ENGINEERING SERVICES AGREEMENT

This Engineering Services Agreement ("Agreement") is dated_____("Effective Date") and is between 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.*, ("District") and Carollo Engineers, Inc. ("Engineer"). The District and the Engineer are collectively referred to in this Agreement as the "Parties."

District requested a proposal for Professional Engineering Services for Seismic Resilience Program Criteria and Joint Water Pollution Control Plant (JWPCP) Seismic Evaluation (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 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.

2. Engineer's Services

2.1 Scope of Services by Engineer. The Engineer shall provide engineering services as described in the Scope of Work in the RFP and 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. If District deems any of Engineer's Work as not meeting this standard, Engineer shall re-perform the Work without additional compensation provided such non-conforming Work is identified in writing within twelve (12) months from completion of the services.

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 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. District shall furnish Engineer with available studies, reports and other data pertinent to Engineer's services and obtain or authorize Engineer to obtain additional reports and data as required. Engineer is entitled to use and rely upon all such information and services provided by District or others in performing Engineer's services under the Agreement except as otherwise stated by District in connection with the information and services provided.

3.2 Access. 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 District's requirements for persons on District's premises.

4. Compensation and Payment for Engineering Services

4.1 Engineer's Compensation: The compensation payable by District for the engineering services performed by Engineer is the sum of: (a) Direct Costs, (b) Overhead Costs, (c) Indirect Costs, (d) Subconsultant Costs (if required), and (e) a Fixed Fee resulting in a "Not to Exceed" cost for Project Task identified in the Scope of Work. The "Not to Exceed" amount for the entirety of the Work is $1,899,492. The breakdown of expenses for each shall be as follows.

a. **Direct Costs.** Direct Costs will be the hourly rates paid by 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 Engineer for rendering engineering services for the Project, including the fringe benefits for the employees who will be utilized on the Project. Engineer's overhead cost will be charged to District as a fixed percentage of the Direct Costs as identified in Section 4.1 a.

c. **Indirect Costs.** Indirect Costs will be all other identifiable costs of 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 Engineer to fulfill its responsibilities for the Project.

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

e. **Fixed Fee.** The Fixed Fee shall be the profit of Engineer 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 28 of the Terms and Conditions of the RFP.

5. Duration, Schedule and Delay

5.1 Duration. Engineer's performance of the Work shall commence on within ten (10) working days of the issuance of the Notice To Proceed (NTP). Engineer shall complete the Work in accordance with the schedule defined in the RFP.

5.2 Delay. Engineer shall perform its services with due diligence and agrees to use its professional efforts to complete the work involved in the Project in accordance with the RFP as expeditiously as is consistent with the professional skill and care and orderly progress of the Work. Engineer shall immediately advise District of any delay in the Project Schedule resulting from causes within or beyond its control. In the event of any such delay by causes within Engineer's control, Engineer shall promptly outline and implement appropriate actions required to overcome such delay, including, but not limited to, one or more of the following:

i. Assignment of additional personnel to the Project;

ii. Utilization of overtime at no increase in compensation by District; and

iii. Change in management structure or approach.

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

In the event of delay by causes beyond its control, Engineer shall promptly provide 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 District's approval of the extent of such delay. If District determines that Engineer has suffered additional costs that could not reasonably have been avoided, District will compensate 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 civil disturbances, or any other cause beyond its reasonable control. Engineer will not be responsible for any delay by District in supplying information and reviewing submittals by Engineer.

6. Changes and Extra Work

District may make changes within the general scope of this Agreement and may request Engineer to perform additional services not covered by the Scope of Work defined in a RFP. If Engineer believes that any proposed change or direction given by District causes an increase or decrease in the cost and/or the time required for the performance of this Agreement, Engineer shall so notify District in writing no later than five days after the date of receiving notification of a proposed change or the changed direction. Engineer shall perform such services and will be paid for such services pursuant to a negotiated and mutually agreed change signed by the Parties to this

Agreement. If Engineer determines that any work beyond the Scope of Work is necessary for completion of the Project, Engineer shall notify District and receive approval prior to starting that work. If the Parties do not agree whether Engineer is entitled to additional compensation or the extent of such compensation for work Engineer determines is extra or changed work, 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 District in its Proposal, including its Project Manager. The Project Manager will be the primary contact for 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 District, which approval will not be unreasonably withheld. Nothing in this Section 7 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.

