ENGINEERING SERVICES AGREEMENT

This Engineering Services Agreement ("Agreement") is dated _____ ("Effective Date") and is between County Sanitation District No. 2 of Los Angeles County, a county sanitation district organized and existing under the County Sanitation District Act, Health and Safety Code Section 4700 *et seq.*, (the "District") and Carollo Engineers, Inc. ("Engineer"). The District and the Engineer are collectively referred to in this Agreement as the "Parties."

The District requested proposals for consulting firms to provide engineering services on an on-call basis for various existing and future projects (the "Project"). Engineer's proposal to provide such services under this Agreement is set forth in Exhibit "A" to this Agreement (the "Proposal"). The services to be provided by Engineer pursuant to the Proposal are set forth in the District's Request for Proposals ("RFP") for the Project (Exhibit "B" to this Agreement) and constitute the "Work."

The Parties therefore agree as follows:

1. Agreement

The RFP and the Proposal are incorporated into this Agreement. In the event that there is any conflict or inconsistency between the provisions of the RFP, the Proposal and/or this Agreement, the provisions of this Agreement will prevail.

This Agreement may be executed in any number of counterparts and all such counterparts shall constitute a single instrument. Delivery of an executed counterpart by facsimile or electronic transmission (in .pdf format or other electronic imaging) shall have the same force and effect as delivery of an original counterpart.

2. Engineer's Services

2.1 Scope of Services by Engineer. The Engineer shall provide engineering services as described in this Agreement. In performance of the Work, Engineer shall comply with all applicable Federal, State and local laws, rules, regulations, ordinances, and industry practices.

2.2 Engineer's Standard of Care. The standard of care applicable to Engineer's Work under the Agreement will be the degree of skill and diligence ordinarily employed by engineers performing the same or similar services, under the same or similar circumstances, in the State of California. The Engineer shall re-perform any Work not meeting this standard without additional compensation.

2.3 Engineer's Estimates and Projections. Engineer's opinions regarding the potential cost, financial analyses, economic feasibility projections, and schedules for potential future construction of the project are projections only and do not reflect: the ultimate cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Engineer does not warrant that the District's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Engineer's opinions, analyses, projections, or estimates, but Engineer shall provide such projections in accordance with the standard of care set forth in Section 2.2 of this Agreement.

3. District's Obligations

3.1 District-Provided Information and Services. The District shall furnish the Engineer available drawings, studies, reports and other data pertinent to Engineer's services and obtain or authorize Engineer to obtain additional reports and data as required. The Engineer is entitled to use and rely upon all such information and services provided by the District or others in performing Engineer's services under

the Agreement except as otherwise stated by the District in connection with the information and services provided.

3.2 Access. The District shall arrange for access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services hereunder. Engineer shall comply with all applicable laws and with the District's requirements for persons on the District's premises.

4. Compensation and Payment for Engineering Services

4.1 Engineer's Compensation: The Task Authorization Form (TAF) system shall be used to issue the Work under this Agreement. When engineering services are required, Engineer will be presented with the project scope and will be asked to prepare a detailed Project Plan indicating the Project Manager, key personnel, and the time and expenses required to complete the Work. Once the Project Plan is approved by the District, the Engineer will be issued a TAF that details the agreed-upon scope, budget, schedule, deliverables and associated progress payments. The compensation payable by the District for the engineering services performed by the Engineer shall be per the final signed TAF for the Work. The total not-to-exceed budget for all Work performed by the Engineer is $1,000,000. The breakdown of expenses for each TAF shall be as follows.

a. **Direct Costs.** Direct Costs will be the hourly rates paid by the Engineer to its employees for time directly chargeable to the Project, exclusive of the costs for fringe benefits for those employees and other payroll costs. Engineer shall ensure that its employees maintain accurate records of the time chargeable to the Project.

b. **Overhead Costs.** Overhead Costs will be all business expenses allocated by the Engineer for rendering engineering services for the Project, including the fringe benefits for the employees who will be utilized on the Project. The Engineer's overhead cost will be charged to the District as a fixed percentage of the Direct Costs.

c. **Indirect Costs.** Indirect Costs will be all other identifiable costs of the Engineer directly chargeable to the Project, including, but not limited to, reproduction of reports, plans, specifications and other documents; preparation for meetings; travel costs; computer services; supplies used in the work; and communication expenses, that are necessary for the Engineer to fulfill its responsibilities for the Project.

d. **Subconsultant Costs.** Subconsultant Costs will be the costs paid by the Engineer to Subconsultants for providing services as required to assist the Engineer in the design and preparation of the deliverables for this Project.

e. **Fixed Fee.** The Fixed Fee shall be the profit of the Consultant and shall be a fixed percentage of the direct and overhead cost for each component of the Project.

4.2 Payment to Engineer. Engineer shall be compensated in accordance with Section 9 (D) of the RFP.

5. Duration, Schedule and Delay

5.1 Duration. Engineer's performance of the Work shall commence on the date identified in the District's Notice to Proceed. Engineer shall complete the Work in accordance with the agreed-upon schedule defined in each TAF (TAF Project Schedule).

5.2 Delay. The Engineer shall perform its services with due diligence and agrees to use its best efforts to complete the work involved in the Project in accordance with the TAF Project Schedule. The Engineer shall immediately advise the District of any delay in the TAF Project Schedule resulting from causes within or beyond its control. In the event of any such delay by causes within the Engineer's control,

the Engineer shall promptly outline and implement appropriate actions required to overcome such delay, including, but not limited to, one or more of the following:

- Assignment of additional personnel to the Project;
- Utilization of overtime at no increase in compensation by the District; and
- Change in management structure or approach.

The foregoing is not intended to relieve the Engineer of responsibility for delay for which it would be responsible under this Agreement.

In the event of delay by causes beyond its control, the Engineer shall promptly provide the District with written notice of the delay and take all reasonable action to mitigate the effect of such delay. If the delay is beyond Engineer's control and without its fault or negligence, the time for the performance of its services may be equitably adjusted by written amendment subject to the District's approval of the extent of such delay. If the District determines that the Engineer has suffered additional costs that could not reasonably have been avoided, the District will compensate the Engineer for those additional costs.

Neither of the Parties will be responsible for delays in the performance of their obligations hereunder caused by strikes, action of the elements, acts and/or decisions of any governmental agency or by third parties, other than either Parties' consultants or subconsultants, which could not reasonably have been foreseen, or by civil disturbances, or any other cause beyond its reasonable control. Engineer will not be responsible for any delay by the District in supplying information and reviewing submittals by the Engineer.

6. Changes and Extra Work

The District may make changes within the general scope of this Agreement and may request the Engineer to perform additional services not covered by the original scope of work defined in a TAF. If the Engineer believes that any proposed change or direction given by the District causes an increase or decrease in the cost and/or the time required for the performance of the Work defined in a TAF or this Agreement, the Engineer shall so notify the District no later than five days after the date of receiving notification of a proposed change or the changed direction. The Engineer shall perform such services and will be paid for such services pursuant to a negotiated and mutually agreed change order signed by the Parties to this Agreement. If the Engineer determines that any work beyond the Work is necessary for completion of the Project, the Engineer shall notify the District and receive written approval prior to starting that work. If the Parties do not agree whether the Engineer is entitled to additional compensation or the extent of such compensation for work the Engineer determines is extra or changed work, the Engineer shall proceed with the work and the issue of the compensation shall be reserved for later determination as provided in Section 9 of this Agreement.

7. Personnel Assignment

Engineer agrees to utilize the key personnel as submitted to the District in its Project Plan, including its Project Manager. The Project Manager will be the primary contact for the District and should have a thorough knowledge of all aspects of the Project and its status. During the term of this Agreement, no replacement of the Project Manager or any of the key personnel of Engineer's Project team or its sub-consultants may be made without the written approval of the District, which approval will not be unreasonably withheld. Nothing in this Section is intended to or may be construed to prevent Engineer from employing or hiring as many employees as Engineer deems necessary for the proper and efficient performance of its services.

The District may request a change in the assignment of the key personnel. Engineer shall change key personnel to the satisfaction of the District within 30 days following written direction to change by the District.

8. Notices

All notices or other communications regarding this Agreement to either party by the other shall be deemed given when made in writing and delivered or mailed (not e-mailed) to such party at their respective addresses as follows:

Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, California 90601
ATTN: Samuel Espinoza

Carollo Engineers, Inc.
707 Wilshire Boulevard, Suite 3920
Los Angeles, CA 90071
ATTN: Miko Aivazian

Either party may change its address or representative for such purpose by giving notice thereof to the other in the same manner.

9. Governing Law, Dispute Resolution and Litigation

Engineer's performance of this Agreement shall be governed and construed in accordance with the laws of the State of California. Except as provided with respect to termination in Section 9 (O) of the RFP, if any dispute arises between the Parties with respect to the Work, compensation for the Work, or any other matter with respect to this Agreement, the Parties shall, if both agree, submit the matter to non-binding mediation. If the mediation does not resolve the dispute, the dispute shall be resolved through litigation. Venue for any action relating to this Agreement will be in the County of Los Angeles, State of California.

10. Third Parties

The services to be performed by Engineer are intended solely for the benefit of the District. No person or entity not a signatory to the Agreement may rely on Engineer's performance of its Work under this Agreement, and no third party will obtain any right to assert a claim against the Engineer by assignment of indemnity rights or otherwise accrue to that party as a result of this Agreement or Engineer's performance of the Work.

11. Entire Agreement

This Agreement represents the entire understanding between District and Engineer as to those matters contained herein. No prior oral or written understanding is of any force or effect with respect to those matters covered in this Agreement.

12. Action by Chief Engineer

Except as otherwise provided in this Agreement, the Chief Engineer and General Manager of the District ("Chief Engineer") may take all actions on behalf of the District in connection with any approvals or actions required of or by the District under this Agreement, and Engineer may rely on any such actions by the Chief Engineer as having been approved or required by the District under all applicable laws.

Carollo Engineers, Inc.

_____ _____

Signature Dated

_____

Name

_____

Title

County Sanitation District No. 2
of Los Angeles County

By: _____ _____

Chairperson Dated

Attest:

_____

Secretary

Approved as to Form:

Lewis Brisbois Bisgaard & Smith LLP

By: _____

District Counsel

EXHIBIT A - PROPOSAL

Prepared for the
LOS ANGELES COUNTY SANITATION DISTRICTS

ON-CALL
ENGINEERING SERVICES

PROPOSAL • JUNE 2021

carollo
Engineers...Working Wonders With Water®

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carollo
Engineers...Working Wonders With Water®

707 Wilshire Boulevard, Suite 3920, Los Angeles, California 90017
P. 213.489.1587 F. 213.572.0361

June 10, 2020

Ms. Maribeth Tan, Senior Buyer
Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, CA 90601-1400

Subject: Proposal for On-Call Engineering Services | RFP No. 03956, Quest CDN No. 7825153

Dear Ms. Tan:

Carollo is currently supporting the Los Angeles County Sanitation Districts (Districts/LACSD) for a variety of on-call projects, as well as recent work for the Valencia Water Reclamation Plant (WRP) Advanced Water Treatment Facility and Aeration Blower and Diffuser Replacement ESCO projects, and we have a history of matching our skills and expertise closely with your needs and objectives. Our breadth and depth in wastewater services is unmatched as we focus exclusively on water/wastewater projects, whereas most, if not all, of our competitors have business lines in areas completely unrelated to water/wastewater. The Carollo team for this proposal was handpicked to provide immediate response to the Districts' needs, and we are confident you will find our organization and resources more than sufficient to deliver successful projects for the Districts. This proposal demonstrates our wide range of qualifications, including:

- **Sewer Rehabilitation and Construction:** Carollo has worked with cities, public utility districts, and community groups to provide planning and/or design for more than 2,000 gravity sewer pipeline and force main projects in California. We have provided engineering services for more than 700 miles of sewer assessment, rehabilitation, and design, with pipe sizes reaching 120 inches in diameter. We have also provided design assistance on bypass pump stations capable of handling flows up to 45 mgd. We match the needs of our clients with the latest technology to achieve innovative and cost-effective solutions. We have also provided engineering solutions for new sewer pipelines (gravity and pressure pipeline) from small, medium, to large main trunk lines.

- **Miscellaneous Design Support and Engineering:** Carollo has established itself as a leader in sewer system master/management planning. In the last 10 years alone, Carollo has completed master plans for $7.5 billion in wastewater facilities. We have prepared comprehensive master plans for more than 200 municipal clients with service area populations from 5,000 to over 4 million. Carollo is also a leader in the development of hydraulic models for wastewater agencies facing a variety of complex issues. We are experienced in creating workable, user-friendly computer simulation models of wastewater collection systems with several well-known models. Our staff is qualified in extracting the necessary spatial and database information from existing databases to create these hydraulic models. Carollo has provided construction management (CM) services for hundreds of wastewater and water facilities throughout the US. We have provided CM and inspection services for more than $2 billion in wastewater and water treatment facilities over the last 10 years, both as the design engineer and as a third-party construction manager. Carollo is currently the No. 1 ranked water/wastewater-only design firm in the United States by *Engineering News-Record* (*ENR*). You can rest assured that we will be able to address any type of special engineering study/report that you may require.

- **Overall Company Resources:** The combined resources of Carollo's five offices in Southern California include more than 100 professional and skilled personnel, of which more than 65 are registered engineers dedicated exclusively to water and wastewater projects. Add to that the other 1,000 Carollo personnel, including more than 450 registered engineers, who can be called upon to provide specialized skills, and you can be confident that Carollo has the resources to meet any of the Districts' challenges.

Miko Aivazian will be our project manager for this contract. Miko is a professional engineer registered in the State of California with more than 30 years of experience in managing the design and engineering of wastewater infrastructure, including project elements similar to those described in the Scope of Work. Additionally, Miko has direct experience with LACSD as he spent a year working out of your offices while serving as project engineer for the preliminary design and study of the Lancaster Wastewater Treatment Plant. Miko will manage this project from our Los Angeles office and will serve as the principal contact. He can be reached at 213-279-3319, maivazian@carollo.com.

We recognize and appreciate that the Districts are facing a number of challenges over the coming months and years. We are confident that our team and capabilities can help the Districts meet these challenges. We look forward to further strengthening our relationship with the Districts through this important contract.

Sincerely,

CAROLLO ENGINEERS, INC.

Roland I. Pilemalm, PE
Principal-in-Charge/ Associate Vice President

Miko Aivazian, PE
Project Manager/Vice President

RIP/MA:alh

Respondent Contact Information

Our proposed project manager, Miko Aivazian, will serve as the principal contact person for all Districts' projects. His contact information is listed below.

Miko Aivazian, PE
707 Wilshire Boulevard, Suite 3920
Los Angeles, CA 90017

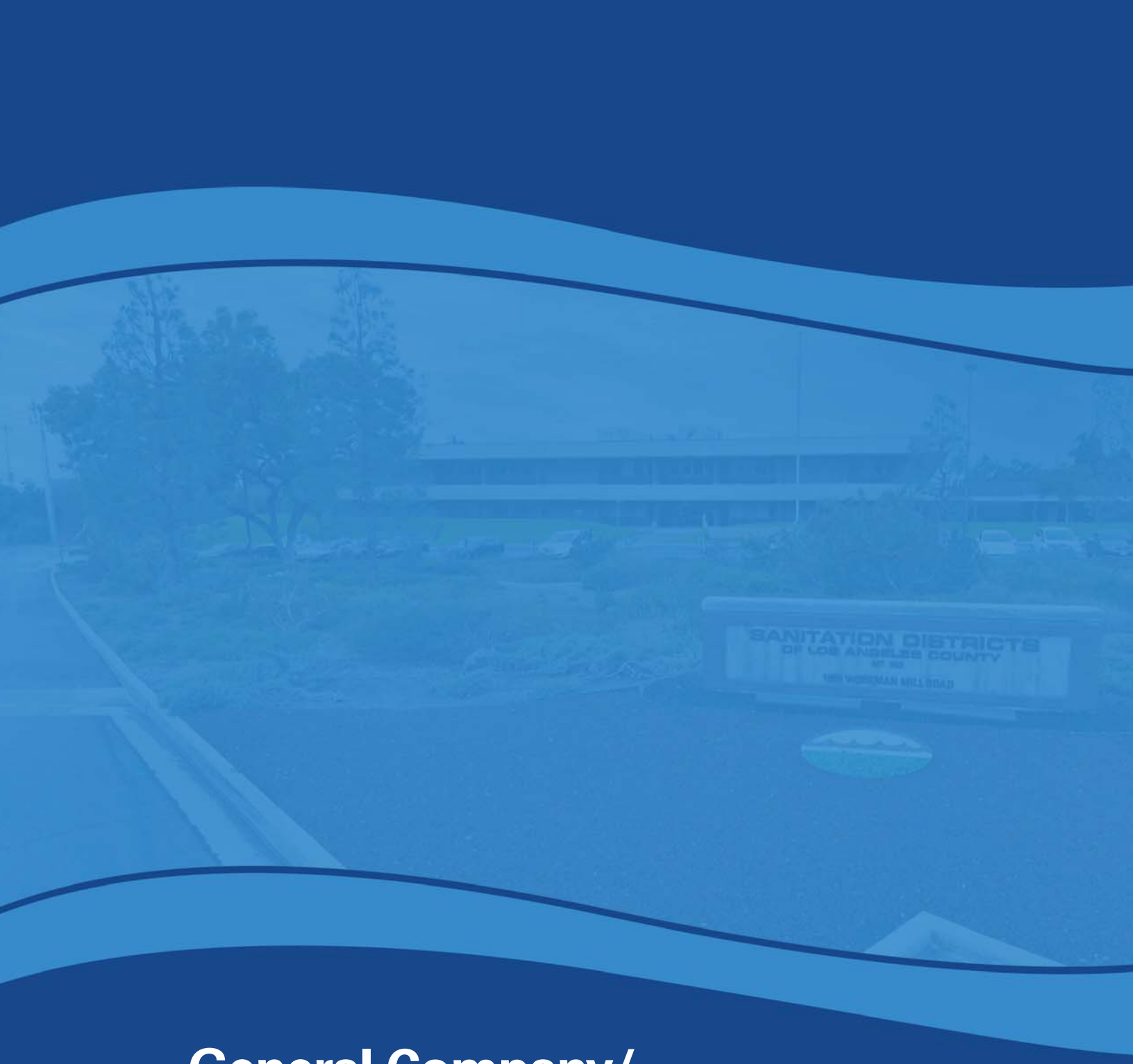
P: 213-279-3319
E: maivazian@carollo.com

Executive Authority Contact Information

This letter is signed by an executive with the authorization to contract with the Districts.

Roland Pilemalm, PE
707 Wilshire Boulevard, Suite 3920
Los Angeles, CA 90017

P: 213-489-1587
E: rpilemalm@carollo.com



General Company/ Team Information

General Company/Team Information

WATER - IT'S ALL WE DO

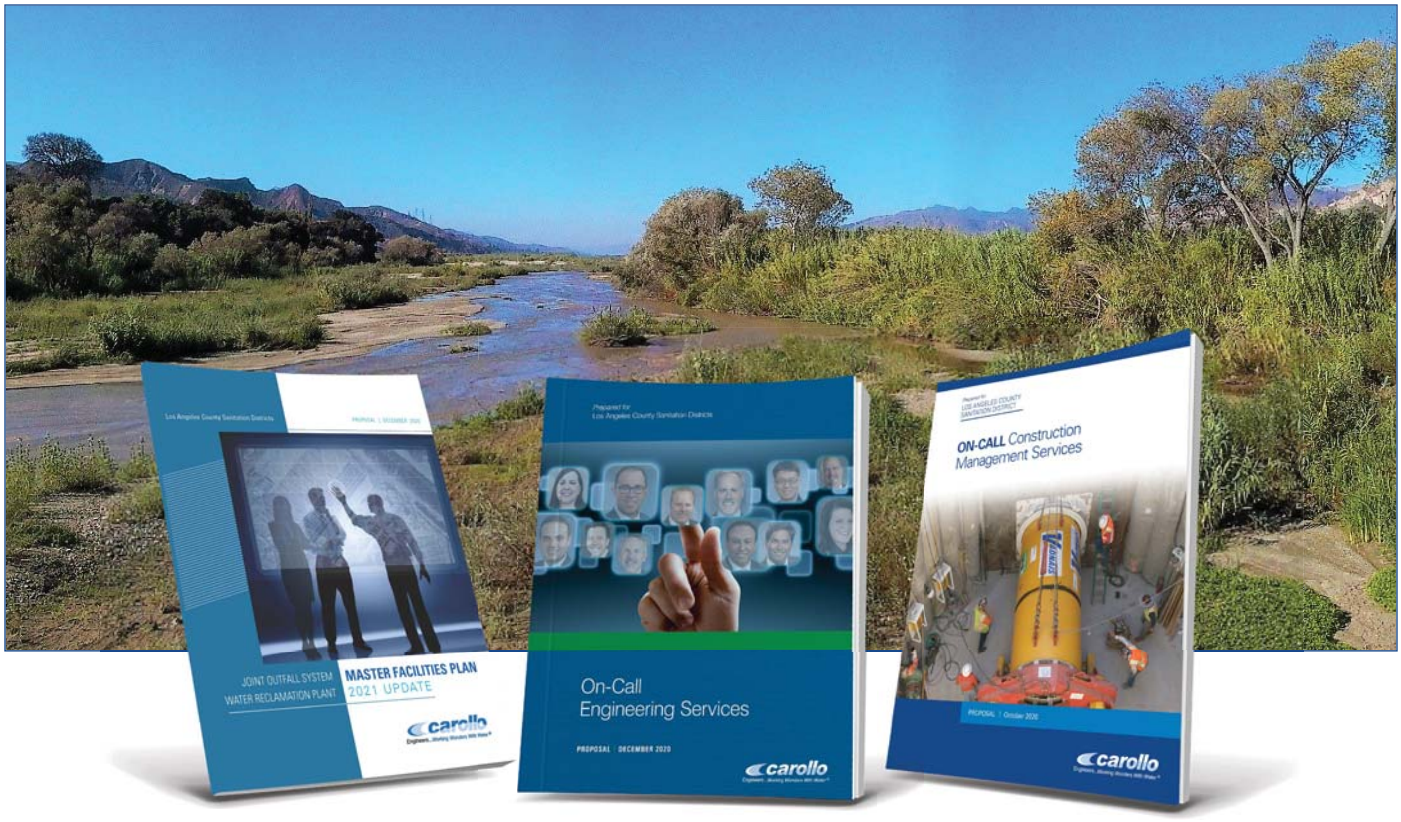
We strive to optimize the use and benefits of this precious resource with a single-minded focus that allows us to deliver innovative solutions, the best talent in the business, and exceptional, responsive client service.

FIRM BACKGROUND

Carollo is an environmental engineering firm specializing in the planning, design, and construction of water and wastewater facilities. Carollo's reputation is based upon client service and a continual commitment to quality. We currently maintain 49 offices throughout the U.S.

During our 88-year history, Carollo has successfully completed more than 25,000 projects for public sector clients. With more than 1,200 employees, Carollo is the largest water-focused engineering firm in the country. Unlike most of our competitors, Carollo only provides water and wastewater engineering services; in fact, *ENR* ranks Carollo number one among all design firms that work solely in water/wastewater. We recruit nationwide and hire technical staff with extensive background and training specific to this field. For that reason, the quality and professional standing of our core group of water and wastewater professionals equals or exceeds that provided by some of the largest design firms in the country.

As the lead consultant for numerous engineering, project management, and CM on-call contracts throughout California, Carollo has developed an appreciation for the many different factors that contribute to the success of an on-call engineering services contract. Throughout our extensive experience in working directly with agencies, we understand that listening to our clients, understanding their real needs, and responding effectively to these needs are the most important elements of success. We are committed to our clients, providing top-tier services in planning, design, and construction of water and wastewater facilities.



HISTORY WORKING WITH LACSD

The Districts have historically conducted a lot of planning and engineering in house thanks to your well-qualified and abundant internal resources. Recently, however, Carollo has completed some innovative work at your Valencia Water Reclamation Plant. We have enjoyed the close collaboration with your staff and organization on the following recent projects:

- **Ongoing Joint Outfall System WRP Master Facilities Plan 2021 Update.** In collaboration with the Districts', Carollo is developing a facilities master plan update for the Long Beach WRP, Los Coyotes WRP, Pomona WRP, San Jose Creek WRP, and Whittier Narrows WRP – all treatment plants within joint outfall system, except for the La Canada WRP.
- **Ongoing On-Call Engineering Services.** Carollo is providing on-call engineering services for the following discipline areas: wastewater treatment, wastewater pumping, solid waste, stormwater, and building modifications. Currently, we are working with your staff to initiate a tertiary filtration study at the Valencia WRP and also a seismic evaluation for the San Jose Creek WRP.
- **Ongoing On-Call Construction Management Services.** Carollo is providing on-call construction management services, with a focus on resident engineering, scheduling, and cost estimating services.
- **Valencia Advanced Water Treatment Facility.** Carollo provided planning and design for the $90 million, 6.5-mgd Valencia AWTF, which uses an innovative, all-membrane-based process that targets chloride removal from tertiary effluent prior to discharge to the Santa Clara River.
- **Valencia WRP North Aeration Process Improvements Project.** Carollo is working with an energy services company (Schneider Electric) to deliver improvements to the existing North Process Air Compressors and Air Diffusion System at the Valencia WRP. These and other improvements at the plant will conserve energy and save the Districts money annually.
- **Mixed Brine Line Study.** Under this study, Carollo evaluated the concept of segregating brines currently collected in the Districts' sewer system and identified optimal solutions using Blue Plan-it®. These brines affect the cost of operation of the planned Regional Recycled Water Advanced Purification Center (APC) that will treat effluent from the JWPCP.

FIRM OWNERSHIP AND ORGANIZATION

Carollo's Corporate Structure is designed to provide excellent service to you, our client. We are a privately held firm with a six-member board of directors made up of well-respected, highly accomplished engineers who are also employee-owners. This organizational structure, combined with the fact that we operate under a single profit center, allows us to be extremely responsive to our client's needs by easily engaging appropriate labor resources from throughout the company, quickly making business decisions, and building a culture of high quality services and work products. With more than 88 years of experience, we have shown that this approach facilitates successful project completion on time and within budget.

Resources

Carollo's staff numbers more than 1,200 employees, including more than 450 registered engineers. We are a full-service company with the experience and qualified professionals to successfully manage projects of any size. Our staff includes civil, sanitary, environmental, electrical, mechanical, chemical, structural, control systems, and corrosion control engineers, as well as architects, planners, and specialists in other areas.

Local Presence

Carollo serves Southern California clients by offering an exceptional engineering team who live and work within the local area. Our services will be delivered mainly from our Los Angeles office located at 707 Wilshire Boulevard, Suite 3920, Los Angeles, California, and supported as needed by other offices across the nation. Our local offices have provided on-call engineering for design, construction management, and other services for several agencies, including the City of Corona, Eastern Municipal Water District, City of Los Angeles, Inland Empire Utilities Authority, City of Riverside, San Bernardino Water Department, San Diego County Water Authority, and City of Santa Barbara.

We have provided our corporate details and other requested information as required in RFP No. 03956.

NAMES OF CORPORATE OFFICERS

NAME	OFFICE POSITION
B. Narayanan	President/CEO
Michael Barnes	Secretary
Ash Wason	CFO/Treasurer

Project Manager Contact Information

Our proposed project manager is Miko Aivazian. Miko is a professional civil engineer registered in the State of California with 32 years of experience in managing the design and engineering of wastewater systems, including project elements like those described in the Scope of Work. Miko will manage this project from our Los Angeles office and will serve as the principal contract person for all Districts' projects. His contact information is listed below.

Miko Aivazian, PE
707 Wilshire Boulevard, Suite 3920
Los Angeles, CA 90017

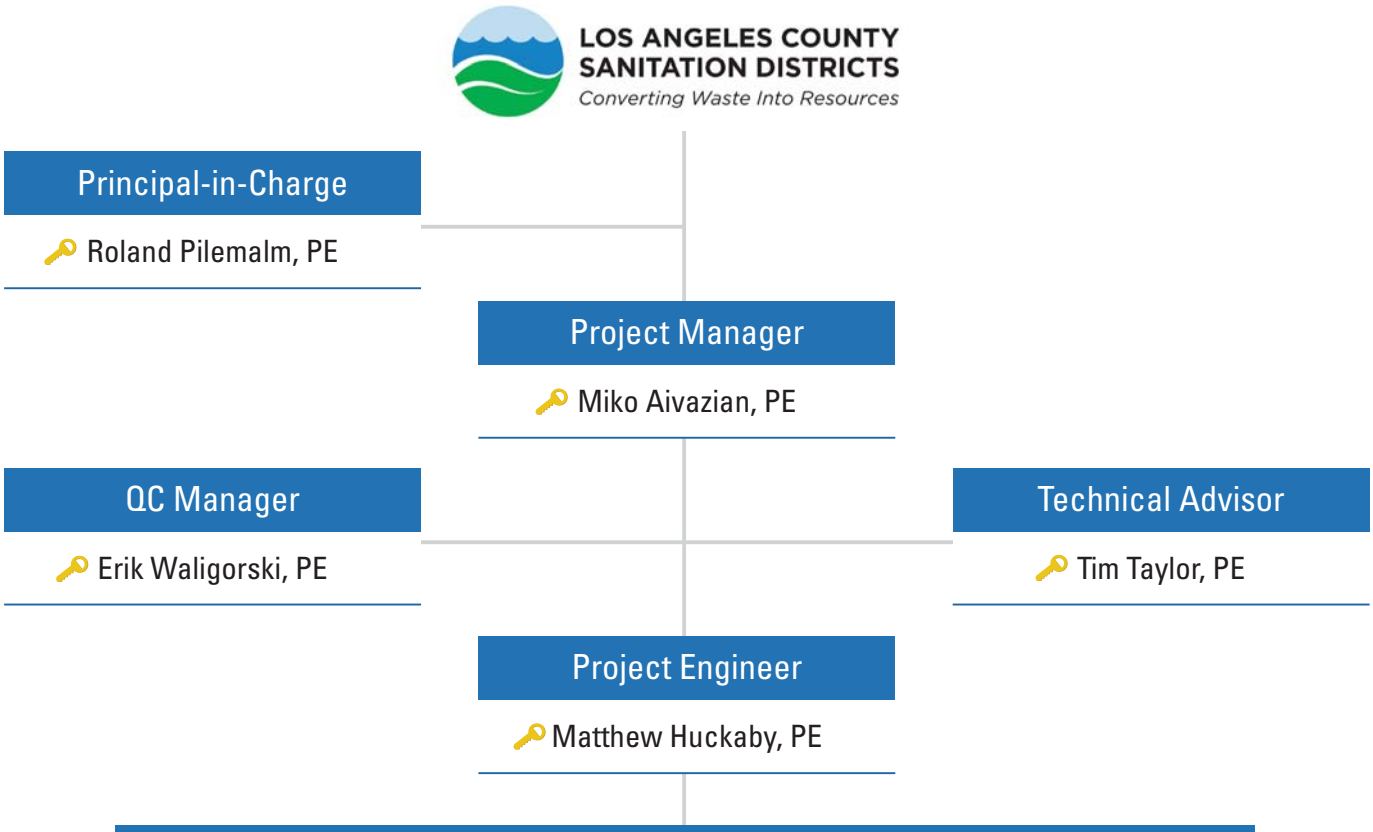
P: 213-489-1587
E: maivazian@carollo.com

Firm DBA

Carollo has not conducted business under any other name in the last 5 years.

ORGANIZATION CHART

Carollo's proposed organization chart is shown below and illustrates all key personnel, including senior staff responsible for QA/QC. The key team members assigned to this project will not be changed or substituted without the knowledge and approval of the Districts.



Technical Support Team

Rehabilitation - Reace Fisher, PE
Trenchless - Brian Avon, PE
Open Trench - Jerry Gantney, PE, PLS
Civil - Raphael Bui, PE
Bypass Pumping - Greg Gould, PE
Microstation CAD - Raj Bhatia
Sewer Study - Amy Martin

Hydraulic Modeling - Ryan Orgill, PE
Ryan Hejka, PE
GIS - Jackie Silber, GISP
Cost Estimating - Jason Rozgony, PE
Environmental - Liz Cutler[1]
Traffic Control - Doug Yeh, TE[2]
Constructability Review - Mike Warriner, PE, CCM
Construction Management - Jamie Burrola

Subconsultants
1. AZTEC
2. KOA

🔑 = Key Team Members

SUBCONSULTANTS

As shown in the proposed organization chart, we have included AZTEC for environmental and KOA for traffic control to augment and complement Carollo's resources to offer a one-stop shop to the Districts.

AZTEC Engineering Group (AZTEC)

Established in 1992, AZTEC is a full-service environmental and engineering consulting firm with more than 150 professional, technical, and administrative personnel throughout offices in California, Arizona, Nevada, Colorado, and Indiana. AZTEC has built an excellent reputation as a quality consulting firm dedicated to meeting clients' needs through strong project management and experienced, dedicated staff. AZTEC has two offices in Southern California: Irvine and Los Angeles. AZTEC's Environmental Services Practice currently has more than 40 environmental professionals comprised of project managers, planners who specialize in CEQA/NEPA, and technical experts in biology, archaeology, hazardous materials, Clean Water Act, GIS, air and noise, architectural history, and landscape architecture.

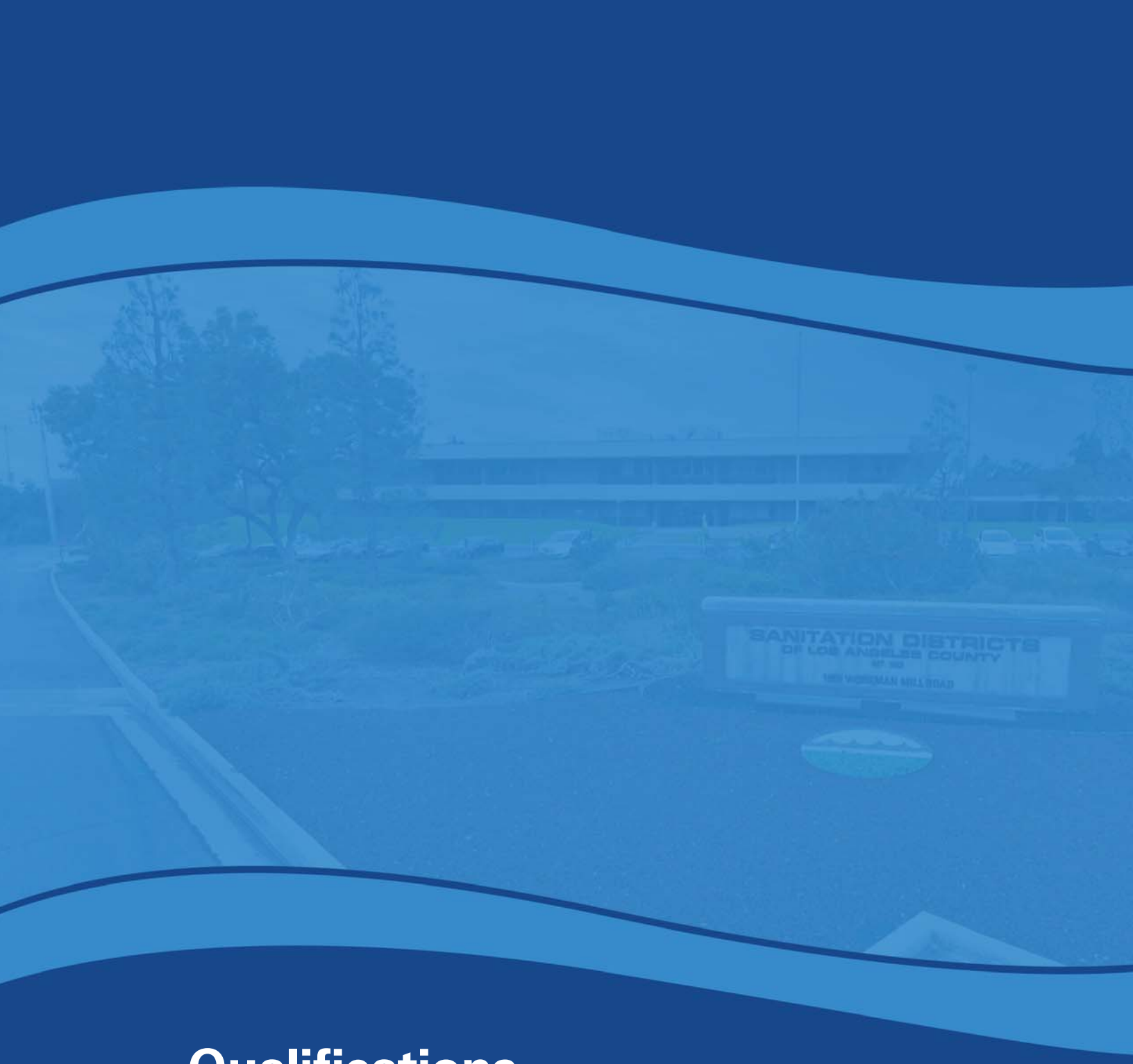
AZTEC provides environmental scoping; planning and technical studies; regulatory licensing, permitting, and compliance; construction and maintenance monitoring; mitigation and restoration; and project management services for a variety of federal, state, and local agencies, as well as tribal communities and private entities. The firm has substantial experience providing environmental services for all stages of project development from initial studies through construction compliance monitoring.

Carollo and AZTEC have worked together on numerous projects throughout the southwestern United States. We are currently teaming on the Cannon Pump Station project for Western Municipal Water District, California.

KOA Corporation

KOA is a leading provider in civil and traffic engineering, transportation planning and construction management services for public agencies and private sector clients. Staff includes certified transportation planners, registered civil and traffic engineers, project/construction managers, and construction inspectors. With four offices located in Southern California, KOA has provided engineering services for the largest public works and transportation planning projects throughout California. KOA regularly provides worksite traffic control designs for a variety of projects, ranging from street closures, light rail construction, to construction of freeways. The worksite traffic control plans provide for the temporary control of traffic adjacent to work areas, allowing for the safe movement of vehicles, bicycles, and pedestrians around the work area.

The firm has provided traffic engineering services on an on-call basis for EIRs, negative declarations, EISs, FONSIs and other environmental studies. KOA also evaluates traffic and circulation impacts of construction, including work zones and hauling. Carollo and KOA have teamed on numerous projects together in the last decade, including the Simi Valley Sewer Trunk Rehabilitation as well as various on-call projects for clients throughout Southern California.



Qualifications

- Company Experience and Past Performance
- Key Project Staff Experience
- Project Management Method
- Location of Project Staff
- Financial Condition

Qualifications

OVERVIEW

Carollo currently provides on-call services to agencies for a wide-range of engineering tasks under similar "as-needed" contracts. We have established a reputation of responsive, high value service, leveraging our extensive project experience and industry-recognized technical expertise and leadership. Through our project work, we have demonstrated our ability to provide innovative, practical solutions to today's complex issues that our clients face.

This section summarizes Carollo's qualifications and those of our team members in each of the technical areas included in the Districts' scope of work. To demonstrate our technical competence, a summary of our team's experience in each technical area is provided on the following pages. Following these general qualifications, we have included a few select projects, including a description of the work performed and references.

OUR TEAM'S EXPERIENCE IN ALL ASPECTS OF WASTEWATER INFRASTRUCTURE ALLOWS US TO PROVIDE A ***ONE-STOP SHOP*** FOR ALL THE DISTRICTS' NEEDS!

Infrastructure Design

- Sewer pipeline rehabilitation and design.
- Sewer pipeline/trunkline design.
- Trenchless sewer pipe installations.
- Sewer lift stations.
- Bypass pumping analysis and design.
- Capacity and performance upgrades.
- Permitting assistance.

Infrastructure Planning

- Hydraulic modeling and analysis.
- Rainfall dependent infiltration and inflow analysis.
- Capacity deficiency and assessment.
- Capital improvement program development.
- Master planning.
- Asset management.
- Condition assessment evaluations.

Carollo will provide a **ONE-STOP SOURCE** for the Districts' needs

Construction Management

- Full or part-time inspection.
- Cost estimating.
- Constructability reviews.
- Value engineering.
- Start-up and commissioning.

Regulatory and Environmental Compliance Services

- Compliance permitting.
- CEQA/NEPA documentation.
- Watershed protection programs.
- SWPPPs and SPCC planning.
- Environmental impacts.
- Regulatory compliance.

Company Experience and Past Performance

Company Experience and Past Performance

CATEGORY 1 Sewer Rehabilitation and Construction

WASTEWATER INFRASTRUCTURE EXPERTS

Carollo has worked with cities, public utility districts, and community groups to provide planning and/or design for more than 2,000 wastewater infrastructure projects in California. We match the needs of our clients with the latest technology to achieve innovative and cost-effective results. We have provided engineering solutions for wastewater pipelines and pump stations capable of handling flows ranging from less than 1 mgd to over 650 mgd in capacity. Successfully managing these projects has required developing measures to:

- Identify and complete appropriate environmental and agency permitting documentation.
- Maintain facilities in operation during construction utilizing critical phasing and bypassing techniques.
- Apply innovative solutions to reduce costs and schedule.

We are also experienced in coordinating public awareness programs to minimize disruption of business and residential activities during construction and in providing transportation planning and control.

Our work has included engineering services for more than 2 million LF of wastewater pipeline ranging in diameter from 6 to 144 inches.

Sanitary Sewer Rehabilitation

Carollo has provided pipeline rehabilitation engineering services for more than one million feet of wastewater pipeline. Carollo's wastewater collection system rehabilitation projects have included important considerations such as utility research, encroachment permits, roadway/paving replacement, pipe rehabilitation selection, challenging crossings, and coordination with various impacted parties. Our pipeline rehabilitation projects have incorporated numerous construction methods such as pipe bursting, cured-in-place pipe, sliplining, and spiral wound liners, and other techniques. Our project team members have evaluated different pipe materials for sewer pipelines and rehabilitation projects such as high density polyethylene (HDPE), fusible polyvinyl chloride (FPVC) for pipe bursting and sliplining projects, as well as researched the advantages and disadvantages between styrene and non-styrene resins for cured-in-place linings. We have instituted rehabilitation techniques on pipe diameters ranging from 4 inches to 96 inches, as well as gravity and pressure pipeline situations. The key to sanitary sewer pipeline rehabilitation is matching the appropriate rehabilitation techniques and costs to specific project constraints. Our hands-on experience during design and construction with each of the methods used for constructing new pipelines and rehabilitating existing pipelines has enabled us to develop a procedure for determining the most effective construction technique (or combination of techniques) for each project.

CAROLLO IS CURRENTLY RANKED ONE OF THE TOP 25 TRENCHLESS TECHNOLOGY DESIGN FIRMS BY TRENCHLESS TECHNOLOGY MAGAZINE.

Sanitary Sewer Trunk Pipelines

Carollo has provided engineering services for more than two million feet of wastewater pipeline. Carollo's wastewater conveyance facility projects have included important considerations such as evaluating alternative alignments, utility research, encroachment permits, roadway/paving replacement, pipe selection, challenging crossings, and coordinating with various impacted parties. Our trunk pipeline projects have incorporated traditional cut-and-cover and jack-and-bore construction methods, as well as microtunneling, horizontal directional drilling, and tunnel boring techniques.

We correctly match the available technologies and costs to the site-specific installation conditions to deliver a cost-effective project. For example, we have found it beneficial to use trenchless methods in sparsely populated areas with unrestricted access for pipe replacement to avoid disturbing sensitive environmental zones. Where traditional cut-and-cover methods seem to be the obvious least-cost alternative, consideration of less apparent costs involving regulatory agency permitting and public acceptance will sometimes dictate selection of alternative trenchless technologies. Our experience allows us to bring these considerations to the table, to help guide your project based on your needs. We have worked with pipe diameters ranging from 4 inches to 144 inches and with pressures from 0 psi (gravity flow) to 600 psi.