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

8. 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: Andrew Fynaardt

Carollo Engineers, Inc.
3150 Bristol Street, Suite 500
Costa Mesa, California 92626
ATTN: Doug Lanning

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 6 of this Agreement, 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 mediation. Venue for any action relating to this Agreement shall be in the County of Los Angeles, State of California.

10. Severability

Should any provision of this Agreement be found or be deemed invalid, this Agreement will be construed as not containing that provision, and all other provisions, which are otherwise lawful, will remain in full force and effect, and to this end the provisions of this Agreement are declared to be severable.

11. Confidentiality

Engineer and its Project team shall not release Project information or documentation to anyone outside District without the express written consent of District.

12. Third Parties

The services to be performed by Engineer are intended solely for the benefit of 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 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.

13. Entire Agreement

This Agreement along with the RFP and the Proposal 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.

14. Action by Chief Engineer

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

15. Counterparts

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.

16. Waiver of Consequential Damages/Limitation of Liability

Neither party will be liable to the other party for any special, incidental, indirect, exemplary, punitive, penal or consequential damages, however arising, incurred by either Engineer or District or for which either may be liable to a third party.

COUNTY SANITATION DISTRICT NO. 2
OF LOS ANGELES COUNTY

By _____
Chairperson, Board of Directors

ATTEST:

By _____
Secretary to the Board

APPROVED AS TO FORM:
LEWIS, BRISBOIS, BISGAARD & SMITH LLP

By _____
District Counsel

Carollo Engineers, Inc.

By _____

Name: Douglas J. Lanning

Title: Senior Vice President

Prepared for
LOS ANGELES COUNTY
SANITATION DISTRICTS

Exhibit A

Seismic Resilience Program Criteria and JWPCP Evaluation

PROPOSAL / RFP No. 04081 / AUGUST 2023

carollo

90 YEARS

Table of Contents

707 Wilshire Boulevard, Suite 3920
Los Angeles, California 90017
213-489-1587
carollo.com

August 8, 2023

Ms. Diana Pineda, Buyer
Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, California 90601

Subject: **RFP No. 04081 Seismic Resilience Program Criteria and JWPCP Evaluation**

Dear Ms. Pineda and Selection Committee,

The Los Angeles County Sanitation Districts (Districts) wastewater system is a critical lifeline that we rely on every day to protect public health and the environment. In the wake of a natural disaster, such as a major earthquake, the recovery of our community's social and economic institutions will depend, in part, on the resiliency of your system. To prepare for this responsibility, the Districts will develop a Seismic Resilience Program (SRP) to identify and prioritize seismic mitigation projects that protect the life and safety of Districts staff and help you maintain the expected level of service following a major seismic event. Carollo will help you achieve these goals.

Key members of Carollo's team, including Project Manager, Doug Lanning, Technical Director, James Doering, and James's structural engineering team, have direct, relevant experience working together on similar seismic evaluation and mitigation projects, including the Orange County Sanitation District's Project PS15-06, a project nearly identical to yours. PS15-06 developed OC San's SRP, evaluated 63 structures at their wastewater treatment plants, and ranked seismic mitigation projects using a risk-based prioritization process.

Based on our experience with PS15-06 and other similar studies, we understand the **key success factors** of your project, and we offer corresponding benefits of selecting Carollo:

- **Diverse array of required skillsets.** The Carollo team encompasses all applicable expertise. In addition to James and his team of structural engineers who specialize in the design and seismic evaluation of wastewater treatment structures, we have included Resiliency Director, Ann Casey, who specializes in risk-based prioritization planning, and subconsultant Nabih Youssef Associates, a local structural engineering firm that specializes in the design and seismic evaluation of occupied buildings.
- **Logical methodology.** Carollo has an effective and efficient methodology for executing the SRP and JWPCP evaluation. Our methodology isn't theoretical – it is a proven process that we have used successfully on the same type of project for others, such as the Eugene/Springfield, OR wastewater system, to 1) complete the work in a systematic manner that keeps the project on track, 2) maintain consistency across various types of structures, and 3) improve the quality of the SRP based on feedback from the JWPCP evaluation.
- **Insightful risk analysis.** Because the seismic risk analysis can be complicated, with a multitude of potential scoring criteria, Carollo will guide the Districts through the risk analysis process. We will present alternative successful strategies used by other agencies, such as OC San, to get your input, collaborate with you to customize risk scoring that best meets the Districts' objectives, and help you develop a strategic implementation plan that balances mitigation costs with level of service resiliency.
- **High-quality project delivery.** Carollo's approach to completing high-quality projects on schedule and budget is proactive, collaborative, and based on the procedures we have developed over our 90-year history delivering successful projects for our clients, including the Districts.

In our proposal, you will find further discussion of Carollo's approach to these and other project success factors.

Our proven, local staff have the availability, commitment, and passion to complete this challenging project for the Districts and make it a success. We look forward to helping you develop a program for improved seismic resiliency in alignment with available resources that fully realizes your goals for the protection of life, safety, public health, and the environment.

As Project Manager, Doug Lanning will lead our team and serve as your primary point of contact. He is a professional engineer registered in the State of California and a Senior Vice President, fully authorized to contractually bind the firm to the terms of this proposal. Gil Crozes, Carollo's Client Service Manager for the Districts, will serve as Principal-in-Charge, providing a second high-level point of contact and maintaining continuity across Carollo-Districts projects.

Executive Authority Contact Information

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

Gil Crozes, PhD
Principal-in-Charge/Senior Vice President
707 Wilshire Boulevard, Suite 3920
Los Angeles, CA 90017
P: 714-655-5120
E: gcrozes@carollo.com

Doug Lanning, PE
Senior Project Manager/Senior Vice President
3150 Bristol St, Suite 500
Costa Mesa, California 92626
P: 714-913-7705
E: dlanning@carollo.com

We look forward to being of service on this important project.

Sincerely,

CAROLLO ENGINEERS, INC.

Douglas J. Lanning, PE
Project Manager/Senior Vice President

Gil F. Crozes, PhD
Principal-in-Charge/Senior Vice President

General Company/ Team Information

General Company/Team Information

Carollo Engineers, Inc., is a multi-discipline environmental engineering firm specializing in the planning, design, and construction of water and wastewater facilities and infrastructure.

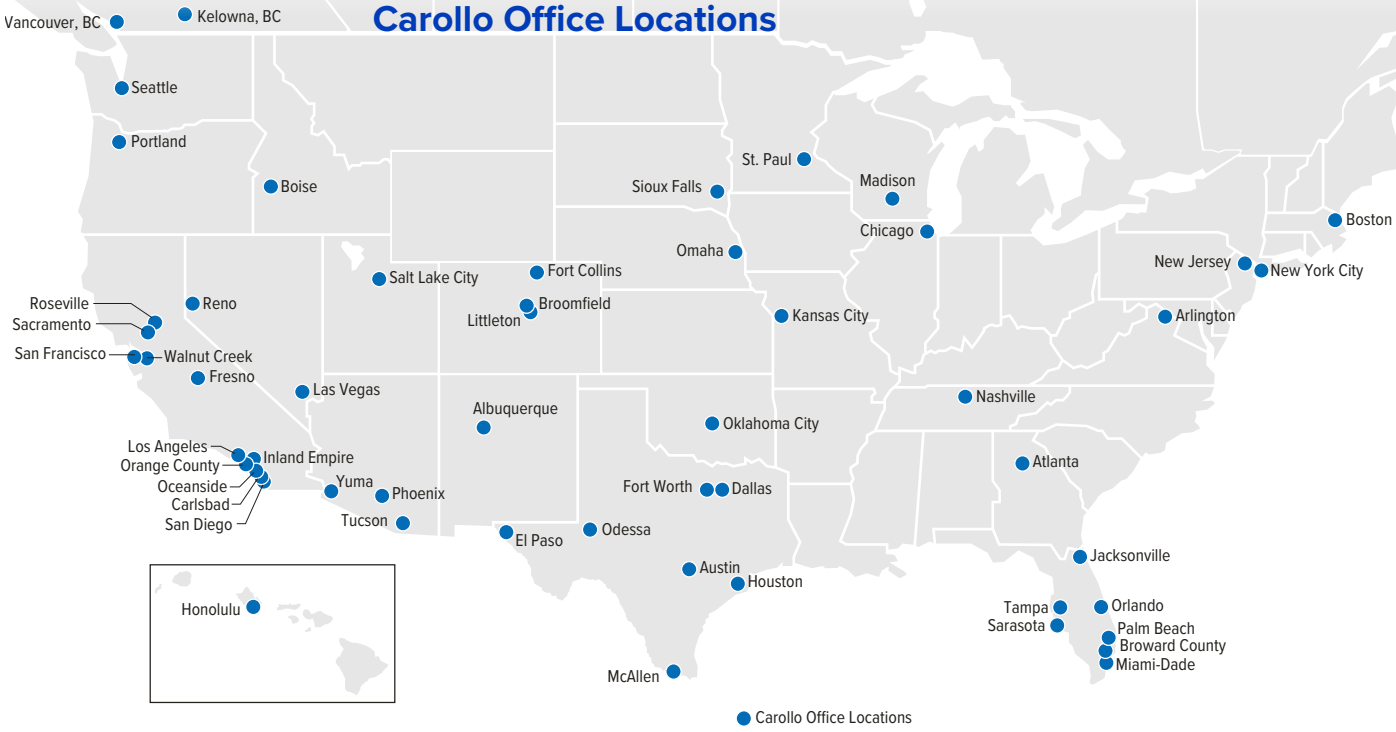
Our reputation is based upon client service, a continual commitment to quality, and technical leadership. We currently maintain 50+ offices in North America.