OUR TRENCHLESS TECHNOLOGY EXPERTS BRING TO YOU:

- Hands-on experience during design and construction with all methods used for constructing new pipelines and rehabilitating existing pipelines
- Cost-effective solutions to the challenges of constructing and rehabilitating critical infrastructure through urbanized areas with the least possible disruption to residents, businesses, traffic, and the environment.

Our wastewater experience includes multiple rehabilitation methods such as CIPP, spiral wound liners, pipe bursting, and sliplining.

SELECTION OF CAROLLO'S REPRESENTATIVE PIPELINE REHABILITATION / REPLACEMENT EXPERIENCE

CLIENT/LOCATION	REHAB / REPLACEMENT METHOD	LENGTH (FT)	DIAMETER (IN)	CONDITION ASSESSMENT	DESIGN	TRENCHLESS	RESIDENTIAL NEIGHBORHOOD	TRAFFIC CONTROL	UTILITY COORDINATION	SWPPP/ ENVIRONMENTAL	BYPASS PUMPING	PUBLIC OUTREACH	PERMITTING	CONSTRUCTION
1 City of Modesto, CA - River Trunk Sewer Emergency Rehabilitation	SL	2,600	45, 48	●	●	●			●	●	●	●	●	●
2 San Luis Obispo County, CA - Trenchless Pipeline Design	SL	1,300	30		●	●			●	●				●
3 City of Fresno, CA - Sewer Rehabilitation of Fruit Avenue/Illinois Avenue	CIPP	6,200	12, 15, 48	●	●	●	●	●	●	●	●	●	●	●
4 Valley Sanitary District, CA - Westward Ho Sewer Crossing Replacement	HDD, MT	1,000	32		●	●	●	●	●		●		●	
5 Elsinore Valley Municipal Water District, CA - Diamond Regional Sewer Lift Station and Dual Forcemains	MT	3,400	16, 24		●	●	●	●	●	●			●	
6 Clark County Water Reclamation District, NV - Paradise Whitney Interceptor	OC, MT	27,000	60-84		●	●	●	●	●	●	●	●	●	●
7 City of Modesto, CA - River Trunk Realignment and Beard Brook Siphon	OC, MT	32,715	48-72	●	●	●	●	●	●	●	●	●	●	●
8 Santa Cruz County Sanitation District, CA - Noble Gulch Sewer Improvements	OC, CIPP, MT, HDD	13,100	8, 10, 15	●	●	●	●		●	●		●	●	●
Hi-Desert Water District, CA - Collection System	OC, BJ	406,560	6-24		●	●	●	●	●	●		●	●	●
City of Simi Valley, CA - FY 2010-11 Sanitary Sewer Trunk Rehabilitation CIPs	CIPP	10,785	10, 12, 20 33, 36, 39	●	●	●	●	●	●	●	●	●	●	●
City of Modesto, CA - River Trunk Improvements	OC, BJ, CIPP, MT	32,715	18-60	●	●		●	●	●	●	●	●	●	●
County of San Diego, CA - As-Needed Engineering Services	OC, CIPP	20,000	8-24	●	●	●	●		●	●	●	●	●	
Santa Cruz County Sanitation District, CA - Upper Rodeo Gulch Trunk Sewer Replacement	PB, OC, CIPP, BJ	5,100	8, 10, 12	●	●	●	●		●	●	●	●	●	
Santa Cruz County Sanitation District, CA - Felt and 17th Ave Sewer Improvements	CIPP, OC, PT	11,000	8, 24, 30	●	●	●	●	●	●	●	●	●	●	●
Dublin San Ramon Services District, CA - Dublin Trunk Rehabilitation	CIPP	8,160	33-42	●	●	●	●	●	●	●	●		●	●
City of Hercules, CA - Sycamore Ave Trunk Sewer Replacement Project	OC, GAB, CIPP, SL	5,500	30	●	●	●	●		●	●	●	●	●	●
City of Modesto, CA - Emerald Trunk Diversion Preliminary Design	OC, PT, MT	9,500	30, 36	●	●	●	●		●	●	●	●	●	●
Central Contra Costa Sanitary District, CA - Concord Recycled Water Distribution Extension	OC, HDD	10,560	6-12, 14		●	●		●	●	●		●	●	●
City of Hillsborough, CA - Crystal Springs Sewer Improvement Project, Phases I and II	PB, OC	90,000	15-28	●	●	●	●	●	●	●	●	●	●	●
City of San Mateo, CA - Los Prados Sanitary Sewer Relief Line Project	OC, HDD	14,000	16			●	●	●	●	●	●	●	●	●
City of San Mateo, CA - 24th and 25th Avenue Sanitary Sewer Relief	OC, PT, BJ	9,000	12, 36			●	●	●	●	●	●	●	●	●
City of Santa Clara, CA - Monroe Street, Chromite Drive, Machado Avenue, and Nobili Avenue, Phase II Sewer Improvements	OC, BJ, HDD	9,300	12-24		●	●	●	●	●	●	●	●	●	●

Rehab/Replacement Methods: *OC = open-cut; SL = sliplining; MT = microtunneling; BJ = bore and jack; CIPP = cured-in-place pipe; HDD = horizontal directional drilling; PT = pilot tube; PB = pipe bursting; L = lining, GAB = guided auger boring.*

MODESTO RIVER TRUNK SEWER EMERGENCY REHABILITATION

City of Modesto, California

CLIENT REFERENCE

William Wong, Engineering Division Manager
1010 Tenth Street, Suite 4600
Modesto, CA 95354
P: 209-571-5801
E: wwong@modestogov.com

SERVICES PROVIDED

Design, Bidding, Construction-Phase Services

PROJECT STATUS

Completed in 2017

CHANGE ORDER RATE

< 0.5%

TEAM INVOLVEMENT

Tim Taylor, Project Manager
Reace Fisher, Project Engineer
Greg Gould, Technical Advisor
Ryan Orgill, Hydraulic Modeling

The Big Picture

Due to severe corrosion and lack of access to the pipe on the Gallo Winery property, a pipeline failed in one section in December of 2014. An emergency repair was performed on the pipeline to temporarily support the failing pipeline.

How We Helped

The City contracted with Carollo to evaluate rehabilitation methods for 2,600 feet of an existing 45- and 48-inch-diameter reinforced concrete pipe on Gallo Winery property in Modesto. Carollo was contracted to perform the rehabilitation design using the selected sliplining process as the best suited technology. Due to the difficult site access requirements given by the Gallo Winery, a combination of coordination efforts between the City of Modesto, Carollo, Gallo Winery officials, and Gallo Winery operations staff was critical for a successful project. The final design included a geotechnical investigation, survey including aerial photography, and preparation of plans, specifications, and cost estimates.

Relevance to LACSD

- Emergency rehabilitation of 2,500 feet of 45- and 48-inch sewer line using sliplining.
- Preliminary design involving alternatives analysis that included CIPP, sliplining, and open-cut construction.
- Extensive stakeholder-agency coordination.

2

TRENCHLESS PIPELINE DESIGN

San Luis Obispo County, California

CLIENT REFERENCE

Nola Engelskirger, Capital Projects Manager
1050 Monterey Street,
Government Center, Room 207
San Luis Obispo, CA 93408
P: 805-788-2100
E: nengelskirger@co.slo.ca.us

SERVICES PROVIDED

Design, Bidding, Construction Phase Services

PROJECT STATUS

Completed in 2021

CHANGE ORDER RATE

0.0%

TEAM INVOLVEMENT

Tim Taylor, Project Manager
Brian Avon, Project Engineer

The Big Picture

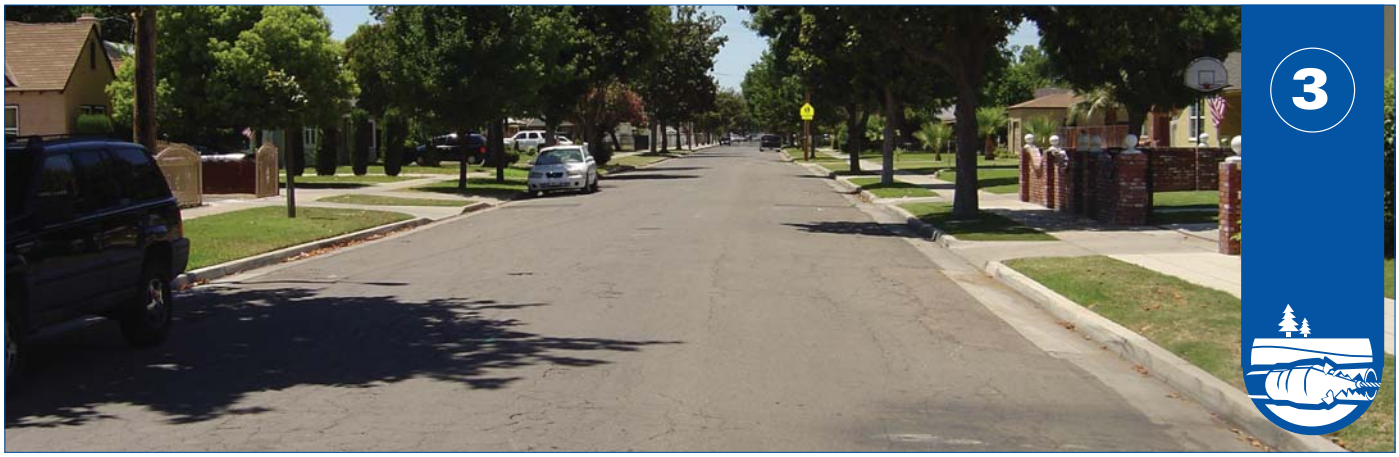
The Nacimiento Water Pipeline (NWP) is a key asset for providing a safe and reliable water supply for the San Luis Obispo County (County) area customers. The County experienced disruptions to service at two existing trenchless crossings along the pipeline alignment due to leaks. The first disruption to the pipeline operation was addressed using a sliplining approach on the Nacimiento River. After leaks were identified at a second crossing at the Salinas River the County removed the NWP from service for inspection, ultimately halting the line's ability to deliver water.

How We Helped

Carollo was retained to evaluate options for repair and/or replacement. After the initial evaluation, sliplining was selected as the preferred alternative. Carollo provided a design for the preferred project and provided bid and construction phase services.

Relevance to LACSD

- Emergency rehabilitation of 1,300 feet of 30-inch critical river crossing.
- Preliminary design involved alternative analysis that included HDD, sliplining, and material evaluation.
- Temporary construction easements were acquired from multiple landowners and a road closure was permitted for final installation.



3

FRUIT AVENUE & ILLINOIS/RECREATION AVENUE SEWER REHABILITATIONS

City of Fresno, California

CLIENT REFERENCE

Orlando Gonzalez, Supervising Professional Engineer
5607 West Jensen Avenue
Fresno, CA, 93706
P: 559-621-5421
E: orlando.gonzalez@fresno.gov

SERVICES PROVIDED

Design, Bid Support, Construction Support

PROJECT STATUS

Completed in 2013

CHANGE ORDER RATE

< 0.5%

TEAM INVOLVEMENT

Tim Taylor, Project Manager
Reace Fisher, Project Engineer
Greg Gould, Technical Advisor
Ryan Orgill, Hydraulic Modeling

The Big Picture

Carollo was contracted to provide design, bid support, and construction support services for two of Fresno's sanitary sewer rehabilitation projects: the Fruit Avenue Sewer Rehabilitation and the Illinois/Recreation Avenue Sewer Rehabilitation. These projects included rehabilitation of approximately 3,576 feet of existing 48-inch diameter and 2,500 feet of existing 12- to 15-inch diameter sewer cured-in-place-pipe liner.

How We Helped

The project team evaluated alternative trenchless rehabilitation techniques to minimize costs while providing the City with an extension of life for the sewer pipelines. These projects also included rehabilitation of existing manholes, development of a bypass pumping/flow diversion concept, and a major junction structure.

To reduce impacts on neighborhood flows and the traveling public, Carollo developed bypass pumping and traffic control requirements. The Illinois/Recreation Avenue rehabilitation also addressed issues associated with impacts on an elementary school by requiring work outside of the school year.

Relevance to LACSD

- CIPP rehabilitation of 5,100 feet of 12- to 48-inch sewer pipe.
- Complex traffic control coordination.
- Bypass pumping coordination.
- Optimized rehabilitation method resulted in $100,000 in construction cost savings.

4

WESTWARD HO SEWER CROSSING REPLACEMENT

Valley Sanitary District, California

CLIENT REFERENCE

Ron Buchwald, District Engineer
45-500 Van Buren Street
Indio, CA 92201
P: 760-238-5408
E: rbuchwald@valley-sanitary.org

SERVICES PROVIDED

Preliminary and Final Design, Permitting, Bid Support, Construction Support

PROJECT STATUS

Final Design was completed in 2021

CHANGE ORDER RATE

n/a

TEAM INVOLVEMENT

Miko Aivazian, Principal-in-Charge
Jerry Gantney, Project Manager
Ryan Hejka, Hydraulic Analysis
Brian Avon, Project Engineer
Raphael Bui, Civil Engineer

The Big Picture

The exposed Westward Ho Sewer was undermined as a result of the storm and subsequent channel erosion that occurred. The District determined that the existing sewer siphon should be replaced with a deeper pipeline that would be safe from future storm erosion.

How We Helped

Carollo is providing engineering services for the preliminary design, final design, permitting assistance, bid phase, and engineering services during construction of this replacement sewer project. Carollo has completed the Preliminary Design Report, which evaluated two trenchless installation methods (HDD or microtunneling). As part of the evaluation, Carollo developed siphon hydraulic design criteria for Option 1 and lift station design criteria for Option 2. Geotechnical information on the subsurface conditions for trenchless methods of construction were reviewed. Carollo also completed a scour analysis for a better understanding of the minimum depth required for the pipeline to be safe from future scour. Carollo recommended the most feasible method for the project and recently completed the final design phase of the project.

Relevance to LACSD

- Evaluation of trenchless installation methods.
- Hydraulic analysis.
- New sewer pipe design.

5

DIAMOND REGIONAL SEWER LIFT STATION AND DUAL FORCE MAINS

Elsinore Valley Municipal Water District, California

CLIENT REFERENCE

Shawnele Morelos, Principal Engineer – Capital Projects
31315 Chaney Street
Lake Elsinore, CA 92531
P: 760-522-9927
E: smorelos@evmwd.net

SERVICES PROVIDED

Preliminary and Final Design Services

PROJECT STATUS

Design completed in 2020
Construction completion estimated in 2022

CHANGE ORDER RATE

not applicable

TEAM INVOLVEMENT

Miko Aivazian, Project Manager
Matthew Huckaby, Project Engineer
Jerry Gantney, Pipeline Lead
Raphael Bui, Civil Lead
Tim Taylor, QA/QC
Ryan Hejka, Hydraulic Modeler

The Big Picture

The new DRSLS will be constructed in three phases. The lift station structure will be constructed for the maximum 19.9-mgd peak hourly wet weather flow (PHWWF) required for Phase 3. A dual force main system of 2- to 24-inch diameter pipeline will be constructed from the new DRSLS to an existing diversion structure located north of the intersection of Lakeshore Drive and Elm Street for conveyance to EVMWD's Regional Water Reclamation Facility via the existing 54-inch diameter Lakeshore Trunk Sewer.

How We Helped

EVMWD selected the Carollo team to provide preliminary engineering and final design services for the project. The team developed multiple alternatives for the pump station and site layouts. Carollo performed surge analyses, CFD modeling, and in-depth hydraulic analyses to verify optimal conditions for the new lift station. The dual force mains alignment is approximately 3,400 linear feet. The team analyzed multiple alternatives for the dual force main system, including several approaches to cross the San Jacinto River, ultimately selecting one 24-inch diameter and one 16-inch diameter pipe to optimize flows for all three phases, with a trenchless crossing of the river via micro-tunneling method.

Relevance to LACSD

- Sewer pipeline design.
- Hydraulic modeling.
- Preliminary design reports and alternatives analysis.
- Trenchless and open cut construction methods.
- Permitting.
- Construction cost estimating.

6

PARADISE WHITNEY INTERCEPTOR

Clark County Water Reclamation District, Nevada

CLIENT REFERENCE

Steven Weber, Senior Civil Engineer
5857 East Flamingo Road
Las Vegas, NV 89122
P: 702-668-8150
E: sweber@cleanwaterteam.com

SERVICES PROVIDED

Planning, Design, Engineering Services During Construction

PROJECT STATUS

Completed in 2018

CHANGE ORDER RATE

Not applicable

TEAM INVOLVEMENT

Tim Taylor, Technical Advisor
Greg Gould, Design Manager
Raj Bhatia, CAD

The Big Picture

The Paradise Whitney Interceptor (PWI) project relieves capacity deficiencies and improves hydraulic operating conditions for sections of the existing interceptors. A key element of the new 13-mile pipeline and tunnel system was the capability of conveying flows from the southwestern portion of the Las Vegas Valley service area to the District's wastewater treatment plant on East Flamingo Road.

How We Helped

Carollo provided planning, design, and engineering services during construction. The project consisted of approximately 27,123 feet of gravity sewer ranging in size from 60 to 84 inches in diameter and included traditional cut-and-cover methods of construction, as well as tunneling under freeways, environmentally sensitive areas, and areas with the potential to cause traffic congestion or disruption to businesses, residences, and the community. Extensive bypass pumping was also required during construction. The pipeline was installed using nonmetallic, FRP piping and manhole appurtenances.

Relevance to LACSD

- Construction cost estimating and pipeline design of 27,00 LF of 60- to 84-in gravity sewers in congested areas.
- Trenchless and open-cut construction methods.
- Extensive bypass pumping.
- Fiberglass reinforced polymer mortar pipe material.

RIVER TRUNK REALIGNMENT AND BEARD BROOK SIPHON

City of Modesto, California

CLIENT REFERENCE

Jesse Franco, Senior Civil Engineer
1010 Tenth Street, Suite 4600
Modesto, CA 95354
P: 209-571-5175
E: jfranco@modestogov.com

SERVICES PROVIDED

Preliminary Design, Design, Bid Support

PROJECT STATUS

Completed in 2022 (estimated)

CHANGE ORDER RATE

Not applicable

TEAM INVOLVEMENT

Tim Taylor, Project Manager
Reace Fisher, Project Engineer
Greg Gould, Technical Review
Ryan Orgill, Hydraulic Modeling

The Big Picture

The Sutter Trunk and River Trunk do not provide adequate capacity to convey peak wet weather flows, exposing the City to the risk of public health impacts and fines from sewer system overflows. The Cannery Segregation Line (CSL) pipeline does not have adequate capacity to convey the peak flows from the Beard Industrial Park industries, should all of them discharge to their contracted limits at the same time. Additional flow capacity may be required for the River Trunk and CSL pipeline to prevent SSOs in highly environmentally sensitive areas such as Beard Brook and the Tuolumne River.

How We Helped

Carollo provided an alternatives analysis and preliminary design services for the River Trunk Realignment, Beard Brook Siphon, and Cannery Segregation Diversion Structure. The project included the development of alternatives to address flow capacity deficiencies and aging infrastructure for the River Trunk, Sutter Trunk, CSL, and Beard Brook Siphon facilities. A preliminary design report was prepared that identified the recommended alternative for meeting the project goals. The City selected Carollo to move forward with the deeper gravity pipeline alternative that included 30- and 42-inch HDPE force mains, 100-foot-deep pump station, and gravity sewer pipes ranging from 48 to 72 inches. Carollo designed the recommended alternative and developed three phases of bid documents for construction.

Relevance to LACSD

- Improved reliability of the sanitary sewer trunk pipelines.
- 48- to 72-inch gravity sewer pipe.
- Alternatives analysis.

8

NOBLE GULCH SEWER IMPROVEMENTS

Santa Cruz County Sanitation District, California

CLIENT REFERENCE

Shaun Deyhim, Civil Engineer
701 Ocean Street
Santa Cruz, CA 95060
P: 831-454-2000
E: shaun.deyhim@santacruzcounty.us

SERVICES PROVIDED

Design, Construction Support

PROJECT STATUS

Completed in 2016

CHANGE ORDER RATE

Not applicable

TEAM INVOLVEMENT

Tim Taylor, Principal-in-Charge & QA/QC
Reace Fisher, Pipeline Design
Brian Avon, Project Engineer

The Big Picture

This project involves seven separate sewer improvement projects, spans four separate areas: Noble Gulch, Harper Street, Felt/Rodeo Streets, and Schwan Lake. Much of the work on these projects was located in sensitive riparian habitats, in residential areas, along state beaches, and in commercial zones.

How We Helped

Carollo completed design and construction support of more than 20,000 feet of sewer improvements involving pipes ranging from 6 to 30 inches in diameter. The Noble Gulch project relocated an existing trunk line following Noble Gulch into nearby roads to reduce environmental impacts and improve accessibility. The existing sewer was upsized from 12 to 15 inches to eliminate capacity constraints. The project involved an alternatives analysis and preliminary and final design of 6,600 feet of 15-inch PVC gravity sewer trunk line.

The new alignment was constructed using open cut, microtunneling, horizontal directional drilling, and CIPP and was primarily constructed through two mobile home parks. The existing trunk sewer was upsized from 12 to 15 inches to eliminate capacity constraints. The project involved traversing two privately owned mobile home parks and constructing a new Highway 1 crossing.

Relevance to LACSD

- Construction via open-cut, sliplining, microtunneling, auger boring, and cured-in-place pipe lining.
- Significant work located in residential areas, along state beaches, and in commercial zones.
- Close working relationship with SCCSD engineering and operations and maintenance staff.

CATEGORY 2

Miscellaneous Design Support Tasks

Carollo is currently the No. 1 ranked water/wastewater-only design firm in the United States by ENR . You can rest assured that we will be able to address any type of special engineering study/report that you may require.

WASTEWATER COLLECTION SYSTEM PLANNING AND HYDRAULIC MODELING

Master Planning

Carollo has established itself as a leader in sewer system master/management planning. In the last 10 years alone, Carollo has completed master plans for $7.5 billion in wastewater facilities. We have prepared comprehensive master plans for more than 200 municipal clients with service area populations from 5,000 to over 4 million. We provide a variety of services to help our clients plan for system maintenance and plan timely expansions that are properly sized to accommodate growth. Our focus includes:

- Developing realistic growth projections for use in collection system capacity evaluations.
- Identifying and quantifying I/I and determining the best approach regarding mitigation of identified system inefficiencies.
- Developing and maintaining up-to-date collection system hydraulic models.
- Identifying capital improvements to provide for system expansion while optimizing the life of existing collection system assets.
- Balancing capital improvements and maintenance programs to maximize taxpayer investment and provide the level of service that ratepayers expect.

In addition, Carollo brings a thorough understanding of sanitary sewer system inspection and condition assessment technologies and rating systems. We have provided sanitary sewer inspection, condition assessment, and R&R engineering services for more than 700 miles of sewer assessment, rehabilitation, and design, with pipe sizes reaching 120 inches in diameter. Our wastewater conveyance experts include NASSCO certified staff and trainers.

Hydraulic Modeling

Carollo is a leader in the development of hydraulic models for wastewater agencies facing a variety of complex issues. We are experienced in creating workable, user-friendly computer simulation models of wastewater collection systems with several well-known models including Infowater, H2O Map Water, H2O Net, WaterGEMS, WaterCAD, Mike Urban, EPA-NET, InfoSWMM, Infosewer, H2O Map Sewer, H2O Map SWMM, SWMM, PC-SWMM, Infoworks, SewerGEMS, Sewer CAD, and XP-SWMM. Our staff is qualified in extracting the necessary spatial and database information from existing databases to create these hydraulic models. Our experience also includes the development of GIS-based land use and population models.

Our proposed team has worked with numerous clients across the western U.S. and has developed the tools, techniques, and modeling methods used company-wide for many years. This experience provides the Districts with a resource that other firms can't match.

SELECTION OF CAROLLO'S REPRESENTATIVE WASTEWATER MASTER PLAN AND HYDRAULIC MODELING PROJECTS

CLIENT/PROJECT	SEWER/ WASTEWATER	CONDITION ASSESSMENT	CIP	HYDRAULIC MODELING
9 City of Banning, CA - 2017 Integrated Master Plan	●	●	●	●
10 City of Torrance, CA - Sanitary Sewer Master Plan Update	●			●
11 Padre Dam MWD, CA - Comprehensive Facilities Master Plan	●	●	●	●
Inland Empire Utilities Agency, CA - Integrated Facilities Master Plan	●		●	●
City of Riverside, CA - Integrated Master Plan & Update	●	●	●	●
City of Oceanside, CA - Integrated Master Plans	●	●	●	●
City of Colton, CA - Water and Wastewater Master Plans	●	●	●	●
City of Modesto, CA - Wastewater Collection System Master Plan	●		●	●
Central Contra Costa Sanitary District, CA - Comprehensive Master Plan	●	●	●	●
City of South Pasadena, CA - Integrated Wastewater Resources Master Plan	●		●	●
City of Chino Hills, CA - Citywide Wastewater Master Plan	●	●	●	●
Elsinore Valley Municipal Water District, CA - Wastewater Master Plan Update	●		●	●
City of Porterville, CA - Integrated Master Plan	●	●	●	●
City of Morro Bay, CA - OneWater Morro Bay Integrated Master Plan	●		●	●
City of Oxnard, CA - Public Works Integrated Master Plan	●	●	●	●
City of Los Angeles, CA - One Water 2040 Plan	●		●	●
City of Tulare, CA - Water, Sewer, and Storm Drain Master Plans and Sewer System Management Plan	●		●	●

CONSTRUCTION MANAGEMENT

Carollo has provided construction management (CM) services for hundreds of wastewater facilities throughout the US. Carollo is currently ranked 32nd within *ENR's* top 100 CM-for-Fee firms. We have provided CM and inspection services for more than $2 billion in wastewater and water treatment facilities over the last 10 years, both as the design engineer and as a third-party construction manager.

More than one-third of Carollo's annual revenues are attributable to construction-related services. Our staff includes construction managers, resident engineers, schedulers, document management specialists, estimators, and resident and specialty inspectors. Our construction managers and resident engineers are experienced in both the design and construction. This benefits our clients because our staff knows what to look for and how to prevent problems before they occur. They add value each time they handle a document—applying lessons learned as specialists in water and wastewater engineering.

The quality and professional standing of Carollo's core CM group is equivalent to or exceeds that provided by some of the largest CM firms in the country. This is especially true in California, where Carollo is regarded as one of the most prominent water and wastewater engineering/CM firms.

Carollo has the resources and skills necessary to deliver a full spectrum of CM services including, but not limited to:

- Reviewing design plans and specifications for constructability.
- Developing CM plans and master schedules.
- Preparing project delivery analyses.
- Analyzing contract documents.
- Evaluating bids.
- Coordinating multiple design consultants and contractors.
- Resident engineering.
- Construction inspection and testing services.
- Managing changes and claims.
- Preparing cash flow analyses.
- Preparing final construction reports.

SELECTION OF CAROLLO'S REPRESENTATIVE CONSTRUCTION MANAGEMENT EXPERIENCE

	THIRD–PARTY CM	CONSTRUCTABILITY REVIEW	CONSTRUCTION OVERSIGHT	CM/RESIDENT ENGINEERING	INSPECTION/SPECIALTY INSP.	DOCUMENT/DRAWING CONTROL	COST AND SCHEDULE CONTROL	MULTI–CONTRACT CONSTRUCTION	MATERIALS TESTING	STARTUP/COMMISSIONING	OPERATIONS DURING CONST.
12 City of San José/Santa Clara, CA – Water Pollution Control Plant, Secondary Effluent Sewer Trunkline Sewage Pipe Rehabilitation		●	●				●				
13 Hi-Desert Water District, CA – Wastewater Collection System		●	●		●						
City of Benicia, CA – WWTP Improvements	●	●		●	●	●	●		●	●	●
Central Contra Costa Sanitary District, CA – Recycled Water Distribution Extension (Concord Landscape Project)		●		●	●	●	●		●	●	●
City of Chico, CA – Water Pollution Control Expansion		●		●	●	●	●	●		●	●
Eastern Municipal Water District, CA – Perris Valley RWRF Expansion	●	●		●	●	●	●			●	
City of Galt, CA – WWTP Upgrade	●	●		●	●	●	●		●	●	●
City of Houston, TX – Northeast Water Purification Plant Expansion			●			●	●				
Los Angeles Bureau of Sanitation, CA – Wastewater and AWP Program			●								
City of Merced, CA – Gove Road Phase IV WWTP Expansion	●	●		●	●	●	●		●	●	
City of Merced, CA – Phase V Solids Handling Expansion	●	●			●	●	●		●	●	●
Metro Wastewater Reclamation District, CO – Northern Treatment Plant Program			●	●	●					●	●
City of Modesto, CA – North Valley Regional Recycled Water Program			●								
Monterey One Water, CA – Salinas Valley WRP Project	●	●		●	●	●	●		●	●	●
City of Morro Bay, CA – Water Reclamation Facility			●	●		●					
City of Pinole, CA – Pinole/Hercules WPCP Upgrade	●	●		●	●	●	●		●	●	●
City of Riverside, CA – RWQCP Expansion	●	●		●	●	●	●	●		●	●
City of Pinole, CA – Pinole-Hercules WPCP Upgrade	●	●		●	●	●	●		●	●	
City of Roseville, CA – Pleasant Grove and Dry Creek Wastewater Treatment Expansion and Pump Station Upgrades		●		●	●	●	●	●	●	●	●
City of San Mateo, CA – Los Prados Sanitary Sewer Relief Line	●			●	●		●				
Sacramento Regional County Sanitation District, CA – Echo Water Projects		●		●	●	●	●	●	●	●	●
City of Stockton, CA – Delta Water Supply Project Intake, Pump Station, and Pipeline	●	●		●	●	●	●		●	●	
City of Sunnyvale, CA – WPCP		●		●	●	●	●	●	●	●	●
Vallejo Sanitation and Flood Control District, CA – Secondary Treatment Upgrade	●	●		●	●	●	●			●	●
West County Wastewater District, CA – Recycled Water Reliability Upgrades, Mechanical Upgrades, Electrical and SCADA Upgrades		●		●	●	●	●	●	●	●	

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2017 INTEGRATED MASTER PLAN

City of Banning, California

CLIENT REFERENCE

Luis Cardenas, Senior Civil Engineer
99 East Ramsey Street
Banning, CA 92220
P: 951-922-3143
E: lcardenas@banningca.gov

SERVICES PROVIDED

Master Planning, Hydraulic Modeling, Demand Forecast, System Analysis, Condition Assessment, CIP Development

PROJECT STATUS

Completed in 2018

CHANGE ORDER RATE

Not applicable

TEAM INVOLVEMENT

Amy Martin, Assistant Project Manager
Ryan Orgill, Sewer Modeling
Ryan Hejka, Recycled Water Modeling
Jackie Silber, GIS Lead

The Big Picture

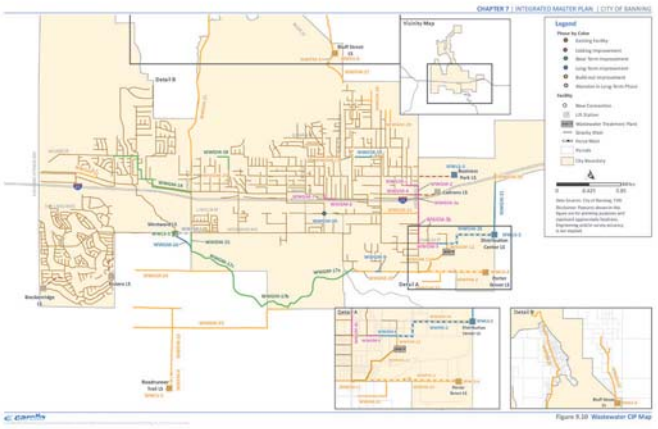
The City retained Carollo to update their water, sewer, and recycled water master plans and combine them into an integrated master plan to guide the City with the budgeting and implementation of the CIPs.

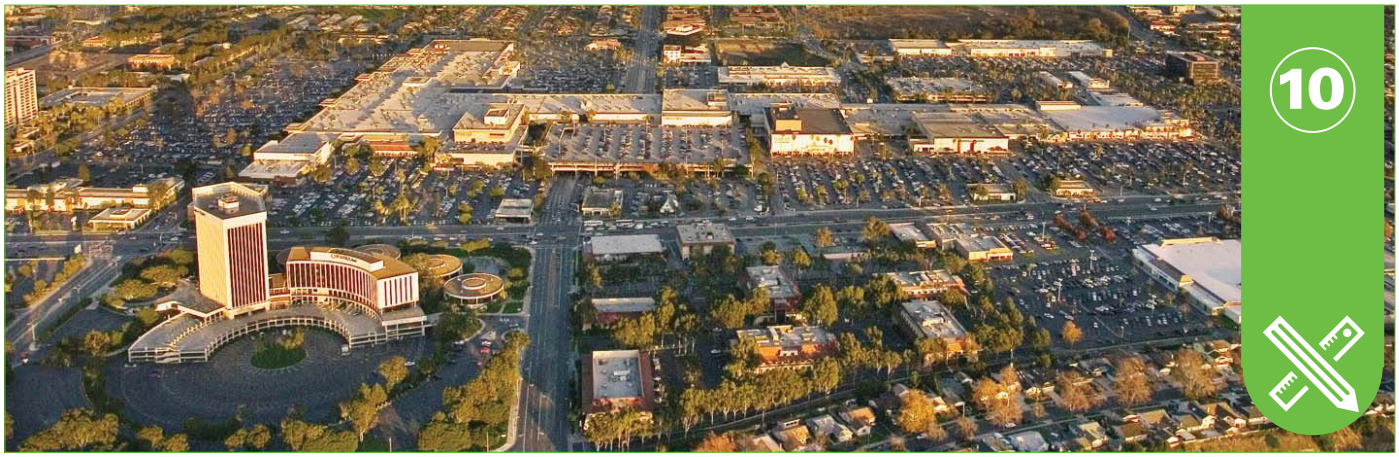
How We Helped

Carollo developed population, demand, and flow forecasts at the beginning of the project, and created three separate hydraulic models for the potable water, recycled water, and wastewater collection systems in Innovyze's InfoWater and InfoSWMM modeling software. The wastewater model was calibrated with field data and used to size both existing and future system improvements. The recommended potable water, recycled water, and wastewater projects were combined in a comprehensive CIP. In addition to a traditional written master plan report, a dynamic CIP tool was developed that allows the City to quickly update the timing, sizing, or cost of projects after the completion of the master plan. This dynamic CIP tool supports the City with annual budgeting and provides the City with an up-to-date CIP at all times.

Relevance to LACSD

- Hydraulic modeling using InfoSWMM modeling software.
- Condition assessment of 112 miles of collection system pipe.
- Developed flow projections and conducted system analysis.





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SANITARY SEWER MASTER PLAN UPDATE

City of Torrance, California

CLIENT REFERENCE

John Dettle, Engineering Manager
3031 Torrance Boulevard
Torrance, CA 90503
P: 310-618-3059
E: jdettle@torranceca.gov

SERVICES PROVIDED

Planning, Hydraulic Modeling

PROJECT STATUS

Ongoing

CHANGE ORDER RATE

Not applicable

TEAM INVOLVEMENT

Ryan Orgill, Modeling Lead
Jackie Silber, GIS

The Big Picture

The City needed to update its Sanitary Sewer System Management Plan (SSMP) to accomplish two goals: 1) develop its sewer system hydraulic model to identify capacity constraints within the existing collection system; and 2) to include a spill response plan designed to reduce and prevent sanitary sewer overflows (SSO) and properly mitigate any SSOs that may occur. The City's collection system conveys wastewater to LACSD's interceptor system and consists of approximately 280 miles of gravity and forced sewer mains, 6,200 manholes, and 9 sewer lift stations. The collection system piping ranges in size from 6 to 27 inches in diameter and is comprised of a wide range of pipe materials.

How We Helped

The City retained Carollo to develop a geographic information system (GIS) based sewer system hydraulic model and to update the SSMP. As part of the SSMP development process, Carollo conducted a temporary flow monitoring program to assist in the development of design flow criteria and to correlate actual sewer system flows to the hydraulic model predicted flows. Flow monitoring data are used to calibrate the wastewater collection system hydraulic model. Carollo developed the City's hydraulic model using InfoSWMM software.

Relevance to LACSD

- Hydraulic modeling using InfoSWMM modeling software.
- Conducted a temporary flow monitoring program.
- Modeling of approximately 280 miles of 6- to 27-inch gravity and forced sewer mains.

COMPREHENSIVE FACILITIES MASTER PLAN AND UPDATE

Padre Dam Municipal Water District, California

CLIENT REFERENCE

Mark Niemic, Interim Director
of Engineering and Planning
9300 Fanita Parkway
Santee, CA 92071
P: 619-258-4766
E: mniemiec@padre.org

SERVICES PROVIDED

Planning, Hydraulic Modeling, Demand and Flow Projections, Design Criteria, Alternatives Analysis, Stakeholder Coordination, CIP Development

PROJECT STATUS

Completed in 2021

CHANGE ORDER RATE

Not applicable

TEAM INVOLVEMENT

Amy Martin, Assistant Project Manager (2020 Update) & Water Lead (2015 CFMP)
Ryan Orgill, Sewer Modeler
Ryan Hejka, Modeler
Jackie Silber, GIS Lead

The Big Picture

The Padre Dam Municipal Water District's (PDMWD) 2001 Integrated Facility Plan addressed water, wastewater, and recycled water needs through 2020. As a result of per capita water use and wastewater flows due to water conservation efforts, water scarcity awareness, and the ongoing economic downturn, PDMWD hired Carollo to update and integrate its water, wastewater, and recycled water master plans into one accurate and defensible document.

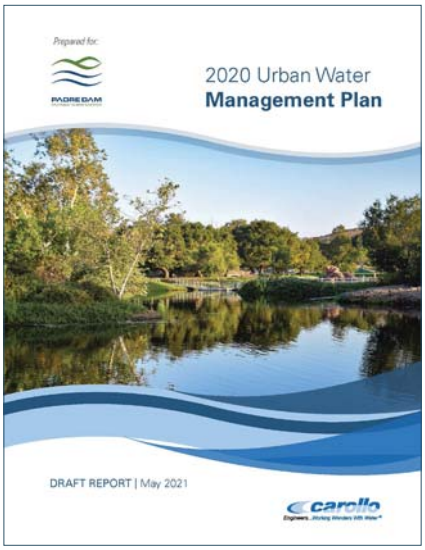
The project also included a feasibility evaluation of the wastewater plant expansion for an indirect potable reuse. The findings from these evaluations provided a basis to develop an integrated and phased CIP to address existing deficiencies and accommodate growth for the next two decades.

How We Helped

Carollo performed an interim update to the CFMP, including demand and flow projection updates and model calibrations for all three systems. The CIP will be updated to reflect projects completed to date and will review projects previously identified. Carollo also prepared the 2020 UWMP as part of this effort.

Relevance to LACSD

- Development of recycled water demand/ sewer flows forecasting.
- Update of hydraulic models for water and recycled water systems.
- Development and calibration of a new sewer system model.
- 165 miles of collection system pipe.



SECONDARY EFFLUENT SEWER TRUNKLINE SEWAGE PIPE REHABILITATION

City of San José, California

CLIENT REFERENCE

Norman Mascarinas, Principal Construction Manager
700 Los Esteros Road
San José, CA 95134
P: 408-535-6812
E: norman.mascarinas@sanjoseca.gov

SERVICES PROVIDED

Construction Management, Constructability Review

PROJECT STATUS

Completed in 2020

CHANGE ORDER RATE

n/a

TEAM INVOLVEMENT

Jaime Burrola, CM Subject Matter Expert

The Big Picture

The 96-inch and 87-inch secondary effluent sewer (SES) project consisted of rehabilitating the existing 162-mgd Regional Wastewater Facility (RWF) primary influent intake pipes of a 96-inch buried reinforced concrete pipe (RCP) and an 87-inch buried RCP. Rehabilitation of the 96-inch line consists of installation of a CIPP liner for 532 feet and approximately 10 feet of structural crown repair. Rehabilitation of the 87-inch pipeline consists of concrete crown replacement (CCR) for approximately 361 feet—nearly the entire length of the pipe.

How We Helped

Carollo is supporting the $1.6 billion San José/Santa Clara Regional Wastewater Facility Capital Improvement Program by providing a construction manager subject matter expert (CM SME) to perform program Construction Management Readiness Assessment, CM team administration support, and direct the project CM team oversight. Additionally, Carollo performed constructability review of the 90% design level plans and specifications. Upon project commencement, Carollo provided submittal review comments on the Contract's Baseline Schedule, the Contractor's Work Plan Narrative, and Monthly Schedule Updates.

Relevance to LACSD

- Construction management and constructability review.
- Cured-in-place pipe liner.
- Sewer pipe rehabilitation.

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WASTEWATER COLLECTION SYSTEM

Hi-Desert Water District, California

CLIENT REFERENCE
Edward Muzik, General Manager (retired)
55439 29 Palms Highway
Yucca Valley, CA 92284
P: 760-899-3858
E: edmuzik11@aol.com

SERVICES PROVIDED
Program Management, Constructability Review

PROJECT STATUS
Completed in 2016

CHANGE ORDER RATE
n/a

TEAM INVOLVEMENT
Jaime Burrola, Program Construction Manager
Jackie Silber, GIS

The Big Picture

The Hi-Desert Water District provides drinking water services for the Town of Yucca Valley and portions of the unincorporated area of San Bernardino County. In 2007, the California Regional Water Quality Control Board adopted a resolution identifying Yucca Valley as a top priority for eliminating the use of septic systems. In response to this resolution, the District implemented the design and construction of a wastewater collection and water reclamation facility.

How We Helped

Carollo managed the design and performed a constructability review of 77 miles of 6- to 24-inch-diameter wastewater collection system piping and three pump stations. We served as an extension of District project management staff, working closely with both District staff and the District's consultants, to delivery a quality project. Carollo also assisted with procurement and public outreach, provided construction/inspection services during construction, and helped the District secure more than $140 million from Clean Water State Revolving Fund for construction of the new facilities and collection system.

Relevance to LACSD

- Constructability review of the wastewater collection system.
- 77 miles of 6- to 24-inch collection system pipeline.
- Close working relationship with District staff and other stakeholders.

Key Project Staff Experience

Key Project Staff Experience

YOUR TEAM OF SPECIALISTS

A key prerequisite to making great things happen on a project is to bring on personnel who have not only the engineering experience, but also the technical understanding and the know-how to deliver sound engineering practices. This section presents the qualifications of the Carollo team. Our team is fully staffed to provide engineering services for sewer rehabilitation, new sewer construction, and miscellaneous design support tasks, including hydraulic modeling and specialized studies/reports.

We have structured a team with a comprehensive understanding of local, technical, institutional, and regulatory issues. We designed our team to provide you with strong project management, engineering, and support services. Our mostly local team will take a proactive role in providing engineering services on your projects by identifying challenges before they become costly issues and developing proactive solutions for optimal results.

Carollo developed our team with these key criteria in mind:

- **Local Expertise.** Our proposed project manager and many of our key staff are located within an hour's drive of the Districts' office and project sites, which will allow us to coordinate directly and thus, more effectively, with the Districts when needed. Meanwhile, our team members all have long track-records for working on projects throughout Southern California.
- **Proven Experience.** Our core team—Miko Aivazian, Matthew Huckaby, and Tim Taylor—has completed several sewer rehabilitation and trunkline projects, as well as planning, hydraulic modeling, and construction management services, under both on-call and non-on-call services. These projects have included many of the same elements described in the RFP.
- **Demonstrated Teamwork.** Selection of team members that have worked together is important so there is no learning curve on assembling the most efficient and integrated consulting team. The proposed team members are complementary in terms of knowledge and skills, and have worked successfully together on several sewer rehabilitation or replacement projects including the Elsinore Valley MWD Diamond Regional project, as well as numerous projects as part of on-call contracts like the City of Los Angeles Bureau of Sanitation, West Basin Municipal Water District, and Eastern Municipal Water District. This well-tested integration of people and skills will pay rapid dividends to the Districts when completing your project tasks, by quickly understanding the detailed issues and converging to solutions in collaboration with the Districts' staff.

Our management team leaders—Roland Pilemalm as Principal-in-Charge and Miko Aivazian as Project Manager—know the Districts and have the right experience to proactively execute your project in a timely and efficient manner.

This last point is paramount and possibly our most important in assembling the team; that is, the familiarity between your staff and our proposed team. Knowledge and experience are certainly important, but personalities and comfort in working together are significant benefits that alleviate risk of a team not working to potential. Many of our key proposed team members have successfully worked with the Districts on past and ongoing projects.

To assist in the review of the qualifications of our key personnel, we have provided brief biographies for our key team members containing information related to the requirements of the RFP in Section 6.3.2. Following these bios is a table summarizing the relevant project experience of our support personnel. Resumes for all our team members are included in an appendix.

A TEAM WITH YOUR BEST INTERESTS AT HEART.

Our role is to delivery your projects to meet the Districts' goals and objectives. We do this by selecting the right team, with a project manager who has the personality and ability to build a trusted relationship with your staff.

Roland Pilemalm, PE

Principal-in-Charge

Roland is a proven project leader to LACSD. He is currently managing your ongoing On-Call Engineering project and has been your project manager for the innovative ESCO project at your Valencia WRP. Roland has a rigorous approach to client service that will keep your projects staffed with dedicated and highly qualified project personnel to deliver the best possible end results. He also has the necessary technical background to appropriately guide the project teams, as necessary. Roland has a track record of successfully delivering projects for major municipalities, and he is also very adept at working with clients to identify collaborative solutions.

Relevant Project Experience

MCCUTCHEN/GOSFORD TRUNK SEWER DESIGN

City of Bakersfield, CA

Project Manager. Led design efforts for 4,000 lineal feet of new 60-inch diameter sewer on McCutchen Road from the McCutchen/Gosford Lift Station to Wastewater Treatment Plant No. 3 to replace the existing 42-inch diameter sewer.

EL CENTRO TRUNK SEWER DESIGN

City of El Centro, CA

Project Manager. Oversaw the design for 21,000 lineal feet of 30-inch diameter trunk sewer pipeline. Design included trenchless construction for major road crossings. Plans, specifications, calculations, and construction cost estimates were prepared. Attended the project pre-bid meeting and provided engineering services during construction.

VALENCIA AERATION BLOWER & DIFFUSER REPLACEMENT ESCO

LACSD, CA

Project Manager. Carollo is leading all the design efforts including process modeling and hydraulic modeling for the entire facility; equipment and vendor analyses for equipment selection; and preliminary design for plant process upgrades and electrical upgrades.

> "I have come to increasingly appreciate Roland's efforts and contributions to critical projects at DCT and LAG. He answers questions, clarifies issues, seeks input and listens and engages in discussions intelligently and intently. His delivery of milestones has been very impressive, both in terms of timeliness and quality. His personality encourages team work and cooperation from team members. He is reliable, knowledgeable and efficient. I am very happy to have him on our team."

Roshanak Aflaki
Division Manager, LASAN

LABOR CATEGORY
Registered Civil Engineer, Level 4

OFFICE
Los Angeles, CA

YEARS OF EXPERIENCE
21 total
6 with Carollo

EDUCATION
MBA Business Administration
BS Civil Engineering

LICENSES
Civil Engineer, CA, HI

AREAS OF EXPERTISE
- Wastewater systems, including treatment, distribution, pumping, and storage
- Program management
- Design-build
- Alternative project delivery
- Advanced water treatment for indirect potable reuse

Miko Aivazian, PE

Project Manager

Miko has more than 30 years of experience in planning, design, and construction and has managed water/wastewater projects for more than 26 years. His focus includes the planning, study, design, and construction management of pipelines, reservoirs, pumping stations, and water and wastewater treatment plants. Additionally, Miko has direct experience with LACSD as he spent a year working out of your offices while serving as project engineer for the preliminary design and study of the Lancaster Wastewater Treatment Plant. Miko has a very rigorous approach to project management that will keep your project on track and on budget, but he also has the necessary technical background to organize the team and execute the tasks.

Relevant Project Experience

DIAMOND REGIONAL SEWER LIFT STATION AND DUAL FORCEMAINS

Elsinore Valley MWD, CA

Project Manager. Carollo performed surge analyses, CFD modeling, and in-depth hydraulic analyses. The team analyzed multiple alternatives for the dual force main system, including several approaches to cross the San Jacinto River. Ultimately one 24-inch and one 16-inch diameter pipe was selected, with a trenchless crossing of the river via micro-tunneling method.

WESTWARD HO SEWER CROSSING REPLACEMENT

Valley Sanitary District, CA

Principal-in-Charge. Carollo is providing engineering services for the preliminary design, final design, permitting assistance, bid phase, and engineering services during construction of this replacement sewer project. Carollo has completed the Preliminary Design Report, which evaluated two trenchless installation methods (HDD or microtunneling).

WEST TWAIN INTERCEPTOR REHABILITATION

Clark County WRD, NV

Project Manager. The project included CIPP lining of approximately five miles of 24-inch to 33-inch reinforced concrete pipe (RCP) and lining of approximately 80 manholes ranging from 36 to 72 inches in diameter. The design also included temporary sewer flow bypassing, odor control and traffic control during construction.

> "The Project Manager, Miko Aivazian, and Carollo's team has been great to work with! They are responsive, they communicate well, they have a solid team of experts that work with the District to meet our requests as well as provide their technical expertise and experience in with the design. They take ownership of the design and are a pleasure to work with."
>
> **Shawnele Morelos,**
> Principal Engineer, Elsinore Valley Municipal Water District

LABOR CATEGORY
Registered Civil Engineer, Level 4

OFFICE
Los Angeles, CA

YEARS OF EXPERIENCE
32 total
4 with Carollo

EDUCATION
BS Technology
MS Environmental Engineering

LICENSES
Civil Engineer, CA, NV

AREAS OF EXPERTISE
- Water and wastewater engineering
- Infrastructure design and construction management
- Focus on pipelines, reservoirs, pump stations, and water and wastewater treatment plants
- Design-build

Matthew Huckaby, PE

Project Engineer

Matthew has an extensive background in structural and civil design for water and wastewater infrastructure, with particular emphasis on structural and seismic design, hydrologic and hydraulic design, site layout/horizontal control and storm water mitigation with a hands-on approach to preparation of design plans, specifications, calculations, reports, schedules and cost estimates. He has practiced as a senior project engineer and civil/structural task leader for multiple projects. His experience includes design of reservoirs (concrete and steel), pump stations, water and wastewater treatment plants, spreading basins and detention ponds, pipelines, channels and culverts, junction and diversion structures, manholes and catch basins, encompassing wastewater, recycled water, stormwater, and potable water.

Relevant Project Experience

DIAMOND REGIONAL SEWER LIFT STATION AND DUAL FORCEMAINS

Elsinore Valley MWD, CA

Project Engineer. Carollo performed surge analyses, CFD modeling, and in-depth hydraulic analyses. The team analyzed multiple alternatives for the dual force main system, including several approaches to cross the San Jacinto River. Ultimately one 24-inch and one 16-inch diameter pipe was selected, with a trenchless crossing of the river via micro-tunneling method.

DOWNTOWN WATER RECYCLING PROJECT

LADWP, CA

Project Engineer. The project involves constructing and operating approximately 9 miles of new 16-inch recycled water pipeline through downtown LA, with several branch segments to reach other customers. This project has several challenges such as construction in a congested downtown street, permitting, tunneling under Caltrans, Metro, and other rights-of-way.

MORENA PUMP STATION, WASTEWATER FORCEMAIN, AND BRINE CONVEYANCE

City of San Diego, CA

Senior Civil Engineer. As part of the City's Pure Water Program, this project involved predesign of a 48-inch discharge forcemain to provide wastewater supply for the upgraded North City WRP, and predesign of a 24-inch brine conveyance pipeline. The project included six trenchless crossings totaling about 6,000 linear feet. Three pipeline alignment alternative evaluations were also performed.

> "Carollo's team has been great to work with! They are responsive, they communicate well, they have a solid team of experts that work with the District to meet our requests as well as provide their technical expertise and experience in with the design. They take ownership of the design and are a pleasure to work with."
>
> **Shawnele Morelos,**
> Principal Engineer, Elsinore Valley Municipal Water District

LABOR CATEGORY
Registered Civil Engineer, Level 3

OFFICE
Los Angeles, CA

YEARS OF EXPERIENCE
16 total
4 with Carollo

EDUCATION
BS Civil Engineering

LICENSES
Civil Engineer, CA

AREAS OF EXPERTISE
- Structural and civil design
- Water and wastewater infrastructure
- Seismic design
- Hydrologic and hydraulic design
- Site layout

Tim Taylor, PE

Technical Advisor

Tim is Carollo's Director of Infrastructure Practice, has served as project manager for numerous water and wastewater infrastructure and treatment projects. With more than 35 years of experience in engineering design, construction, and project management for water distribution systems, gravity sewer collection systems, pump stations, water and wastewater treatment facilities, geographic information system (GIS), and modeling projects, Tim is proficient in all aspects of management, technical engineering, modeling, GIS, and design software. He has designed pipelines ranging from 12 inches up to 148 inches in diameter, as well as pump stations ranging in size from a few hundred gpm up to over 100 mgd.

Relevant Project Experience

PARADISE WHITNEY INTERCEPTOR (PWI)

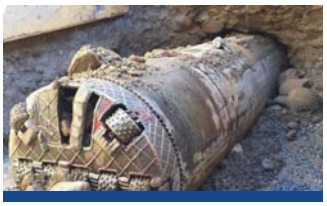
Clark County WRD, NV

Technical Reviewer. Carollo provided preliminary engineering for the trenchless rehabilitation of approximately 5,000 feet of 96-inch diameter concrete sewer, including the analysis of a sewer bypass system capable of handling up to 45 mgd, cultural resources, environmental studies including noise analysis, and project permitting.

MODESTO RIVER TRUNK SEWER EMERGENCY REHABILITATION

City of Modesto, CA

Project Manager. Carollo evaluated rehabilitation methods for 2,600 feet of 45- and 48-inch-diameter reinforced concrete pipe on Gallo Winery property. The rehabilitation design uses the sliplining process as the best suited technology. The final design included a geotechnical investigation, survey with aerial photography, and preparation of plans, specifications, and cost estimates.



NOBLE GULCH SEWER IMPROVEMENTS

Santa Cruz County Sanitation District, CA

Principal-in-Charge & QA/QC. Carollo completed design and construction support of more than 20,000 feet of sewer improvements involving pipes ranging from 6 to 30 inches in diameter. The new alignment was constructed using open cut, microtunneling, horizontal directional drilling, and CIPP and was primarily constructed through two mobile home parks.

> The Carollo team has been great! From their hydraulics team, to their collections specialists, to their project management team. Their emphasis has really been customer centered. They have taken the time to listen to our concerns and have worked collaboratively with us on solutions. Even though they have extensive experience and expertise, their objective has not been to push a "Carollo design" but a design that will benefit the user."
>
> **Jesse Franco**
> Engineering Manager, City of Modesto

LABOR CATEGORY
Registered Civil Engineer, Level 4

OFFICE
Sacramento, CA

YEARS OF EXPERIENCE
35 total
27 with Carollo

EDUCATION
MS Civil and Environmental Engineering
BS Civil and Environmental Engineering

LICENSES
Civil Engineer, CA, AZ, ID, HI, NV
Professional Engineer, WA, OR

AREAS OF EXPERTISE
- Wastewater infrastructure
- Pipeline design
- Project management
- Gravity sewer collection systems
- GIS and modeling

Erik Waligorski, PE

QC Manager

Erik's experience is in sewer and water system design, structural design, comprehensive planning, and project and construction administration and management. He has been involved with engineering projects from all perspectives including consulting, government agency, and contractor. His 25 years of experience span: structural design for residential and commercial buildings; water and wastewater projects, including comprehensive planning and design of collection systems. Erik has specialized expertise in trenchless pipeline rehabilitation and replacement having completed projects involving cured-in-place-pipe (CIPP), horizontal directional drilling (HDD), auger boring, pipe ramming, slip lining, and pipe bursting.

Relevant Project Experience

EASTSIDE INTERCEPTOR SECTION 2 REHABILITATION

King County, WA

Project Manager Review. Carollo provided preliminary engineering for the trenchless rehabilitation of approximately 5,000 feet of 96-inch diameter concrete sewer, including the analysis of a sewer bypass system capable of handling up to 45 mgd, cultural resources, environmental studies including noise analysis, and project permitting.

CHELSEA PARK SEWER REHABILITATION

Southwest Suburban Sewer District, WA

Project Manager. Completed the feasibility analysis and design for the rehabilitation of approximately 65,000 feet of existing 8- to 15-inch diameter sewer using open cut replacement and CIPP rehabilitation. Project included review of CCTV inspections and defect coding using NASSCO PACP methods. Project saved District more than $4 million dollars over life of the project.

BASIN 5 SEWER REHABILITATION

City of Shelton, WA

Project Manager. The project included design and rehabilitation of approximately 42,000 lineal feet of existing sewer mains consisting of several construction rehabilitation methods including conventional open-cut, pipe bursting, and cured-in-place-pipe (CIPP). The existing sewer mains range in size from 6-inch diameter to 12-inch diameter.

> "Erik Waligorski and his team at Carollo have been excellent in accommodating our ever-changing needs. I have appreciated their ability to listen, adapt, take initiative and be flexible. They have been an extremely valuable asset to the success of the project."
>
> **Matoya Scott**
> Project Manager, King County Wastewater Treatment Division

LABOR CATEGORY
Registered Civil Engineer, Level 4

OFFICE
Seattle, WA

YEARS OF EXPERIENCE
25 total
5 with Carollo

EDUCATION
BSCE Civil Engineering

LICENSES
Civil Engineer, ID
Professional Engineer, WA, OR

AREAS OF EXPERTISE
- Sewer system design
- Comprehensive planning
- Construction administration
- Trenchless rehabilitation and replacement methods

SUPPORT STAFF

NAME/ROLE/FIRM/EDUCATION/ YEARS OF EXPERIENCE (TOTAL/FIRM)	LICENSES/CERTIFICATIONS	RELEVANT EXPERIENCE
Reace Fisher, PE *Rehabilitation Lead* **Carollo Engineers** BS Civil Engineering 16 / 11 Years of Experience	Civil Engineer, CA Certificate, Pipeline Assessment Certification Program, NASSCO	▪ Project engineer, River Trunk Rehabilitation, City of Modesto, CA. ▪ Project engineer, Fruit Avenue and Illinois/Recreation Avenue Sewer Rehabilitation, City of Fresno, CA. ▪ Project engineer, Dublin Trunk Rehabilitation, Dublin San Ramon Services District, CA.
Brian Avon, PE *Trenchless Lead* **Carollo Engineers** BS Civil Engineering BS Business Administration 14 / 8 Years of Experience	Civil Engineer, CA Certificate, Pipeline Assessment Certification Program, NASSCO	▪ Project engineer, On-Call Sewer Improvements, Santa Cruz County Sanitation District, CA. ▪ Project engineer, Westward Ho Sewer Crossing Replacement, Valley Sanitary District, CA. ▪ Project manager, Trenchless Pipeline Design, San Luis Obispo County, CA.
Jerry Gantney, PE, PLS *Open Trench Lead* **Carollo Engineers** BSCE Civil Engineering 43 / 2 Years of Experience	Civil Engineer, CA Professional Land Surveyor, CA Professional Engineer, TX	▪ Project manager, Westward Ho Sewer Crossing Replacement, Valley Sanitary District, CA. ▪ Pipeline lead, Diamond Regional Sewer Lift Station and Dual Force Mains, Elsinore Valley Municipal Water District, CA. ▪ Lead civil engineer, Fillmore Wastewater Treatment Plant Design-Build, City of Fillmore, CA.
Raphael Bui, PE *Civil Lead* **Carollo Engineers** BS Civil Engineering 26 / 4 Years of Experience	Civil Engineer, CA	▪ Civil engineer, Diamond Regional Sewer Lift Station and Dual Force Mains, Elsinore Valley Municipal Water District, CA. ▪ Civil engineer, Westward Ho Sewer Crossing Replacement, Valley Sanitary District, CA. ▪ Project engineer, Downtown Water Recycling Project, Los Angeles Department of Water and Power, CA.
Greg Gould, PE *Bypass Pumping Lead* **Carollo Engineers** BS Civil Engineering 26 / 14 Years of Experience	Civil Engineer, AZ, NV, WA Professional Engineer, CO, TX, Washington DC Certified PAC Program Trainer Certified ITC Program for CIPP Inspector; Manhole Rehabilitation Technologies Inspector	▪ Project engineer review, Eastside Interceptor Section 2 Rehabilitation Phase 1, King County, WA. ▪ Project engineer, Paradise Whitney Interceptor, Clark County Water Reclamation District, CA. ▪ Technical advisor, Sanitation Sewer Trunk Rehabilitation, City of Simi Valley, CA.
Raj Bhatia *MicroStation CAD Lead* **Carollo Engineers** BS Civil Engineering 36 / 15 Years of Experience	n/a	▪ CAD, Paradise Whitney Interceptor, Clark County Water Reclamation District, NV. ▪ CAD, As Needed Water and Wastewater Engineering Services, San Diego County, CA ▪ CAD, Collection System Facility Improvements, City of Chandler, AZ.
Amy Martin *Sewer Study Lead* **Carollo Engineers** BS Civil Engineering 15 / 6 Years of Experience	n/a	▪ Assistant project manager, Integrated Master Plan, City of Banning, CA. ▪ Project manager, Citywide Wastewater Master Plan Update, City of Chino Hills, CA. ▪ Assistant project manager, Comprehensive Facilities Master Plan Update, Padre Dam Municipal Water District, CA.
Ryan Orgill, PE *Hydraulic Modeling Lead* **Carollo Engineers** BS Civil Engineering 17 / 16 Years of Experience	Civil Engineer, CA, NV	▪ Modeling lead, Sanitary Sewer Master Plan Update, City of Torrance, CA. ▪ Hydraulic modeling lead, Wastewater Collection System Master Plan, City of Modesto, CA. ▪ Hydraulic modeling lead, Fruit Avenue and Illinois/Recreation Avenue Sewer Rehabilitation, City of Fresno, CA.

SUPPORT STAFF

NAME/ROLE/FIRM/EDUCATION/ YEARS OF EXPERIENCE (TOTAL/FIRM)	LICENSES/CERTIFICATIONS	RELEVANT EXPERIENCE
Ryan Hejka, PE *Hydraulic Modeling Lead* **Carollo Engineers** BS Civil Engineering 8 / 8 Years of Experience	Civil Engineer, CA	▪ Hydraulic modeling lead, Diamond Regional Sewer Lift Station and Dual Force Mains, Elsinore Valley Municipal Water District, CA. ▪ Hydraulic analysis, Westward Ho Sewer Crossing Replacement, Valley Sanitary District, CA. ▪ Hydraulic modeler, Comprehensive Facilities Master Plan, Padre Dam Municipal Water District, CA.
Jackie Silber, GISP *GIS Lead* **Carollo Engineers** MS Geographic Information Systems BA Geography AA Geology 20 / 5 Years of Experience	Certified Geographic Information Systems Professional	▪ GIS specialist, Integrated Master Plan, City of Banning, CA. ▪ GIS specialist, Sanitary Sewer Master Plan Update, City of Torrance, CA. ▪ GIS specialist, Comprehensive Facilities Master Plan Update, Padre Dam Municipal Water District, CA.
Jason Rozgony, PE *Cost Estimating Lead* **Carollo Engineers** BS Civil Engineering 25 / 3 Years of Experience	Professional Engineer, CO	▪ Cost estimator, Veolia Wastewater Treatment Plant Critical Improvements, City of Richmond, CA. ▪ Cost estimator, Water Pollution Control Plant Secondary Treatment Facilities Design, City of Sunnyvale, CA. ▪ Cost estimator, North Huron Interceptor, City of Westminster, CO.
Liz Cutler *Environmental Lead* **AZTEC Engineering** MS Geology BS Geology 25+ / 1.5 Years of Experience	U.S. Bureau of Land Management Visual Impact Analysis/Visual Resources Management	▪ Environmental project manager and senior technical consultant, Cannon Pump Station Project, Western Municipal Water District, CA. ▪ Project manager and technical specialist, Southern California Edison Capital Improvement Program, Various Counties in CA and NV. ▪ Project manager and environmental technical specialist, Central Federal Lands Highway Division Programs and Projects, Federal Highway Administration.
Doug Yeh, TE *Traffic Control Lead* **KOA Corporation** BS Optical Engineering 32 / 32 Years of Experience	Professional Engineer, Traffic, CA	▪ Project manager, Trunkline Replacement Projects, Los Angeles Department of Water and Power, CA. ▪ Project manager, Traffic Control Plan Development for Trunkline Construction Projects, LADWP, CA. ▪ Project manager, Engineering Design Services for Traffic Control for Trunkline Construction, LADWP, CA.
Mike Warriner, PE, CCM *Constructability Review Lead* **Carollo Engineers** Graduate Studies, Civil Engineering BS Agricultural Engineering 31 / 15 Years of Experience	Civil Engineer, CA Certified Construction Manager Confined Space Entry	▪ Constructability review, On-Call Construction Management Services, Contra Costa Water District, CA. ▪ Construction manager, Pinole-Hercules Water Pollution Control Plant Upgrades, City of Pinole, CA. ▪ Construction advisor, Los Prados Sanitary Sewer Relief Construction Management Services, City of San Mateo, CA.
Jaime Burrola *Construction Management Lead* **Carollo Engineers** BS Engineering Technology (Construction Management) AS Building Technology 42 / 3 Years of Experience	n/a	▪ Construction management subject matter expert, Secondary Effluent Sewer Trunkline Settled Sewage Pipe Rehabilitation, City of San Jose/Santa Clara, CA. ▪ Program construction manager, Wastewater Collection System, Hi-Desert Water District, CA. ▪ Principal-in-charge, Santa Ana River Interceptor: Mainline Realignment and Relocation, Orange County Sanitation District, CA.

Project Management Method

Project Management Method

This section provides our overview of the Carollo team's tailored project management approach for the Districts' On-Call Engineering Services. Our approach in working with you to successfully deliver this contract is centered upon providing excellence in our responsiveness to your individual project requests, by providing strong project management to meet your schedule deadlines, and by adhering to the project budget while providing quality engineering services.

RESPONSIVENESS TO CLIENT NEEDS

Carollo has rigorous procedures for project management. These have been developed and refined over our eight-decade history and contribute to our responsiveness to our clients' needs. Key elements of our management approach include:

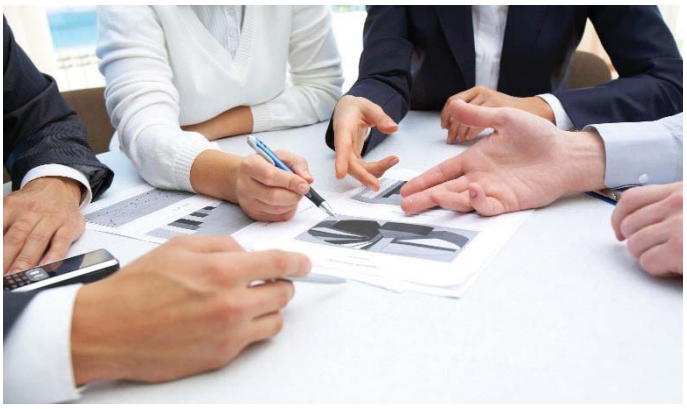
- Emphasis on communication with the client and within the project team, making the life as easy as possible for the Districts' Project Managers.
- Identifying the appropriate staff to perform the work, with key senior staff involvement.
- Frequent comparison of planned-versus-actual budget and schedule.
- Minimizing or eliminating plant shutdowns.

These approaches are detailed in the following sections.

In addition to the items listed above, Carollo's Project Manager, Miko Aivazian, monitors the work progress and provides technical overview with the support of his team to resolve concerns before they become significant problems. The Districts' Project Manager will receive a concise progress report every month that highlights the work progress, upcoming work, and a budget update. You can call Carollo's Project Manager or Principal-in-Charge at any time and discuss concerns. For your project, Roland Pilemalm will serve as the Principal-in-Charge and Miko Aivazian will serve as the Project Manager. Both of these team members have experience working with the Districts and understand the Project Management style that works for you.

COMMUNICATION

All communication on the project will go through Carollo's Project Manager, Miko Aivazian, in order to establish a single point of contact for the Districts. It will be Miko's duty to convey information to the design team and to keep the Districts appraised of project progress. In addition, Miko will work with the Districts to establish required project meetings and their frequency.



Our most direct way to communicate with you will be by meetings with the affected stakeholders. During our work with the Districts on the Valencia Advanced Water Treatment Project, our team stressed the importance of frequent meetings, in person or virtual. Communication and coordination on the project were improved between all members of the project team as a result. Regular progress meetings will be scheduled monthly, during design, and weekly, during construction, if required. Miko will prepare an agenda and typically forward it one week in advance so that staff is made aware of the issues to be discussed and the people required to make the necessary decisions can be in attendance. Meeting notes are prepared for each meeting to document decisions made. Meeting notes will be distributed within three business days. Items documented in the meeting notes will include: attendees; meeting time, date, and location; record of discussion; project status; decisions made; action items; and outstanding issues.

We also anticipate meeting on a more frequent and informal basis with project team members and stakeholders as required to assist in the decision-making process. We schedule informal meetings through our project manager to maintain proper communication channels. These meetings can be in person or virtual, whichever is more convenient for the Districts' Project Manager and staff.

PROJECT STAFFING PLAN

Staffing is key to successful project management and an integral part of our quality management program. Our fundamental approach is to assemble the best qualified team to match the project requirements. We then review the scope of the project and review staffing levels and budgets from similar projects to estimate labor requirements to complete a project.

The project schedule has a significant impact on staffing planning. Project milestones are identified and labor-hour requirements per task are estimated to determine staffing levels to complete the task by the milestone date. The staffing levels are broken down by discipline to determine overall office personnel planning. A database on staffing needs and current staff assignments is maintained and updated monthly, both company-wide and in our local office. The database allows us to project workloads and identify when and if staff becomes over or under committed.

ESTABLISHING AND MAINTAINING SCHEDULES

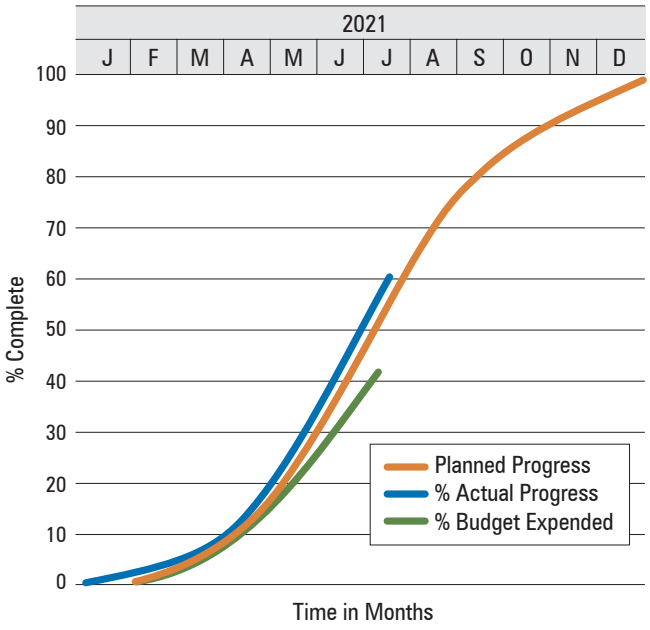
Schedules are established by identifying project milestones and determining when each task must be complete to meet the milestone dates. The schedule is reviewed to determine staff requirements to complete the project on schedule. If a project is needed on a fast track, more staff are assigned than for a project with a longer schedule.

On a monthly basis, Roland will assess the percent complete for the project. The percent complete is estimated on a per task basis, in a defined manner, and is done independently of budget review. The estimated percent complete is compared to the planned percent complete to determine if the project is on schedule. If the project is not on schedule, staffing adjustments or other corrective measures are implemented.

MONITORING BUDGETS

Each Project Manager has access to the labor hours charged to each job and can monitor project budgets daily. Using the cumulative hours, the percent of budget used is calculated and plotted on the project S-curve. The project manager can then assess the following:

- Are percent complete and percent budget expended close to the planned curve?
- Are percent complete and percent budget expended curves parallel, converging, or diverging?



- Does the rate of progress match the budget expenditure rate?
- Schedule and labor-hour budgets are established to provide sufficient resources to complete each aspect of a project. This is monitored monthly in relation to the progress of the project to allow early detection of potential budget or schedule problems.

QUALITY ASSURANCE AND QUALITY CONTROL

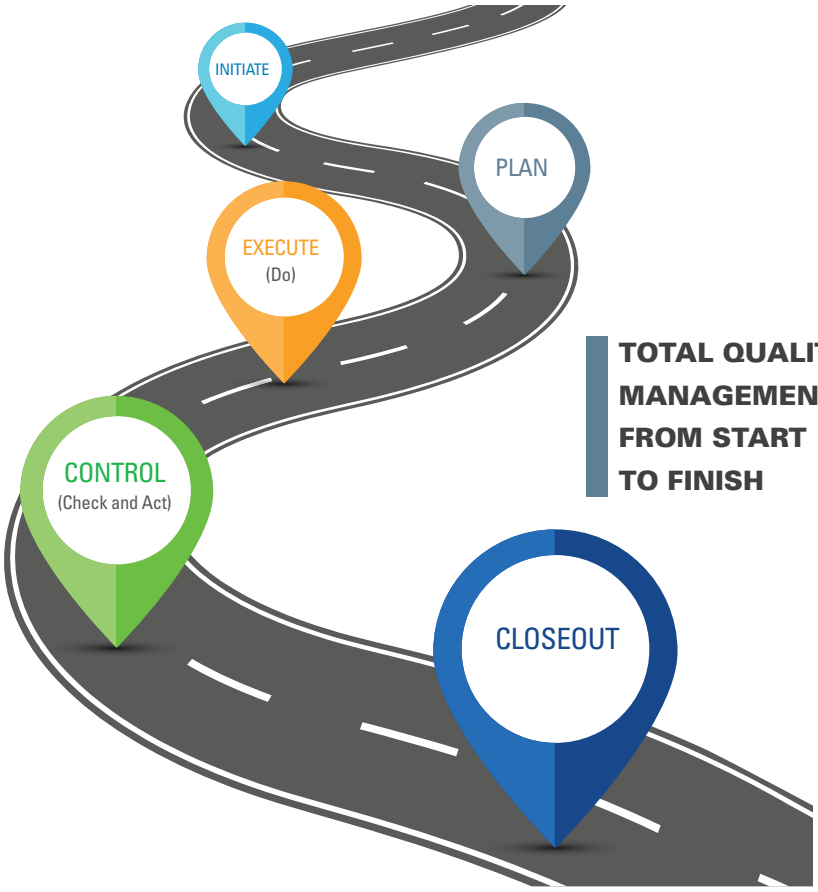
Carollo has developed defined Quality Control Procedures. Miko and Roland will prepare a Project Checklist that lists various project steps. This checklist guides the project team to identify the necessary quality management steps. The checklist helps confirm that the project follows our quality management procedures. Special requirements that can impact the project are identified. This can include special permits and regulatory approvals that could affect schedule, teaming arrangements, and project delivery issues. Carollo has developed several design aid manuals and other Quality Control Tools. These manuals are maintained both as hard copies and on our intranet. These documents are regularly used on our projects to provide a consistent approach to quality management.

Next, a work plan is established to sequence the work effort, outlines when work needs to occur within the project schedule, schedules meeting times, identifies topics of discussion at the meetings, highlights key decisions to be made, and tracks the status of the project deliverables. In addition, a Project Management Plan

documents the lines of communication, overall schedule, project scope and budget, staffing plan, and any special requirements.

Projects receive a series of reviews at various project points as part of the Quality Control Procedures. These include a peer review at the preliminary design report (PDR) phase and owner review at set milestones (60 and 90-percent). These checklists will be modified based on the particular task order that we will work on under the On-Call Engineering contract.

One of the most important elements of a quality management program is to prevent repetition of project problems. Prevention requires specific programs to implement solutions. Carollo has identified practice leaders by project type and by discipline. The practice leaders have the responsibility to keep abreast of application of current technologies. The practice leaders are a resource to design engineers to provide advice and prevent problems before they occur. Training is a large part of our continuous improvement program. Construction feedback is provided to the design team so that design engineers and CADD operators learn how their designs work in the field.



Our approach will focus on quality throughout all phases to deliver a project that is correct, on time, on budget, achieves the scope, and meets or exceeds your expectations.

Location of Project Staff

Location of Project Staff

A LOCAL TEAM

Carollo understands that having a local team is important to the Districts due to the complexity of the work and the need for timely and effective communication. Carollo's staff is based entirely in the United States. In fact, the core team we assembled for your on-call project is comprised of members who live, work, and play within Los Angeles and your surrounding communities. We have the right expertise, local knowledge, and commitment to your communities!

Work for this contract will be performed and/or directed from Carollo's downtown LA office:

707 Wilshire Boulevard, Suite 3920
Los Angeles, California
P: 213-489-1587

Currently, Carollo has 25 staff and growing at our downtown LA location, with 100 staff locally in Southern California and more than 200 within the State. Our office is less than one hour from the Districts' offices. The close proximity of our team's project office and core team member's offices to the Districts makes it easy to meet on a regular basis. Attendance at monthly meetings is a priority for our team and a key success factor for executing task assignments timely and efficiently.

Regional Business Enterprise

Since our first California office opened in 1951, Carollo has grown to become a leader in the Southern California municipal water industry. We currently maintain five offices within the Districts' service areas and its adjacent counties, including Los Angeles, Riverside, Orange, and San Diego. We have maintained an office in Los Angeles County for nearly 20 years and have consistently grown our presence in LA—establishing our downtown office nearly 10 years ago to better serve our LA clients. We have provided our LA business license below.

THIS CERTIFICATE MUST BE POSTED AT PLACE OF BUSINESS

CITY OF LOS ANGELES TAX REGISTRATION CERTIFICATE

THIS CERTIFICATE IS GOOD UNTIL SUSPENDED OR CANCELLED

BUSINESS TAX

ISSUED: 11/03/2017

ACCOUNT NO.	FUND/CLASS	DESCRIPTION	STARTED	STATUS
0003012385-0001-0	L049	PROFESSIONS / OCCUPATIONS	3/1/2014	ACTIVE

ISSUED TO

CAROLLO ENGINEERS INC
CAROLLO ENGINEERS
4600 E WASHINGTON ST STE 500
PHOENIX AZ 85034-1915

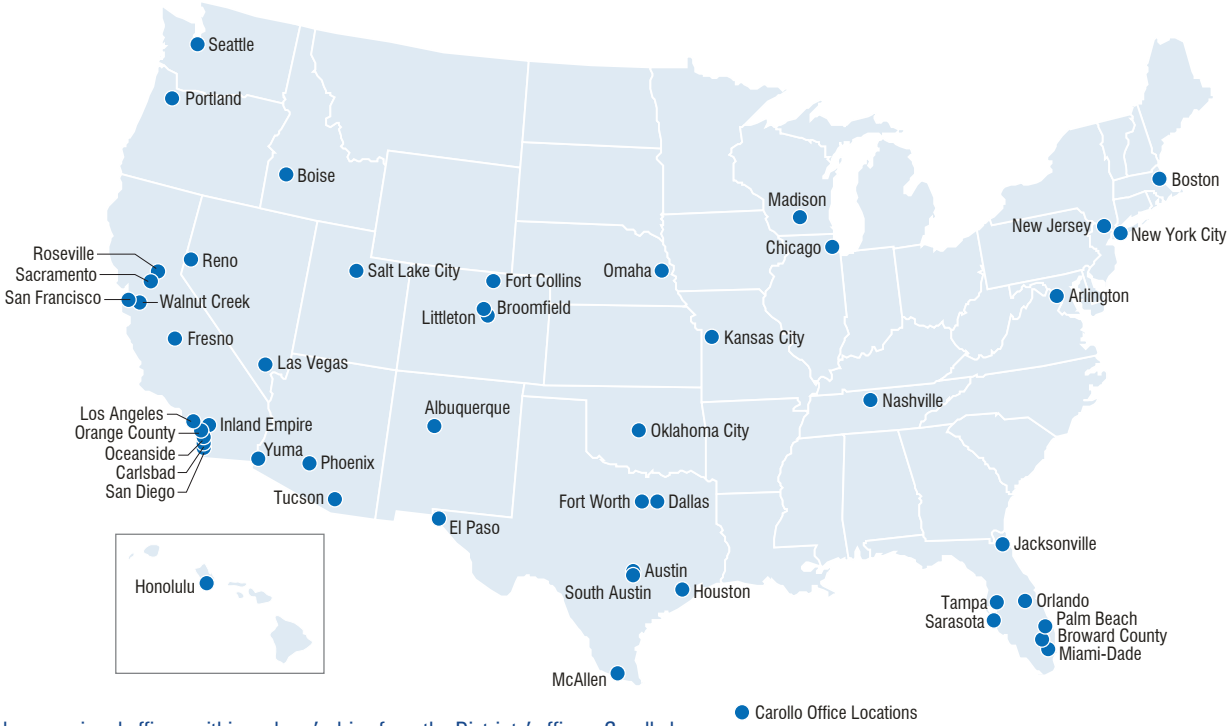
707 WILSHIRE BLVD SUITE #3920
LOS ANGELES, CA 90017-3568

ISSUED FOR TAX COMPLIANCE PURPOSES ONLY
NOT A LICENSE, PERMIT, OR LAND USE AUTHORIZATION

ISSUED BY:
Clare Bastis
DIRECTOR OF FINANCE

"No registration certificate or permit issued under the provisions of the Business Tax ordinances of the LAMC, or the payment of any tax required under the provisions of the Business Tax ordinances of the LAMC shall be construed as authorizing the conduct or continuance of any illegal business or of a legal business in an illegal manner."

NOTIFY THE OFFICE OF FINANCE IN WRITING OF ANY CHANGE IN OWNERSHIP OR ADDRESS - OFFICE OF FINANCE, P.O. BOX 53200, LOS ANGELES CA 90053-0200
IMPORTANT - READ REVERSE SIDE



With two large regional offices within an hour's drive from the Districts' offices, Carollo has the resources to immediately provide staff to match the requirements of any task order.

Financial Condition

Financial Condition

Carollo has been in business since 1933. We take pride in our proven, conservative financial management principles that have sustained our company throughout our 88-year history. We recognize the importance of sound and solid financial practices to you as an owner as we perform services for your organization. While Carollo does not produce an annual report, we have provided summaries of our most recent three consecutive years of audited financial statements as requested for your consideration and review (full audited financial statements can be provided upon request).

In the last 5 years, Carollo has never had an unpaid judgment against us over $1 million, nor have we had any disputed claims over $5 million.

CONFIDENTIAL

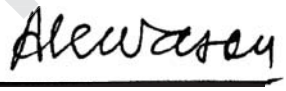
Summary Information Sheet
Carollo Engineers, Inc.
Balance Sheet
As of December 31, 2020

Assets

Cash	31,372,374
Receivables	66,790,154
Prepaid Expenses & Other Current Assets	11,526,507
Fixed Assets - net	16,402,070
Notes Receivables	626,028
Other Long Term Assets	412,361
Total Assets	**127,129,494**

Liabilities

Accounts Payable	18,759,799
Accrued Expenses & Other Current Liabilities	51,005,409
Other Long Term Liabilities	34,701,016
Owner's Equity	22,663,270
Total Liabilities & OE	**127,129,494**



Ash Wason, CFO

Carollo Engineers, Inc. (Carollo), has been in operation since 1933. Carollo's professional engineering services extend throughout the United States with offices in 48 cities, including major design centers in Walnut Creek, California; Orange County, California; Phoenix, Arizona; Denver Littleton, Colorado; Boise, Idaho and Dallas, Texas.

The firm has demonstrated a high level of fiscal responsibility throughout the years. Borrowings are on a short-term basis to meet cash requirements at peak times of the year.

The company has a banking relationship with National Bank of Arizona.

National Bank of Arizona
6001 N 24th St
Phoenix, AZ 85016
Rob Maver, Senior Vice President
Office (602) 235-6000
Direct (602) 212-8810

Some information indicating the capacity of the firm to handle large jobs is:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gross Revenue (000)	146,215	148,542	154,924	173,142	211,667	247,550	271,810	300,457	311,211	330,506
ENR Ranking	77	73	79	79	69	65	59	59	50	51
# of Employees (avg.)	625	618	654	709	771	893	1,012	1,074	1,108	1,164

CONFIDENTIAL

Summary Information Sheet
Carollo Engineers, Inc.
Balance Sheet
As of December 31, 2019

Assets

Cash	16,057,313
Receivables	64,680,363
Prepaid Expenses & Other Current Assets	13,340,286
Fixed Assets - net	15,606,526
Notes Receivables	670,874
Other Long Term Assets	107,775
Total Assets	**110,463,137**

Liabilities

Accounts Payable	19,567,203
Accrued Expenses & Other Current Liabilities	34,755,582
Other Long Term Liabilities	19,542,601
Owner's Equity	36,597,751
Total Liabilities & OE	**110,463,137**

Ash Wason, CFO

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Gross Revenue (000)	146,215	148,542	154,924	173,142	211,667	247,550	271,810	300,457	311,211
ENR Ranking	77	73	79	79	69	65	59	59	50
# of Employees (avg.)	625	618	654	709	771	893	1,012	1,074	1,108

Summary Information Sheet
Carollo Engineers, Inc.
Balance Sheet
As of December 31, 2018

Assets

Cash	9,609,837
Receivables	62,095,883
Prepaid Expenses & Other Current Assets	9,639,860
Fixed Assets - net	11,530,721
Notes Receivables	1,316,692
Other Long Term Assets	846,155
Total Assets	**95,039,148**

Liabilities

Accounts Payable	21,058,860
Accrued Expenses & Other Current Liabilities	32,665,069
Other Long Term Liabilities	13,879,789
Owner's Equity	27,435,430
Total Liabilities & OE	**95,039,148**

Dale Dykstra (May 8, 2019)
Dale Dykstra, Controller

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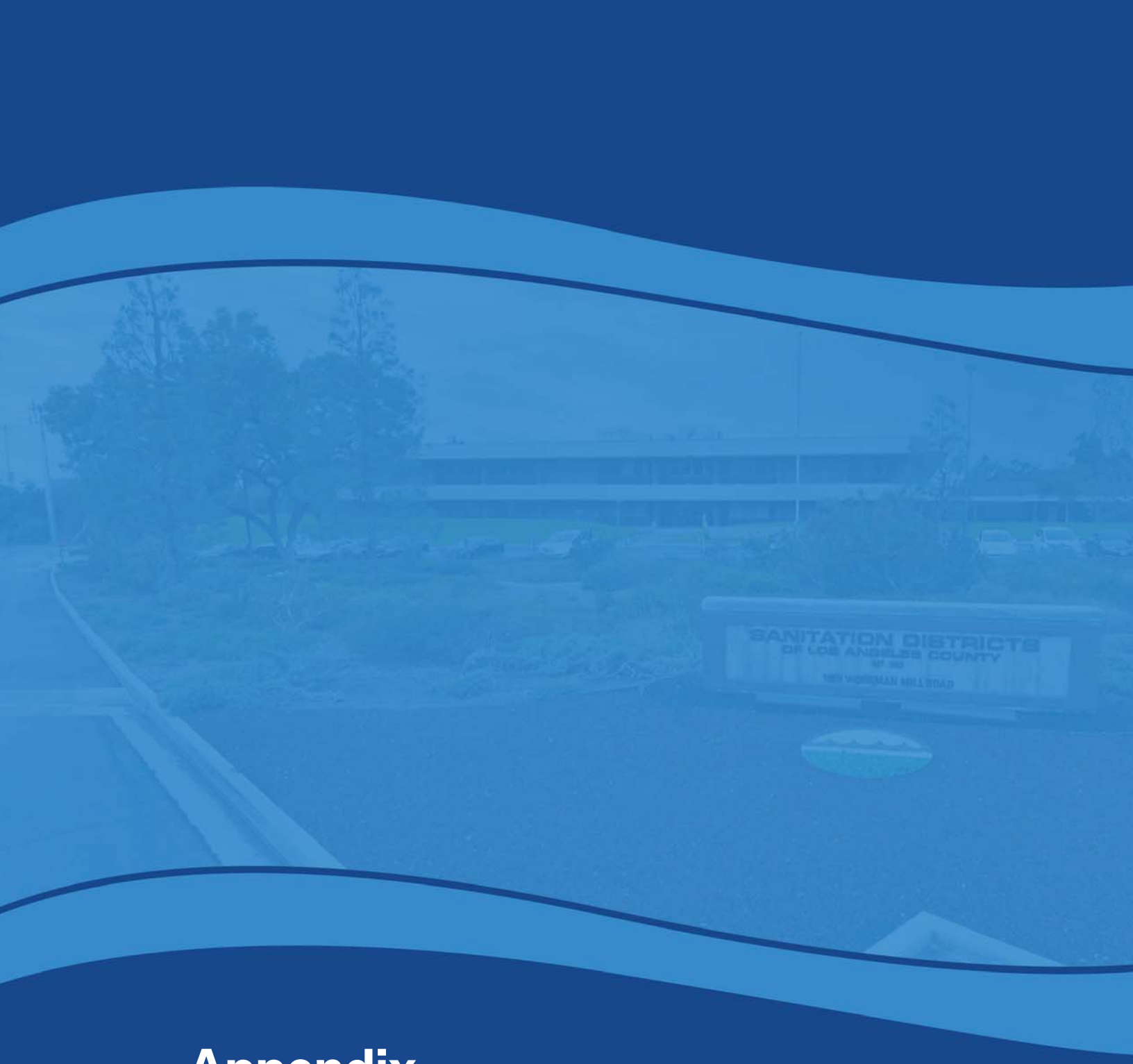
National Bank of Arizona
6001 N 24th St
Phoenix, AZ 85016
Rob Maver, Senior Vice President
Office (602) 235-6000
Direct (602) 212-8810

Some information indicating the capacity of the firm to handle large jobs is:

	2012	2013	2014	2015	2016	2017	2018
Gross Revenue (000)	148,542	154,924	173,142	211,667	247,550	271,810	300,457
ENR Ranking	73	79	79	69	65	59	59
# of Employees (avg.)	618	654	709	771	893	1,012	1,074



Appendix

- Resumes
- Forms

Labor Category

Registered Civil Engineer, Level 4

Office

Los Angeles, CA

Years of Experience

Total: 21

Carollo: 6

Education

MBA Business Administration, University of California, Berkeley, 2008

BS Civil Engineering, University of Washington, 2000

Coursework/Training

- General Management Acceleration Program (GMAP)
- Target Zero: Proactive Safety Attitudes
- Leadership and Management Program
- PACE (Plan, Act, Check, Excel) Quality Management
- Safety, Health, and Risk Program (SHARP)
- Supervisory Training and Accident Reduction Techniques (START)

Licenses

Professional Engineer, Hawaii

Civil Engineer, California

Roland I. Pilemalm, P.E.