During our 90-year history, Carollo has successfully completed more than 25,000 projects for public sector clients. Carollo is one of the largest firms in the United States dedicated solely to water-related engineering—it's all we do.

Our targeted expertise allows us to focus on developing cost-effective, innovative, and reliable solutions to help our clients protect public health and the environment. It also allows us to recruit the brightest minds in the industry, train our staff on the issues impacting water—including resiliency—and lead the industry with innovative ideas tailored to the specific needs of our clients.

Carollo's sole focus is water and wastewater engineering services, leading to long-term partnerships with our clients. As an example, Carollo has served the Orange County Sanitation District for 70 years.

Carollo Office Locations



Structural Engineering is an Important Part of Carollo's Services

Structures for water and wastewater treatment facilities face unique demands. They must resist the typical forces from gravity loads, liquid loads, and transient loads, such as wind and seismic events, but in addition, they must provide a relatively long service life while maintaining a high level of performance without leakage and deterioration.

Often, they are constructed in aggressive environments with exposure to corrosive air, liquids, soil, and groundwater. Deep foundations or ground improvement are frequently required to mitigate excessive settlement or liquefaction hazards. Many projects involve modifying or expanding existing structures. And a large variety of materials and systems are used for construction, including cast-in-place concrete, prestressed concrete, masonry, steel, stainless steel, and aluminum.

Because Carollo's sole focus is water/wastewater services, our structural engineers specialize in the unique design and construction challenges of water infrastructure projects.

Carollo's structural engineering services include condition assessments, seismic evaluation for resiliency-type studies, feasibility studies to develop conceptual alternatives, preliminary and final design, rehabilitation, repair, and construction services.

Carollo's structural engineers specialize in the unique design and construction challenges of water infrastructure projects.

Risk Management and Resilience Strategies

Maintaining secure and reliable water systems in the face of highly variable and emerging risks is critical for water and wastewater utilities. From cyber-attacks, seismic and climate events, to newly discovered contaminants, these challenges are layered into normal capital requirements attributable to aging infrastructure.

Carollo works with our clients to develop comprehensive risk management strategies that identify and categorize these risks, assess system condition and criticality, identify system vulnerabilities, and enact risk mitigation strategies. Mitigation measures are optimized within available resources to minimize service disruptions, narrow recovery times, and safeguard resilient water systems.