Roland Pilemalm has more than 20 years of experience in design and engineering of water/wastewater systems, including water and wastewater treatment, pumping, storage, and distribution projects. More recently, he has successfully managed a number of complex advanced water treatment (AWT) and MBR projects, treating source wastewater, on schedule and on budget. His project management experience affords him the ability to successfully accomplish the most complicated projects, and he is highly committed to delivering projects on time and on budget, while incorporating the most appropriate engineering solutions and treatment processes to best meet client needs.

Relevant Experience

→ Project manager for the ongoing On-Call Engineering Services for the Los Angeles County Sanitation Districts, California. Carollo is providing on-call engineering services for the following discipline areas: wastewater treatment, wastewater pumping, solid waste, stormwater, and building modifications. Currently, we are working with your staff to initiate a tertiary filtration study at the Valencia WRP and also a seismic evaluation for the San Jose Creek WRP.

→ Project manager for the Santa Clarita Valley Sanitation District / Sanitation Districts of Los Angeles County, California, Valencia WRP Aeration Blower and Diffuser Replacement ESCO. The objective of this project is to select and install energy and operationally efficient process air compressors (turbo blowers) and air diffusion equipment. Carollo, as a subconsultant to Schneider Electric (ESCO), is leading all design efforts for this project. Carollo's services and efforts to date include equipment and vendor analyses for equipment selection; existing facilities process and hydraulic modeling for entire WRP; and design for project components.

→ Project manager for the McCutchen/Gosford Trunk Sewer Design for the City of Bakersfield, California. Led design efforts for 4,000 lineal feet of new 60-inch diameter sewer on McCutchen Road from the McCutchen/Gosford Lift Station to Wastewater Treatment Plant No. 3 to replace the existing 42-inch diameter sewer.

→ Project manager for the El Centro Trunk Sewer Design for the City of El Centro, California. Oversaw the design for 21,000 lineal feet of 30-inch diameter trunk sewer pipeline. Design included trenchless construction for major road crossings. Plans, specifications, calculations, and construction cost estimates were prepared. Attended the project pre-bid meeting and provided engineering services during construction.

→ Principal-in-charge for Inland Empire Utilities Agency, SCADA and I&C WWTP Design Upgrades, Chino, California. A supervisory control and data acquisition (SCADA) and instrumentation and controls (I&C) upgrades design contract. The project involves control system migration for four IEUA water recycling facilities. Scope includes developing input/output lists and control narratives, updating existing control drawings, and control panel design. Coordinating contract administration with client management and overseeing project.

→ Project manager for the San Diego County Water Authority, California, San Vicente-Moreno Lakeside Interconnect Pipeline Design project. The project involved providing project and construction management services for developing the San Vicente Pipeline. The 3,000-linear-foot pipeline provided an alternative water supply source to the county during extended service interruptions. He led final design of 66-inch and 90-inch diameter welded steel raw water pressure pipelines. He managed the project team and budgets, prepared cost proposals and scopes of work, reviewed invoices, supervised subconsultants, coordinated various discipline teams, coordinated activities, and provided reports to the client. Design efforts included developing plans, specifications, reports, calculations, the construction schedule, and construction cost estimates.

→ Project manager for the San Diego County Water Authority, California, Oliven-

Roland I. Pilemalm, P.E.

Professional Affiliations

WateReuse Association, Member

Areas of Expertise

Wastewater systems, including treatment, distribution, pumping, and storage

Program management

Design-build

Alternative project delivery

Advanced water treatment for indirect potable reuse

hain Pipeline Surge Pipeline Progressive Design-Build. He led the design team for progressive design-build of this large-diameter raw water pressure pipeline, including a 66-inch-diameter concrete bar-wrapped cylinder pressure pipe, a 66-inch-diameter welded steel pressure pipe, and a 90-inch-diameter reinforced concrete cylinder pressure pipe. Design components included plans, specifications, reports, and calculations. Prepared a cost proposal and a scope of work, monitored project budgets, provided coordinated services to manage various project disciplines, and communicated with the client and contractor on a regular basis.

→ Project manager for the Inland Empire Utilities Agency, California, RP-4 Primary Clarifier and Process Rehabilitation Project Design. Carollo is providing planning and design services for various rehabilitation projects at RP-4. This includes modifications to the influent pumping system, rehabilitation of grit removal, primary treatment, odor control, aeration system blowers, solids wasting, tertiary filtration, and improvements to the emergency lagoon pumping system.

→ Project engineer for the Los Angeles Bureau of Sanitation, California, Program Management Support Services. The project involves supporting LASAN executives with program management services that span from general management support (risk management, multi-party agreements development, financial management, and rate studies), to Owner Representative services (project delivery methodology selection, owner's agent work on various progressive design-build (DB) projects. The DB projects include assignments such as the Hyperion AWPF estimated at $60 million, the DC Tillman AWPF (17 mgd of MF/RO/AOP) estimated at $280 million, the LA/Glendale WRP process expansion estimated at $50 million, and the CLARTS Organic Processing Facility estimated at $38 million. Carollo is also providing design and planning services (CIP, R&R, project schedules) and public outreach and stakeholder involvement support (i.e., groundwater recharge public outreach and communication). The program supports LASAN across its divisions: Clean Water, Watershed Protection, Solids Resources, and Financial Management.

→ Project engineer for the Orange County Sanitation District, California, Capital Improvement Program Design Services. Program highlights included wastewater treatment projects to expand existing operating plants, adding 90 mgd of primary treatment and 150 mgd of secondary treatment. Collection system projects involved constructing or renovating 15 pumping stations and 100 miles of trunk sewer pipe ranging up to 120 inches in diameter. Responsible for preparing a feasibility-level design report for a 20-mgd sewer pump station rehabilitation, which included coordinating civil, mechanical, electrical, and instrumentation disciplines.

→ Project manager for the City and County of Honolulu, Hawaii, Central Oahu Wastewater Facilities Wahiawa Wastewater Treatment Plant Improvements Design Project. Project involved feasibility, preliminary, final design, and engineering services during construction for upgrading wastewater facilities and the effluent reuse system on Central Oahu. Responsibilities included managing the project team, communicating and coordinating with the client, managing project budgets, supervising subconsultants, leading design efforts, and coordinating various disciplines, including architectural, civil, mechanical, structural, electrical, instrumentation, and HVAC for on time delivery of design packages.

→ Project manager for the Covanta Honolulu Resource Recovery Venture, Inc., HPOWER Expansion Sewage Sludge System Design-Build, Kapolei, Hawaii. Project involved final design services to provide facility additions to handle, store, convey, and inject sewage sludge into the facility's existing expansion boiler. Responsibilities included managing the project team, communicating and coordinating with the client, managing project budgets, supervising subconsultants, and coordinating various disciplines, including architectural, civil, mechanical, structural, electrical, instrumentation, and HVAC for successful delivery of on time design packages.

Labor Category

Registered Civil Engineer, Level 4

Office

Los Angeles, CA

Years of Experience

Total: 32

Carollo: 4

Education

BS Technology, University of Houston, 1984

MS Environmental Engineering, Loyola Marymount University, 1997

Licenses

Civil Engineer, California, Nevada

Areas of Expertise

Water and wastewater engineering

Infrastructure design and construction management

Focus on pipelines, reservoirs, pump stations, and water and wastewater treatment plants

Design-build

Megerdich "Miko" Aivazian, P.E.

Miko Aivazian has more than 30 years of experience in marketing, planning, design, and construction of facilities for environmental, industrial, and commercial projects. He has been involved as a senior project/client manager and engineer for several water/wastewater projects for more than 26 years, including planning, study, design and construction management of reservoirs, pumping stations, pipelines, and water and wastewater treatment plants. He has managed the design and construction of many projects for major Southern California clients and has been involved on several design-build projects.

Relevant Experience

→ Project Manager for the Elsinore Valley Municipal Water District's Diamond Regional Sewer Lift Station (DRSLS) and Dual Forcemains (DFMS). The DRSLS encompasses three major components: New Lift Station, New Dual Forcemains, and system improvements and tie-in the existing sewer system. DRSLS is a three phased project with a peak flow capacity of 9, 14.8, and 19.9 mgd. The phase 1 will construct the structure for the ultimate phase three capacity and the equipment will be installed to meet the phase 1 peak flow capacity. The DRSLS also includes a pre-treatment (Grinder) and an odor control facility. The lift station is a Dry-Pit Submersible type lift station with a depth of approximately 45-feet. This project also includes a DFM approximately 3,100-feet long, one 24-inch and one 16-inch inside diameter HDPE pipelines. Miko has been coordinating the design of this project with the District as well as the subconsultants and other agencies. The project design is complete, and the construction is scheduled for completion in early 2022.

→ Principal-in-charge for the Westward Ho Sewer Crossing Replacement project for Valley Sanitary District, California. Carollo is providing engineering services for the preliminary design, final design, permitting assistance, bid phase, and engineering services during construction of this replacement sewer project. Carollo has completed the Preliminary Design Report, which evaluated two trenchless installation methods (HDD or microtunneling).

→ Project Manager for City of Riverside Public Utilities Department, San Bernardino Pipeline Condition Assessment, Riverside, CA. This project consisted of condition assessment of approximately 5 miles of the San Bernardino Water Supply Pipeline that delivers water from San Bernardino to the city. Several sections of the pipeline were constructed in 1927, and the City required a manual in pipe inspection combined with CCTV to assess the condition of the pipeline. The inspection work was performed in segments and required careful planning with the City's operations staff for shutdown schedule and coordination with the City of San Bernardino, City of Riverside, and several other agencies. This project involved permitting and traffic control from several agencies, including work under Caltrans property.

→ Project manager for the Clark County Water Reclamation District, Las Vegas, NV, West Twain Interceptor Rehabilitation Project. Mr. Aivazian was responsible for preparation of plans and specifications for this project. The West Twain Interceptor Rehabilitation included CIPP lining of approximately five miles of 24-inch to 33-inch Reinforced Concrete Pipe (RCP) and lining of approximately 80 manholes ranging from 36 to 72 inches in diameter. The design also included temporary sewer flow bypassing, odor control and traffic control during construction. The West Twain Interceptor Rehabilitation alignment also crosses over several busy intersections including several Nevada Department of Transportation intersections. Permitting of work within NDOT easements was also part of this challenging project.

→ Project Engineer for the Los Angeles County Sanitation District, Preliminary design and study of the Lancaster Wastewater Treatment Plant, Los Angeles, CA. This project provided 16 mgd of expansion to the existing treatment plant with an ultimate future capacity of 52 mgd. This project consisted of conventional wastewater treatment

that included primary, secondary, and tertiary treatment with nitrification/de-nitrification process. Mr. Aivazian was the responsible project engineer from preliminary design study through the final design phase of the project. His role as the project engineer was to provide the entire design coordination among different disciplines and the client. He was responsible for coordinating the treatment processes and also designing the entire tertiary system including the intake pumping station, media filters, backwash piping and flow equalization basin/process.

→ Project manager for the City of San Diego, California, Pure Water Program, Task 7 – Morena Pump Station, Wastewater Forcemain, and Brine Conveyance preliminary design. The Morena Pump Station was constructed to divert flow from the (E) Mission Valley Interceptor, screen the flow, and pump it through a 48-inch discharge forcemain to the North City Water Reclamation Plant (NCWRP). Discharged brine from NCWRP was conveyed by a 24-inch brine pipeline to an energy dissipater facility at the same site location as the Morena Pump Station. The brine discharge flows by gravity along the same alignment as the wastewater forcemain. The energy dissipater facility reduces the flow velocity before the brine is discharged into an existing 48-inch sanitary sewer line. Provided civil design services, including development of alignment alternatives and 10-percent level design for the pipelines and pump station. Responsible for managing the project with City staff from project conception and working with permitting agencies, including Caltrans and Railroad Authorities, for tunneling sections of the pipeline alignment.

→ Project manager for the City of Los Angeles Department of Water and Power (LADWP), California, Unit 8 Second Gap Connection Pipeline. The $4.1-million Task Order No. ESC-32 involved design of a recycled water pipeline main to feed the Los Angeles County Dominguez Channel Gap Pipeline as Task 1 and to provide a 30-percent level of design for a 16-inch pipeline crossing the Dominguez Channel as Task 2. The main consisted of approximately 3,100 feet of 24-inch ductile iron pipe (DIP), magnetic flow meter vault, and pressure sustaining/reducing vault, all located in public right-of-way. Task 2 involved preliminary design of 16-inch DIP recycled water pipeline starting from the connection with Task 1's 24-inch DIP at the intersection of Opp Street and Goodrich Avenue. It continued south along Goodrich Avenue for 50 feet before turning southeasterly crossing the Los Angeles County Flood Control District operated Dominguez Channel, an open channel. The crossing was proposed using underground jack-and-bore tunnel. Responsible for managing the design of this project with LADWP internal staff and permitting agencies.

→ Project manager for the Downtown Water Recycling Project, for the Los Angeles Department of Water and Power (LADWP), California. The Downtown Water Recycling Project (WRP) involves constructing and operating approximately 9 miles of new 16-inch recycled water pipeline from the proposed terminus at Mesnagers Street near Los Angeles State Historic Park to customers located in, downtown Los Angeles, Exposition Park, Boyle Heights, and southeast Los Angeles. The mainline would roughly extend on San Pedro Street south to Jefferson Boulevard to serve customers in downtown Los Angeles. Several branch segments would extend from the mainline segment to reach customers in Boyle Heights, Exposition Park, and the South Los Angeles Wetlands Park. Additionally, a proposed new pressure regulator station would be installed and operated on San Fernando Road south of Loosmore Street, within the community of Cypress Park. Miko managed this project with LADWP and developed several pipeline alternative alignments in a feasibility alignment study. The project was then moved into the final design phase and completed to 90% at this time. This project has several challenges such as construction in congested Downtown streets, permitting, tunneling under Caltrans, Metro, and other rights-of-way.

Labor Category

Registered Civil Engineer, Level 3

Office

Los Angeles, CA

Years of Experience

Total: 16

Carollo: 4

Education

BS Civil Engineering, University of Louisiana, Lafayette, 2005

Licenses

Civil Engineer, California

Areas of Expertise

Structural and civil design

Water and wastewater infrastructure

Seismic design

Hydrologic and hydraulic design

Site layout

Matthew B. Huckaby, P.E.

Matt Huckaby has an extensive background in structural and civil design for water and wastewater infrastructure, with particular emphasis on structural and seismic design, hydrologic and hydraulic design, site layout/horizontal control and storm water mitigation with a hands-on approach to preparation of design plans, specifications, calculations, reports, schedules and cost estimates. He has practiced as a senior project engineer and civil/structural task leader for multiple projects. His experience includes design of reservoirs (concrete and steel), pump stations, water and wastewater treatment plants, spreading basins and detention ponds, pipelines, channels and culverts, junction and diversion structures, manholes and catch basins, encompassing stormwater, wastewater, recycled water, and potable water.

Relevant Experience

→ Supervising project engineer, Diamond Regional Sewer Lift Station (DRSLS) and Dual Forcemains (DFM) Project, Elsinore Valley Municipal Water District, CA. The proposed DRSLS will be designed to receive raw wastewater and pump it through a new parallel dual 16-inch and 24-inch forcemain system and discharge the sewage to an existing junction structure located on Lakeshore Drive near Elm Street that connects to the existing 54-inch gravity sewer pipeline along Lakeshore Drive. The 2016 Master Plan identified the proposed DRSLS to serve as the regional wastewater lift station and have the ultimate capacity of 19.9 mgd peak design flow or peak hourly wet weather flow (PHWWF) at year 2040 with an anticipated initial average inflow of ADWF (Phase 1) of 3.0 mgd and PWWF of 9.0 mgd. The project's goal is to eliminate the following three existing lift stations: Summerly Interim Lift Station; B-2 lift station; and Back Basin Groundwater Treatment Plant Lift Station.

→ Senior civil engineer for the City of San Diego, California, Pure Water Program, Task 7 – Morena Pump Station, WW Forcemain and Brine Conveyance Pre-Design. The Morena Pump Station will be constructed to divert flow from the (E) Mission Valley Interceptor, screen the flow and pump it through a 48" discharge forcemain to North City Water Reclamation Plant (NCWRP). At NCWRP, the forcemain will connect to the influent pump station line as it enters the headworks building. Discharged brine from NCWRP will be conveyed by a 24" brine pipeline to an energy dissipater facility at the same site location as the Morena Pump Station. The brine discharge will flow by gravity along the same alignment as the wastewater forcemain. The energy dissipater facility reduces the flow velocity before the brine is discharged into an existing 48" sanitary sewer line. Mr. Huckaby provided civil design services including development of alignment alternatives and 10% level design for the pipelines and pump station.

→ Senior engineer for the Unit 8 Second Gap Connection Pipeline, for the City of Los Angeles Department of Water and Power (LADWP), California. Task Order No. ESC-32 involved the design of a recycled water pipeline main to feed the Los Angeles County Dominguez Channel Gap Pipeline as Task 1 and to provide a 30-percent level of design for a 16-inch pipeline crossing the Dominguez Channel as Task 2. The main consisted of approximately 3,100 linear feet of 24-inch ductile iron pipe (DIP), a magnetic flow meter vault, and a pressure sustaining/reducing vault all located in public right-of-way. Task 2 involved the preliminary design of 16-inch DIP recycled water pipeline, crossing the Los Angeles County Flood Control District operated Dominguez Channel, an open channel. The crossing was proposed utilizing underground jack-and-bore tunnel. Mr. Huckaby provided civil design services including plans, specifications and design report development.

→ Project engineer for the Downtown Water Recycling Project, for LADWP, California. The Downtown Water Recycling Project involves constructing and operating approximately 9 miles of new 16-inch recycled water pipeline. This project has several challenges such as construction in a congested downtown street, permitting, tunneling under Caltrans, Metro, and other rights-of-way.

Matthew B. Huckaby, P.E.

→ Civil/structural engineer for the Tuscany Recycled Water Project for the Elsinore Valley Municipal Water District (EVMWD), California. The project included two construction packages. Package 1 consisted of a new turnout facility, pump station, 0.8 MG aboveground reservoir, and associated piping bound within property and easement limits. Package 2 consisted of approximate 40,000 linear feet of transmission and distribution piping located within public street rights-of-way. He served as structural design engineer for the steel storage tank, concrete pump station and turn out.

→ Civil/structural engineer for the , Eastern Municipal Water District, California, 2.0-MG Benton Recycled Water Reservoir. This project consists of an above ground, recycled water storage steel tank and associated facilities and approximately 6,700 linear feet of 24-inch diameter steel inlet/outlet recycled water pipeline and 1,100 linear feet of 24-inch ID RCP overflow pipeline. Approximately 2,400 linear feet of the pipeline alignment will be constructed under a new 1,500 linear feet of access road that climbs approximately 100 vertical feet in elevation. The remaining 4,300 linear feet of the 24-inch steel piping will be placed in the existing public Benton Road. Mr. Huckaby served as structural engineer for the steel reservoir tank and provided civil and mechanical design services.

→ Project engineer for the San Diego International Airport/Sundt Stormwater Design-Build Validation Phase for the San Diego International Airport (SDIA); California. Carollo was hired by Sundt Construction, Inc. to provide design and engineering services during construction for the proposed stormwater storage tank known as Cistern "C". The Cistern C sizing was based on the Strategic Stormwater Master Plan (SSMP) recommendations – Capture and Reuse Project developed for the San Diego Airport Authority. As part of the project, Carollo validate the hydrology model with an 85% capture rate. Carollo was also responsible for the structural design of the cistern that included a cast-in-place circular tank with a diameter of approximately 160-feet.

→ Senior project engineer for the Schuyler Heim Bridge Replacement – Union Pacific Railroad Overhead Stormwater Pumping Plant No. 53-2626W, Port of Long Beach/Los Angeles, CA, Caltrans, 2011-2012, California. This project will relieve stormwater from the existing pumping plant and storage box, eliminating the need for the existing plant. In addition to the new pumping plant, approximately 500 linear feet of 18-inch HDPE and 24-inch diameter HDPE and steel pressure pipeline are proposed. Mr. Huckaby was structural task leader responsible for structural, hydrologic and hydraulic design of the pumping plant as well as design drawing development, specifications, cost estimates and preparation of a pump type selection report.

→ Civil engineer for the South Perris Valley Pipeline, Perris, City of Perris/Riverside County/Metropolitan Water District (MWD) of Southern California, California. The project consisted of approximately 4 miles of 96-inch CML&C carbon steel pipeline that was designed ahead of schedule and under budget. The pipeline design included designing 2 Turnout facilities, one north of Van Buren Boulevard for Western Municipal Water District (40 cfs), and the other at Oleander Avenue (165 cfs) for Eastern Municipal Water District. Mr. Huckaby provided civil design services including plans and specifications development.

→ Senior civil/structural engineer for the Haiwee Penstock Pipeline Replacement EPC RFP, Inyo County, City of Los Angeles Department of Water and Power (LADWP), California. This project calls for assistance to LADWP in preparation of a Request for Proposal (RFP) and 30% effort level of completion for the design-build of penstock pipeline replacement. The existing penstock pipeline is proposed with buried 84-inch inside diameter fiberglass reinforced plastic (FRP) pipeline with 84-inch high performance butterfly valve facility. Mr. Huckaby was responsible for leading the structural design of a vault to house a 102-in valve and provided civil and hydraulics design services for the replacement of a portion of the LA Aqueduct No. 1.

Labor Category

Registered Civil Engineer, Level 4

Office

Sacramento, CA

Years of Experience

Total: 35

Carollo: 27

Education

MS Civil and Environmental Engineering, San Jose State University, 1994

BS Civil and Environmental Engineering, California Polytechnic State University, San Luis Obispo, 1986

Management Action Program (MAP), Pleasanton, CA

Truckee North Tahoe Leadership Training Course, Truckee/North Tahoe Area

Licenses

Civil Engineer, California, Idaho, Nevada

Professional Engineer, Oregon, Washington, Hawaii, Arizona

Areas of Expertise

Water and wastewater infrastructure

Design, construction, and project management

Gravity sewer collection systems

GIS and modeling

Tim F. Taylor, P.E.

Tim Taylor, Carollo's Director of Infrastructure Practice, has served as project manager for numerous water and wastewater infrastructure and treatment projects. With more than 34 years of experience in engineering design, construction, and project management for water distribution systems, gravity sewer collection systems, pump stations, water and wastewater treatment facilities, geographic information system (GIS), and modeling projects, Tim is proficient in all aspects of management, technical engineering, modeling, GIS, and design software. He has designed pipelines ranging from 12 inches up to 148 inches in diameter, as well as pump stations ranging in size from a few hundred gpm up to over 100 mgd.

Relevant Experience

→ Technical reviewer for the Clark County Water Reclamation District, Nevada, Paradise Whitney Interceptor (PWI), Package No. 2 in Las Vegas, Nevada. The need for PWI was first identified as part of the District's Integrated Facility Master Plan Wastewater Collection System Modeling effort completed in January 2008 by Carollo Engineers, and subsequently refined by the District. The PWI project will relieve existing capacity deficiencies, improve hydraulic operating conditions for sections of the existing interceptors, and provide a new 13-mile cross-town interceptor capable of conveying flows from the southwestern portion of the Las Vegas Valley Service Area to the District's wastewater treatment plant on East Flamingo Road.

→ Project manager for the City of Modesto, California, River Trunk Pipeline. This project included design and permitting for 8,500 feet of 48- to 54-inch gravity pipeline. The pipeline alignment runs down a residential street and is 40 feet deep in some sections. The project team evaluated the use of microtunneling as an option to open-cut construction. This is the second phase of a three-phase project for the City to eliminate a high-risk gravity trunk sewer routed along the edge of the Tuolumne River.

→ Project manager for the City of Modesto, California, River Trunk Realignment, Beard Brook Siphon and Cannery Segregation Line (CSL) Improvements. The City's wastewater collection and treatment system is divided into two separate systems: domestic and segregated cannery process water. The main objectives of the project are to address capacity and structural deficiencies in the Sutter and River Trunk systems, as well as capacity and operations and maintenance (O&M) issues associated with the Beard Brook Siphon. During conceptual development, additional objectives were identified, including addressing CSL peak flow limitations, improving River Trunk O&M access, and mitigating the vulnerability of river washout. Eight pipeline reaches were evaluated and designed to address the main objectives of the project. New 54- to 84-inch-diameter sewers in excess of 30 feet deep were evaluated to relocate the River Trunk sewer out of the Tuolumne River floodplain. In addition to the gravity sewer relocation, a new 54.5-mgd pump station approximately 80 feet deep was designed.

→ Project manager for the City of Modesto, California, River Trunk Rehabilitation, which evaluated rehabilitation methods for 2,600 feet of 45- and 48-inch-diameter reinforced concrete pipe on Gallo Winery property. Due to severe corrosion and lack of access to the pipe, the pipeline failed in one section in December 2014. An emergency repair was performed to temporarily support the failing pipeline. The rehabilitation design uses the sliplining process as the best suited technology. Due to the difficult site access requirements, coordination efforts between the City of Modesto, Carollo, Gallo Winery officials, and operations staff was critical for a successful project. The final design included a geotechnical investigation, survey with aerial photography, and preparation of plans, specifications, and cost estimates.

→ Principal-in-charge and quality assurance/quality control for the Santa Cruz County Sanitation District, California, On-Call FY07-08 and FY08-09 Sewer Improvements, which involved design of more than 20,000 feet of sewer improvements with pipes ranging from 6 to 30 inches in diameter. The

Tim F. Taylor, P.E.

Professional Affiliations

Water Environment Federation

Water Environment Federation Collection Systems Committee (Previous Member)

California Water Environment Association, Sierra Section, Board of Directors (2008 President)

Truckee Donner Public Utility District Board of Directors (2007 and 2008 President)

Awards

Special District Leadership and Management, Special District and Local Government Institute, 2007

contract comprises seven separate sewer improvement projects and spans four separate areas: Noble Gulch, Harper Street, Felt/Rodeo Streets, and Schwan Lake. Much of the work on these projects was in sensitive riparian habitats, in residential areas, along state beaches, and in commercial zones. Construction methodologies included open-cut construction, pipe bursting, pipe reaming, sliplining, horizontal directional drilling, auger boring, and cured-in-place pipe lining.

→ Project manager for the City of Modesto, California, Cannery Segregation Line (CSL) Diversion Structure. In 2014, the City discovered a section of exposed sewer pipe in the CSL along the Tuolumne River. The City constructed temporary bank reinforcement for this location and a previous location where the CSL was exposed. The CSL Diversion Structure was constructed to provide the City with the ability to divert flows from the industrial CSL trunk pipeline to the domestic River Trunk pipeline and vice versa. The Diversion Structure was located immediately downstream of the existing lateral connection of Stanislaus Foods, which was approximately 1,600 feet upstream of where the CSL was exposed during high river flows.

→ Project manager for the City of Fresno, California, Fruit Avenue Sewer Rehabilitation. The project included installation of 3,576 feet of 48-inch-diameter cured-in-place pipe liner, rehabilitation of four existing manholes, and development of a bypass pumping/flow diversion concept. Carollo also utilized soil data from a geotechnical investigation to optimize the design and minimize the liner thickness. This approach ultimately saved the City more than $100,000 in construction costs.

→ Project manager for the City of Simi Valley, California, Sanitary Sewer Trunk Rehabilitation Capital Improvements. The project involved rehabilitation of more than 10,800 feet of gravity sewer pipeline, ranging in size from 10 to 39 inches in diameter, using cured-in-place pipe. Four separate bid packages were developed and included extensive bypass pumping and traffic control requirements.

→ Technical reviewer for the West County Wastewater District, California, Garrity Creek Sanitary Sewer Crossing. Reviewed the sewer pipeline design, which included a 250-foot-long, 12-inch-diameter siphon to be installed using horizontal directional drilling methods. Close coordination between Carollo and the geotechnical subconsultant was required to ensure all the trenchless technology parameters were identified prior to bid.

→ Project manager for the Sacramento Regional County Sanitation District, California, Folsom East 1B Interceptor. The project included design of 15,000 feet of 54-inch to 72-inch sewer interceptor piping that was 40 feet in depth. A key feature was design of a vortex drop structure that allows the pipeline to go over a major concrete box culvert and then under an access tunnel. This structure provided a 13-foot vertical drop and assisted in eliminating potential odor issues. The project also involved design of large junction structures for future interceptor connections and coordination between a road widening project and construction of a light rail system.

→ Technical advisor for the City of Las Vegas, Nevada, Downtown Interceptor Sewer Rehabilitation. The project included fast-track design for trenchless rehabilitation of 10,915 feet of unlined reinforced concrete interceptor pipe, diversion structure rehabilitation, development of temporary bypass pumping of sewage during construction, pipeline cleaning and inspection, design of a bypass pumping and piping system with 24-inch HDPE pipe, and control of odor and noise.

→ Technical reviewer for the South Tahoe Public Utility District, California, A-Line Replacement. The project included installation of 52,800 feet (10 miles) of 30-inch-diameter, 250-psi pressure rated, ductile iron force main along residential streets and State Highways 50 and 89. In addition to conventional cut-and-cover techniques, two jack-and-bore operations (120 feet each) and one 1,200-foot horizontal directional drill (HDD) operation were used to install the new pipe.

Labor Category

Registered Civil Engineer, Level 4

Office

Seattle, WA

Years of Experience

Total: 25

Carollo: 5

Education

BSCE Civil Engineering, Washington State University, 1996

Licenses

Professional Engineer, Washington, Oregon

Civil Engineer, Idaho

Professional Affiliations

American Water Works Association (AWWA)

North American Society for Trenchless Technology (NASTT)

Areas of Expertise

Sewer system design

Comprehensive planning

Construction administration

Trenchless rehabilitation and replacement methods

Erik J. Waligorski, P.E.

Erik Waligorski's professional engineering experience is in water system design, sewer system design, structural design, comprehensive planning, and project and construction administration and management. He has been involved with engineering projects from all perspectives including consulting, government agency, and contractor. His 25 years of experience span: structural design for residential and commercial buildings; water and wastewater projects, including comprehensive planning and design of water distribution systems and wastewater collection systems. His primary responsibilities include conceptual and detailed analysis; design and project management including: scoping, budgeting and planning, regulatory coordination, client communication and construction administration. Mr. Waligorski has specialized expertise in trenchless pipeline rehabilitation and replacement having completed projects involving cured-in-place-pipe (CIPP), horizontal directional drilling (HDD), auger boring, pipe ramming, slip lining, and pipe bursting.

Relevant Experience

→ Project manager review for the Eastside Interceptor Section 2 Rehabilitation, Phase 1, for King County, Washington. Project includes the preliminary engineering for the trenchless rehabilitation of approximately 5,000 feet of 96-inch diameter concrete sewer in Renton, WA located between the Boeing Renton Plant and Renton Landing. The preliminary engineering will include the analysis of a sewer bypass system capable of handling up to 45 mgd, cultural resources, environmental studies, including noise analysis and project permitting.

→ Project manager for the Southwest Suburban Sewer District, Burien, Washington, Chelsea Park Sewer Rehabilitation Project Phases I – V. Completed the feasibility analysis and design for the rehabilitation of approximately 65,000 feet of existing 8-inch to 15-inch diameter sewer using open cut replacement and cured-in-place-pipe (CIPP) rehabilitation. Project included review of CCTV inspections and defect coding using NASSCO pipeline assessment certification program (PACP) methods. Project saved District in excess of $4 million dollars over life of the project.

→ Project manager for the City of Shelton, Washington, Basin 5 Sewer Rehabilitation Project. Completed the design of a rehabilitation project in Basin 5 for the City of Shelton. The project consists of the rehabilitation of approximately 42,000 lineal feet of existing sewer mains in the Hillcrest and Angleside areas of the City. The project included aerial mapping, pre-design efforts, and the design of the project. The project consisted of several construction methods for the rehabilitation of the existing sewer including conventional open-cut, pipe bursting, and cured-in-place-pipe (CIPP). The existing sewer mains range in size from 6-inch diameter to 12-inch diameter and are located in streets, alleys, and easements. This project also included the replacement of existing side sewers to within 5 feet of the existing structure and access agreements required for construction.

→ Project manager for the Soos Creek Water & Sewer District, King County, Washington, Lift Station No. 46 Covington Way/SR516/SR18 Trenchless Crossing Contract. Managed the construction of a $20 million dollar gravity sewer project consisting of the trenchless installation of approximately 1,200 lineal feet of 48-inch diameter steel casing using pipe ramming and microtunneling technologies to allow for the installation of 18-inch gravity sewer pipe serving the future Covington Town Center area. Project consisted of 5 pipe ram crossings of state highways, environmentally sensitive areas, creeks, and hills. Crossings ranged from 110 to over 300 feet long and at depths over 60 feet below ground surface.

→ Project manager for the Talbot Hill Sewer Replacement project for the City of Renton, WA. The project included the installation of new 12-inch diameter gravity sewer at depths up to 50 feet deep using HDD and a new 36-inch diameter casing for a gravity sewer crossing under I-405 using guided auger bore technology.

Erik J. Waligorski, P.E.

→ Project manager for the City of Des Moines, Washington's Downtown Des Moines Sewer Rehabilitation Study, Midway Sewer District. Completed feasibility analysis for the rehabilitation of approximately 40,000 feet of existing sewer using cured-in-place-pipe (CIPP) technology. Project identified the need for open-cut replacement, pipe bursting replacement, and rehabilitation using CIPP technology.

→ Project manager for the City of Renton, Washington's 2013 Sewer Rehabilitation – Tiffany Park Project. Analyzed feasibility of rehabilitating approximately 4,000 feet of sewer using cured-in-place-pipe (CIPP) technology. Project included providing topographic surveying, utility locating, and base map preparation for City.

→ Design manager for the City of Bainbridge Island, Washington's Eagle Harbor Beach Sewer Main Replacement. Responsible for the analysis and design to replace approximately 4,000 feet of 6-inch, 12-inch, and 16-inch diameter ductile iron force mains in the beach at Eagle Harbor.

→ Project manager for the City of Lynnwood, Washington's 76th Avenue W Sewer Trunk Line Improvements. Completed preliminary design analysis for the replacement of an undersized 24-inch diameter sewer trunk main for the City. Design included the installation of a 28-inch diameter HDPE overflow pipe constructed in a narrow road parallel to an existing 24-inch diameter ductile iron water main.

→ Project manager for the City of Lynnwood, Washington's Kinko's Sewer Replacement Project. Completed the analysis and design of the rehabilitation of approximately 1,200 feet of existing sewer under State Route 524 using cured-in-place-pipe (CIPP) technology. Project included the design of a sewer bypass system which was installed in the substructure of an existing WSDOT bridge to transport sewage from one side of SR524 to the other.

→ Project manager for the City of Everett, Washington's Sewer Main Replacement "I". Completed the design and construction of a sewer replacement project in the north end of the City of Everett. The project consisted of the replacement of over 5,000 linear feet of sewer main within existing streets and alleys. The pipe ranged in size from 24" diameter HDPE to 8" diameter PVC. Construction of the sewer replacement included both standard open-cut construction and pipe bursting.

→ Project manager for the City of Renton, Washington's Presidents Park Sewer Rehabilitation Study. Completed feasibility analysis for the rehabilitation of approximately 5,000 feet of existing sewer using cured-in-place-pipe (CIPP) technology. Project included the development of project specifications for CIPP pipe rehabilitation for the City in WSDOT format.

→ Project engineer for the I/I Reduction Study for the City of Grants Pass, Oregon. The study included a condition assessment, rehabilitation plan, and smoke testing of the 24-inch sewer main connecting the Redwood pump station to the Darneille pump station. The study identified locations that if repaired would have the greatest potential to reduce I/I. Condition of the existing sewer main was accomplished by reviewing CCTV video inspections and visual manhole inspections, as well as smoke testing generated by the City.

→ Construction manager for the Lift Station No. 46 & Conveyance Installation, Soos Creek Water & Sewer District, WA. The Lift Station No. 46 and Conveyance Installation consisted of sub-projects to upgrade and expand the District's regional conveyance system. The projects consisted of approximately 5,000 lineal feet of 18-inch diameter gravity sewer and force main installed in high groundwater conditions at depths up to 22 feet via traditional open cut methods, approximately 1,200 lineal feet of 48 and 60 inch diameter steel casings via various trenchless methods to allow for gravity sewer installation, and Lift Station No. 46 itself, designed to accommodate futures flows of 2,400 gpm. Erik Waligorski provided project management and construction management services for the conveyance and trenchless portions of the Lift Station No. 46 projects.

Labor Category

Registered Civil Engineer, Level 2

Office

Fresno, CA

Years of Experience

Total: 16

Carollo: 11

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)

Areas of Expertise

Wastewater collection system design

Wastewater treatment facilities planning

Infrastructure master planning

Water conveyance design

Rehabilitation methods

Reace P. Fisher, P.E.

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

Relevant Experience

→ Project engineer for the City of Modesto, California, River Trunk Rehabilitation, which involved sliplining of 2,600 feet of 45-inch and 48-inch-diameter pipe. Responsible for condition assessment investigations and evaluation of existing pipeline facilities using Pipeline Assessment and Certification Program. Responsible for site investigations; utilities search; coordination of geotechnical, surveying, and traffic control efforts; and development design drawings and bypass pumping plans, specifications, and cost estimates. The project was designed and successfully constructed to minimize the impacts to Gallo Winery operations.

→ Project engineer for City of Fresno, California, Fruit Avenue Sewer Rehabilitation Design, which included 3,600 feet of 48-inch pipe and large junction structures. Responsible for site investigations; utilities search; coordination of geotechnical and surveying efforts; development of plans, specifications, and cost estimates; bidding support; and construction support.

→ Project engineer for City of Fresno, California, Illinois/Iowa/Recreation Avenue Sewer Rehabilitation Design, which included 2,315 feet of 12- and 15-inch CIPP liner, 4 manholes, and bypass pumping. Responsible for site investigations; utilities search; coordination of geotechnical and surveying efforts; development of plans, specifications, and cost estimates; bidding support; and construction support.

→ Engineer for the City of Modesto, California, River Trunk Realignment and Beard Brook Siphon. Responsible for condition assessment investigations, evaluation of existing pipeline facilities using Pipeline Assessment and Certification Program, and recommendations for rehabilitation or replacement for preliminary design of the pipeline.

→ Project manager for City of Fresno, California, Downtown Sewer Rehabilitation Design, which included 3,000 feet of 48-inch pipe and 2,000 feet of 10-inch pipe. Responsible for site investigations; utilities search; coordination of geotechnical and surveying efforts; development of plans, specifications, and cost estimates; bidding support; and construction support. Project challenges included routing bypass pumping down congested downtown streets and replacing laterals in congested alleys.

→ Project engineer for the Dublin San Ramon Services District, California, Dublin Trunk Rehabilitation, which involved rehabilitation of 10,000 feet of failing pipeline and coating of 30 manholes. Responsible for site investigations; utilities search; coordination of geotechnical, surveying, and traffic control efforts; and development of design drawings and bypass pumping plans, specifications, and cost estimates. The project was designed to accommodate strict traffic requirements and rehabilitate the District's main trunk line along the busiest corridor in Dublin.

→ Project engineer for the Dublin San Ramon Services District, California, Davona-Berwick 8-Inch Sewer Replacement. Responsible for preliminary site investigations, utilities search, coordination of geotechnical and surveying efforts, and preliminary design recommendations.

→ Project engineer for the City of Fresno, California, Chestnut Avenue Sewer Rehabilitation Design. Responsible for site investigations; utilities search; coordination of geotechnical and surveying efforts; development of plans, specifications, and cost estimates; bidding support; and construction support.

→ Project manager for the City of Fresno, California, North Avenue Trunk Emergency Realignment. Responsible for site investigations, utilities search, and development of design drawings and bypass pumping

plans, specifications, and cost estimates. The project rerouted a failing 57-inch-diameter pipeline with a 66-inch-diameter parallel under four railroads, an irrigation canal, and an existing bridge. Careful coordination with permitting agencies was the key to keeping this emergency project on track and preventing impacts to critical facilities.

→ Project engineer for City of McFarland, California, Perkins Avenue Sewer Rehabilitation Design, which involves rehabilitation of a 12-inch main crossing Highway 99. Responsible for site investigations; utilities search; coordinating geotechnical and surveying efforts; development of plans, specifications, and cost estimates; bidding support; and construction support.

→ Project manager for the City of Fresno, California, Marks Avenue Trunk Sewer planning, design, and construction. Responsible for managing technical, financial, and business documents; interpreting plans and specifications for technical support; executing railroad, Caltrans, and county encroachment permits and property acquisition; and coordinating with the consultant on design and construction of the sewer rehabilitation.

→ Project manager for the City of Fresno, California, Del Mar Avenue Trunk Sewer planning, design, and construction. Responsible for managing technical, financial, and business documents; interpreting plans and specifications for technical support; executing railroad, Caltrans, and county encroachment permits; and coordinating work with the consultant on design and construction of the sewer rehabilitation.

→ Project manager for the City of Fresno, California, Bullard Avenue Trunk Sewer planning, design, and construction. Responsible for managing technical, financial, and business documents; interpreting plans and specifications for technical support; executing railroad, Caltrans, and county encroachment permits; and working with the consultant on design and construction of the sewer rehabilitation.

→ Project manager for the City of Fresno, California, Maple Avenue Trunk Sewer planning, design, and construction. Responsible for managing technical, financial, and business documents; interpreting plans and specifications for technical support; executing railroad and county encroachment permits; investigating property ownership; obtaining right-of-way; and coordinating with the consultant on design and construction of the sewer rehabilitation.

→ Project manager for the City of Fresno, California, East Avenue Trunk Sewer planning, design, and construction. Responsible for managing technical, financial, and business documents; interpreting plans and specifications for technical support; executing railroad and county encroachment permits; and coordinating work with the consultant on design and construction of the sewer rehabilitation.

→ Engineer for the City of Fresno, California, Collection System Master Plan. Responsible for hydraulic model update, review, and calibration. Using condition assessments, developed improvement projects to mitigate capacity and structural deficiencies. Hydraulic modeling efforts allowed the City to determine the excess capacity in the collection system and prevented costly capital improvement projects.

→ Staff engineer/GIS for the City of Turlock, California, Sanitary Sewer and Storm Water Master Plans. Responsible for construction of the City's sewer collection system hydraulic model, capacity analysis, and development of improvement projects to mitigate capacity deficiencies and storm connections. As part of the analysis, several improvement alternatives were considered to alleviate capacity deficiencies in the majority of the sewer collection system in the downtown area, including replacing existing sewer pipelines with larger diameter sewers or removal of the direct storm drainage connections to the sewer. Preferred improvements to the sewer and storm drainage systems were incorporated into the Sanitary Sewer and Storm Water Master Plan reports.

Brian W. Avon, P.E.

Brian Avon brings more than 14 years of experience in design, preparing contract documents and cost estimates, and facilitating the acquisition of permits. His work has included systems evaluation, pipeline design and condition evaluation, development of rehabilitation/ replacement improvements, construction, geotechnical engineering, and preparation of cost estimates and implementation schedules.

Labor Category

Registered Civil Engineer, Level 3

Office

Walnut Creek, CA

Years of Experience

Total: 14

Carollo: 8

Education

BS Civil Engineering, University of the Pacific, 2007

BS Business Administration, University of Southern California, 2004

Licenses

Civil Engineer, California

Professional Engineer, Washington, Colorado, Maryland

Certification

Certificate, Pipeline Assessment Program, NASSCO, California, 2010

Affiliations

Western Society of Trenchless Technology (WESTT) Chairman of the Board of Directors

North American Society of Trenchless Technology (NASTT) Committee member

Pipe Users Group (PUG) Past Board Member

Relevant Experience

→ Project engineer for the Trenchless Pipeline Design project for San Luis Obispo County, California. The project involved emergency rehabilitation of 1,300 feet of 30-inch critical river crossing. Carollo was retained to evaluate options for repair and/or replacement. After the initial evaluation, sliplining was selected as the preferred alternative. Carollo provided a design for the preferred project and provided bid and construction phase services.

→ Project engineer for the Westward Ho Sewer Crossing Replacement project for Valley Sanitary District, California. Carollo is providing engineering services for the preliminary design, final design, permitting assistance, bid phase, and engineering services during construction of this replacement sewer project. Carollo has completed the Preliminary Design Report, which evaluated two trenchless installation methods (HDD or microtunneling).

→ Project engineer for the City of Santa Clara, California, Trimble Road Trunk Sanitary Sewer Condition Assessment. The project included the identification of specific rehabilitation and replacement needs of over 13,000 linear feet of sanitary sewer pipes. The sewer included 15- and 24-inch diameter siphons, 33- and 48-inch diameter gravity sewers, and 49 manholes and junction structures. The process included the review of the existing sanitary sewer system map, available historical data, sewer line and manhole inspection and evaluation, hydrogen sulfide monitoring, and the preparation of a condition assessment report.

→ Engineer for the Harper Street, Schwan Lake, Felt Street, and Noble Gulch Sewer Improvement Projects for the Santa Cruz County Sanitation District, California. The project includes the relocation and/or replacement of more than 15,000 feet of sewer pipe. Work includes location of the existing lines, design of the new pipeline, and assistance in facilitating the acquisition of permits.

→ Project engineer for the West County Wastewater District, California, Garrity Creek Siphon Project. The project included the emergency installation of a 500-foot double-barrel siphon by horizontal directional drilling under Garrity Creek to replace an exposed sanitary sewer. Responsibilities included hydraulic modeling of the old and proposed sewer, sewer design, permitting assistance, plans, specifications, and engineering services during construction.

→ Staff engineer for the City of Santa Clara, California, Monroe Street, Chromite Drive, Machado Avenue, and Nobili Avenue Sewer Improvements design project. The project included removing approximately 9,300 feet of existing sewers ranging from 10- to 18-inches in diameter and constructing new 12- to 24- inch sewers. Project was located in a residential neighborhood and included two siphon creek crossings. A parallel siphon was installed by horizontal directional drilling to replace one of the existing siphons. New lower service laterals were also replaced as part of this project. Evaluated multiple construction methods to determine the best solution for constructing the new sewers; performed hydraulic calculations to verify new slopes would accommodate future flows; responsible for plans, specifications, cost estimate, and lead project meetings.

→ Staff engineer for the Sanitary District No. 1 of Marin County, California, William/Holcomb/Meadowood Capacity Improvements Project. Included 3,000 lf of sewer replacement by open-cut construction methods to provide additional capacity required.

→ Project engineer for Ross Valley Sanitary District, California, Sir Francis Drake Sewer

Brian W. Avon, P.E.

Areas of Expertise

Water and wastewater treatment design

Pipeline design and condition evaluation

Rehabilitation and replacement methods, including trenchless design

Geotechnical engineering

Cost estimating

Permitting

Improvements Project. The project includes the replacement of 3,800 feet of linear sewer pipe. Construction methods will include open-cut, sliplining, and pipe bursting.

→ Project engineer for Santa Cruz County Sanitation District, California, Upper Rodeo Gulch Sewer Improvements Project. The project includes the replacement of 2,000 feet of linear sewer pipe. Construction methods will include open-cut, pipe bursting, horizontal directional drilling, and jack/bore.

→ Project engineer for Santa Cruz County Sanitation District, California, Estates Drive Borregas Gulch Sewer Improvements Project. The project includes the replacement of 2,200 feet of linear sewer pipe. Construction methods will include open-cut, pipe bursting, and jack/bore.

→ Engineer for the Rehabilitation and Replacement of Tara Hills Force Main for the West County Wastewater District, in Richmond, California. Responsibilities included surveying the location of the existing force main and drafting all relevant data into AUTOCAD.

→ Senior engineer for the Port of Brisbane, California Storm Drain and outfall Rehabilitation Project. The project included the evaluation of the Port's Stormwater collection mains and discharge outfall ranging in diameter from 36 to 60 inches. With the facility at water's edge, the entire system was subject to tidal influence. After evaluation of the existing facilities, an inspection schedule and plan was developed for future use by the Port, as well as recommendations for spot repairs, lining, and monitoring.

→ Project manager and trenchless lead for the City of Ventura, California's Concentrate Outfall and Desalination Intake Feasibility Study. The study evaluated existing outfalls, geologic conditions, sizing of facilities, concentrate disposal alternatives, and provided construction recommendations. Additionally a regulatory strategy was established, preliminary permitting meetings were held, cost estimates and schedules were created, and a list of additional studies was provide.

→ Project director/technical lead for a confidential client for replacement of approximately 3,960 feet of vintage 8- and 12-inch pipe with 3,670 feet of new 12-inch pipe via horizontal directional drilling (HDD) and open cut. The HDD was designed to go under the American River and under a 60 foot deep flood wall. The new pipeline will be installed parallel to the existing pipe and the existing pipe will be decommissioned.

→ Project director/technical lead for a confidential client for replacement of approximately 700 feet of steel pipe via horizontal directional drilling within a residential area of the City of Santa Cruz. The project included a feasibility analysis, routing study, geotechnical analysis, and detailed design.

→ Project director/technical lead for a confidential client for replacement of existing 24 and 22 inch steel pipe with approximately 12,300 feet of new 36-inch pipe to provide needed capacity and replace aging infrastructure. Construction methods included open cut, microtunneling, and horizontal directional drilling. The project included a feasibility analysis, routing study, geotechnical analysis, trenchless design, risk assessment, and detailed design.

→ Senior inspector for a Confidential Client for the special inspection of a 4,300 LF 36-inch HDD. The construction included duel conductor casings and was performed as an intersect. Responsibilities included full time inspection, daily reports, frackout plan compliance, and engineering support during challenging drilling.

→ Senior project engineer for a Confidential Client, for their Site Utility Plan, necessary Municipal System Improvement Plan, and trenchless design of six 20-inch natural gas trenchless crossings. The design included approximately 7,200 LF of 4-inch sewer force main, 1,500 LF of gravity sewer, and 1,100 LF of 12-inch water main. The design was located in narrow county and state highway roads and required crossing a wide electrical right-of-way with high voltage KV lines.

Labor Category

Registered Civil Engineer, Level 4

Office

Los Angeles, CA

Years of Experience

Total: 43

Carollo: 2

Education

BSCE Civil Engineering, California State Polytechnic University, Pomona, 1981

Licenses

Civil Engineer, California

Professional Land Surveyor, California

Professional Engineer, Texas

Professional Associations

American Water Works Association

American Society of Civil Engineers

American Public Works Association

California Land Surveyors

Areas of Expertise

Water and wastewater infrastructure

Civil engineering

Pipeline design

Design-build

Cornelius J. Gantney, P.E., PLS

Cornelius (Jerry) Gantney is an experienced project manager with a wide variety of water, groundwater and wastewater projects including water distribution system design. He has experience with design/build delivery systems as well as conventional design, bid build methods.

Relevant Experience

→ Civil engineer for the Elsinore Valley Municipal Water District's Diamond Regional Sewer Lift Station (DRSLS) and Dual Forcemains. DRSLS encompasses three major components: a new lift station, new dual forcemains, and system improvements and tie-ins to the existing sewer system. DRSLS is a three-phased project with a peak flow capacity of 9, 14.8, and 19.9 mgd. The lift station is a dry-pit submersible type lift station with a depth of approximately 45 feet.

→ Project manager for the Westward Ho Sewer Crossing Replacement project for Valley Sanitary District, California. Carollo is providing engineering services for the preliminary design, final design, permitting assistance, bid phase, and engineering services during construction of this replacement sewer project. Carollo has completed the Preliminary Design Report, which evaluated two trenchless installation methods (HDD or microtunneling).

→ Project manager and design lead for the Tuscany Hills Recycled Water Project for the Elsinore Valley Municipal Water District, California. The recycled water targeted for landscape irrigation uses in parks, common areas and schools. The project consist of a turnout connection to Eastern MWD at Railroad Canyon and Summerhill Drive, a 18-inch CML&C steel pipeline with a 36-inch microtunneled steel pipe casing crossing of the Railroad Canyon Creek, and a new 4,500-gpm, 250-psi pumping station at Summerhill Park, a new 800,000 gallon steel tank reservoir above Bella Lucia on a ridge, and 40,000 lineal feet of 18-inch ductile iron pipe to 6-inch PVC pipe for transmission and distribution pipelines.

→ Lead civil engineer for the Design/Build Fillmore Wastewater Treatment Plant for the City of Fillmore, California. Responsible for the design drawings and specifications for this Design-Build project. The project consisted of a new treatment plant site with a membrane batch reactor (MBR) type of nutrient removal and UV disinfection system. Other work included designing and constructing 4,800 lineal feet of 30-in PVC (polyvinyl chloride) gravity influent trunk sewer pipeline, and 4,600 lineal feet of 18-inch DIP (ductile iron pipe) recycled water pipeline and 4,600 lineal feet of 12-in PVC potable water pipeline and 1500 lf of 72-in RCP (reinforced concrete pipe) storm drain, 2 junction structures and a large outlet structure. A bike path was added to the design along the Sespi Creek on top of the newly constructed levee.

→ Lead civil engineer and civil design manager for the Phase I Reclaimed Water Project for the City of Burbank, California. Responsible for the design, specifications, and office engineering services during construction. The project included over 17,000 lineal feet (3.2 miles) of 16-inch and 8-inch ductile iron pipe, 2 booster pump stations, and 2 steel tank reservoirs for a total flow of 3.6 mgd. The pipelines were placed in existing paved streets with numerous utility crossings to be resolved.

→ Civil engineer for the San Diego International Airport/Cistern "C". The Cistern C sizing was based on the Strategic Stormwater Master Plan (SSMP) recommendations – Capture and Reuse Project developed for the San Diego Airport Authority. As part of the project, Carollo validated the hydrology model with an 85% capture rate. The Cistern C was sized for 3.0 MG storage capacity and included inlet piping, overflow system and two submersible forcemain pumps. Carollo was also responsible for the structural design of the cistern that included a cast-in-place circular tank with a diameter of approximately 160 feet.

→ Civil engineer for the City of Los Angeles Bureau of Engineering, California, Stormwater Capture Parks Program (TOS 25) – Whitsett Fields Park North and Valley Village Park. LABOE is the lead agency for the

Cornelius J. Gantney, P.E., PLS

Stormwater Capture Parks Program, preparing detailed design documents for nine projects, and collaborating closely with the Los Angeles Department of Water and Power (LADWP), who is funding the parks projects to expand the stormwater capture and recharge. Carollo developed a Preliminary Design Report analyzing different alternatives for the stormwater diversion and capture within the parks.

→ Civil engineer for Haiwee Penstock Pipeline Replacement Project, LADWP. Under several task orders, this team worked with LADWP in the early stages for development of penstock pipe material, investigations, hydraulic study, construction cost estimates, and 30% design of the penstock pipeline. This project also included preparation of a RFP for the design-build of penstock pipeline replacement.

→ Manager and lead design civil engineer for the Perris Valley Pipeline for the Metropolitan Water District of Southern California, Cities of Riverside and Perris, California. The first project (Phase 1), called Perris Valley Pipeline Phase 1 was the onsite Henry J. Mills Plant 108-in CML&C pipeline and Guard Valve Vault (34-ft square by 29 feet deep, with a 72-in motorized high performance butterfly valve, acoustic flow meter and a new 48-inch Western MWD Turnout. Phase 2 of the Perris Valley Pipeline was also called the North Reach, consisting of 2.5 miles of 108-in and 96-in CML&C steel pipeline and tunnels, continuing the 108-inch CML&C pipeline from Phase 1 to Alessandro Blvd. Then the 96-inch CML&C pipeline continued east on Alessandro Blvd to the I-215 Freeway and turned south, parallel with the 1-215 Freeway to Cactus Avenue. A new 48-inch Eastern MWD was constructed. Phase 3, also called the South Reach. The 96-inch CML&C pipeline was continued south between the Riverside County Transportation Commission (RCTC) Railroad and the I-215 for about 4 miles to Harley Knox Blvd, where a new Eastern MWD Turnout was constructed. The South Reach crossed the RCTC twice, including a 1700-ft tunnel under the BNSF Railroad and Caltrans I-215 freeway times using 127-inch steel tunnel casing. The work included assisting MWD with right-of-way, easement acquisitions permits from both RCTC and Caltrans as well as relocation of existing power poles and street reconstruction. The work included coordinating the future improvements with Caltrans to widen the I-215 freeway and a new Van Buren Bride to be constructed near the 96-inch pipeline.

→ Lead civil engineer for the Reclaimed Water Final Design for the City of Pasadena, California. Responsible for the design for more than 38 miles of new 36-inch to 6-inch-diameter pipelines. The pipeline route covered the Scholl Canyon landfill reservoir for the City of Glendale supplied recycled water point of connection. Various user sites were located eastward, throughout the major non-potable water users of the City, including the Arroyo Seco recreation area, the Rose Bowl, Jet Propulsion Laboratory, the City's power plant, Huntington Library, and Caltrans green space areas. The final design was halted during the pre-design phase by the City due to insufficient funding.

→ Lead civil engineer for the Groundwater Production, Restoration and Transmission Mains for the Castaic Lake Water Agency, Santa Clarita, California. Responsible for the design engineering, bid assistance services and engineering support services during construction. The project consisted of 22,000 lineal feet of both drinking water and untreated well water (perchlorate contaminated) in pipe sizes ranging from 48-inch to 10 inch. There were 4 bridge crossings (Valencia Bridge, Magic Mountain Bridge two times and Bouquet Canyon Road Bridge). The pipeline project was a part of the Agency's lawsuit settlement to clean up the Whittaker-Bermite perchlorate contaminated site near Magic Mountain Parkway and Bouquet Canyon. There were two main pipelines, one for drinking water supply to the Agency's retail water companies and new extraction wells to remove the perchlorate contaminated plume in two existing well sites along the South Fork of the Santa Clara River. The work also included coordination with the Agency to determine the appropriate distribution for the lawsuit between the Whittaker-Bermite site owners and the Agency.

Labor Category

Registered Civil Engineer, Level 4

Office

Los Angeles, CA

Years of Experience

Total: 26

Carollo: 4

Education

BS Civil Engineering, California State Polytechnic University, Pomona, 1994

Licenses

Civil Engineer, California

Areas of Expertise

Water and wastewater infrastructure

Civil design

Pipeline design

Site layout

Yard piping plans

Raphael V. Bui, P.E.

Raphael Bui has more than 26 years of experience in civil detail design of pipelines, utilities, storm drainage, stormwater mitigations, open water flow channels, water diversion facilities, wells, wetlands, percolation ponds, water reclamation plants, pump stations, geometric roadways, reservoirs, and water and wastewater treatment plants projects with particular emphasis on site layout design, grading plans, horizontal control plans, and yard piping plans and mechanical piping. He is also experienced with hydrology, hydraulic, and subdivision designs that include public street improvements. In addition to his strong design background, Raphael has performed as Field Project Engineer and Resident Engineer in construction management services at water and wastewater treatment facilities for two years.

Relevant Experience

→ Civil engineer for the Elsinore Valley Municipal Water District's Diamond Regional Sewer Lift Station (DRSLS) and Dual Forcemains (DFMS). The DRSLS encompasses three major components: New Lift Station, New Dual Forcemains, and system improvements and tie-in the existing sewer system. DRSLS is a three phased project with a peak flow capacity of 9, 14.8, and 19.9 mgd. The phase 1 will construct the structure for the ultimate phase three capacity and the equipment will be installed to meet the phase 1 peak flow capacity. The DRSLS also includes a pre-treatment (Grinder) and an odor control facility. The lift station is a Dry-Pit Submersible type lift station with a depth of approximately 45-feet. This project also includes a DFM approximately 3,100-feet long, one 24-inch and one 16-inch inside diameter HDPE pipelines. The project design is complete, and the construction is scheduled for completion in early 2022.

→ Civil engineer for the Westward Ho Sewer Crossing Replacement project for Valley Sanitary District, California. Carollo is providing engineering services for the preliminary design, final design, permitting assistance, bid phase, and engineering services during construction of this replacement sewer project. Carollo has completed the Preliminary Design Report, which evaluated two trenchless installation methods (HDD or microtunneling).

→ Project engineer for the City of Los Angeles Department of Water and Power (LADWP), California, Unit 8 Second Gap Connection Pipeline. Task Order No. ESC-32 requested MWH to design a recycled water pipeline main to feed the Los Angeles County Dominguez Channel Gap Pipeline as Task 1 and to provide a 30-percent level of design for a 16-inch pipeline crossing the Dominguez Channel as Task 2. The proposed pipeline alignment started with a connection to an existing 20-inch recycled water main located on Anaheim Street at the intersection with Cristobal Avenue. The pipeline continued north along Cristobal Avenue, then west along Opp Street before turning north on Goodrich Avenue to the connecting terminus located at the interchange of Goodrich Avenue and Grant Street. The main consisted of approximately 3,100 linear feet of 24-inch ductile iron pipe (DIP), a magnetic flow meter vault, and a pressure sustaining/reducing vault all located in public right-of-way. Task 2 involved the preliminary design of 16-inch DIP recycled water pipeline starting from the connection with Task 1's 24-inch DIP at the intersection of Opp Street and Goodrich Ave. It continued south along Goodrich Avenue for 50 linear feet before turning southeasterly crossing the Los Angeles County Flood Control District operated Dominguez Channel, an open channel. The crossing was proposed utilizing underground jack-and-bore methodology.

→ Project engineer for the Los Angeles Department of Water and Power (LADWP), California, Downtown Water Recycling Project. The project involves constructing and operating approximately 9 miles of new 16-inch recycled water pipeline from the proposed terminus at Mesnagers Street near Los Angeles State Historic Park to customers located in downtown Los Angeles, Exposition Park, Boyle Heights, and southeast Los Angeles. Additionally, a proposed new pressure regulator station would be installed

Raphael V. Bui, P.E.

Awards

Caltrans Success In Motion, District 8 2014 Gold Award

and operated on San Fernando Road south of Loosmore Street, within the community of Cypress Park. The project is now moving into the final design phase and the next step is starting the 35% final design plans and specifications. This project has several challenges such as construction in a congested downtown street, permitting, tunneling under Caltrans, Metro, and other rights-of-way.

→ Project engineer for the Inland Empire Utilities Agency (IEUA), California, Baseline Recycled Water Pipeline Extension. The project, as part of a comprehensive recycled water system expansion in the northeastern portion of the service area, begins from an existing 24-inch diameter pipeline terminus located on Baseline Avenue, east of Interstate 15 Freeway and will be extended approximately 8,000 linear feet to Cherry Avenue in the City of Fontana. The project will support recycled water for landscape irrigation in medians, park ways, and parks which will increase the beneficial reuse of recycled water by approximately 105 AFY.

→ Senior engineer for the Eastern Municipal Water District/Western Municipal Water District/Metropolitan Water District (MWD), California, North Perris Valley Pipeline. Responsible for the design of pipeline and MWD Turnout vault elements. The 2.5-mile North Perris Valley Pipeline is a multi-agency 108-inch and 96-inch CML&C carbon steel pipeline project that traverses from the MWD Mills Water Treatment Plant on the east side of the City of Riverside to the north end of the City of Perris. The pipeline will provide an additional 350 cfs of drinking water for the next ten years (ultimate flow is 600 cfs). The work included a Turnout with a 42-inch motorized high performance butterfly valve in a vault and a separate meter vault. Also included are two tunnel crossings at Alessandro Boulevard and BNSF Railroad.

→ Senior engineer for the Metropolitan Water District (MWD), California, South Perris Valley Pipeline. Responsible for the fast-tracked pipeline design. The project consisted of approximately 4 miles of 96-inch CML&C carbon steel pipeline that was designed ahead of schedule and under budget. The pipeline design included designing 2 Turnout facilities, one for Western Municipal Water District (40 cfs) and the other for Eastern Municipal Water District (165 cfs). The project also required about 1,500 lineal feet of 120-inch tunnels crossing under BNSF railroad, Interstate 215 Freeway and two local roadways.

→ Senior engineer for the City of Oxnard, California, Rice Avenue and U.S. 101 Interchange Utilities Relocation Improvements. The project included the relocation of the City's existing 45-inch water transmission and 15-inch sanitary sewer pipelines along the U.S. 101 Freeway and Rice Avenue interchange. The work consisted of redesigning the new 45-inch CML&C steel water transmission pipeline to clear the freeway widening and other utilities such as telephone and electrical vaults as well as replacing the pipeline along Rice Avenue away from the new roadway ramps. Also included were new connections to the existing CCP at Gonzales Road and Rice Avenue. All the work was performed to Caltrans standards.

→ Supervising engineer for the City of Los Angeles Department of Water and Power (LADWP), California, Haiwee Penstock Pipeline Replacement EPC Request for Proposal (RFP). This project called for assistance to LADWP in preparation of a RFP and 30% effort level of completion for the design-build of penstock pipeline replacement. Raphael was responsible for leading the pipeline design and hydraulics for the replacement of a portion of the LA Aqueduct No. 1. The existing penstock pipeline was proposed with buried 84-inch inside diameter fiberglass reinforced plastic (FRP) pipeline with 84-inch high performance butterfly valve facility. Approximately 10,000-foot penstock from South Haiwee Reservoir to the existing power plant will be placed with minimum cover and parallel to the existing penstock that was originally constructed in 1927. Hydraulic network analysis for this project was performed using open source EPANET, a public-domain, water distribution system modeling software.

Labor Category

Registered Civil Engineer, Level 3

Office

Las Vegas, NV

Years of Experience

Total: 26

Carollo: 14

Education

BS Civil Engineering, California State University, Long Beach, 1995

Licenses

Professional Engineer, Colorado, Texas

Civil Engineer, Arizona, Nevada, Washington, Washington D.C.

Certifications

Certified, PAC Program Trainer of PACP Users to include Manhole Module, National Association of Sewer Service Companies (NASSCO), May 2010

Certified, ITC Program for CIPP Inspector, (NASSCO), August 2010

Certified, ITC Program for Manhole Rehabilitation Technologies Inspector, NASSCO, January 2013

Greg A. Gould, P.E.

Greg Gould, an Associate Vice President with Carollo, joined the firm in 2007 and has 26 years of experience in civil engineering design, construction, and project management for water distribution systems, gravity sewer and storm collection systems, force main systems, industrial infrastructure, lift stations, pumping stations, condition assessment, trenchless technology applications, and rehabilitation projects. Greg specializes in infrastructure projects with experience covering a wide range of water, wastewater and storm drain infrastructure applications for general, public, and city agencies. His experience includes hydraulic and master plan modeling and design related software. He has designed pipelines ranging from small collector sewers and water distribution lines to major pipelines up to 134 inches in diameter. He is also a certified NASSCO PACP/MACP Trainer.

Relevant Experience

→ Project engineer review for the Eastside Interceptor Section 2 Rehabilitation, Phase 1, for King County, Washington. Project includes the preliminary engineering for the trenchless rehabilitation of approximately 5,000 feet of 96-inch diameter concrete sewer in Renton, WA located between the Boeing Renton Plant and Renton Landing. The preliminary engineering will include the analysis of a sewer bypass system capable of handling up to 70 mgd, cultural resources, environmental studies, including noise analysis, odor control, risk analysis, and project permitting.

→ Project engineer for the Clark County Water Reclamation District's, Paradise Whitney Interceptor (PWI), Package No. 2 project in Las Vegas, Nevada. The need for PWI was first identified as part of the Integrated Facility Master Plan, Wastewater Collection System Modeling effort completed in January 2008 by Carollo Engineers, and subsequently refined by the District. The PWI project will relieve existing capacity deficiencies and improve hydraulic operating conditions for sections of the existing interceptors as well as provide a new 13-mile cross town interceptor capable of conveying flows from the southwestern portion of the Las Vegas Valley Service Area to the District's wastewater treatment plant on East Flamingo Road.

PWI Package No. 2 consists of approximately 27,138 lineal feet of gravity sewer ranging in size from 60 to 84 inch. The project includes traditional cut-and-cover methods of installation as well as bore-and-jack and micro-tunneling trenchless methods under freeways, environmentally sensitive areas, and areas with the potential to cause traffic congestion or disruption to businesses, residences, and the community from construction activities. The pipeline was installed using non-metallic, FRP piping and manhole appurtenances. Services also included construction cost estimating, quality management, environmental assessment, risk management, permitting and utility agency coordination, public outreach, geotechnical investigation, construction sequencing, traffic control, corrosion control, ROW and easement acquisition, detailed design, bid period services, and construction management services.

→ Technical advisor for Sewerage Agency of Southern Marin, California. The project involved wastewater treatment plant improvements as part of the 2016-2020 Five-Year CIP Upgrades including the emergency outfall trenchless rehabilitation repair/replacement project. The emergency outfall project included a technical memorandum and rehabilitation design for approximately 650 linear feet of 30-inch and 36-inch diameter asbestos zinc-clad corrugated metal pipe built in the 1940s. Trenchless technology alternatives evaluation included cured-in-place pipe (CIPP), sliplining, pipe bursting, and horizontal directional drilling (HDD). The project was also located in an environmentally sensitive area where regulatory requirements included coordination with San Francisco Bay Conservation and Development Commission (BCDC), U.S. Army Corps of Engineers, San Francisco Bay Regional Water Quality Control Board, and the California Department of Fish and Wildlife.

Greg A. Gould, P.E.

Professional Affiliations

National Society of Professional Engineers

American Society of Civil Engineers

American Public Works Association

Society of American Military Engineers

Areas of Expertise

Civil engineering

Gravity sewer and storm collection systems

Water distribution systems

Trenchless technology applications

Rehabilitation methods

Bypass pumping

→ Technical advisor for the City of Simi Valley, California, FY 2010-2011 Sanitation Sewer Trunk Rehabilitation Capital Improvements. The project included four separate projects totaling over 9,000 feet of sewer line rehabilitation using cured-in-place pipe (CIPP) for 20-inch and 33-inch sewer pipe. The original pipe material was either reinforced concrete pipe (RCP) or vitrified clay pipe (VCP) gravity sewer. Duties included bypass pumping layout and design with 18-inch HDPE pipe, CIPP design drawings and specs, closed-circuit television (CCTV) review, utility coordination, and coordination with traffic control.

→ Project engineer for the Downtown Interceptor Sewer Rehabilitation (Phase 1) for the City of Las Vegas, Nevada. The project included a fast-track design for the trenchless rehabilitation of approximately 10,915 feet of existing unlined reinforced concrete interceptor pipe consisting of 2,500 feet of 42-inch diameter sewer, 1,200 feet of 45-inch diameter sewer, 850 feet of 48-inch diameter sewer, 1,600 feet of 51-inch diameter sewer, and 3,255 feet of 54-inch sewer with cured-in-place pipe (CIPP) by upstream or downstream inversion and approximately 1,510 feet of 54-inch pipe by slip line method by an upstream and downstream insertion. The project also included diversion structure rehabilitation, development of a temporary bypass pumping of sewage during construction, cleaning and inspection of pipelines, design of a bypass pumping and piping system with 24-inch HDPE pipe, temporary control and handling of sewage, maintaining public health, and control of odor and noise.

→ Project engineer for the City of Las Vegas, Nevada – Downtown Sewer Rehabilitation (Phase 2). The project included condition assessment, rehabilitation design, and engineering services during construction for approximately 6,600 linear feet of interceptor pipe ranging in diameter from 36- to 54-inches. Primary trenchless technology method for rehabilitation was CIPP. The design also included flow monitoring and a practical scheme for diversion and/or temporary bypass pumping of wastewater during construction.

→ Project engineer for the Upper Narrows Emergency Evaluation Project for Victor Valley Wastewater Reclamation Authority (VVWRA) located in Hesperia, California. The project involved the evaluation of rehabilitation/replacement/realignment of the 36-inch Victor Valley Interceptor in the Upper Narrows area due to a rupture in the Mojave River. The line was damaged as a result of a flood event in the river. The study evaluated four alternatives that included repair break(s), lining with cured-in-place (CIPP) or slip lining, remove and replace with a design that could withstand river scour and realignment with a tunnel out of the riverbed. This project forms the basis for VVWRA seeking FEMA financial assistance and this replacement design. Date: 2001, Cost: $25,000; Alt 3 and 4 are $8 million and $17 million, respectively.

→ Project engineer performing the review of the condition assessment report for the Trimble Road trunk sanitary sewer pipes and sewer structures within the City of Santa Clara, California. The project included the identification of specific rehabilitation and replacement needs of over 13,000 LF of sanitary sewer pipes. The sewer included 15-inch and 24-inch diameter siphons, 33-inch and 48-inch diameter gravity sewers, and 49 manholes. The process included the review of the existing sanitary sewer system map, available historical data, sewer line and manhole inspection and evaluation, hydrogen sulfide monitoring, and the preparation of a condition assessment report.

→ Project engineer for the Condition Assessment and Emergency Rehabilitation Design and Construction Project for Victor Valley Wastewater Reclamation Authority, Victorville, California. Carollo investigated 30,000 linear feet of a 27-inch interceptor consisting of vitrified clay pipe (VCP) and steel pipe using CCT and sonar technology. The investigation revealed a failed lining. Carollo prepared a fast-tracked CIPP design based on E-80 loading, and the project was successfully constructed with an ultraviolet (UV) cured CIPP installation. HDPE bypass piping was required to allow rehabilitation.

Labor Category

Draftsperson, Level 2

Office

San Diego, CA

Years of Experience

Total: 36

Carollo: 15

Education

BS Civil Engineering, Bangalore University, India, 1985

Licenses

Engineer-in-Training, California

Areas of Expertise

Computer-aided design (CAD)

3D modeling

Training development

Microstation

AutoCad

Geopak

Triforma and PlantSpace

Microsoft Office and Microsoft Project

Rajesh Bhatia, E.I.T.

Raj Bhatia has 36 years of experience in the engineering field with emphasis in the application of computer-aided design (CAD) and 3D modeling, providing leadership on a variety of civil engineering, infrastructure, water, wastewater, and transportation projects. His experience includes coordination with contractors, planners and engineers on joint venture teams; coordinating CAD workload among the staff; participation in project execution planning, assisting project managers with budgeting and project sheet counts.

Mr. Bhatia is Carollo's CAD leader for the southwest region that works on company-wide standards and procedures for civil engineering projects. He is actively involved with Carollo's Leadership in Smart Production system strategic initiative, working on the design and CAD in 3D.

Mr. Bhatia has developed comprehensive training programs and training manuals for a variety of computer applications. He has specific experience in the application of various state-of-the-art hardware, network systems, and engineering software including: Microstation Versions J7/V8/XM, AutoCad 2007, Inroads, LDD5, Geopak, IRAS-C, 3D applications - ProjectWise, Triforma and PlantSpace; and Microsoft Office, and Microsoft Project.

Relevant Experience

→ CAD leader / coordinator for the Clark County Water Reclamation District, Nevada, Paradise Whitney Interceptor (PWI), Package No. 2 in Las Vegas, Nevada. The need for PWI was first identified as part of the District's Integrated Facility Master Plan Wastewater Collection System Modeling effort completed in January 2008 by Carollo, and subsequently refined by the District. The PWI project will relieve existing capacity deficiencies, improve hydraulic operating conditions for sections of the existing interceptors, and provide a new 13-mile cross-town interceptor capable of conveying flows from the southwestern portion of the Las Vegas Valley Service Area to the District's wastewater treatment plant on East Flamingo Road.

→ CAD leader / coordinator for the As-Needed Engineering Services project for the County of San Diego, CA. The project involved several task orders. Projects included CIPP lining of existing sewer lines, manhole repair and replacement, sewer capacity improvements, and improvements analysis throughout east county San Diego.

→ CAD leader / coordinator for the Ak-Chin Indian Community Water and Wastewater System Improvements, Maricopa, Arizona. This project involved designing the needed infrastructure to support the Community's plans for future residential, commercial, and industrial development, as well as a vulnerability assessment and security master plan. Utilized 3-D visualization tools to communicate design concepts, meet critical schedule and budget constraints, and facilitate the understanding of stakeholders. This $31 million project received the Bentley "Be Inspired" Innovations in Water and Wastewater Treatment Grand Award in October 2010.

→ CAD leader / coordinator for the Victor Valley Water Reclamation Authority, California Scalping Plants using MBR Technology. Project highlights include a remote scalping plant approach with facilities located based on recycled water end users, utilizing a "two-location, "single-plant" strategy for operational consistency and cost-effectiveness, and MBR technology with innovative design features for reduced footprint on a compact site. A 3-D CAD design approach was used to increase visualization and understanding.

→ CAD leader / coordinator for the City of Chandler, Arizona Chandler Heights Recharge project Phase 1. The project developed recharge site, and an integrated, multi-use park facility, including education, passive recreation, habitat, and trails.

Rajesh Bhatia, E.I.T.

→ CAD leader / coordinator for the City of Yuma, Arizona Desert Dunes Water Reclamation Facility Phase 2. Project elements included a second grit chamber, second aeration basin, third secondary clarifier, expanded RAS pumping, second module of tertiary filters, second train of UV disinfection, expanded effluent metering facilities, and on-site treated effluent storage and reclaimed water pumping. Solids are stabilized with aerobic digestion, and effluent is disposed of on-site utilizing percolation ponds for groundwater recharge. Responsible for the 3-D modeling of the aerobic digester building.

→ CAD leader / coordinator for the City of Casa Grande, Arizona Water Reclamation Facility Phase 3 Expansion. This project included a 2.0-mgd expansion of the existing 4.0-mgd facility. The upgrade consists of one additional treatment train, including preliminary screening using step screens, vortex grit removal, nitrification/denitrification in a Carrousel™ basin, secondary clarification, tertiary filtration and aerobic digestion. Responsible for the 3-D modeling of the solids handling building.

→ CAD leader / coordinator for the City of Eloy, Arizona Wastewater Treatment Plant Phase 1A Expansion Headworks Replacement project which involved emergency replacement of the existing headworks design and a new influent pump station, screening facilities, and an in-ground biofilter.

→ CAD leader / coordinator for the Fountain Hills Sanitary District, Arizona Flow Equalization Basin Expansion and Interim Digester Modification project which includes revisions to the aerobic digesters, replacement of blowers and aeration systems in the existing digesters, replacement of the digester diffuser and air piping systems, addition of a new clarifier, addition of a 3200 square-foot storage warehouse building, expansion of the influent flow equalization basin, addition of a third secondary clarifier, and miscellaneous plant and control improvements.

→ CAD leader / coordinator for the City of Phoenix, Arizona 24th Street Water Treatment Plant Granular Activated Carbon Implementation Preliminary Design 24th St. WTP GAC Implementation Preliminary Design project that involved: development of design criteria and alternative evaluations; construction plans and specifications; permit coordination for construction and operations; implementation of CMAR reviews; bid evaluation, and recommendation of contract award. Responsible for 3-D modeling.

→ CAD leader / coordinator for the City of Phoenix and Town of Paradise Valley, Arizona 4J-02 Pump Station Design which involved an upgrade to the domestic service pumping system, including pumps, piping, surge tanks (suction and discharge), and ancillary equipment.

→ CAD leader / coordinator for the City of Goodyear, Arizona Water and Sewer Pipelines Design Build project which involved service to an area north of I-10 freeway and a water pipeline replacement.

→ CAD leader / coordinator for the City of Goodyear, Arizona 145th Avenue Lift Station.

→ CAD leader / coordinator for the City of Prescott, Arizona Airport Area Well No. 2 Design and Construction which involved equipping one of the wells, connection to the water system, utilities, and site development, and managing the overall services under this contract.

→ CAD leader / coordinator for the Metro Water Northwest Central Arizona Plant Water System Cost Estimate Study civil site plans and profiles.

→ CAD leader / coordinator for the Maricopa County Facilities Management, Arizona Buckeye Hills Infrastructure Water System for a new waterline extension to the new Town Hall complex site.

→ CAD leader / coordinator for the City of Surprise, Arizona.

→ CAD leader / coordinator for the City of Tempe, Arizona.

Labor Category

Planner, Level 2

Office

Costa Mesa, CA

Years of Experience

Total: 15

Carollo: 6

Education

BS Civil Engineering, California State Polytechnic University, Pomona, 2007

Professional Affiliations

WateReuse Association

Water Environment Federation

Areas of Expertise

Urban and regional master planning

Recycled water infrastructure

Wastewater treatment plants

Construction management

Cost estimating

Permitting

Amy N. Martin

Amy Martin joined Carollo in May 2014 as a lead planner. She has more than 15 years of engineering project management experience at a leading public agency in Southern California. She has managed large-scale recycled water infrastructure projects, feasibility reviews, database development projects, and coordinated with multiple owners and agencies. Her technical experience also includes recycled water infrastructure, wells, wastewater treatment plants, construction management, cost estimating, and permitting.

Relevant Experience

→ Project engineer and assistant project manager for the City of Banning, California, 2018 Integrated Master Plan. The project includes an integrated approach to potable water, wastewater, and recycled water demand/flow forecasting, hydraulic model updates and model calibration for the potable water and wastewater systems, hydraulic model creation for the recycled water systems, and supply analysis. Infrastructure upgrades for the existing and future systems were evaluated.

→ Assistant project manager and water system master planning lead for the Padre Dam Municipal Water District, California, 2015 Comprehensive Facilities Master Plan. This integrated master plan involves the District's water, wastewater, and recycled water infrastructure. This project includes (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic modeling updates for the water and recycled water systems, development and calibration of a new sewer model, and field condition assessment of key facilities with operations staff. In addition, the feasibility of the wastewater plant expansion for an indirect potable reuse project was evaluated. The findings were combined in a comprehensive capital improvement program (CIP) and water master plan report.

→ Project manager for the ongoing Citywide Wastewater Master Plan Update for the City of Chino Hills, California. This project will address current, near-term, and build-out condition needs to bring the City's current plan up to date. Carollo's services will include CCTV and condition assessment of the current sewer system, developing a comprehensive assessment of collection system capacity, developing a strategy to implement projects in the near- and long-term, and developing a capital improvement plan (CIP) through 2045.

→ Water system master plan lead for the City of Oceanside, California, 2015 Integrated Water, Wastewater, and Recycled Water Master Plans. This project includes (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and wastewater systems, and development of a new recycled water system model. As part of the model calibration process, coordination with operations staff was conducted. In addition, the infrastructure needs of the development of the agricultural Morro Hills area, including soil percolation testing for feasibility analysis of septic tanks, were evaluated. Closed-circuit television of 60 sewer and 30 water pipeline segments were conducted. The findings were combined in a comprehensive CIP and water master plan report.

→ Planner for the Water System Master Plan Update and On-Call Engineering Support for Mesa Water District, California. The Master Plan included demand projections, water supply analysis, hydraulic model updates and calibration, extensive field condition assessment, and development of an optimization model. As part of the field condition assessment, all water system facilities were visited. In addition, 2 miles of non-destructive pipeline testing was done. The findings of the modeling and condition assessment analysis were combined in a comprehensive CIP and water master plan report. Since the development of the master plan, Carollo has provided support to Mesa on a variety of projects. This includes on-call engineering services as well as GIS support.

→ Project engineer for On-Call Hydraulic Modeling Services for the expansion of the

Amy N. Martin

Los Angeles International Airport (LAX). Various fire flow scenarios were analyzed using the hydraulic model developed by Carollo. The modeling results were used to advise the design team on layout and sizing of pipelines, valve configuration, and residual pressure.

→ Water demand and flow forecasting task lead for the City of Los Angeles, California, One Water LA 2040 Plan. The Plan is a collaborative effort of the LA Sanitation (LASAN) and LA Department of Water and Power (LADWP) that takes a holistic approach to consider all types of water as "One Water." The Plan is developed through a stakeholder driven process and will guide the City with strategic and multi-billion dollar decisions for water infrastructure projects to make LA a more water resilient and sustainable City.

→ Project manager for a large recycled water infrastructure project for Inland Empire Utilities Agency (IEUA). This $30-million project increased the availability of recycled water to direct use customers and groundwater recharge basins by 10,000 acre-feet per year (AFY) while furthering the conservation goals within the region. The project included over five miles of 36-inch pipeline, a 3.5-MG reservoir conversion, and a 1,200-horsepower pump station.