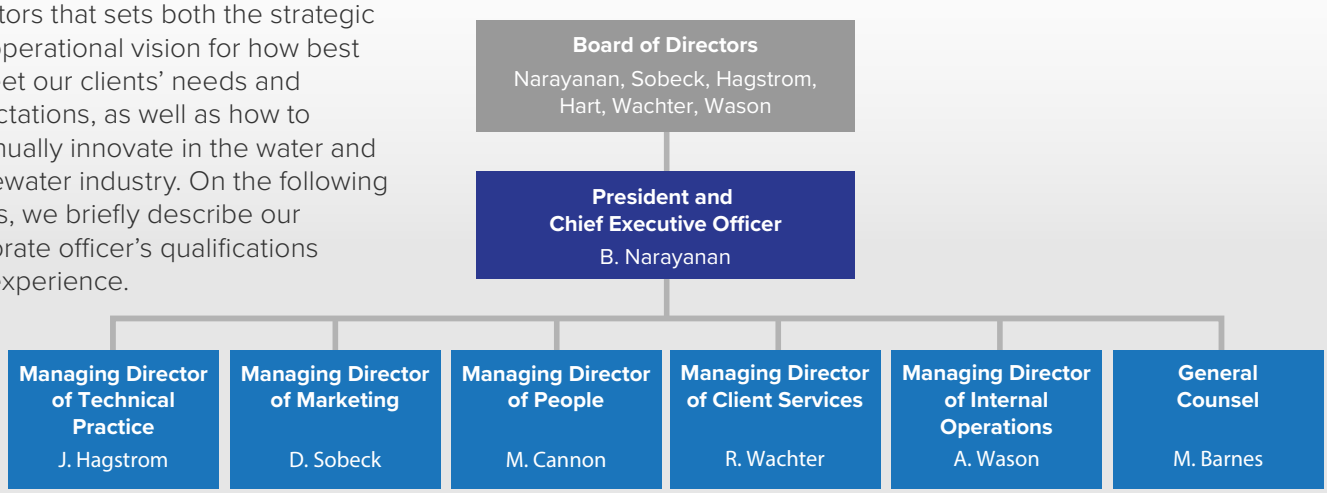
Carollo works collaboratively with our clients to develop comprehensive strategies that address resilience and risk concerns.

Some of our risk and resilience planning services include:

- Seismic resilience planning.
- Holistic asset risk and risk mitigation capital planning.
- Security and natural hazard risk analysis and planning (AWWA J100).
- Risk and redundancy studies.
- Security and resilience policy and procedure development.
- Climate adaptation and resilience planning.
- Mitigation strategies and procedure development.
- Emergency response plan (ERP) development.
- Business Continuity Plan (BCP) and Continuity of Operations Plan (COOP) development.
- Asset management risk framework and CIP development.

Names of Partners or Officers

Carollo is managed by a Board of Directors that sets both the strategic and operational vision for how best to meet our clients' needs and expectations, as well as how to continually innovate in the water and wastewater industry. On the following pages, we briefly describe our corporate officer's qualifications and experience.



B. Narayanan, PhD, PE

PRESIDENT & CEO

Mr. Narayanan is President and CEO of Carollo and has also served as Director of Wastewater Process Technology, overseeing the process design on all Carollo wastewater projects. He has 34 years of experience in process and hydraulic evaluations on numerous master planning and design projects, and in the process engineering on many nutrient removal design projects. He is a recognized expert in the area of phosphorus removal to very low levels with numerous publications and presentations to his credit.

PhD Civil/Environmental Engineering
MS Environmental Engineering
BS Civil Engineering

Civil Engineer, CA
Professional Engineer, MI

Ash Wason, PE

EXECUTIVE VP/CFO/TREASURER

Mr. Wason has more than 40 years of experience in the planning, design, and construction management of water and wastewater treatment facilities, pipelines, pump stations, and cogeneration facilities. He is experienced in the areas of preliminary, primary, secondary, and tertiary treatment, including solids handling, headworks, odor control, HVAC, pump stations, and cogeneration facilities. He has led multi-million-dollar expansion projects for facilities throughout California.

MS Mechanical Engineering
BS Mechanical Engineering

Civil Engineer, CA
Mechanical Engineer, CA

Jim Hagstrom, PE

EXECUTIVE VICE PRESIDENT

Mr. Hagstrom has 35 years of experience in planning, design and construction management of water and wastewater treatment facilities. His background includes successful project management of large, diverse consulting teams delivering innovative and sustainable solutions to clients throughout the West. He has been involved with the successful development and delivery of 12 wastewater facility/master plans.