→ Project planning lead for the Phase 1 (2016) and Phase 2 (2018) Recycled Water Feasibility Study to increase the region's water supply with the sustainable and reliable use of recycled water. Interconnection between the City of Pomona, Monte Vista Water District, and Inland Empire Utilities Agency were evaluated to develop water supply alternatives that would provide IEUA with regional water supply benefits. As part of this evaluation, seasonal flow data from multiple supply sources with variable water quality was analyzed, regulatory permit impacts were reviewed, groundwater impacts were evaluated, and advanced treatment alternatives were assessed. The final selected alternatives were analyzed utilizing InfoWater models from the City of Pomona and IEUA. Upon completion of the Phase 1 and Phase 2 studies, a Title XVI grant report was submitted to USBR to obtain project funding.

→ Project engineer for the City of Glendale, California, 2016 Water Master Plan. This project includes potable and recycled water demand forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems using H_2OMap. In addition, the infrastructure upgrades for the existing and future systems, including fire flow capacity upgrades, were evaluated. The findings were combined in a capital improvement program (CIP) and water master plan report.

→ Project engineer for the University of California, Irvine, California, Water and Recycled Water Master plan. The project includes the creation of water system and recycled water system models, as well as a blueprint for additional facilities for UC Irvine to handle their projected growth and development on campus. This is the first water and recycled water master plan for UC Irvine.

→ Project engineer for the Moulton Niguel Water District, California, Recycled Water Master Plan. This project includes recycled water demand forecasting, modeling, and alignment alternatives analysis to evaluate the most cost-effective system expansions. In addition, a turf replacement analysis tool was developed and a field condition assessment of existing recycled water system facilities was conducted.

→ Project engineer for the City of Banning, California, 2018 Atwell Development Developer Impact Study. This project included the development of a trigger analysis tool that calculated incremental demands by phase and pressure zone. This tool was utilized to identify when storage, pump station, and supply projects would be required within the City. A hydraulic modeling analysis was also performed for the sewer and potable water systems to identify distribution system deficiencies that would occur within the near- and long-term planning horizon. The results were summarized in a Technical Memorandum.

Labor Category

Registered Civil Engineer, Level 2

Office

Reno, NV

Years of Experience

Total: 17

Carollo: 16

Education

BS Civil Engineering, California State University, Fresno, 2006

Licenses

Civil Engineer, Nevada, California

Professional Affiliations

American Water Works Association

California Water Environment Association - Central San Joaquin Section

Areas of Expertise

Master planning

Hydraulic modeling

Sewer system management planning

Urban water management planning

GIS

Ryan F. Orgill, P.E.

Ryan Orgill joined Carollo in 2005 and has experience in master planning, hydraulic modeling, sewer system management planning, urban water management planning, and geographic information systems (GIS).

Relevant Experience

→ Modeling lead for the Sanitary Sewer Master Plan Update for the City of Torrance, California. The City retained Carollo to develop a geographic information system (GIS) based sewer system hydraulic model and to update the SSMP. As part of the SSMP development process, Carollo conducted a temporary flow monitoring program to assist in the development of design flow criteria and to correlate actual sewer system flows to the hydraulic model predicted flows. Flow monitoring data are used to calibrate the wastewater collection system hydraulic model. Carollo developed the City's hydraulic model using InfoSWMM software.

→ Hydraulic modeling lead for the City of Modesto, California, Wastewater Collection System Master Plan. The hydraulic model was originally constructed in H2OMap Sewer as part of the previous master plan. In advance of the wastewater collection system master plan update, the City contracted with Carollo to convert the hydraulic model from H2OMap Sewer to the more advanced InfoSWMM platform. Responsibilities as part of the master plan update included updating and recalibrating the InfoSWWM hydraulic model, which involved more sophisticated simulation of storm drainage system cross connections within the InfoSWMM model. Other responsibilities include development of existing and future wastewater flow projections, improvement alternatives to mitigate existing capacity deficiencies and to service future growth, and a capital improvement plan.

→ Project engineer for the City of Fresno, California, Collection System Master Plan. Responsible for hydraulic model update and calibration of the City's all-pipe sewer system hydraulic model under dry and wet weather conditions, development of improvement projects to mitigate capacity deficiencies, and development of a capital improvement plan for the City.

→ Hydraulic modeler for City of Fresno, California, Fruit Avenue Sewer Rehabilitation Design, which included 3,600 feet of 48-inch pipe and large junction structures. Responsible for site investigations; utilities search; coordination of geotechnical and surveying efforts; development of plans, specifications, and cost estimates; bidding support; and construction support.

→ Project manager for the South Tahoe Public Utility District, California, Sewer System Hydraulic Model. This is an ongoing project. No changes or updates have been made to the District's wastewater collection system model that was created 10 years ago using Innovyze InfoSewer hydraulic modeling software. In the last decade, additional infrastructure construction and collection system changes have been made. This contract allowed for on-call hydraulic modeling support to evaluate the existing model, identify potential improvements, and convert the model to InfoSWMM.

→ Engineer for the City of Oceanside, California, Sewer System Master Plan. Responsible for system evaluation, hydraulic modeling, development of the Sewer Master Plan report, and custom model training for City staff.

→ Project engineer for the Elsinore Valley Municipal Water District, California, Sewer System Management Plan, which included development and review of all applicable SSMP requirements, including a system evaluation and capacity assurance plan.

→ Project engineer for the City of Tulare, California, Sewer System Management Plan, which included development and review of a system evaluation and capacity assurance plan, overflow emergency response plan, and a fats oils, and grease control plan.

→ Staff engineer for the Port of Oakland, California, Phase I Sewer System Management Plan, which included development of a Port-specific overflow emergency response plan, a fats oils, and grease control

plan, sanitary sewer use ordinances, operations and maintenance recommendations, and sanitary sewer design standards.

→ Project engineer for the City of Hanford, California, Sewer System Management Plan, which included development or review of all applicable SSMP requirements, including an overflow emergency response plan and a review of the City's most recent sewer system master plan, design standards, and sewer ordinances.

→ Project engineer for the City of Pismo Beach, California, Sewer System Management Plan, which included development of a fats oils, and grease control plan.

→ Project engineer for the City of Hughson, California, Sewer System Management Plan, which was developed as part of the City's Water, Sewer, and Storm Drainage Master Plan Project. This project included development of many of the SSMP elements, including a system evaluation and capacity assurance plan, an overflow emergency response plan, and a fats oils, and grease control plan.

→ Project Engineer for the City of Morro Bay, California, OneWater Morro Bay Plan. Responsible for overseeing the development of hydraulic models of the water distribution, sewer collection, and storm drainage systems. Improvement projects and a capital improvement plan were developed to mitigate capacity deficiencies.

→ Project engineer for the Washoe County, Nevada, Pleasant Valley Interceptor (PVI) Alternatives Evaluation Study. The PVI was to be constructed in four Reaches, ultimately connecting the South Truckee Meadow Water Reclamation Facility (STMWRF) to Damonte Ranch Parkway, Dorothy Town Lift Station and Pleasant Valley. Reach 3 was planned as a gravity interceptor and Reach 4 will provide sewer service to approximately 1,500 homes. The STMWRF Facility Plan Update included planning and wastewater collection system hydraulic modeling for the STMWRF service areas. Additional work efforts included updating the County's hydraulic model to InfoSWMM; providing a force main risk assessment, and pump station capacity evaluation; interceptor, pump station, and forcemain preliminary design; detailed design; and preparing construction contract documents for the Pleasant Valley Interceptor Reach 3, which included gravity conveyance and the Geiger Lift Station and associated force main. Responsible for using the County's collection system hydraulic model to develop alternatives for Reach 3 and 4 of the proposed PVI.

→ Project manager for the Truckee Sanitary District, California, 2017 Hydraulic Modeling Assistance. The District hired Carollo to provide assistance with the development and calibration of three of their four existing wastewater collection system models. The models are being calibrated to peak dry and peak wet weather flow conditions using flow monitoring data from the 2016 and 2017 storm season.

→ Project engineer for the City of Oakland, California, Sanitary Sewer Collection System Master Plan. Responsible for construction of the City's hydraulic computer model using the InfoSWMM modeling software package, model calibration, capacity analysis, development of improvement projects to mitigate capacity deficiencies, capital improvement cost estimate, and preparation of a technical report documenting the results of the analysis for submission to the U.S. Environmental Protection Agency in accordance with the City's Stipulated Order. Construction of the City's hydraulic model included digitization of the major collection system facilities into the InfoSWMM hydraulic modeling software program, with several complex overflow structures and connections to the East Bay Municipal Utility District (EBMUD) interceptor. The model was calibrated to 140 flow monitoring locations for both dry and wet weather flow conditions, approximately half of which recorded flow at City connection points to the EBMUD interceptor system.

→ Collection system engineer for the West County Wastewater District, California, District-Wide Master Plan. Responsible for preparation and calibration of a dynamic collection system model to evaluate wet weather storm events to simulate existing flow conditions.

Labor Category

Registered Civil Engineer, Level 1

Office

Los Angeles, CA

Years of Experience

Total: 8

Carollo: 8

Education

BS Civil Engineering, California State Polytechnic University, Pomona, 2012

Licenses

Civil Engineer, California

Professional Affiliations

American Society of Civil Engineers

California Water Environment Association

Areas of Expertise

Civil engineering

Hydraulic modeling

Master planning

3D modeling

Pump station, pipeline, and reservoir design

Ryan M. Hejka, P.E.

Ryan Hejka is a civil engineer with four years of professional experience. He is specialized in water and recycled water system hydraulic modeling and master planning projects and is skilled in the use of a wide variety of hydraulic modeling packages including InfoWater, H_2OMAP, Mike Urban, and Water GEMs. In addition, he has extensive experience with ArcGIS and proficient in multiple programming languages that he utilized to build several customized water optimization models and tools for water agencies. Recently, Ryan has been involved in designing pump stations, pipelines, and reservoirs. In addition, he has extensive experience with AutoCAD and Sketchup and has developed models and tools to visualize the layouts of facilities in 3D.

Relevant Experience

→ Staff engineer/modeler for the 2015 Comprehensive Facilities Master Plan for Padre Dam Municipal Water District, California. This integrated master plan involved the District's water, wastewater, and recycled water infrastructure. The project included (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems, development and calibration of a new sewer system model, and field condition assessment of key findings. He was responsible for the modeling of the existing and future infrastructure. The feasibility of the wastewater plant expansion for an IPR project was also evaluated. The findings were combined into a comprehensive CIP and water master plan report.

→ Assistant engineer for the Westward Ho Channel Siphon project. He performed the hydraulic analysis and sizing of the 6" HDPE pipes inside a 20" DIP casing to connect two manholes on either side of the storm drain channel. He performed the detailed design of the manholes and the sewer siphon.

→ Assistant engineer for the planning, design, and construction services for the gravity sewer, lift station, and force main within approximately 0.5 square miles surrounding the Diamond Stadium in Lake Elsinore. The influent piping into Diamond Regional Lift station ranges from a 48-inch diameter pipeline to tributary pipelines as small as 8-inch diameter. The effluent pipeline was a dual system with a 24-inch diameter pipeline and a 36-inch diameter pipeline. The ultimate capacity of the lift station is designed at 20.0 mgd. His role involved using Elsinore Valley's Hydraulic model to analyze sewer flows to properly size and phase the development of the sewer pipelines into and out of the lift station. Additionally, he sized the wet well, pumps, and force main in the lift station. He was also involved in the design of the civil, structural, and mechanical drawings of the lift station and yard piping.

→ Staff engineer/modeler for the 2015 Integrated Water, Wastewater, and Recycled Water Master Plans for the City of Oceanside, California. He was responsible for coordinating data gathering, supply analysis, and preparing the report on this $1.2 million assignment. The project involved water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and wastewater systems, and development of a new recycled water system model. In addition, the infrastructure needs of the development of the agricultural Morro Hills area, including soil percolation testing for feasibility analysis of septic tanks, were evaluated. CCTV of 60 sewer and 30 water pipeline segments was conducted. The findings were combined in a CIP and water master plan report.

→ Staff engineer for the 2013 Integrated Water Master Plan for the City of Riverside, California. He was responsible for identifying potential stormwater recharge sites, sizing detention basins, sizing recharge site infrastructure, and preparing the report.

→ Assistant engineer for The Downtown Water Recycling Project (WRP) involves constructing and operating approximately 9 miles of new 16-inch recycled water pipeline. He used the city's hydraulic model to size and route the pipeline. This project has several challenges such as construction in a

congested downtown street, permitting, tunneling under Caltrans, Metro, and other rights-of-way.

→ Project engineer for the on-call hydraulic modeling for the City of South Pasadena, California. The project consisted of various hydraulic modeling evaluations to the hydraulic impact and new water system infrastructure requirements when new developers are connected to the existing distribution system. The model that was developed and calibrated during a previous project was utilized for these studies.

→ Task engineer for the Mass Balance Model for the One Water LA 2040 Plan, California. This project looks at the integration of all of the City's water assets. He was responsible for the development of a custom mass balance planning model that tracks all major flows in the City of Los Angeles in annual time steps from 2015 through 2020 under normal, wet, and dry year conditions. The modeled flow components include imported water, groundwater, wastewater, recycled water, stormwater, and discharges to the LA River and ocean. This model also includes a cost module and will be utilized in the alternatives analysis of the One Water LA 2040 Plan.

→ Staff engineer for system-wide hydraulic model development for the Metropolitan Water District of Southern California. As subconsultant to DHI, Carollo assisted in the development, calibration, and validation of four separate hydraulic models that collectively cover Metropolitan's entire conveyance system. The models were developed from existing GIS data in Mike Urban modeling software. Ryan assisted in the model development, model calibration, model validation, and model development documentation.

→ Staff engineer/modeler for the existing and future system supply and storage study for the Greenbelt pipeline system. The Greenbelt pipeline system is a main recycled water supply line of the Los Angeles/Glendale Water Reclamation Facility. He was responsible for determining the future infrastructure need of the storage and conveyance pipelines for customers along this pipeline.

→ Staff engineer for a confidential client in California. This project included the use of the Los Angeles' recycled water hydraulic model to conduct system analysis for the greenbelt expansion. Hydraulic modeling analysis was conducted to evaluation system pressures, storage needs, and pipeline sizing to serve future demands from the LA-Glendale Water Reclamation Facility. The findings of this study were presented in a report.

→ Staff engineer/modeler for the Mike Urban Model training, and Wastewater Master Plan for the City of Tacoma, Washington. He was responsible for preparing model training documentation, as well as conducting a one day model training for the City. Additionally, he is assisting other Carollo modelers with advanced support of the Mike Urban modeling software.

→ Staff engineer/modeler for the on-call hydraulic modeling services for the expansion of the Los Angeles International Airport (LAX), California. Various fire flow scenarios were analyzed using the InfoWater hydraulic model developed by Carollo. He was responsible for updating the hydraulic model with their current facilities, hydraulic model analysis of pipeline velocities and residual fire flow pressures, and providing future infrastructure recommendations. The modeling results were used to advise the design team on layout and sizing of pipelines, valve configuration, and residual pressure.

→ Staff engineer/modeler for the water and fire water system analysis for the Utilities Infrastructure (UIP) master plan for LAX. The UIP included analyzing future water demand projections based on passenger counts. As part of this effort, As-Builts were utilized to update the existing LAX hydraulic model. Alternatives were then developed in the model to analyze existing and future water and fire water system deficiencies. Improvement projects were then prioritized into a phased capital improvement program (CIP) within the UIP.

Labor Category

Computer Personnel, Level 2

Office

Los Angeles, CA

Years of Experience

Total: 20

Carollo: 5

Education

MGIS, Penn State University, 2017

BA Geography, California State University, Northridge, 2001

AA Geology, Pasadena City College, 1997

Certifications

Certified Geographic Information Systems Professional (GISP), Geographic Information Systems Certification Institute, 2012

Areas of Expertise

Geographic Information Systems (GIS)

Geospatial GIS analysis

Geodatabase design and optimization

Spatial analysis

Jackie M. Silber, GISP

Jackie Silber is a geographic information systems (GIS) lead with 20 years of professional experience in GIS and technical training. Her experience includes geospatial GIS analysis for water resource planning, environmental remediation sampling, and demographic forecasting projects. Her GIS skills focus on geodatabase design and optimization, manipulation and conversion of projections, CAD and KML to GIS conversion, spatial analysis, automation of repetitive analysis using Model Builder and Python, and creation of cartographic figures.

Relevant Experience

→ GIS specialist for the City of Banning, California. As part of the Integrated Master Plan, Ms. Silber developed figures representing the existing recycled water system as well as the proposed non-potable reuse system.

→ GIS specialist for the Sanitary Sewer Master Plan Update for the City of Torrance, California. The City retained Carollo to develop a geographic information system (GIS) based sewer system hydraulic model and to update the SSMP. As part of the SSMP development process, Carollo conducted a temporary flow monitoring program to assist in the development of design flow criteria and to correlate actual sewer system flows to the hydraulic model predicted flows. Flow monitoring data are used to calibrate the wastewater collection system hydraulic model. Carollo developed the City's hydraulic model using InfoSWMM software.

→ GIS specialist for the Padre Dam Municipal Water District, California, 2015 Comprehensive Facilities Master Plan. This integrated master plan involves the District's water, wastewater, and recycled water infrastructure. This project includes (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic modeling updates for the water and recycled water systems, development and calibration of a new sewer model, and field condition assessment of key facilities with operations staff. In addition, the feasibility of the wastewater plant expansion for an indirect potable reuse project was evaluated. The findings were combined in a comprehensive capital improvement program (CIP) and water master plan report.

→ GIS specialist for the University of California, Irvine, Recycled Water System Analysis and Capital Improvement Program. Ms. Silber worked with hydraulic modelers to illustrate future system pressure deficiencies and pipeline velocities.

→ GIS specialist for the City of Medford, Oregon Sanitary Sewer Master Plan. To help the City anticipate future needs, Ms. Silber, developed figures illustrating the locations of high I/I due to sewer trunk line deficiencies. Also investigated existing and future land use changes per parcel as part of a wastewater capital charge per equivalent residential unit analysis.

→ GIS lead for the GIS and Hydraulic Model Hosting and Maintenance Services project for Mesa Water District, California. Carollo is providing ongoing GIS support services until 2025.

→ ArcGIS online administrator for the City of Reno, Nevada, Northwest Model Expansion and Capacity Analysis and Master Plan Story Map project.

→ GIS specialist for the San Gabriel Valley Water Company Water System Master Plan Update, California. In addition to developing figures illustrating system deficiencies, Ms. Silber also developed a Python script to loop through an 11 million record table and sum the total water demands for every customer.

→ GIS specialist for the Hillsborough County, Florida Capital Improvement Program. As part of the on-call potential Septic Replacement/Water Line Extension Program, Ms. Silber performed geospatial analysis to determine the number of septic parcels within wellhead protection and high hazard coastal areas. Additionally, produced figures of wastewater facilities and parcels served by current infrastructure.

Jackie M. Silber, GISP

→ GIS specialist for a Long-Range Wastewater Management Plan for the City of Renton, Washington. As part of the pipe risk approach, Ms. Silber developed an ArcGIS-based criticality and vulnerability model. The model identified and prioritized critical assets in close proximity to key infrastructure or that are susceptible to failure.

→ GIS specialist for the U.S. Agency for International Development (USAID) Infrastructure Needs Program Bulk Water Supply Systems Master Plan (Southern West Bank, Palestine). As part of a team responsible for defining the future water facility needs in the southern West Bank, developed GIS data, traveled to the West Bank, and presented the data to USAID and other key stakeholders. With the help of bilingual staff, also conducted a workshop for GIS specialists to review the data developed, which included three geodatabases and a file system of existing and recommended water and wastewater infrastructure. Pipeline data was imported from AutoCAD and created from heads up digitizing on aerial photography and was compared against the hydraulic schematic. Assisted project managers with locating potential wells/wellfields based on topology, cone-of-depression, and other hydrologic constraints. Additionally, elevation profiles from ground surface data were created for proposed regional pipelines. Geologic scanned imagery was georeferenced to a common projection system and a file system was created to maintain organization. Also served as internal project coordinator for the final deliverable.

→ GIS specialist for the Los Angeles County Waterworks District 29, California, Water System Master Plan. Compiled and developed a water infrastructure geodatabase and geocoded the water billing data to correlate metered usage data with parcels. Using current land use and future zoning parcel data, analyzed water demands for private customers. Also created pressure zones and allocated commercial demands for fire flow in InfoWater.

→ GIS specialist for on-call GIS services for the City of Westminster Water Department, California. To provide current updates to the District's GIS data, Ms. Silber cleaned, projected, and updated the City's valves and hydrant attributes. Additionally, she cleaned the pipeline topology and created a map book for field personnel. The data was delivered and used as part of the training for water district personnel on using maintaining the map book.

→ GIS specialist for the Stormwater Capture BMP Site Suitability Analysis for the Upper San Gabriel River Enhanced Watershed Management Program, California. Using a uniform grid, performed a multi-criteria decision analysis of valued and binary constraints to identify potential stormwater BMP sites in the Watershed as part of the Los Angeles County MS4 Permit Compliance. The constraints were scored and weighted to rank the locations. Iterative tasks such as classifying the locations were automated using python scripts.

→ GIS specialist for the Mission Creek and Garnet Hill Subbasins Water Management Plan for the Coachella Valley Water District, Desert Water Agency, and Mission Springs Water Districts, California. As part of a collaborative groundwater replenishment program, analyzed population and other demographic projections and mapped the watersheds and multi-habitat conservation areas.

→ Lead cartographer for the Los Angeles Department of Water and Power (LADWP), California, Owens Lake Groundwater Evaluation Program, which is a collaborative program between LADWP and the Inyo County Water Department to evaluate use of groundwater for dust mitigation on Owens Lake. Provided GIS support for well location identification, and was responsible for managing the GIS data for the project. Working with hydrgeologists and modelers, mapped surface geology, groundwater contours, consumptive use, and water quality surrounding the Owens Lake Bed. Also produced well log illustrations.

Labor Category

Registered Civil Engineer, Level 4

Office

Broomfield, CO

Years of Experience

Total: 25

Carollo: 3

Education

BS Civil Engineering, South Dakota School of Mines and Technology, 1995

Licenses

Professional Engineer, Colorado

Professional Affiliations

Invited Member of the Sage Timberline Industry Advisory Board

Areas of Expertise

Water and wastewater engineering

Cost estimating

Jason Rozgony, P.E.

Jason Rozgony has more than 25 years of experience in the water and wastewater industry, the majority of which has been full-time cost estimating for engineering projects and "at-risk", CMAR, design-build, and hard bid projects. He has been responsible for the development of corporate estimating standards, and has managed estimating staff across the United States. Jason has prepared discipline-level estimates and has led complete estimates for more than 250 design and fixed price construction projects requiring collaboration with design engineers, vendors, and subcontractors from preliminary through final design.

Relevant Experience

→ Estimator for the City of Richmond, California, Veolia Wastewater Treatment Plant Critical improvement project. Carollo provided design and engineering services during construction for Veolia Water's Critical Improvements to the Richmond WWTP. The project included grit removal, fine screen, and odor control system upgrades at the headworks; aeration basin diffuser improvements; secondary effluent splitter box modifications; a new blower building; and secondary clarifier mechanism replacement for early implementation of critical facility components in parallel with the Facility Plan.

→ Estimator for the City of Sunnyvale, California, Water Pollution Control Plant Secondary Treatment Facilities Design.

→ Cost estimator for the City of Westminster, Colorado, North Huron Interceptor. Jason was responsible for AACE cost estimating consistent with design level submittals for the detailed design and routing of the under-capacity sections of sewer interceptor, resulting in approximately 7,400 linear feet of new interceptor piping.

→ Estimator for the Water Quality Improvements – Phase III, City of Odessa, Texas, $154 million.

→ Estimator for the Northwood Water Treatment Plant – Phase II Improvements, City of North Miami Beach, Florida, $30 million.

→ Estimator for the Wemlinger CT Chamber Project, City of Aurora, Colorado, $19 million.

→ Estimator for the Pellet Softening, Disinfection, and Facility Improvements Project, South Adams County Water and Sanitation District, Colorado, $42 million.

→ Estimator for the Avon Wastewater Treatment Facility Nutrient Upgrades, Eagle River Water and Sanitation District, Colorado, $43 million.

→ Estimator for the City of Kansas City Water, Missouri, Blue River Wastewater Treatment Plant Biosolids Upgrades. This $155-million project includes the preliminary and conceptual design of a new THP system and necessary improvements for processing biosolids from three of the City's wastewater treatment facilities. Project included providing assistance to the City for procurement strategy development, packaging evaluations, development of preliminary design of the THP system, comprehensive evaluation of proposal submittals, and negotiation of a long-term service contract.

→ Estimator for the North Texas Municipal Water District, Texas, South Mesquite Regional Wastewater Treatment Plant Solids Handling Improvements. The project involved providing a new solids dewatering facility to process solids for the current 33 mgd plant capacity and including consideration for future equipment to process solids for the 41 mgd plant capacity.

→ Estimator for the Filtration Building Improvements, City of Las Vegas, Nevada, $20 million.

→ Estimator for the City of Cape Coral, Florida, Southwest Water Reclamation Facility Biosolids Facility. Project included the construction of a Biosolids Thermal Drying Facility at the Southwest Water Reclamation Facility (WRF). Responsibilities included cost estimate development, subcontractor and vendor solicitation and evaluation, and final project cost determination.

→ Cost estimator for the City of Salem, Oregon, Geren Island WTP Improvements.

Jason Rozgony, P.E.

Provided cost estimating for a $39 million project delivered through a CM/GC method to construct a new ozone facility.

→ Estimator for the Water Reclamation Facility Improvements, City of Niles, Ohio, $51 million.

→ Estimator for the Lancaster Water Reclamation Plant Expansion – Phase I, County Sanitation Districts of Los Angeles County, California, $120 million.

→ Estimator for the West Seattle and Maple Leaf Reservoirs, Seattle Public Utilities, Washington, $66 million.

→ Estimator for the Peace River Manasota Regional Water Supply Authority, Florida, Peace River Reservoir Expansion. This $45-million project included the construction of an earthen reservoir.

→ Estimator for the Point of the Mountain Water Treatment Plant, Metropolitan Water District of Salt Lake and Sandy, Utah, $81 million.

→ Ft. Polk North and South Wastewater Treatment Plants, American Water, Louisiana, $64 million.

→ Rio Tinto Holden Mine Reclamation and Water Treatment Facility, Washington, $23 million.

→ Water Reuse Facility, Pueblo of Santa Ana, New Mexico, $17 million.

→ Central Treatment Plant Upgrade and Expansion, City of Tacoma Department of Public Works, Washington, $74 million.

→ Lead estimator for the Berl L. Handcox, Sr. Water Treatment Plant (formerly Water Treatment Plan No. 4), City of Austin, Texas. While with a previous firm, Jason served as the lead construction cost estimator for the $150 million project located in located in Austin, Texas. Major elements of work included construction of clarifiers, gravity filters, sludge facilities, maintenance and administration buildings, pump stations, and clearwells. Jason collaborated with procurement staff to prepare the subcontractor scopes of work and solicitation documents, led the internal estimating effort, and completed all of the bid evaluations and GMP development.

→ Southeast Treatment Plant Biosolids Improvements, San Francisco Public Utilities, California, $1.1 billion.

→ Next Level Treatment, City Spokane, Washington, $126 million.

→ Water Treatment Facility Expansion, Town of Eagle, Colorado, $23 million.

→ Wastewater Pollution Control Center, City of Fremont, Ohio, $57 million.

→ Hillcrest Reservoirs and Pump Station, Denver Water, Colorado, $100 million.

→ Phase A Expansion, Upper Blackstone Water Pollution Abatement District, Massachusetts, $23 million.

→ Estimator for the Thomas P. Smith Water Reclamation Facility Expansion, City of Tallahassee, Florida, $170 million. Responsibilities included managing the estimating team during the internal cost estimates preparation for the all of the work and completing subcontractor and vendor bid analysis, risk analysis, and other pricing reviews. In addition to traditional estimating, prepared Value Engineering (VE) estimates at multiple locations throughout the facility. Several of the VE concepts were actualized resulting in a significant savings to the overall project costs.

→ Wastewater Treatment Plant Expansion, North Davis Sewer District, Utah, $90 million.

→ Wastewater Treatment Facility, Trinity River Water Authority, Texas, $196 million.

→ Lake Texoma Water Treatment Plant Expansion, City of Sherman, Texas, $24 million.

→ PAR 1225 South Headworks and Grease Processing Improvements, Metro Wastewater Reclamation District, Colorado, $52 million.

→ Water Storage Improvements, City of Avon Lake, Ohio, $23 million.

→ Wastewater Treatment Plant Expansion, City of Louisville, Colorado, $27 million.

Labor Category
Project Manager

Years with AZTEC Engineering
1.5 years

Years with Other Firms/Agency
25+ years

Education

- M.S., Geology, University of Wyoming
- B.S., Geology, University of California Los Angeles (UCLA)

Training

- U.S. Bureau of Land Management
  Visual Impact Analysis/Visual Resources Management

Areas of Expertise
Liz has extensive experience managing linear projects, including successfully delivering environmental clearance for new and replacement pipeline (oil, gas, water, sewer, underground utilities), transportation (roadway, bridges, and rail), and transmission line programs/projects across the western U.S.

Liz specializes in identifying project approaches and mitigation solutions that have resulted in reducing the construction schedule by half on one project and cost savings of more than $10 million each on two separate linear projects in California.

AZTEC TYPSAGroup

Liz Cutler

Senior CEQA/NEPA and Permitting Specialist

Liz Cutler is a Senior Project Manager and CEQA/NEPA/ Permitting Specialist with more than 25 years of experience in federal and state environmental scoping, siting, licensing, permitting, compliance during construction, restoration, and mitigation on simple-to-complex federal, state, and local projects in California, Nevada, Utah, Colorado, Wyoming, Idaho, Arizona, Alaska, Hawaii, and across the US. Liz also manages obtaining and complying with federal and state permitting regulations, including Federal and California Endangered Species Act, Section 106 of the National Historic Preservation Act and Native American Graves Protection and Repatriation Act, Paleontological Resources Preservation Act, Clean Air Act, Federal Consistency Determination, Coastal Zone Management, and Section 4(f) and 6(f). She brings significant experience managing high-profile, multi-faceted projects in the pipeline (oil, gas, water, sewer, underground utilities), transportation, rail, power (generation and transmission), renewable energy (solar and wind), water, mining, Department of Defense, and nuclear markets. Liz has a demonstrated record of developing innovative environmental, siting, construction, and mitigation solutions for projects in extreme environments (high desert, high-mountain, extreme terrain, and remote locations) and within constrained right-of-way and on two separate projects, saving her clients more than $10 million.

RECENT PROJECTS AND PROGRAMS

Western Municipal Water District - Cannon Pump Station Project – 2020 – present | Environmental Project Manager and Senior Technical Consultant.

Liz is managing the preparation of a California Environmental Quality Act Addendum for WMWD, who is the lead CEQA agency. WMWD previously was a Responsible Agency for the Santa Ana Conservation and Conjunctive Use Project Joint Projects Environmental Impact Report (Inland Empire Utilities Agency 2019) that provided initial clearance for the project. The updated elements of the Cannon Pump Station Project include conveyance pipeline, vaults, emergency generator, realigned access road, and antenna. Support also includes continued California Native American coordination, special-status flower plant survey,

Section 1602 permit, and Section 404 permit. Recently, Liz successfully helped WMWD obtain a Section 404 Jurisdictional Determination of No Jurisdiction under the New Navigable Waters Protection Rule (EPA, 2020) from the U.S. Army Corps of Engineers for a swale that conveys across the pump station project site.

Southern California Edison Capital Improvement Program - Ventura, Los Angeles, Kern, Riverside, San Bernardino Counties, CA and Clark County, NV – 2006 – 2018 | Project Manager and Technical Specialist

Liz managed and provided CEQA/NEPA and permitting support to SCE on more than 19 transmission, distribution, substation, coal-fired and nuclear generating station projects during siting, licensing, permitting, preconstruction, construction, post-construction, mitigation/ restoration, and demolition/decommissioning project phases. Activities included environmental project execution plan, alternatives siting and screening; project and alternatives descriptions; National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and proponent's environmental assessments (PEAs) preparation and review, including air quality, air quality, agriculture and forestry, biological resources, cultural and paleontological resources, geology, soils, minerals, seismic, hazards and hazardous materials, land use, noise, hydrology, geohydrology, floodplains/floodways, water quality, wetlands, population, housing, environmental justice, public services and utilities, recreation, traffic and transportation, wildland fires, visual resource, and cumulative impacts analysis; environmental mitigation concepts and design; project modification reports, mitigation plans, notice-to-proceed requests, and variance requests; environmental compliance monitoring and reporting during construction; federal and state agency permitting consultation; restoration and mitigation implementation, worker environmental awareness and safety training, design and development of the online Field Reporting Environmental Database, photo documentation and photojournalism, lessons learned and best practices training; California Public Utilities rate case support; and preparation of environmental legal testimony. Also supported obtaining environmental permits and clearance under federal (Section 401, Section 402, Section 404, Section 106, National Pollutant Discharge Elimination System (NPDES), USFS Special Use Permit, Biological Opinion, Air Quality Conformity Determination), State (Section 1602, Section 2081 – Take Permit, Section 402, and CPUC 131-D), and local regulations. Additionally, developed White Papers (e.g., Connected Action/Cumulative Effects, Visual Resources, Rotor-wash Dust Suppression, Noise Thresholds for Threatened and Endangered/ Special Status Species, California Energy Commission Licensing Approach. Identified project activities, approaches, and alternative mitigation that saved SCE more than $10 million on one project.

Federal Highway Administration - Central Federal Lands Highway Division (FHWA – CFLHD), Programs and Projects - CA, NV, AZ, UT, NE, HI – 2004 – 2018 | Project Manager and Environmental Technical Specialist

Liz managed and worked on 24 Federal Highway Administration – Central Federal Lands Highway Division (FHWA-CFLHD) task orders including serving as the Environmental Lead for the California Federal Land Access Program (FLAP) for Truckee River Bridge and Meeks Bay, Lake Tahoe, and USFWS Don Edwards National Wildlife Refuge; Nevada FLAP for SR 28, Lake Tahoe, NV, Tonto National Forest Bridges Design-Build, AZ, Beaver to Junction Road Improvement, Fishlake National Forest, UT, Sevenmile-Gooseberry Road Realignment, Fishlake National Forest, UT, Kyle and Lee Canyon Roads, BLM and USFS, Las Vegas, Clark County, NV, as well as the Environmental Technical Specialist for the CFLHD Hawaii Program of Bridges, Oahu, Kauai, Big Island, Hawaii. Also supported obtaining environmental permits and clearance under Federal and State ESAs, FLPMA, Clean Water Act, Clean Air Act, Federal Consistency Determination, Coastal Zone Management Act, Section 106, and Section 4(f) and Section 6(f). Identified project and mitigation approaches that reduced the construction schedule by half and resulted in cost savings of more than $1 million.

RESUMES

DOUG YEH, TE

TRAFFIC CONTROL LEAD | VP, SENIOR ENGINEER

Doug Yeh has extensive experience in the design and analysis of transportation and infrastructure projects. He has served as Project Manager and Team Leader for numerous projects involving design of roadways, traffic signals, work site traffic control, street lighting, signing & striping, and intelligent transportation systems design. Doug is an expert in geometric design, traffic signal design and preparation of worksite traffic control (traffic handling) plans.

RELEVANT EXPERIENCE

- LACDPW Beverly Blvd. Traffic Signal Synchronization Project
- LACDPW Cesar E. Chavez Et Al
- LACDPW Ladera Heights-Centinela Et Al
- LACDPW Sun Valley Storm Drain Phase 2
- LACDPW West Carson Community Bikeways
- LACDPW Altadena Drive & Washington Blvd. Roadway Improvement
- LACDPW Del Mar at Redding Avenue Traffic Signal Project
- LACDPW Eaton Washington Bike Path, Phase 1
- LACDPW Whittier & Downey AHSC
- LACDPW Michillinda Intersection Improvement
- LACDPW Vallecito & Camino Et Al & Bikeways
- LACDPW Avocado Heights/San Jose Hills, Valley Blvd. Et Al
- LACDPW Castaic at Ridge Route & The Old Road at Parker Traffic Signal

PROJECT HIGHLIGHTS

LADWP Traffic Control Plan Development for Main Line Replacement Projects, Los Angeles, CA

Project Manager. We prepared, submitted worksite traffic control/detour plans, coordinated for plan review, and obtained approval from City of Los LADOT, Caltrans and other reviewing agencies for construction of multiple projects.

LADWP Professional and Technical Services Related to Trunk Line Design Services for City Trunk Line North Unit 2 Project, Los Angeles, CA

Project Manager. KOA developed traffic control, temporary traffic signal and restoration traffic signal plans to accommodate the construction, and coordinated with the LADOT plan review and approval.

LABOR CATEGORY

Senior Engineer II

OFFICE LOCATION

Monterey Park, CA

YEARS OF EXPERIENCE

33 Years with KOA

33 Years in Industry

EDUCATION

BS, Optical Engineering, University of La Verne, La Verne, CA

REGISTRATIONS

Professional Engineer (TE), Traffic, CA #1900

PROFESSIONAL AFFILIATIONS

Institute of Transportation Engineers (ITE), Member

AREAS OF EXPERTISE

Design and analysis of transportation and infrastructure projects

Worksite traffic control

Traffic signal design

Geometric Design

LADWP Trunk Line Replacement Projects, Los Angeles, CA

Project Manager. KOA prepared worksite traffic control, detour, and temporary traffic control signal plans, as well as restoration traffic signal plans for construction of LADWP's pipeline projects.

LADWP RFP for Task Proposal ESC28 – Traffic Control Plan Development for Trunk Line Construction Projects, Los Angeles, CA

Project Manager. KOA prepared traffic control plans, temporary traffic signal plans and restoration traffic signal plans to provide a work area adequate for construction of three trunk line projects.

LADWP Trunk Line Construction – Engineering Design Services for Traffic Control, Los Angeles, CA

Project Manager. The engineering services included preparation of worksite traffic control plans, detour plans, signing & striping, and temporary traffic signal plans.

Labor Category

Registered Civil Engineer, Level 4

Office

Walnut Creek, CA

Years of Experience

Total: 31

Carollo: 15

Education

BS Agricultural Engineering, California Polytechnic State University, San Luis Obispo, 1990

Graduate Studies, Civil Engineering, University of California, Berkeley

Licenses

Civil Engineer, California

Certifications

Certified Construction Manager (CCM), Construction Manager Certification Institute, 2020

Confined Space Entry, 2018

Professional Affiliations

American Concrete Institute

SAVE International

American Society of Civil Engineers

American Water Works Association

Construction Management Association of America

Michael R. Warriner, P.E., CCM

Michael Warriner is a senior vice president and chief construction manager with Carollo Engineers. His duties include supervision of field staff and administration and coordination of construction management services with clients, their attorneys, and design engineers. Specific responsibilities include arranging and conducting pre-bid conferences, attending bid openings, and making recommendations concerning responsiveness of the bids and bidders. Mike secures permits for construction, reviews and analyzes construction schedules and monthly updates, evaluates and negotiates costs of change orders, assists clients in claims resolution, monitors contractor-certified payrolls and safety programs, provides monthly construction progress reports to clients, and makes recommendations on final project acceptance once work is complete. He also monitors all construction activities, which are recorded and documented with document-tracking software that facilitates timely response to submittals, clarifications, and correspondence.

Prior to joining Carollo, Mike served as senior project manager and practice area leader for water and wastewater construction management projects for Swinerton Management and Consulting, Inc. He also served as senior engineer and operations superintendent for the Contra Costa Water District (CCWD) in Concord, California. His duties included field inspection and supervision of resident engineers and field inspectors, as well as consulting on design alternatives, construction scenarios, and project delivery methods. Mike provided constructability reviews to CCWD and other agencies as a third-party review.

Relevant Experience

→ Construction manager for the Pinole-Hercules Water Pollution Control Plant Upgrade for the City of Pinole, California. This $43 million project included space and scheduling challenges to construct new process facilities within the footprint of the existing plant in three phases: new headworks and grit removal, solids handling, primary clarifiers improvements, one new primary clarifier, three new secondary clarifiers, new chemical storage facilities, expanded chlorine contact basin and expanded aeration basins. Carollo provided third party construction management including resident engineering, inspection, startup and testing, and special inspection materials testing services.

→ Principal-in-charge for the Contra Costa Water District, California, On-Call Construction Management Services. Led the on-call construction management services for the District Capital Improvement projects. Work has included constructability reviews, cost estimating, change order negotiation, and schedule analysis. Projects include canal replacement treatment plant upgrades, pipeline replacement, and canal screen upgrades.

→ Assisted with constructability review of the City of Napa, California, Jamieson Canyon Water Treatment Plant Improvements. Work involved reviewing the 70-percent design, meeting with treatment staff, reviewing and commenting on construction constraints associated with water operations, and reviewing front-end documents and suggesting changes to better manage the contractor's activities.

→ Design review for the City of Brentwood, California, Water Treatment Plant. Responsible for site planning and constructability review of the civil and structural portions of a $40 million, 12-mgd water treatment plant. The project scope included review of construction elements and engineer's estimate.

→ Site planning and constructability review for the $6 million connection between the Mokolumne and Los Vaqueros pipelines, located in northern California. Also served as interagency liaison between the East Bay Municipal Utility District and Contra Costa Water District.

→ Construction advisor for the City of San Mateo, California, Los Prados Sanitary Sewer Relief construction management services.

Michael R. Warriner, P.E., CCM

Areas of Expertise

Construction management

Constructability review

Permitting

Claims resolution

Supervision and administration

→ Construction manager during the $2.5 million sewer replacement for the Vallejo Sanitation and Flood Control District, California. This work included installation of 4,500 feet of 8-inch through 24-inch sanitary and storm sewer pipelines and manhole replacements. The pipeline replacement incorporated several different methods, including pipe bursting, open-trench replacement, and in-situ lining.

→ Construction manager for the Recycled Water Pipeline project, Napa Sanitation District/Los Carneros Water District, California. Carollo provided full construction management services on this recycled water pipeline project that features nine miles of 8- to 20-inch pipeline including both a jack and bore section and a constructed abutment bridge crossing over a sensitive waterway. The pipeline, as constructed, was a combination of PVC bell-and-spigot, fusible PVC, and welded steel sections.

→ Construction manager for the Central Contra Costa Sanitary District, California, Recycled Water Distribution Extension project. Key elements of this $4 million project included installation of more than two miles of 6- to 14-inch pipelines, including 2,000 lf of 14-inch pipeline by HDD methods. Duties included overall management for field personnel, schedule review, and change order negotiations with the contractor.

→ Project manager for construction of the Coastside County Water District, California, $4.5 million Phase 3 El Granada Transmission Pipeline Replacement. Work consisted of installing 14,000 feet of 16-inch ductile iron pipe, including four creek undercrossings and seven roadway undercrossings, by jack and bore. Responsible for close coordination with the environmental permitting process, implementing environmental and cultural monitoring, and public awareness and outreach.

→ Construction manager for the City of San Bruno, California, Cedar Mills Storm Drain Repairs. The project required visual inspection of one mile of 60-inch storm drain sewer underneath a new residential neighborhood and development of repair procedures to correct surface cracking and age-related deterioration of the storm sewer. Also provided inspection of the repairs and documentation that the corrected storm sewer was acceptable for service.

→ Construction manager for the Central Contra Costa Sanitary District, California, Recycled Water Main Extension. Key elements of this $2.5 million project included installation of more than 1.5 miles of 4-inch to 12-inch open-cut PVC pipe, installation of 2,000 feet of 14-inch HDPE directional bore pipe, and all associated appurtenances. Duties included overall management of field personnel, schedule review, and change order negotiations with the contractor.

→ Construction manager for the Gove Road Wastewater Treatment Plant Phase V Solids Handling Upgrade for the City of Merced, California. Key elements of this $28 million project included construction of solar drying facilities, sludge handling facilities, a new septic receiving station, digester, and other facility improvements.

→ Construction manager for the Gove Road Wastewater Treatment Facility Phase IV Upgrade and Expansion for the City of Merced, California. New process facilities and improvements associated with this $30.5 million, 12-mgd expansion include new headworks and influent pump station, flow equalization basin after primary clarifiers, flocculation basin, cloth disk filters, UV disinfection, and new outfall. Carollo provided preconstruction services, construction management, resident engineering and inspection, startup and operation testing, and materials testing services.

→ Project manager for the City of Galt, California, Wastewater Treatment Plant Upgrade. Improvements for the first phase of this upgrade include headwork modifications, new oxidation ditch and modifications to the two existing oxidation ditches, new secondary clarifier and modifications to the two existing secondary clarifiers, three-sided enclosure around the UV disinfection facility, expanded operations and electrical building, new return activated sludge and waste activated sludge pumps, new solids handling facilities, associated yard piping and splitter boxes, and control upgrades.

Labor Category

Construction Manager, Level 4

Office

Los Angeles, CA

Years of Experience

Total: 42

Carollo: 3

Education

BS Engineering Technology (Construction Management) California State University, Long Beach, 1988

AS Building Technology, Don Bosco Technical Institute, 1977

Professional Affiliations

Association of California Water Agencies

CalDesal

Construction Management Association of America

Orange County Water Association

WaterReuse, California

Areas of Expertise

Program, project, and construction management

Constructability reviews

Team management

Budget and schedule control

Dispute resolution

Jaime Burrola

Jaime Burrola has more than 40 years of experience in the construction industry with an extensive background in complex municipal, heavy industrial and commercial/multi-use projects for various public and private sector clients. Mr. Burrola has managed construction of more than $1.2 billion in Southern California infrastructure over the past 10 years. He has a proven record in large construction organization including interagency coordination, program development and implementation, successful program, project and construction management, successful project close-out, daily direction of a team of highly-qualified managers and inspectors, budget controls and change order management, development and modification of resources to maintain schedules, dispute resolution and regulatory/environmental compliance.

Relevant Experience

→ Construction Management Subject Matter Expert for the $ 1.6 B San Jose / Santa Clara Regional Wastewater Reclamation Facility, California. He is providing Program level CM services in performing a CM Readiness Assessment of the existing construction management program and processes, is providing constructability reviews on all projects, revising the CM Construction Administration Plan (CAP) and performing as CM Testing, Startup & Commissioning Lead. The Readiness Assessment reviewed all CM program processes, systems, tools, organizational structures, provided recommendations which are currently implemented. He is leading the revisions to the CM CAP, which is the governing document for the construction management program. He has established consistent construction schedule reporting procedures and implementing a master construction schedule of all projects to identify schedule issues, track project/program milestones, and coordinate testing, startup, and commissioning activities with the operations of the existing facility.

→ Program construction manager for the Water Reclamation Sewer Collection System Phase I project for Hi-Desert Water District, California. The project was a multi-phased, citywide project to install 25 miles of sewer main lines and approximately 1,200 lateral connections in the first phase of the three-phase program, including a public outreach program implemented by the District. Mr. Burrola provided program management expertise, developed the multi-phased concept for tracking the project construction status and informing the community of the project status, developed a multiple-crew construction management team to maintain coordination with the Contractor on three simultaneous headings, provided monthly program oversight, and interfaced with the District-led public outreach program.

→ Principal-in-charge for the Lakeshore Trunk Sewer Reach II for the Elsinore Valley Municipal Water District Capital Improvement Project (CIP) Program, California. He provided weekly oversight for construction of approximately 21,000 lf of new 84-inch RCP gravity sanitary sewer tunneled through the City of Lake Elsinore with approximately 5,200 lf of new 84-inch installed through open trench construction with connection to the existing Regional Sewer Interceptor pipeline. He managed a third-party CM team to provide staffing resources and proper implementation of project controls, QA procedures, reviewed commissioning and start up plans, claims mitigation, and performed program and projects close out.

→ Principal-in-charge for the Orange County Sanitation District Santa Ana River Interceptor – Mainline Realignment and Relocation Project, Yorba Linda, California. Mr. Burrola served as PIC for the construction of a new 54-inch gravity sanitary sewer, a dual 30-inch siphon across the Santa Ana River and approximately 5,200 lf of new 84-inch to 102-inch encased tunneling encasing the 54-inch sanitary sewer connection to the existing SARI pipeline. Mr. Burrola provided adequate staffing resources and proper implementation of project controls, quality assurance procedures, reviewed commissioning and start up plans and performed program and projects close out.

→ Principal-in-charge for the Orange County Sanitation District Santa Ana River Interceptor - Yorba Linda Spur, Yorba Linda, California. Mr. Burrola served as PIC for the

Jaime Burrola

construction of a new 15-inch gravity sanitary sewer, a dual 10-inch siphon across the Santa Ana River and a new 18-inch gravity sanitary sewer connection to the existing SARI pipeline.

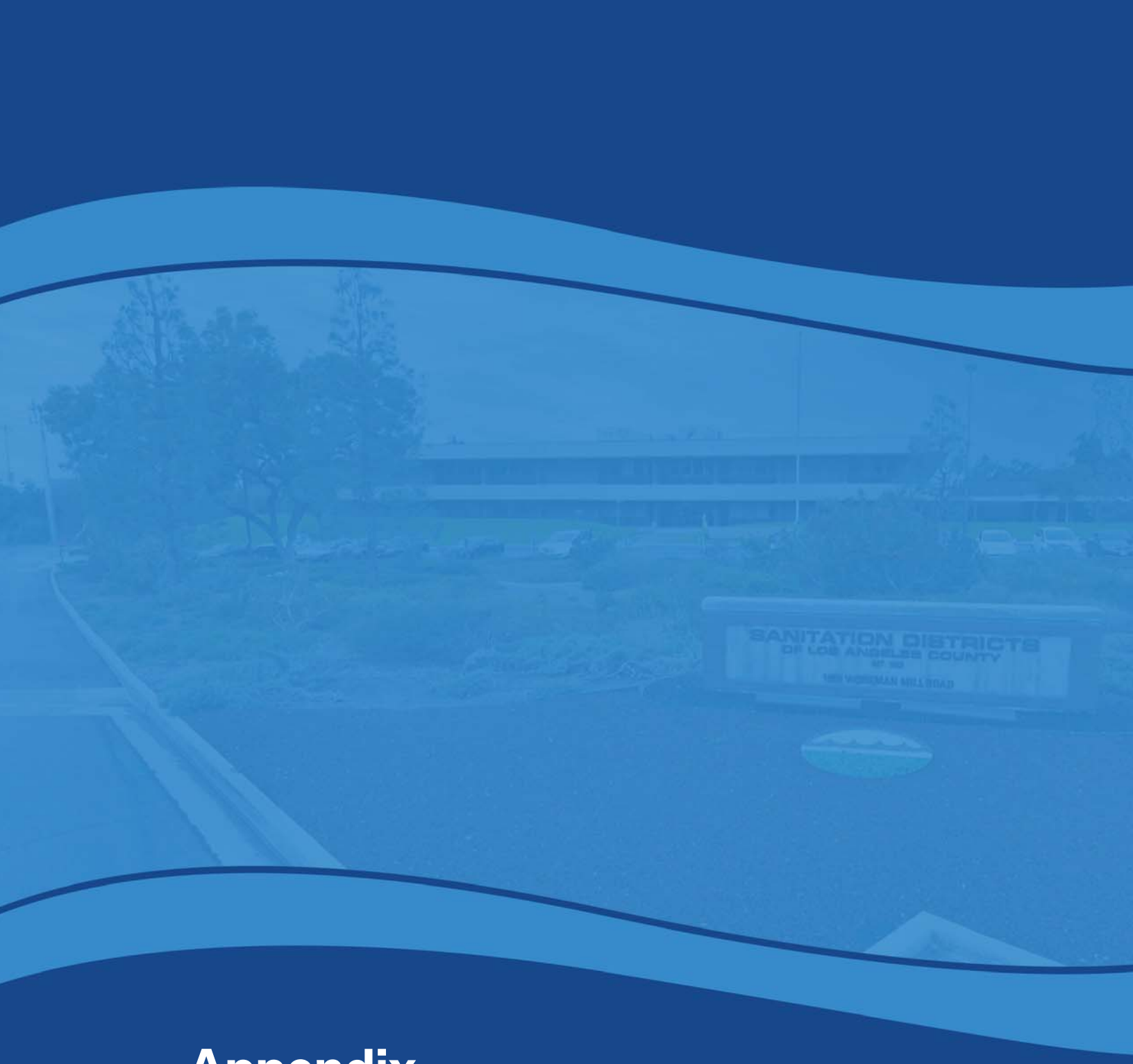
→ Construction manager, Canyon Lake Water Treatment Plant Rehabilitation and Repairs, City of Lake Elsinore, California. Mr. Burrola managed the $1.4 million design-build plant rehabilitation and repair project. He managed construction oversight during pre-construction services, contracting, construction and startup phases.

→ Project manager for the Goleta Water District, Corona Del Mar Water Transmission Pipeline – Emergency Repairs Project, Goleta, California. Mr. Burrola led the implementation of a fast-track $2 million design-build project for an emergency repair of a critical 42-inch transmission main. He managed the project through preconstruction, contracting, construction and startup, as well as direct supervision of specialty subcontractors and suppliers. The project was completed through "fast-track" scheduling in 90 days and ahead of schedule.

→ Program manager for the Elsinore Valley Municipal Water District Capital Improvement Project (CIP) Program, Lake Elsinore, California. Mr. Burrola managed an integrated program and construction management team for this $110 million program. The program's goal was to deliver 35 municipal facilities' improvements contracts for preconstruction services, contracting and construction management through startup and the contractor's one-year warranty. Mr. Burrola provided administrative staff augmentation performing a monthly program report to the board, writing staff/board reports, participation in monthly engineering and construction committee meetings, participation in weekly/daily engineering department staff and project meetings, grant fund application processing and fund reporting. He also led the team which provided constructability reviews, master scheduling of multiple design packages, bid and award support, and full third-party construction management services, including contract administration and site inspection, training, and commissioning services. The projects ranged in size from $2 million to $40 million, and included the replacement of water distribution pipelines, large service water meters, replacement of approximately 300 water meters and service lines, drilling and equipping water wells, as well as constructing reservoirs, water pump stations, sewage lift stations, trunk sewers, infrastructure facilities and an arsenic removal treatment plant.

→ Construction manager for the Orange County Water District Groundwater Replenishment System (GWRS) Program, Fountain Valley, California. Mr. Burrola managed construction for this $492 million award-winning program, including the $300 million Advanced Water Purification Facility. He oversaw all project phases for ten construction and four procurement contracts, and managed the team throughout the five-year project. The CM staff provided constructability reviews, master scheduling of multiple design packages, bid and award support and full third-party construction management services, including contract administration and site inspection, training and commissioning services. Mr. Burrola proactively addressed and incorporated the contractor's issues as change orders without impacting the schedule. Mr. Burrola provided adequate staffing resources and proper implementation of project controls, quality assurance procedures, reviewed commissioning and start up plans and performed program and projects close out.

→ Program construction manager for the Reclaimed Water Expansion Project (RWEP) for El Toro Water District, California. The project was a multi-phased, citywide project installing 15 miles of 6-inch to 30-inch waterlines in the community, including reclaimed water meter installations and an expansion of the wastewater treatment plant to deliver reclaimed water. Mr. Burrola provided program management expertise, developed the multi-phased concept, implemented the web-based interactive map for tracking the project construction status and informing the community of the project status, managed the construction management team, and interfaced with the District's public outreach firm.



Appendix

- Resumes
- Forms

5.4. Solicitation Form

FAILURE TO SIGN AND SUBMIT THIS PAGE WITH PROPOSAL WILL DISQUALIFY YOUR RESPONSE

The Consultant shall identify which general scope(s) of work the firm is agreeing to provide engineering services for by checking the appropriate box(es) below. Failure to identify which scopes(s) are being proposed will disqualify your response.

- ☑ Sewer Rehabilitation and new sewer construction projects
- ☑ Miscellaneous design support tasks, including but not limited to hydraulic modeling and specialized studies/reports

If awarded, the undersigned offers and agrees to furnish the services listed in this RFP at the prices and terms stated, subject to mutually agreed upon terms and conditions. Additionally, the undersigned warrants and represents their authority to bind the firminto an agreement subject to the terms and conditions of this Request for Proposal.

Company Name: Carollo Engineers, Inc.

Street Address: 707 Wilshire Boulevard, Suite 3920

City, State Zip: Los Angeles, CA 90017

Email: rpilemalm@carollo.com

Telephone: 213-489-1587

By (Authorized Signature):	Date Signed:
x 	x June 10, 2021
Print name and title of Authorized Signatory	
Roland I. Pilemalm, PE, Associate Vice President	

ALL SPECIFICATIONS, TERMS, AND CONDITIONS OF THIS PROPOSAL WILL BE INCORPORATED INTO ANY RESULTING AGREEMENT.

ATTACHMENT B

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

RFP No. 03956

ON-CALL ENGINEERING SERVICES

NON-COLLUSION DECLARATION
(Public Contract Code §7106)

I, Roland Pilemalm, PE, declare, as follows:

I am the Associate Vice President of

Carollo Engineers, Inc., the party making the attached bid.

I know of my own personal knowledge and declare under penalty of perjury, that the attached bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone will refrain from bidding; that the bidder has not in any manner, directly or indirectly sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted its bid price or any breakdown of the bid price, or the contents of his bid, or divulged information or data relative to its bid, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent of any such corporation, partnership, company, association, organization, or bid depository to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

June 10, 2021
(Date)

Los Angeles, CA
(Location)


(Signature of Bidder)

Engineers...Working Wonders With Water ®

CONFIDENTIAL

Summary Information Sheet
Carollo Engineers, Inc.
Balance Sheet
As of December 31, 2020

Assets

Cash	31,372,374
Receivables	66,790,154
Prepaid Expenses & Other Current Assets	11,526,507
Fixed Assets - net	16,402,070
Notes Receivables	626,028
Other Long Term Assets	412,361
Total Assets	**127,129,494**

Liabilities

Accounts Payable	18,759,799
Accrued Expenses & Other Current Liabilities	51,005,409
Other Long Term Liabilities	34,701,016
Owner's Equity	22,663,270
Total Liabilities & OE	**127,129,494**

Ash Wason, CFO

Carollo Engineers, Inc. (Carollo), has been in operation since 1933. Carollo's professional engineering services extend throughout the United States with offices in 48 cities, including major design centers in Walnut Creek, California; Orange County, California; Phoenix, Arizona; Denver Littleton, Colorado; Boise, Idaho and Dallas, Texas.

The firm has demonstrated a high level of fiscal responsibility throughout the years. Borrowings are on a short-term basis to meet cash requirements at peak times of the year.

The company has a banking relationship with National Bank of Arizona.

National Bank of Arizona
6001 N 24th St
Phoenix, AZ 85016
Rob Maver, Senior Vice President
Office (602) 235-6000
Direct (602) 212-8810

Some information indicating the capacity of the firm to handle large jobs is:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gross Revenue (000)	146,215	148,542	154,924	173,142	211,667	247,550	271,810	300,457	311,211	330,506
ENR Ranking	77	73	79	79	69	65	59	59	50	51
# of Employees (avg.)	625	618	654	709	771	893	1,012	1,074	1,108	1,164

CONFIDENTIAL

Summary Information Sheet
Carollo Engineers, Inc.
Balance Sheet
As of December 31, 2019

Assets

Cash	16,057,313
Receivables	64,680,363
Prepaid Expenses & Other Current Assets	13,340,286
Fixed Assets - net	15,606,526
Notes Receivables	670,874
Other Long Term Assets	107,775
Total Assets	**110,463,137**

Liabilities

Accounts Payable	19,567,203
Accrued Expenses & Other Current Liabilities	34,755,582
Other Long Term Liabilities	19,542,601
Owner's Equity	36,597,751
Total Liabilities & OE	**110,463,137**

Ash Wason, CFO

Carollo Engineers, Inc. (Carollo), has been in operation since 1933. Carollo's professional engineering services extend throughout the United States with offices in 44 cities, including major design centers in Walnut Creek, California; Orange County, California; Phoenix, Arizona; Denver Littleton, Colorado; Boise, Idaho and Dallas, Texas.

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Gross Revenue (000)	146,215	148,542	154,924	173,142	211,667	247,550	271,810	300,457	311,211
ENR Ranking	77	73	79	79	69	65	59	59	50
# of Employees (avg.)	625	618	654	709	771	893	1,012	1,074	1,108

Summary Information Sheet
Carollo Engineers, Inc.
Balance Sheet
As of December 31, 2018

Assets

Cash	9,609,837
Receivables	62,095,883
Prepaid Expenses & Other Current Assets	9,639,860
Fixed Assets - net	11,530,721
Notes Receivables	1,316,692
Other Long Term Assets	846,155
Total Assets	**95,039,148**

Liabilities

Accounts Payable	21,058,860
Accrued Expenses & Other Current Liabilities	32,665,069
Other Long Term Liabilities	13,879,789
Owner's Equity	27,435,430
Total Liabilities & OE	**95,039,148**

Dale Dykstra (May 8, 2019)

Dale Dykstra, Controller

Carollo Engineers, Inc. (Carollo), has been in operation since 1933. Carollo's professional engineering services extend throughout the United States with offices in 44 cities, including major design centers in Walnut Creek, California; Orange County, California; and Phoenix, Arizona.

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National Bank of Arizona
6001 N 24th St
Phoenix, AZ 85016
Rob Maver, Senior Vice President
Office (602) 235-6000
Direct (602) 212-8810

Some information indicating the capacity of the firm to handle large jobs is:

	2012	2013	2014	2015	2016	2017	2018
Gross Revenue (000)	148,542	154,924	173,142	211,667	247,550	271,810	300,457
ENR Ranking	73	79	79	69	65	59	59
# of Employees (avg.)	618	654	709	771	893	1,012	1,074

Prepared for the
LOS ANGELES COUNTY SANITATION DISTRICTS

ON-CALL
ENGINEERING SERVICES

COST PROPOSAL • JUNE 2021

carollo
Engineers...Working Wonders With Water®

Carollo Engineers, Inc.
Fee Schedule
Los Angeles County Sanitation Districts

	2021	Labor Category
Engineers/Scientist	**Hourly Rate**	
Assistant Professional	$193.00	1
Professional	$236.00	2
Project Professional	$280.00	3
Lead Project Professional	$301.00	4
Technicians		
Technicians	$146.00	6
Senior Technicians	$203.00	7
Support Staff		
Document Processing/Clerical	$129.00	8
Project Equipment Communication Expense (PECE) Per Direct Labor Hour	$13.00	
Other Direct Expenses		
Travel and Subsistence	at cost	
Mileage at IRS Reimbursement Rate Effective January 1, 2020	$.575 per mile	
Subconsultant	cost + 10%	
Other Direct Cost	cost + 10%	

BILLING RATES WORKSHEET

COMPANY:	SCOPE OF WORK:	DATE:
AZTEC Engineering Group, Inc.	**On-Call Services**	**May 28, 2021**

BILLING RATES

STAFF NAME	TITLE	RATE
Mike Shirley	Project Principal	$279.22
Liz Cutler	Project Manager	$262.57
Norris Dodd	Environmental Specialist - Senior	$207.59
Mike Myers	Environmental Specialist - Senior	$207.59
Justin Hoppman	Environmental Planner / Scientist IV	$184.44
Rob Ingram	Environmental Planner / Scientist IV	$184.44
David Webb	Environmental Planner / Scientist III	$144.17
Diana Dunn	Environmental Planner / Scientist III	$144.17
Jessica Rybczynski	Environmental Planner / Scientist III	$144.17
Lauren Lockwood	Environmental Planner / Scientist II	$120.96
Matt Camba	Environmental Planner / Scientist I	$74.10
Brynne Taylor	Environmental Planner / Scientist I	$74.10
Brendan Leach	Environmental Technician	$59.04
Deil Lundin	Principle Investigator - Archaeologist	$171.22
Doug Mitchell	Senior Archaeologist	$118.08
John Langan	Senior Archaeologist	$118.08
Sara Frank	Archaeologist	$88.99
Kristina Davison	Associate Archaeologist	$71.54
Amelia Blanton	Archaeologist Technician	$57.60
Steve Lohide	Landscape Architect- Senior	$182.85
Jules Perillo	Designer	$101.78
Ron Szwiec	Project Engineer - Senior	$215.00
Herson Go	Project Engineer	$195.00
David Shu	Noise / Air Specialist	$164.62
Steve Sutherland	Hazmat Manager	$151.89
TBD	GIS - Senior	$128.22
TBD	GIS	$74.10

BILLING RATES WORKSHEET

COMPANY:	SCOPE OF WORK:	DATE:
AZTEC Engineering Group, Inc.	**On-Call Services**	**May 28, 2021**

BILLING RATES

STAFF NAME	TITLE	RATE
TBD	Deputy Project Manager	$225.00
TBD	Senior Biologist- Project Manager	$190.00
TBD	Senior Biologist	$165.00
TBD	Staff Biologist	$135.00
TBD	Associate Biologist	$90.00
TBD	Staff Landscape Architect	$155.00
TBD	Associate Landscape Architect	$135.00
TBD	Senior Analyst - Archaeology	$135.00
TBD	Project Director - Archaeology	$150.00
TBD	Architechtural Historian / Historian	$120.00

LA County San District RFP - sub to Carollo

KOA Corporation

2021 Hourly Billing Rates

Professional Services	2021 Rates
President/CEO	$ 309.75
Principal II	$ 292.16
Principal I	$ 248.06
Senior Engineer II	$ 237.04
Senior Engineer I	$ 198.45
Senior Associate Engineer II	$ 154.35
Senior Associate Engineer I	$ 137.81
Associate Engineer II	$ 126.79
Associate Engineer I	$ 110.25
Senior Designer II	$ 143.33
Senior Designer I	$ 126.79
Associate Designer II	$ 110.25
Associate Designer I	$ 82.69
Senior Planner II	$ 237.04
Senior Planner I	$ 198.45
Senior Associate Planner II	$ 154.35
Senior Associate Planner I	$ 137.81
Associate Planner II	$ 126.79
Associate Planner I	$ 110.25
Senior Construction Manager	$ 189.00
Construction Manager	$ 157.50
Senior Construction Inspector	$ 144.90
Construction Inspector	$ 139.65
Administrative Assistant II	$ 93.71
Administrative Assistant I	$ 72.41
Intern	$ 60.64

General Provisions:

Project reimbursable expenses are billed at cost. Project expenses include:
Non-commuter automobile mileage ($0.575 per mile) or current IRS rate, postage and special courier expenses, travel expenses, reproduction, subcontractor services and other direct project expenses as requested by the client.

Telephone, equipment, and fax are included in the above hourly costs. Direct expenses including blacklining, commercial CAD plotting, sub-consultant expense, issuance of specially endorsed insurance certificate, and direct costs are billed at cost plus 5% unless stated otherwise in the proposal.

Annual adjustments in these billing rates of approximately 5% will occur on January 1 of each calendar year.

EXHIBIT B - RFP

LOS ANGELES COUNTY
SANITATION DISTRICTS
Converting Waste Into Resources

REQUEST FOR PROPOSALS

ON CALL ENGINEERING SERVICES

BID No. 03956

QUESTCDN No. 7825153

CONTACT: Maribeth Tan, Senior Buyer

DUE DATE & TIME: June 10, 2021 at 11:00 a.m.

LAST DAY FOR QUESTIONS: May 26, 2021

Robert C. Ferrante
Chief Engineer and General Manager

Los Angeles County Sanitation Districts | Purchasing Section | 1955 Workman Mill Road | Whittier, CA 90601
Phone: 562-908-4288 ext. 1400 | Email: bids@lacsd.org

Table of Contents

REQUEST FOR PROPOSALS
for
RFP No. 03956 QuestCDN No. 7825153
ON-CALL ENGINEERING SERVICES

May 2021

1. INTRODUCTION AND BACKGROUND

The Los Angeles County Sanitation Districts (Districts) are issuing this Request for Proposal (RFP) requesting Statements of Qualifications (SOQs) and Hourly Rates from qualified engineering consulting firms (Respondents) to provide general engineering design services in support of the Districts' wastewater collection system operations on an as-needed basis for a period of up to three (3) years. Each Proposal shall include SOQs and Hourly rates provided in separate electronic files. In issuing this RFP, the Districts are seeking to identify and prequalify firms possessing the technical expertise and resources to perform the project management, and/or civil, structural, and mechanical design of:

- Sewer Rehabilitation and new sewer construction projects
- Miscellaneous design support tasks, including but not limited to hydraulic modeling, cost estimating for both design and construction, and specialized studies/reports.
- Review and updates to various design guidelines and procedures, including presentation of updates to Districts' staff.

Respondents may propose to subcontract portions of the design services listed above if they are unable to provide all listed services. However, in the selection process, preference will be given to Respondents that can provide the design services using their own forces and an additional bonus will be given to Respondents whose staff work in a Regional Business Enterprise (RBE) as defined in Section 6.3.4.1.

The District encourages participation in its engineering services contracts by all members of the community including Minority Business Enterprises (MBE), Women Business Enterprises (WBE), Disadvantaged Business Enterprises (DBE), Disabled Veterans Business Enterprises (DVBE) and Small Business Enterprises (SBE). The District has established an aspirational goal of 20 percent overall participation by such firms. Although such participation is encouraged, award of a contract is not based on race, gender, disabled, disadvantaged or small business status.

1.1. Background

The Districts are a public agency focused on converting waste into resources like recycled water, energy and recycled materials. The agency consists of 24 independent special districts serving about 5.6 million people in Los Angeles County. The service areas cover approximately 850 square miles and encompass 78 cities and unincorporated areas in the county.

The Districts were created in 1923 to construct, operate, and maintain facilities that collect and treat domestic and industrial wastewater (sewage). The agency operates and maintains a regional wastewater collection system, which includes approximately 1,400 miles of sanitary sewers ranging in diameter from 8- to 144-inches, 48 pumping plants, and 11 wastewater treatment plants that transport and treat about half the wastewater

in Los Angeles County. The Sewer Design Section is responsible for the design of sewer rehabilitation and new sewer construction projects.

1.2. Objective

To maximize efficiency and reduce costs, the 24 Sanitation Districts work cooperatively with one administrative staff headquartered at the Joint Administration Office (JAO) near the City of Whittier. The Engineering Department is located at the JAO and includes the Sewer Design Section. The Districts intend to supplement the work of the Sewer Design Section by using qualified and experienced consulting firms to augment the work of the Sewer Design Section due to the large number of projects that have been identified to be completed in the next few years.

2. CONTRACT DETAILS AND ASSIGNMENT OF WORK

The Districts will evaluate the Proposals submitted by the Respondents in response to this RFP and develop a list of engineering consulting firms (Consultants) who, in the Districts' opinion, are most-qualified to provide ALL the listed design services. The overall goal of this RFP process is to enter into Engineering Services Agreements (ESAs) with up to four (4) firms and allocate up to approximately $1,000,000 for each firm to provide on-call engineering design services for the term of the ESA. The Districts anticipates that the selected Consultants may be retained for up to three (3) years after the award date or until the allocated budget has been spent. The Districts' selection of a Consultant and execution of an ESA is NOT a guarantee of any work or quantity of work. Selected Consultants will be hired to perform work under the ESA on an as-needed basis at the sole discretion of the Districts. The Districts hereby reserve the right to use any, all, or none of the funds allocated to each Consultant.

When engineering services are required, a Consultant will be presented with the scope of the project and will be asked to prepare a detailed proposal indicating the time and expenses required to complete the project. The Consultant will be expected to respond to requests for detailed scope proposals in a timely manner. Once the proposal is approved by the Districts, the Consultant will be issued a Task Authorization Form (TAF) that details the agreed-upon scope, budget, schedule, deliverables and associated progress payments (see Attachment A for a sample TAF). No subsequent work shall be performed by the Consultant prior to receiving a written Notice to Proceed from the Districts. If a Consultant fails to respond in a timely manner or is unable to meet the requested project schedule, the Districts reserve the right at its sole discretion to present the work to another Consultant for development of a proposal. As each project may have a completely different scope of work, Respondents are not required to possess expertise in all listed areas.

3. SCOPE OF WORK

The scope of work to be performed by the Consultants awarded an ESA may include civil, structural, and mechanical engineering and design, and construction management support (responding to submittals, RFIs, etc.), for the project types listed below. The Consultants shall provide engineering services in conformance with Districts' standards and in full compliance with all applicable laws, standards, and codes, including the Standard Specifications for Public Works Construction (Greenbook), latest approved edition, and the Districts' amendments thereto. The general design process and typically required deliverables for the Consultant's work are provided for reference in Section 4 of this RFP.

3.1. Sewer Rehabilitation and Construction Projects

Perform preliminary and detailed design of small and large diameter sewer rehabilitation projects and new sewer construction projects. Qualified firms shall have experience in the preparation of design, plans, specifications, cost estimates and contract documents for capital improvement projects involving rehabilitation of small and large diameter sewers by cured-in-place pipe lining, sliplining and other rehabilitation methods, construction of new sewers by open trench construction, jacking and tunneling, construction of new sewer force mains, rehabilitation of existing force mains, preparation of sewer flow studies, environmental documentation, constructability reviews and reports.

3.2. Miscellaneous Design Support and Engineering Tasks

In addition to the engineering design projects, the Consultant may be asked to perform hydraulic modeling of the sewer collection system; provide environmental/planning and construction management support; and perform special engineering studies/reports. Consultants may also be asked to review various design manuals and procedures used bye the Sewer Design Section, including the presentation and training of Districts' staff related to any updates.

4. TYPICAL PROJECT ADMINISTRATION STEPS FOR SEWER REHABILITATION AND CONSTRUCTION PROJECTS

The Districts will approach one of the selected Consultants having the appropriate qualifications to complete a proposed project. The Consultant will have the opportunity at that time to review the scope of the proposed project and provide a preliminary proposal that includes a preliminary cost estimate and project schedule AND a list of key staff members that will be assigned to the project. If the initial Consultant does not have the resources to complete the project within the specified time frame or provides what is deemed an excessive cost proposal, the District can advance to the next available Consultant without any legal or financial impacts to either party. Projects will generally proceed through the following three (3) phases: (1) Preliminary Engineering Phase (including a Pre-Design Evaluation), (2) Detailed Design Phase, and (3) Construction Management Support Phase. However, proposals may be requested for starting at any of the three phases or for support-type projects that do not typically follow said phasing.

Once a preliminary proposal is requested, the Consultant shall coordinate with the Districts and other necessary and appropriate government units, utilities, organizations, and persons in order to ascertain project requirements. Not all projects require the same level of detail and the Districts and Consultant will work together to determine what level of detail is required. The Consultant will then prepare and submit a detailed staffing plan, QA/QC plan, and cost proposal for providing the requested engineering services for the current phase of the proposed project.

The cost proposal shall be broken down to show expected labor hours for each phase of the work and the associated labor costs, including work performed by outside subconsultants. The staffing plan, QA/QC plan, and cost proposal shall be submitted to the Districts for review and approval prior to start of any work. Once the Districts and the Consultant have agreed and accepted the plans and cost proposal, the Consultant and Districts will sign and execute a Task Authorization Form (TAF) that will establish the scope, budget, schedule, staffing, deliverables, and progress payments for that phase of the project. The Consultant shall propose a project manager for each TAF. The Consultant's project manager shall oversee the TAF to the completion of the project and shall not be replaced without the Districts' authorization. The Districts may at any time request

that a project manager be replaced. The project manager is responsible for submitting monthly progress reports that will include an earned value analysis of the project. The project manager will immediately notify the Districts of proposed staffing changes, and any major changes in scope, budget or schedule.

4.1. Preliminary Engineering Phase

During this phase, the project scope is defined, general consensus on design parameters is reached, and project constraints are identified, including, but not limited to regulatory and permitting constraints, design and construction schedule, and site conditions. The end goal of this phase is to have a Preliminary Design Report (PDR) or a Work Scope Memo (WSM) that provides the Districts with enough detailed information to make effective decision on the project goals, requirements and costs. Preliminary Engineering generally includes the following tasks:

4.1.1. Scoping Meetings – The purpose of this meeting is to have the project's requestor (Wastewater Collection Systems (WCS) Operations) clarify the scope of work as discussed in the Design Request.

4.1.2. Site Visits – The Consultant's Project Manager, Design Engineer and assigned designers should schedule and conduct a site visit with District's Design and Operations staff to become familiar with the project area and identify constraints. During the site visit, confirm that as-built drawings reflect what is on and below the ground and note any modifications or changes to be surveyed or added electronically to the background drawings.

4.1.3. Existing Conditions and Background Drawings – The District will provide any existing as-built drawings that apply to the project to the Consultant. The Consultant shall investigate, analyze, and measure the existing facilities to the extent necessary to determine the information necessary for project work. The Consultant shall request and obtain substructure information from all utilities within the project area.

4.1.4. Identify additional investigative work required by geotechnical, survey, or other service providers. The District may provide the geotechnical and/or surveying consultant under a separate contract.

4.1.5. For new sewer construction projects, the Consultant shall calculate ultimate flow conditions by performing a sewer area study in accordance with the District's procedures.

4.1.6. CCTV Inspection Review – The District will provide access to CCTV inspection records for the existing sewer. The CCTV records shall be reviewed to confirm the condition of the sewer and to help determine the method of repair, or if repair is necessary.

4.1.7. Relief, Replacement, or Rehabilitation – All available alternatives shall be evaluated based on ultimate flow conditions, sewer condition, available alignments, flow bypass capabilities, and cost. Alternatives may include a new relief sewer and maintaining the existing sewer in service, a replacement sewer and removing the existing sewer from service, a combination of relief and rehabilitation, various methods of rehabilitation, or a combination of the above. An estimate of the costs for the various alternatives should be included.

4.1.8. Preliminary Design and Construction Schedule – Prepare a schedule showing the time frames for developing construction drawings, specifications and other related information for the 50%, 90% and 100% Phases, and the anticipated duration for construction of the selected alternative.

4.1.9. Cost estimate for the proposed design and construction.

4.1.10. The PDR or WSM shall include the following:

4.1.10.1. Background - Include the location and description (optional) of the existing sewer alignment, year(s) constructed, lengths, diameters and materials of pipe, and the reason for the project. Describe the condition of the sewer. Attach a figure(s) showing the existing (and proposed) alignments. Include an aerial photo of the area showing all District's facilities for large or complex projects.

4.1.10.2. Area Study and Flow Capacity- Include the current dry weather peak flow, wet weather peak flow if available, the ultimate peak flows based on land use and 2050 (or identify other year) population with a recommendation for which flows should be used, and the ultimate peak wet weather flows if this can be estimated. Also, include as applicable, the flow capacities for the existing sewer and various pipe size options for relief and/or replacement sewers, together with the percent d/D for the existing sewer and each option. Attach schematic(s) showing pipe size, junctions, current and ultimate peak flows, flow depths and flow capacities of the proposed and existing sewers. For rehabilitation, include the flow capacities and percent d/D of the rehabilitated sewer using the reduced pipe internal diameter and the lower Manning's roughness coefficient as appropriate.

4.1.10.3. Discussion - For relief and/or replacement, discuss and compare the various options, provide tables showing the construction cost for each option, describe the alignment, available corridor or substructure interferences, local sewer and lateral connections, rehabilitation needs, constructability, right of way requirements, indicate if it is in Caltrans or railroad property, upcoming construction in the area, potential contamination along specific alignments, agency requirements, traffic, operations and maintenance (O&M) considerations, and anything else that may have a bearing on the recommendation. For rehabilitation, recommend the extent of rehabilitation based on CCTV and show on a figure. Include a discussion of right of way, rehabilitation method, capacity after lining, pump bypass or flow diversions, manhole condition and recommendation, and cost.

4.1.10.4. Recommendation - Indicate the recommended option and include lengths, diameters, materials, and cost. Also include major considerations for the specific project, such as right of way issues, jacking/tunneling, groundwater, etc. For rehabilitation, indicate the recommended rehabilitation method of the sewer and also include recommended methods for rehabilitation of manholes and structures.

4.1.11. Once the District and the Consultant have reviewed and resolved any outstanding issues, the Consultant will receive a final progress payment according to the TAF.

4.2. Detailed Design Phase

Once the PDR or WSM has been completed, the TAF for the Detailed Design Phase is broken into four (4) specific milestones: 50% Design, 90% Design, 100% Design, and Advertise/Award/Bid. The Consultant shall not proceed from one milestone to the next until so directed by the Districts.

4.2.1 50 Percent Design Milestone

The Consultant shall prepare and submit 50 percent design documents to the District for review. All drawings shall conform to the latest version of the Sewer Design Drafting Standards. At the 50 percent stage the plans should include the following information:

4.2.1.1 Cover sheet with Project Title, General Location map, and Vicinity Map.

4.2.1.2 Data from field survey and geotechnical work.

4.2.1.3 Plan and Profile sheets showing proposed work.

4.2.1.4 Detail sheets showing any necessary manhole, structure, or miscellaneous details.

4.2.1.5 Table of Contents for Special Provisions

4.2.1.6 Updated construction cost estimate and updated construction schedule.

Once the District and the Consultant have reviewed and resolved any outstanding issues identified during the 50 percent design review, the Consultant will be provided with a copy of the Districts' Special Provision Templates which are to be incorporated, as required, into the 90 percent submittal package. The Consultant will receive a progress payment according to the TAF and will be issued an NTP to move to the 90 Percent Design Phase.

4.2.2 90 Percent Design Milestone

The Consultant shall prepare and submit 90 percent design documents to the District for review. These drawings and specifications are expected to be as close to final as possible. No major changes are expected after this phase, only minor drafting and typographical changes/corrections are expected. At the 90 percent stage, the plans should include the following information:

4.2.2.1 Complete electronic set of construction drawings showing all plans, profiles, and details.

4.2.2.2 Draft Special Provisions.

4.2.2.3 Updated construction cost estimate, and updated construction schedule.

Once the District and the Consultant have reviewed and resolved any outstanding issues identified during the near final review of the detailed design and specifications, the Consultant will receive a progress payment according to the

TAF and will be issued an NTP to move to the 100 Percent Design Phase.

4.2.3 100 Percent Design Milestone

The Consultant shall prepare and submit 100 percent Contract Documents and final construction cost estimate to the Districts for review. At the 100 percent stage, the plans and specifications should be complete and ready for inclusion in the Bid Package released to the general public inviting bids on the proposed work. These documents shall be as complete as possible to reflect the level of detail specified in the Preliminary Engineering Phase. Payment for this phase will not be made until the District accepts the Contract Documents as "Complete". All drawings shall be signed and stamped by the Professional Engineer who had responsible charge over the content of the associated construction drawings. Said engineer shall be a professional engineer registered in the State of California in the discipline covered by the drawings.

4.2.4 Advertise/Bid/Award Milestone

The Districts' Design staff will take the lead on this phase of the project, including coordinating advertisement of the Bid Package/Contract Documents, acceptance of bids, and award of contract to the lowest, responsible, responsive bidder. The Consultant shall be responsible for providing answers to RFIs during the bidding phase and shall assist in preparing and producing any addenda required to address contractor questions. The Consultant shall assist in preparing any evaluations and/or recommendations regarding the awarding of the project.

4.3. Construction Management Support Phase

After award of a contract, the Districts' Construction Management (CM) Section will take the lead on management of the project through construction completion. Prior to the start of construction, the Districts and the Consultant will draft and execute a new TAF to establish the budget for construction management support work by the Consultant. This phase will include review and approval of submittals, responding to the contractor's Requests for Information (RFIs), and assisting CM staff with resolution of construction issues. This may also include participation by the Consultant in on-site meetings with CM staff and the contractor. As described below, the Consultant's staff will be required to use Oracle Unifier™ software for transmittal of all correspondence during the construction phase.

4.4. Software Requirements

The Consultants will be required to use MicroStation CONNECT Edition Update 10 or newer to prepare all CAD drawings. The Consultants will be required to use Bluebeam Revu Standard (or better) to distribute all design deliverables for Districts' review thru Bluebeam's Studio Sessions feature, including the PDR, 50 percent design, 90 percent design, and 100 percent design documents. The Consultants will also be required to utilize Oracle Unifier™ software for routing of design-related documents and for all correspondence during the Construction Management Support phase. At the Consultants' sole expense, the Consultants shall provide Bluebeam Revu Standard software for their staff assigned to Districts' projects. The Districts will provide licensing and training for Oracle Unifier™ for the Consultants' staff. The Consultants shall include

budget for their staff to attend Unifier™ training in the TAF proposals as appropriate.

5. SOLICITATION INFORMATION AND KEY DATES

5.1. Schedule

Issue RFP	May 7, 2021
Last Day for Questions	May 26, 2021
Proposal Due Date	**No later than 11:00 a.m. on June 10, 2021**
Districts' Board of Directors Approval to Award Contract	Anticipated in August 2021

5.2. Proposal Format

The proposal shall sufficiently describe and demonstrate the Respondent's understanding of and approach to the scope of this RFP.

The Proposal shall include the Solicitation Form with authorized signature provided in Part 5.3 below. Failure to include the signed Solicitation Form with the Proposal will disqualify the Proposal from consideration.

Respondents shall respond to all the Districts' requests for information listed in this RFP in the order in which they appear. All information, calculations, footnotes, comments, text, advertising literature, etc., shall be in the English language. Only English engineering units shall be used. To facilitate the review process, the SOQ and Hourly Rates shall follow the format outlined in the respective sections of this RFP. All pages shall be numbered. Pages in appendices need not be numbered but shall be tabbed for convenient access. Concise language and direct answers are preferred to lengthy discussion and non-pertinent information. Failure of the Respondent to organize the information required by this RFP as outlined may results in the Districts, at its sole discretion, deeming the Proposal nonresponsive.

5.3. Proposal Submittal

Upload Proposals in two (2) separate files to QuestCDN per the below:

1) **Technical Proposal**
2) **Cost proposals**

The Proposal shall be uploaded no later than **11:00 a.m. on Thursday, June 10, 2021** to QuestCDN.com. QuestCDN's clock is the official time. The Districts is not responsible for Internet Service Provider (ISP) transmission interruptions.

https://qap.questcdn.com/qap/projects/prj_browse/ipp_browse_grid.html?projType=all&provider=7047059&group=7047059.

Any Proposals submitted after the above time and date, or to any other person or address will be rejected. Please direct all questions to Ms. Maribeth Tan at btan@lacsd.org. **Last day for questions is Wednesday, May 26, 2021.**

5.4. Solicitation Form

FAILURE TO SIGN AND SUBMIT THIS PAGE WITH PROPOSAL WILL DISQUALIFY YOUR RESPONSE

The Consultant shall identify which general scope(s) of work the firm is agreeing to provide engineering services for by checking the appropriate box(es) below. Failure to identify which scopes(s) are being proposed will disqualify your response.

- ☐ Sewer Rehabilitation and new sewer construction projects
- ☐ Miscellaneous design support tasks, including but not limited to hydraulic modeling and specialized studies/reports

If awarded, the undersigned offers and agrees to furnish the services listed in this RFP at the prices and terms stated, subject to mutually agreed upon terms and conditions. Additionally, the undersigned warrants and represents their authority to bind the firminto an agreement subject to the terms and conditions of this Request for Proposal.

Company Name: _____

Street Address: _____

City, State Zip: _____

Email: _____

Telephone: _____

By (Authorized Signature): x	Date Signed: x
Print name and title of Authorized Signatory	

ALL SPECIFICATIONS, TERMS, AND CONDITIONS OF THIS PROPOSAL WILL BE INCORPORATED INTO ANY RESULTING AGREEMENT.

6. SOQ REQUIREMENTS

6.1. Cover Letter

The Respondent's SOQ shall include a cover letter of transmittal attesting to its accuracy, signed by an individual authorized to execute binding legal documents on behalf of the proposing firm. The cover letter shall provide the name, address, telephone number of the Respondent along with the name, title, address, telephone number and email address of the executive that has the authority to contract with the Districts.