MS Environmental Engineering
BS Civil Engineering

Civil Engineer, CA, IL, ID, WA
Professional Engineer, MI

Dave Sobeck, PE

EXECUTIVE VICE PRESIDENT

Mr. Sobeck has more than 24 years of experience specializing in the design and construction management of water and wastewater treatment facilities, supply, distribution, and infrastructure projects. During that time, he has led the design of over $3 billion in water and wastewater construction for public and private sector clients throughout the US, including more than 20 Design-Build and CMAR projects.

MS Civil and Environmental Engineering
BS Civil Engineering

Civil Engineer, AZ, MI

Michelle Cannon

SENIOR VICE PRESIDENT

Ms. Cannon serves as Carollo's Managing Director of People and has more than 28 years of experience in the Human Resources field. In her current role, Ms. Cannon oversees the Human Resources, Learning and Development, Community Engagement, Diversity Equity and Inclusion, and Employee Recognition and Engagement groups providing operational and strategic support to the organization.

MBA
BS Business Management, Human Resources

Russ Wachter, PE

EXECUTIVE VICE PRESIDENT

Mr. Wachter has more than 30 years of experience in the planning, design, and construction of municipal wastewater collection and treatment facilities, water distribution and treatment facilities, and related infrastructure, as well as various odor control systems and environmental permitting processes. He is experienced in alternative project delivery, including more than 30 projects totaling more than $2 billion in GMPs.

MS Environmental Engineering
BS Civil Engineering

Civil Engineer, AZ, NM, NV, SD, NE, MO

Vincent Hart, PE, LEED, ENV SP

EXECUTIVE VICE PRESIDENT

Mr. Hart has 30 years of experience in planning, design, and expansion of water supply, water treatment, and water distribution facilities. He has been involved with multiple bench and pilot studies involving design and expansion of water treatment facilities and has written various publications and given presentations on the subject. His areas of expertise include pilot and water treatment plant design and operation, membrane filtration facilities, and UV disinfection for drinking water.

MS Environmental Engineering
BS Environmental Engineering

Professional Engineer, CO, MO, MN, KS, NJ, NC, TN, MI

LEED Accredited Professional
Envision Sustainability Professional

Michael Barnes

CORPORATE SECRETARY/GENERAL COUNSEL

Mr. Barnes has more than 30 years of experience in the construction and design process, public works construction law, dispute resolution, client counseling, and contract preparation. Additionally, he has successfully represented public and private clients in complex, multi-million-dollar construction delay, impact and defect litigation. He has served as Carollo's General Counsel for 14 years providing oversight of all company legal functions including employment, immigration, and regulatory compliance; assisting in claims avoidance and resolution; and managing insurance programs.

JD Law
AB History

Admitted to Practice December 1991 California, Northern District of California, Ninth Circuit Court of Appeals

Doug Lanning will serve as Project Manager and primary contact person for your project:

Doug Lanning, PE, Senior Project Manager/Senior Vice President
714-913-7705; dlanning@carollo.com
Civil Engineer, California. License #47513

35 Years of Relevant Experience

All names under which the proposing firm has conducted business during the preceding five years: **Carollo Engineers, Inc.**

Organization Chart

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste into Resources

LACSD Seismic Resilience/JWPCP Evaluation

Principal-in-Charge
Gil Crozes, PhD

Project Manager
Doug Lanning, PE

Quality Control Team
Steve Hough, PE - *Resiliency Planning*
Mike Dadik, PE, SE - *Process Structures*
Ryan Wilkerson, SE[1] - *Buildings*

Seismic Resiliency Plan
Ann Casey, MBA - *Resiliency Director*

Seismic Criteria and Evaluation Methodology
James Doering, PE, SE
Owen Hata[1]

Risk Analysis Methodology
Doug Lanning, PE
James Doering, PE, SE
Marios Panagiotou, PhD, PE[1]

JWPCP Evaluation and Mitigation
James Doering, PE, SE - *Technical Director*

Field Assessments
Caleb Che, PE
Owen Hata[1]

Process Buildings
James Doering, PE, SE
Felicia Fan, PE, SE
Scott Stewart, SE[1]