6.2. General Company/Team Information

The SOQ shall include the ownership, organization, and background of the Respondent.

The following information shall be provided by the respondent:

- Names of partners or officers.
- Name and contact information for the Project Manager who will act as the principal contact person for all Districts' projects. The Project Manager shall be a professional engineer registered in the State of California with no less than ten (10) years of experience in design and/or project management of projects relevant to the Scope of Work in Section 3.
- All names under which the proposing firm has conducted business during the preceding five (5) years.
- Complete organization chart with all key personnel listed, including senior staff responsible for QA/QC. The line of authority and communication for the entire project team shall clearly be shown.
- What portions of the services, if any, will be subcontracted to sub-consultants.

If sub-consultants are proposed, the proposed contractual relationships between the Respondent and sub-consultants shall be outlined in the SOQ. The Respondent shall describe the history of the relationships among team members, including a description of past working relationships.

The Respondent shall recognize that its key employees assigned to this project will be used as a basis for ranking and selecting firms. Therefore, changes to the Respondent's proposed team, including substitution or addition of sub-consultants or key employees, may alter suitability of the project team for project assignments after award of an ESA.

6.3. Qualifications

Respondents to the RFP shall demonstrate their ability by providing the technical qualifications of the Respondent, individual team members, and sub-consultants, if any, relevant to the Scope of Work identified in Section 3. The Districts reserve the right to conduct an independent verification of the Respondent's technical qualifications by contacting project references, accessing public information, or by contacting independent parties. Additional information may be requested during the evaluation of technical qualifications. The Respondent shall provide the following information to demonstrate its technical qualifications:

6.3.1 Company Experience and Past Performance

The Respondent shall provide its experience with designing projects relevant to the proposed Scope of Work identified in Section 3. For each scope area, the Respondent shall provide project descriptions for a minimum of three (3) projects completed in the last ten (10) years within the State of California and/or any other state in the United States of America. For each of the projects identified, provide the following information:

- Name and location of project
- Client (include address and phone number)
- Reference contact of the client
- General description of the referenced project
- General description of the services provided by the respondent
- Status of the project
- Change order rate of the project, as a percentage (total change orders divided by original capital contract amount)
- Key personnel involved with the referenced project with their specific duties including all management personnel
- Applicability and relevance of the referenced project to the services required by the Districts

6.3.2 Key Project Staff Experience

The Respondent shall provide the qualifications of key staff proposed to be assigned to the Districts' project. A brief resume for each key staff member shall be submitted that includes experience relevant to the Scope of Work in Section 3 of this RFP. The same key staff identified in the SOQ shall be used during the assigned design projects. At a minimum, the resumes shall include:

- Staff person's name;
- Labor category;
- Office location;
- Number of years of technical experience;
- Number of years with current firm;
- Areas of expertise and/or experience
- Educational background
- Proposed role in on-call contract

6.3.3 Project Management Method

The Respondent shall provide a narrative describing how the project management would occur within the Respondent's organization. This would include individual staff's roles and responsibilities in various phases of project development, methods of schedule and budget control, QA/QC procedures, etc.

6.3.4 Location of Project Staff

Due to the complexity of the work and the necessity for timely and effective communications during the various phases of the work, the District requires that **ALL** project staff are physically located within the United States of America during the course of the project. Multi-national firms shall not allow work to be performed on the project by staff located outside of the United States of America.

6.3.4.1 Regional Business Enterprise (RBE) Incentive

An RBE is a business that has maintained an office for a minimum of one year within the District's service area and/or the adjacent five counties. Those six counties are as follows: Los Angeles, San Bernardino, Riverside, Orange, San Diego and Ventura. The business must have a business permit or license issued by the local jurisdiction in which it is located. Firms participating as prime Respondents that qualify as an RBE will receive five (5) percentage points toward total scoring points.

6.3.5 Financial Condition

The respondent shall provide full disclosure of information regarding its financial condition and, if applicable, the financial condition of the corporation willing to guarantee the respondent's obligations under the ESA (Project Guarantor). The disclosure shall include a copy of the Respondent's most recent Annual Report. The respondent shall also submit the most current annual financial statement and the financial statements for the two (2) years immediately prior to the current one. Furthermore, the respondent shall identify the number of unpaid judgments against them over $1,000,000 in the past five (5) years. The respondent shall also identify the number of disputed claims over $5,000,000 in the past five (5) years.

7. HOURLY RATES REQUIREMENTS

In a separate electronic file, the Respondent shall submit Hourly Rates for all proposed key project staff. The hourly rate for each classification shall be fully burdened and include all indirect and overhead costs. At a minimum, the rates provided shall include:

- Project Manager
- Registered Civil Engineer
- Registered Structural Engineer
- Registered Mechanical Engineer
- Registered Electrical Engineer
- Design Engineer
- Designer
- Drafter
- Administrative (if applicable)

In addition, the work resulting from the RFP process may involve direct costs (e.g., reproduction, travel, etc.). Direct costs shall be billed at cost plus the selected Consultant's markup. Respondents shall include their proposed markup percentage rates for direct costs with the

Hourly Rates portion of the Proposal. Respondents shall be aware that travel time will not be billable.

Annual cost of living escalators will be allowed for all proposed rates and shall not exceed the Consumer Price Index (CPI) – Los Angeles Region for the preceding year. The rates submitted shall be good through end of June 2022.

8. REVIEW AND EVALUATION OF PROPOSALS

8.1. SOQ

The Districts will evaluate SOQs submitted by the firms in response to this RFP and select a limited number of the most qualified Respondents to be placed on an on-call list to provide engineering services. The following table represents the evaluation criteria and weighted percentage (%) points that will be considered during the evaluation process. Each SOQ will be competitively evaluated on its relative strengths and weaknesses against the following criteria listed below and as described in Section 6:

Evaluation Criteria	Weights
Company Qualifications and Record of Past Performance	35%
Key Personnel and Staff	35%
Project Management Method	10%
Financial Condition of Company(s)	10%
Ability to self-perform all services listed in Section 3	5%
RBE per Section 6.3.4.1	5%
Total	**100%**

8.2. Hourly Rates

Hourly Rates will be reviewed after the SOQs have been review and ranked. The Hourly Rates submitted shall be used to negotiate the fair and reasonable costs for the services. If the Districts are unable to reach an agreement with one or more of the top ranked Respondents, the Districts will terminate negotiations and negotiate with the next highest-ranked Respondent.

8.3. Districts Rights and Options

The Districts, at their sole discretion, reserve the following rights:

- To determine which responsible Respondents, if any, shall be included in the on-call list resulting from this RFP;
- To reject any, or all, Proposal or information received pursuant to this RFP;
- To supplement, amend, substitute or otherwise modify this RFP at any time by means of a written addendum;

- To cancel this RFP with or without the substitution of another RFP or prequalification process;
- To request additional information;
- To verify the qualifications and experience of each respondent;
- To take any action affecting the RFP, the RFP process, or the services or facilities subject to this RFP that would be in the best interests of the Districts;
- To require one (1) or more Respondents to supplement, clarify or provide additional information in order for the Districts to evaluate the SOQs and Hourly Rates submitted; and
- To waive any minor defect or technicality in any SOQ received.

9. TERMS AND CONDITIONS

A) General Contract Conditions

This RFP shall serve as a binding technical and contract document that outlines and prescribes the terms and conditions of the on-call services, and how administrative tasks are to be performed. The Districts' ESA, this RFP, each TAF and subsequent written amendments thereto, and all parts of the Consultants' Proposal and written amendments thereto that are accepted in writing by the Districts shall constitute the sole and exclusive ESA between the Consultant and the Districts. No verbal modifications to the ESA are allowed or recognized. **The Districts do not recognize, or sign contract documents proposed by Consultants.**

B) RFP Headings and Format

The section headings and captions of this RFP are for the sole convenience of the parties. The section headings, captions and arrangement of this RFP do not in any way affect, limit, amplify, or modify the terms and provisions of this RFP. The singular form shall include plural, and vice versa. The RFP shall not be construed as if it had been prepared by one of the parties, but rather as if both parties had prepared it. Any provision thereof that is found court of proper jurisdiction to be ambiguous or inconsistent, either internally or in relation to other provisions contained herein, shall be construed in accordance with a fair and ordinary meaning so as to effectuate the intent of the parties to this RFP and subsequent ESA. Unless otherwise indicated, all references to sections are to this RFP. All exhibits referred to in this RFP are attached to it and incorporated in it by reference. The preamble and all recitals to this RFP are also incorporated herein.

C) Changes in Schedule or Scope of Work

After issuance of a TAF, the Districts reserve the right to change the scope of work at any time during the project. Changes in work scope could include elimination, reduction, or addition of optional or non-optional work tasks. If the Districts want the Consultant to perform work that is not within the scope of services described in the TAF, the Districts shall direct the Consultant to perform such work in writing as an amendment to the TAF. Prior to the performance of any such work requested by the Districts, the Consultant shall provide the Sanitation Districts with a written notification to the Districts detailing the Consultant's understanding of the change in scope and how the Consultant's proposal and/or current project would be affected.

A change in the scope of services is defined as either an increase or decrease in the

number of hours beyond the estimated labor hours for an individual(s) working on a task or sub-task or the total number of hours for any given work task or sub-task identified in the TAF, or a change in the individual(s) hourly wages as identified in the Consultant's proposal; and, any outside direct or indirect costs or services). A change in the scope of services also is defined as a change in the Consultant's schedule (either the total estimated time to conduct work, or time for any identified task or sub-task) from the schedule provided in the Consultants TAF.

The Consultant may identify that a change in the scope of services identified in a TAF requires a change, which shall be defined as follows; either a change in the scope of services of an individual sub-task or a major task item; a change in the costs of labor, direct or indirect costs of an individual work task item or major task; or, a change in the proposed schedule of work or deliverables due to the Districts. Should any such change in the scope of services occurs, the Consultant is required to immediately notify the Districts both verbally and in writing. The Consultant shall not proceed with any work activity on this change, or incur any costs or expenses related to the change until the Consultant has identified the nature of the change, the Districts have agreed in writing to the amendment to the TAF conditions, and have issued a formal notice to proceed with such change as agreed. In a separate "stand-alone" letter to the Districts' Project Manager, the Consultant shall state the nature of the out-of-scope work, the proposed cost to perform the out-of-scope work, and any changes to the project schedule from the performance and from the nonperformance of such work. The "stand-alone" letter shall be uniquely identified with a Subject Header in Bold Font Type stating "NOTIFICATION OF CHANGE IN SCOPE". The "stand-alone" letter shall not be combined or concealed with any other form of transmittal, including but not limited to required project transmittal letters, progress letters, reports, drafts, emails or invoices. If the Consultant performs any out-of-scope work without the prior written approval from the Districts' Project Manager, or has not submitted his change in the scope of services in the form as previously identified in this section, the Consultant shall have de facto waived its rights to compensation for performing any such work. The Consultant shall not perform any out-of-scope work without the prior written approval of the Districts.

D) Invoicing and Payment

To allow for regular, continuous budget management, the Consultant shall submit invoices on at least a quarterly basis to invoices@lacsd.org detailing time used, and expenses incurred during completion of each tasks. For each task, each invoice shall include columns totaling (1) current monthly expenses, (2) previously billed expenses, (3) total billed to date, (4) proposed task budget, (5) remaining budget, (6) percent completion for each task, and (7) percent of budget remaining on each task and for the total budget. Failure to submit quarterly invoices may result in delayed and partial payments.

Each quarterly invoice shall detail labor charges, charges for subcontractors' services, and other direct costs. All charges shall be broken down and listed on a per-task basis. Each invoice for any particular month shall list in detail all charges incurred for each specific project and task performed during that quarter.

The Consultant shall expect to be paid on a time and material basis with a not-to-exceed budget for each task. Under the category of labor charges, each invoice shall list the name and project title of each team member who worked on each individual project task during the month that is being invoiced. The number of labor hours worked by each named

employee of the Consultant's firm on each individual task and the wage and billing rates per hour for each named employee shall be listed in the invoice. Names, titles (i.e. John Doe, Project Manager, etc.) and labor hours shall be in accordance with the TAF.

Personnel billing rates in accordance with the Consultant's Cost Proposal may be escalated in subsequent years for the duration of the project. Annual percent increases to hourly wages only will be implemented July of every year during the contract based upon the increase in the Consumer Price Index (C.P.I.) for All Urban Consumers for the Los Angeles - Long Beach – Anaheim area using the 1982-84 = 100 base for March to March, according to the following chart:

Increase in C.P.I.	Percent Salary Increase
>0 - 3.0%	3.00%
3.0 - 9.0% from 3.0% to 9.0% in the C.P.I.	3.00% plus 66 $^{2}/_{3}$% of the increase
9.0 - 12.0% from 9.0% to 12.0% in the C.P.I.	7.00% plus 50% of the increase
12.0 and above	8.50%

A decrease in the C.P.I. will result in no hourly wage increase. A C.P.I. of zero will result in no hourly wage increase.

The Consultant shall be held liable for the output and conduct of their own and of subcontracted personnel, and for lost time or additional personnel-hours and associated costs incurred due to the actions of the Consultant's personnel, subcontracted personnel, the use of inadequate equipment, or for equipment failure. Disputed items of work shall not be paid until resolved. The Districts shall hold these items in abeyance. The Districts' Project Manager shall authorize payments as soon as each invoice has been reviewed and verified, not to exceed thirty days from the date of receipt of the invoice.

The budget for each task shall be tracked and managed separately from the budgets for all of the other tasks. If the Consultant believes that it may not be able to complete the required scope of work for any task within the respective budget for that task, the Consultant shall immediately notify the Districts. Any task that is authorized in writing to be over budget by the Districts shall be denoted as such in the monthly invoices. The invoice shall clearly show the total percentage of completion for each activity; the total amount expended for each activity; the summation of the total amount expended for all activities; the total amount paid as of the date of the invoice; and the total amount due on this invoice.

The invoice(s) shall not include a change in the scope of services as identified in Section C. Changes in the scope of services that have been approved and authorized in writing may

be invoiced under a separate, stand-alone invoice in the format previously identified above.

E) Severability

If any term or provision of this RFP and subsequent ESA shall, to any extent, be held invalid or unenforceable, the remainder of this contract shall not be affected.

F) Insurance Requirements

The Consultant shall defend, indemnify and hold free and harmless the Districts, its officers, agents, and employees from and against any and all claims, demands, actions, loss or liability, arising out of negligent errors, omissions or acts of the Consultant or its subcontractors in performing the Consultants obligations herein. This indemnity shall extend to the payment of all costs of litigation including reasonable attorney's fees with respect to any cause of action referred to above.

The Consultant shall secure and maintain until the completion of the on-call services such insurance as shall protect it and the Districts in such a manner and at such amounts as set forth below. The Consultant shall pay the premiums for said insurance coverage.

The Consultant shall furnish to the Districts, certificates of insurance and endorsements verifying the insurance coverage as required by this RFP. These certificates of insurance and endorsements shall be delivered to the Districts within seven (7) days after the Sanitation Districts have awarded an ESA. The Districts reserves the right to require complete and accurate copies of all insurance policies required by this RFP. Coverage provided by Consultant's policies shall be primary coverage. The Districts shall receive thirty (30) days prior written notice of a policy cancellation or reduction in coverage. Insurers shall have at least an "A" policyholders rating and "X" financial rating in accordance with the current Best's Key Rating Guide. The insurance provided under the ESA shall include policies providing coverage to include each of the requirements set forth below in amounts that meet or exceed the minimums set forth herein. The Consultant shall provide insurance coverage through insurers, which meet the following terms:

G) Insurance Coverage

a) General Liability

The Consultant shall maintain General Liability Insurance with an endorsement naming the "Los Angeles County Sanitation Districts" and the applicable property owner(s), to be identified later, as additional insured and a standard cross liability clause or endorsement. The limit of insurance shall not be less than $3,000,000 per occurrence.

b) Automobile Liability

The Consultant shall maintain automobile liability insurance with coverage for any vehicle including those owned, leased, rented or borrowed. The limit amount for this insurance shall be not less than $1,000,000 per occurrence combined single limit.

c) Professional Liability

The Consultant shall maintain professional liability insurance with coverage for wrongful acts, errors, or omissions committed by Consultant in the course of work

performed for the Districts under this ESA. This insurance shall include coverage for liability assumed under this ESA when such liability is caused by Consultant's negligent acts, errors, or omissions. The limit for this insurance shall be not less than $1,000,000 per occurrence. The effective dates for this insurance shall start within seven (7) calendar days after the Districts' Board of Directors approves award of an ESA and shall be valid for five (5) calendar years after completion of a TAF subject to this ESA.

d) Workers' Compensation

The Consultant shall maintain Workers' Compensation Insurance as required by law in the State of California and Employer's Liability Insurance (including disease coverage) in an amount not less than $1,000,000 per occurrence. This insurance shall also waive all right to subrogation against the Districts, its employees, representatives and agents.

H) Protection of Property and Existing Facilities

The Consultant shall be held responsible for the preservation of all public and private property on and adjacent to the working areas and shall be required to exercise due caution to avoid and prevent any damage, injury, or nuisance thereto because of this operation.

Should any direct or indirect damage, injury, or nuisance result to any public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or as a consequence of the non-execution thereof, on the part of the Consultant or any of his employees or agents, such property shall be restored by, and at the expense of, the Consultant. The degree of restoration or recompense shall be, at a minimum, equivalent to restore existing conditions before the damage, injury, or nuisance occurred.

I) Cooperation with Others

The Consultant is cautioned that other Consultants or Contractors may be on the job sites at times during this contract. The Consultant shall not willfully or unnecessarily interfere with any ongoing operations, or with Districts' Contractors or other forces engaged in site maintenance or repairs, nor with any other Consultant or Contractor engaged in work for the Districts.

The Consultant shall observe all site speed limits and shall follow safe driving habits.

J) Clean-Up

The Consultant shall remove from the work and storage areas all debris incidentals to his investigation and work. All refuse and debris shall be disposed of at the nearest appropriately permitted disposal facility. The work and storage areas shall be restored to their original condition to the satisfaction of the Districts. At the end of each working day, the Consultant shall ensure that all soil and water generated during the day as well as all supplies incidental to the daily operation shall be properly stored. This daily clean-up is to be completed during the normal working hours, and the Consultant must allow adequate time to complete a proper cleanup of the site during the defined working hours.

K) Interaction with the Public

All persons employed by the Consultant shall display good conduct and maintain a high degree of professionalism. Any questions received by the public regarding the nature of

this project should be forwarded to the Districts project personnel.

L) Proposal Requirement Conformance

In submitting a response to this RFP and a subsequent TAF, the Consultant is deemed to understand and agree to the full measure of work specified therein. The Consultant further understands that all services therein shall be provided whether or not a service was specifically responded to in the Consultant's Proposal or TAF. It is further understood that all costs in providing the services specified herein shall be borne by the Consultant. Costs involved in providing a service therein specified shall not be considered as work claims, subject to additional reimbursement unless specifically authorized by the Districts in writing.

M) Damage to Equipment

The Consultant shall be fully responsible for the condition of and proper maintenance and operation of equipment appropriate for this investigation and the site conditions and shall neither have nor make any claim for damage that may occur to equipment as a result of the requirements of this investigation.

N) Electronic Format Submittal Requirements

The RFP shall be in PDF text-searchable format (Adobe Acrobat latest version). It is preferred that all documents be transferred to the PDF format from its native application. If this is not possible, then the documents shall be scanned in a PDF format.

The file size must not exceed 75MB. If a chapter or section is too large to achieve a file size that does not exceed 75MB, a chapter/section may be logically divided with each division being a separate file.

All material shall be scanned at a minimum resolution of 300 dpi. For color text, charts, drawings, graphs, and/or photographs, the scanned image shall be in color. For black and white text, charts, drawings, graphs, and/or photographs, the images shall be scanned in black and white unless a particular item requires a grey scale for a superior quality image. Gray scale shall never be used for the entire document.

All scanning shall conform with the following ANSI/AIIM standards: ANSI/AIIM MS44-1988 (R1933), Recommended Practice for Quality Control of Image Scanners, and AIIM TR38-1996, Compilation of Test Targets for Document Imaging Systems.

O) Termination

The Districts shall have the right to terminate the ESA without cause upon its giving the Consultant thirty (30) days advance written notice of its election to do so. The ESA may be terminated by either party hereto upon thirty (30) days advance written notice to the other party hereto in the event of substantial failure by said other party to perform in accordance with the terms of the ESA through no fault of the terminating party. No such termination for cause shall be effected unless the other party is given: (1) not less than ten (10) calendar days written notice (delivered by certified mail return receipt requested) of intent to terminate; and, (2) an opportunity for consultation with the terminating party before the said thirty (30) days' notice. Late payment by the Districts of approved invoices shall not constitute a substantial failure to perform unless the Districts has received written notification of overdue payment and payment is not made within fourteen (14) days after receipt of such notification. Consultant agrees not to terminate due to delays of up to one (1) year caused by the Districts. However, in the event of delays in excess of

six (6) months, caused by other than the Consultant, the Consultant's compensation and schedule for performance shall be subject to renegotiation.

In the event of termination by the Districts without cause, the Consultant shall cease all work and the District will compensate the Consultant for all agreed upon services performed and costs incurred up to the effective date of termination for which the Consultant has not been previously compensated. The Consultant shall be entitled to payment of all costs incurred to the date of termination and that portion of the fees prorated to the date of termination based on the percentage of the total hours and work completed as approved by the Districts.

In the event of termination for cause, the rights and obligations of the parties shall be determined in accordance with applicable principles of law and equity. Upon receipt of notice of termination from the Districts, the Consultant shall promptly stop its services, unless otherwise directed, and deliver to the Districts all data, drawings, reports, estimates, engineering calculations, summaries and such other information and materials as may have been accumulated by the Consultant in the performance of any TAF associated with this ESA whether completed or in progress. Any use by the Districts of incomplete information and materials shall be at the sole risk of the Districts.

P) Non-Disclosure Agreement

The Consultant shall not divulge to any third party, without the prior written consent of the Districts, any information developed or obtained through the Districts, in connection with the performance of this RFP unless: a) the information is known to the Consultant prior to obtaining the same from the Districts; b) the information is, at the time of disclosure by the Consultant, then in the public domain; or c) the information is obtained by the Consultant from a third party that did not receive the same, directly or indirectly, from the Districts.

Q) Ownership of Documents

All reports as well as original reports, plans, studies, memoranda, computation sheets, survey data, computer hardware or software developed or purchased specifically for the work under this RFP, and other documents assembled or prepared by the Consultant, or furnished to the Consultant in connection with this RFP shall be the property of the Districts. Copies of said documents may be retained by the Consultant but shall not be made available by the Consultant to any individual or organization without the prior written approval of Districts. Any reuse of said documents on an extension of a project or on any other project by the Districts without written verification or adaptation by the Consultant for the specific purpose intended shall be at Districts' sole risk and without liability or legal exposure to the Consultant, and the Districts shall indemnify and hold the Consultant harmless from all claims, damages, losses and expenses including attorney's fees, arising out of or resulting from any such reuse by the Districts. Any preliminary or working drafts, notes, or inter-agency or intra-agency memoranda which are not expected to be retained by the Consultant or the Sanitation Districts in the ordinary course of business shall be exempt from disclosure to any public entity under provisions of the Public Records Act.

R) Access to Work and Records

Representatives of the Districts shall be allowed access to the work whenever it is in preparation or in progress. The Consultant shall provide proper facilities for such access and inspection.

The Districts, or any authorized representatives of the Districts, shall have access to any books, documents, papers, and records of the Consultant that are pertinent to the Project for the purpose of making audit, examination, excerpts, and transcriptions.

The Consultant shall maintain and make available for reasonable inspection by the Districts accurate detailed records of its costs, disbursements and receipts with respect to items forming any part of the basis for billings to the Districts. Such inspections may be made during regular office hours at any time until one (1) year after the final payment under this ESA is made.

S) Notices

All notices or other communications to either party by the other shall be deemed given when made in writing and delivered or mailed (not e-mailed) to such party at their respective addresses as follows:

County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, California 90601
ATTN: Mr. Anthony Howard, Division Engineer
Sewer Design Section

Consultant's Name
Consultant's Address
ATTN: Consultant's Point of Contact

Either party may change its address or representative for such purpose by giving notice thereof to the other in the same manner.

T) Litigation

Should litigation be necessary to enforce any term or provision of this ESA, or to collect any portion of the amount payable under this ESA, then the prevailing party shall be entitled to recover reasonable attorney's fees in addition to any other relief to which the prevailing party would otherwise be entitled.

U) Compliance

The selected Consultant shall abide by and obey all applicable Federal, State, and local laws, rules, regulations and ordinances.

V) Governing Laws and Requirements

Performance of services herein shall be governed and construed in accordance with the laws of the State of California. The selected Consultant hereby agrees that in any action relative to the performance of said services, venue shall be in the County of Los Angeles, State of California.

W) Confidentiality

The Consultant and its Project team shall not release information or documentation associated with work under this RFP to anyone outside the Sanitation Districts without the express written consent of the Districts.

ATTACHMENTS

ATTACHMENT A

SAMPLE - TASK AUTHORIZATION FORM (TAF)
LOS ANGELES COUNTY SANITATION DISTRICTS
BLANKET ORDER NO. ###
(Consultant Name)

COMPLETED BY DISTRICT:

TAF No. **###** **Project Title**	**(Consultant Name)** **Proposal No.: ###**
District's Project/Task Number	**####### / ##-##-##**

District's Project Contact Information			
Title	Name	email	Phone No.
Districts Project Manager	Name	name@lacsd.org	(562)908-4288 x ####
Districts Project Engineer/Task Leader	Name	name@lacsd.org	(562)908-4288 x ####

TASK DESCRIPTION/PURPOSE:

The District has requested a proposal to

SCOPE OF WORK:

MATERIALS PROVIDED BY DISTRICTS:

DELIVERABLES FROM CONSULTANT:

COMPLETED BY CONSULTANT

(Consultant's Name) Project Contact Information			
Title	Name	email	Phone No.
Project Manager	Name		(###) ###-#### x ####
Project Engineer/Task Leader	Name		(###) ###-#### x ####
Project Engineer	Name		(###) ###-#### x ####
Project Designer	Name		(###) ###-#### x ####
Subconsultant 1	Name		(###) ###-#### x ####
Subconsultant 2	Name		(###) ###-#### x ####

PROPOSED TASKS AND DELIVERABLES:

Consultant will complete the following tasks and provide associated deliverables:

SCHEDULE FOR COMPLETION OF TASK:

Consultant will begin work upon receiving notice to proceed. Anticipated completion dates for completing above listed tasks and providing associated deliverables:

TOTAL ESTIMATED COST TO COMPLETE TASK:

Consultant will perform the tasks described above on a time-and-materials basis in accordance with the 2020 Professional Fee Schedule from our on-call contract with the District, as amended. (Note that work outside standard working hours (e.g. nights and/or weekends) will only be charged at increased labor rates if preauthorized by the District's Project Manager.)

Consultant Lead Assignments and Hourly Rates:

Project Manager ..... $XXX

Senior Engineer..... $XXX

Project Engineer ..... $XXX

Professional Staff ..... $XXX

Technician..... $XXX

CADD Operator ..... $XXX

Word Processor ..... $XXX

Total Hours:

Project Manager ..... XX **hrs**

Senior Engineer..... XX **hrs**

Project Engineer ..... XX **hrs**

Professional Staff ..... XX **hrs**

Technician..... XX **hrs**

CADD Operator ..... XX **hrs**

Word Processor ..... XX **hrs**

Estimated costs for the corresponding scope items; summarized below.

Consultant Labor:	$XXX
Consultant Expenses:	$XXX
Subcontractor Costs:	$XXX
Total:	$XXX

ATTACHMENT B

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

RFP No. 03956

ON-CALL ENGINEERING SERVICES

NON-COLLUSION DECLARATION
(Public Contract Code §7106)

I,_____, declare, as follows:

I am the_____of

_____,the party making the attached bid.

I know of my own personal knowledge and declare under penalty of perjury, that the attached bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone will refrain from bidding; that the bidder has not in any manner, directly or indirectly sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted its bid price or any breakdown of the bid price, or the contents of his bid, or divulged information or data relative to its bid, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent of any such corporation, partnership, company, association, organization, or bid depository to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____
(Date)

_____
(Location)

_____
(Signature of Bidder)

LOS ANGELES COUNTY
SANITATION DISTRICTS
Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

May 28, 2021
RFP No.: 03956

ADDENDUM NO. ONE

RFP 03956 – ON-CALL ENGINEERING SERVICES, dated May 7, 2021.

PART 1
GENERAL INFORMATION – CHANGES AND REVISIONS

1. Section 9. Terms and Conditions

INSERT: X) Prevailing Wages

Pursuant to applicable provisions of the Labor Code of the State of California, not less than the general prevailing rate of per diem wages and not less than the general prevailing rate of per diem wages for legal holiday and overtime work, for each craft or type of workman needed to execute the work contemplated under this agreement, as ascertained by the Director of the Department of Industrial Relations, shall be paid to all workmen performing field work on said work by the Consultant or by any subcontractor doing or contracting to do any part of said work.

A copy of the listing of the general prevailing wage rates may be obtained from the State of California Department of Industrial Relations, Office of Policy, Research, and Legislation, P.O. Box 420603, San Francisco, California, 94142-0603, or by visiting their website at www.dir.ca.gov.

2. Section 2. CONTRACT DETAILS AND ASSIGNMENT OF WORK; first paragraph, second sentence add the following to the end:

INSERT: (see Attachment C for a sample ESA)

3. Attachments

INSERT: ATTACHMENT C: SAMPLE ENGINEERING SERVICES AGREEMENT ESA

PART 2
GENERAL INFORMATION – QUESTIONS AND CLARIFICATION

The following questions were received by the Districts' and below are the answers.

1. **QUESTION:** RFP Section 1 states "preference will be given to Respondents that can provide the design services using their own forces". Section 4.1.4 states "District may provide the geotechnical and/or survey or other service providers". Is LACSD expecting firms to propose Geotechnical,

Surveying and other field services in their response? Would a proposal not be given preference if subs are proposed for these roles?

ANSWER: *Preference to Respondents that can provide the design services using their own forces is referring to the design engineers/managers such as Civil Mechanical, Electrical, and Structural engineers that will be working on the projects and the designers/drafters that will be preparing the plans. Necessary field work such as survey and geotechnical investigations (i.e. performing exploratory borings) does not need to be performed by each consultant's in-house staff; sub-consultants for the field work will be acceptable. It is not necessary to propose the firms but would like to know in the proposal if such subconsultants will be utilized if necessary and would like to know the Respondents ability to obtain these services in a timely manner. The Districts have obtained On-Call Survey Consultants and have On-Call Geotechnical Consultants (managed by our Structural Design Section) and in some cases, the Districts may require the use of these services; however the Districts would like the flexibility of using these services or the Consultant's (subconsultant's) services if necessary.*

2. **QUESTION:** Regarding Section 4.1.5, can LACSD provide the "sewer area study" procedure? Is there a need to have flow monitoring capabilities or other flow monitoring field service folks to complete a study?

   ANSWER: *If an area study is required for a particular project, the Districts will provide the procedures and guidance as necessary. Alternatively, the District's may provide the design flows. The District's Wastewater Collection System have flow monitoring at some locations and flow monitoring can be requested if necessary; however, some special projects may require flow monitoring field service to complete a study and the Consultants can propose flow monitoring field service if required; subconsultants will be allowed for this work.*

3. **QUESTION:** CCTV subconsultant –Should we include this on our team, or will the Districts be handling this through a separate contract?

   ANSWER: *As stated in Section 4.1.6 of the RFP for CCTV Inspection Review – The Districts will provide access to CCTV inspection records for the existing sewer and therefore, a CCTV subconsultant is not necessary.*

4. **QUESTION:** Potholing - Should we include this on our team, or will the Districts be handling this through a separate contract?

   ANSWER: *No, potholing if required for a specific project/task will be handled using District's potholing contractors.*

5. **QUESTION:** RFP Section 6.3.5 – We are a private corporation and do not have an annual report to disclose, but we are able to provide financial statements for the prior years as requested. Will that be acceptable?

   ANSWER: *Providing financial statements for prior years in lieu of an annual report to determine the respondent's financial condition is acceptable.*

6. **QUESTION:** RFP Section 6.3.5 – Will the LA County Sanitation Districts accept the financial statements as a separate (3rd) electronic document listed as "Confidential and Proprietary"?

   ANSWER: *The Districts will accept the submission of the financial statements as a separate electronic document listed as "Confidential and Proprietary".*

7. **QUESTION:** RFP Page 1 – The RFP states that "The District has established an aspirational goal of 20 percent overall participation by such firms." Is there a DBE goal requirement?

   ANSWER: *The 20 percent aspirational goal refers to overall participation in all members of the community including Minority Business Enterprises (MBE), Women Business Enterprises (WBE), Disadvantaged Business Enterprises (DBE), Disabled Veterans Business Enterprises (DVBE) and Small Business Enterprises (SBE). This overall goal includes DBE and is not a specific goal requirement. As stated in the RFP, participation is encouraged but award of a contract is not based on race, gender, disabled, disadvantaged or small business status. Evaluation Criteria is referenced in Section 8 of the RFP.*

8. **QUESTION:** RFP Section 7 – In the cost proposal, is the respondent expected to assign an hourly rate to each specific key individual and list their names, or is it acceptable to simply assign hourly rates to each labor classification?

   ANSWER: *In the cost proposal, the respondent is not expected to list specific names; it is acceptable to assign hourly rates to the classification (i.e. Project Manager, Civil Engineer, Designer, etc.).*

9. **QUESTION:** Is a draft Engineering Services Agreement (ESA) is available for review?

   ANSWER: *See Attachment C: Sample Engineering Services Agreement ESA, attached hereto.*

All other items remain the same.

Very truly yours,

Maribeth Tan

Maribeth Tan
Senior Buyer

BT:ee
Attachment: ATTACHMENT C: SAMPLE ENGINEERING SERVICES AGREEMENT ESA

ATTACHMENT C

ENGINEERING SERVICES AGREEMENT

This Engineering Services Agreement ("Agreement") is dated _____ ("Effective Date") and is between District No. 2, a county sanitation district organized and existing under the County Sanitation District Act, Health and Safety Code Section 4700 *et seq.*, (the "District") and <Consultant> ("Engineer"). The District and the Engineer are collectively referred to in this Agreement as the "Parties."

The District requested proposals for consulting firms to provide engineering services on an on-call basis for various existing and future projects (the "Project"). Engineer's proposal to provide such services under this Agreement is set forth in Exhibit "A" to this Agreement (the "Proposal"). The services to be provided by Engineer pursuant to the Proposal are set forth in the District's Request for Proposals ("RFP") for the Project (Exhibit "B" to this Agreement) and constitute the "Work."

The Parties therefore agree as follows:

1. Agreement

The RFP and the Proposal are incorporated into this Agreement. In the event that there is any conflict or inconsistency between the provisions of the RFP, the Proposal and/or this Agreement, the provisions of this Agreement will prevail.

This Agreement may be executed in any number of counterparts and all such counterparts shall constitute a single instrument. Delivery of an executed counterpart by facsimile or electronic transmission (in .pdf format or other electronic imaging) shall have the same force and effect as delivery of an original counterpart.

2. Engineer's Services

2.1 Scope of Services by Engineer. The Engineer shall provide engineering services as described in this Agreement. In performance of the Work, Engineer shall comply with all applicable Federal, State and local laws, rules, regulations, ordinances, and industry practices.

2.2 Engineer's Standard of Care. The standard of care applicable to Engineer's Work under the Agreement will be the degree of skill and diligence ordinarily employed by engineers performing the same or similar services, under the same or similar circumstances, in the State of California. The Engineer shall re-perform any Work not meeting this standard without additional compensation.

2.3 Engineer's Estimates and Projections. Engineer's opinions regarding the potential cost, financial analyses, economic feasibility projections, and schedules for potential future construction of the project are projections only and do not reflect: the ultimate cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Engineer does not warrant that the District's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Engineer's opinions, analyses, projections, or estimates, but Engineer shall provide such projections in accordance with the standard of care set forth in Section 2.2 of this Agreement.

3. District's Obligations

3.1 District-Provided Information and Services. The District shall furnish the Engineer available drawings, studies, reports and other data pertinent to Engineer's services and obtain or authorize Engineer to obtain additional reports and data as required. The Engineer is entitled to use and rely upon all such information and services provided by the District or others in performing Engineer's services under the Agreement except as otherwise stated by the District in connection with the information and services provided.

3.2 Access. The District shall arrange for access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services hereunder. Engineer shall comply with all applicable laws and with the District's requirements for persons on the District's premises.

4. Compensation and Payment for Engineering Services

4.1 Engineer's Compensation: The Task Authorization Form (TAF) system shall be used to issue the Work under this Agreement. When engineering services are required, Engineer will be presented with the project scope and will be asked to prepare a detailed Project Plan indicating the Project Manager, key personnel, and the time and expenses required to complete the Work. Once the Project Plan is approved by the District, the Engineer will be issued a TAF that details the agreed-upon scope, budget, schedule, deliverables and associated progress payments. The compensation payable by the District for the engineering services performed by the Engineer shall be per the final signed TAF for the Work. The total not-to-exceed budget for all Work performed by the Engineer is $1,000,000. The breakdown of expenses for each TAF shall be as follows.

a. **Direct Costs.** Direct Costs will be the hourly rates paid by the Engineer to its employees for time directly chargeable to the Project, exclusive of the costs for fringe benefits for those employees and other payroll costs. Engineer shall ensure that its employees maintain accurate records of the time chargeable to the Project.

b. **Overhead Costs.** Overhead Costs will be all business expenses allocated by the Engineer for rendering engineering services for the Project, including the fringe benefits for the employees who will be utilized on the Project. The Engineer's overhead cost will be charged to the District as a fixed percentage of the Direct Costs.

c. **Indirect Costs.** Indirect Costs will be all other identifiable costs of the Engineer directly chargeable to the Project, including, but not limited to, reproduction of reports, plans, specifications and other documents; preparation for meetings; travel costs; computer services; supplies used in the work; and communication expenses, that are necessary for the Engineer to fulfill its responsibilities for the Project.

d. **Subconsultant Costs.** Subconsultant Costs will be the costs paid by the Engineer to Subconsultants for providing services as required to assist the Engineer in the design and preparation of the deliverables for this Project.

e. **Fixed Fee.** The Fixed Fee shall be the profit of the Consultant and shall be a fixed percentage of the direct and overhead cost for each component of the Project.

4.2 Payment to Engineer. Engineer shall be compensated in accordance with Section 9 (D) of the RFP.

5. Duration, Schedule and Delay

5.1 Duration. Engineer's performance of the Work shall commence on the date identified in the District's Notice to Proceed. Engineer shall complete the Work in accordance with the agreed-upon schedule defined in each TAF (TAF Project Schedule).

5.2 Delay. The Engineer shall perform its services with due diligence and agrees to use its best efforts to complete the work involved in the Project in accordance with the TAF Project Schedule. The Engineer shall immediately advise the District of any delay in the TAF Project Schedule resulting from causes within or beyond its control. In the event of any such delay by causes within the Engineer's control, the Engineer shall promptly outline and implement appropriate actions required to overcome such delay, including, but not limited to, one or more of the following:

- Assignment of additional personnel to the Project;

- Utilization of overtime at no increase in compensation by the District; and
- Change in management structure or approach.

The foregoing is not intended to relieve the Engineer of responsibility for delay for which it would be responsible under this Agreement.

In the event of delay by causes beyond its control, the Engineer shall promptly provide the District with written notice of the delay and take all reasonable action to mitigate the effect of such delay. If the delay is beyond Engineer's control and without its fault or negligence, the time for the performance of its services may be equitably adjusted by written amendment subject to the District's approval of the extent of such delay. If the District determines that the Engineer has suffered additional costs that could not reasonably have been avoided, the District will compensate the Engineer for those additional costs.

Neither of the Parties will be responsible for delays in the performance of their obligations hereunder caused by strikes, action of the elements, acts and/or decisions of any governmental agency or by third parties, other than either Parties' consultants or subconsultants, which could not reasonably have been foreseen, or by civil disturbances, or any other cause beyond its reasonable control. Engineer will not be responsible for any delay by the District in supplying information and reviewing submittals by the Engineer.

6. Changes and Extra Work

The District may make changes within the general scope of this Agreement and may request the Engineer to perform additional services not covered by the original scope of work defined in a TAF. If the Engineer believes that any proposed change or direction given by the District causes an increase or decrease in the cost and/or the time required for the performance of the Work defined in a TAF or this Agreement, the Engineer shall so notify the District no later than five days after the date of receiving notification of a proposed change or the changed direction. The Engineer shall perform such services and will be paid for such services pursuant to a negotiated and mutually agreed change order signed by the Parties to this Agreement. If the Engineer determines that any work beyond the Work is necessary for completion of the Project, the Engineer shall notify the District and receive written approval prior to starting that work. If the Parties do not agree whether the Engineer is entitled to additional compensation or the extent of such compensation for work the Engineer determines is extra or changed work, the Engineer shall proceed with the work and the issue of the compensation shall be reserved for later determination as provided in Section 9 of this Agreement.

7. Personnel Assignment

Engineer agrees to utilize the key personnel as submitted to the District in its Project Plan, including its Project Manager. The Project Manager will be the primary contact for the District and should have a thorough knowledge of all aspects of the Project and its status. During the term of this Agreement, no replacement of the Project Manager or any of the key personnel of Engineer's Project team or its sub-consultants may be made without the written approval of the District, which approval will not be unreasonably withheld. Nothing in this Section is intended to or may be construed to prevent Engineer from employing or hiring as many employees as Engineer deems necessary for the proper and efficient performance of its services.

The District may request a change in the assignment of the key personnel. Engineer shall change key personnel to the satisfaction of the District within 30 days following written direction to change by the District.

8. Notices

All notices or other communications regarding this Agreement to either party by the other shall be deemed given when made in writing and delivered or mailed (not e-mailed) to such party at their respective addresses as follows:

Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, California 90601
ATTN: Samuel Espinoza

<Consultant>
<Mailing Address>
<City, State, Zip Code>
ATTN: <Project Manager>

Either party may change its address or representative for such purpose by giving notice thereof to the other in the same manner.

9. Governing Law, Dispute Resolution and Litigation

Engineer's performance of this Agreement shall be governed and construed in accordance with the laws of the State of California. Except as provided with respect to termination in Section 9 (O) of the RFP, if any dispute arises between the Parties with respect to the Work, compensation for the Work, or any other matter with respect to this Agreement, the Parties shall, if both agree, submit the matter to non-binding mediation. If the mediation does not resolve the dispute, the dispute shall be resolved through litigation. Venue for any action relating to this Agreement will be in the County of Los Angeles, State of California.

10. Third Parties

The services to be performed by Engineer are intended solely for the benefit of the District. No person or entity not a signatory to the Agreement may rely on Engineer's performance of its Work under this Agreement, and no third party will obtain any right to assert a claim against the Engineer by assignment of indemnity rights or otherwise accrue to that party as a result of this Agreement or Engineer's performance of the Work.

11. Entire Agreement

This Agreement represents the entire understanding between District and Engineer as to those matters contained herein. No prior oral or written understanding is of any force or effect with respect to those matters covered in this Agreement.

12. Action by Chief Engineer

Except as otherwise provided in this Agreement, the Chief Engineer and General Manager of the District ("Chief Engineer") may take all actions on behalf of the District in connection with any approvals or actions required of or by the District under this Agreement, and Engineer may rely on any such actions by the Chief Engineer as having been approved or required by the District under all applicable laws.

<CONSULTANT>

_____

Signature

Name

Title

DISTRICT NO. 2 OF THE

LOS ANGELES COUNTY SANITATION DISTRICTS

By: _____

Chairperson

Attest:

_____

Secretary

Approved as to Form:

Lewis Brisbois Bisgaard & Smith LLP

By: _____

District Counsel