Cost Estimating
Jason Rozgony - *Mitigation*
Kinsey Ryan, PE - *Facility Value*

Occupied Buildings
Owen Hata[1]
Scott Stewart, SE[1]

Tanks and Basins
Caleb Che, PE
Mathew Esquer, PE

Likelihood of Failure Analysis
James Doering, PE, SE
Owen Hata[1]
Felicia Fan, PE
Caleb Che, PE
Mathew Esquer, PE

JWPCP Prioritization
Ann Casey, MBA - *Resiliency Director*

Consequences of Failure Analysis
Ali Ahmadi, PhD, PE, PMP

Risk-Based Prioritization
Ann Casey, MBA
Ali Ahmadi, PhD, PE, PMP

Key Team Member

Subconsultant
1 - Nabih Youssef & Associates

About *Nabih Youssef & Associates*

NABIH YOUSSEF ASSOCIATES STRUCTURAL ENGINEERS

Subconsultant Nabih Youssef & Associates adds Program Development and Building Expertise

For over three decades, Nabih Youssef & Associates (NYA) has focused on design-intensive private, institutional, and public structural engineering projects. NYA is a leader in advanced analysis for the evaluation and design of new and existing buildings. They have worked with public agencies and private owners to create seismic evaluation standards and emergency response plans for portfolios of various building types. As part of their commitment to excellence, they aim to advance the practice of engineering by deploying state-of-the-art technologies that further earthquake engineering standards and performance-based design.

NYA's specialized expertise will complement Carollo's. By utilizing our advanced capabilities and in-depth knowledge of code and analysis, NYA will help establish guidelines for evaluation criteria and steer the application of these criteria to the occupied and process buildings in the JWPCP campus.

NYA Team Members

Owen Hata
OCCUPIED BUILDING LEAD

Ryan Wilkerson, SE
QUALITY CONTROL – BUILDINGS

Marios Panagiotou, PhD, PE
RISK ANALYSIS METHODOLOGY

Scott Steward, SE
PROCESS BUILDINGS, OCCUPIED BUILDINGS

HIGHLIGHTED EXPERIENCE: In collaboration with the University of Southern California, Nabih Youssef & Associates led and coordinated efforts of a professional committee of structural engineering firms to assist the University in the development of seismic performance criteria based on the long-term masterplan and current standards.

The committee screened and evaluated occupied buildings using **ASCE 41** and provided a score to help the university prioritize retrofits. **50 structures were evaluated as part of the reference project.**

HIGHLIGHTED EXPERIENCE: Nabih Youssef Associates provided structural engineering services for the seismic evaluation and seismic strengthening of several critical infrastructure buildings and distribution structures located at the Amgen manufacturing facility in Puerto Rico.

Using **ASCE 41,** NYA performed seismic evaluations on **12 industrial building structures,** major pipe rack structures traversing the facility, MEP equipment and distribution systems, and tank farms. The seismic performance objective was that any building damage and equipment or component failure had to be repaired or replaced within 6 months. NYA worked closely with Amgen and their contractor to identify seismic deficiencies and develop correction measures, all under a very tight schedule.

Nabih Youssef & Associates will help establish seismic evaluation criteria and apply these criteria to the occupied buildings in the Districts' JWPCP campus.

All team members are located in Los Angeles, CA.

Please review Nabih Youssef & Associates' bios in Section 3.

History of the relationships among team members, including a description of past working relationships.

Carollo offers a local key team working toward a common goal.

Five of our six key team members (shown below) are local to greater Los Angeles—this is our community where we live and work. We align with the Districts' mission to protect public health and the environment, and we will lead your important project to success.

Gil Crozes, PhD
PRINCIPAL-IN-CHARGE
LOS ANGELES, CA

Doug Lanning, PE
PROJECT MANAGER
ORANGE COUNTY, CA

James Doering, PE, SE
TECHNICAL DIRECTOR
ORANGE COUNTY, CA

Owen Hata, PhD
OCCUPIED BUILDINGS LEAD
ORANGE COUNTY, CA
(Nabih Youssef & Associates)

Ali Ahmadi, PhD, PE
CONSEQUENCES OF FAILURE ANALYSIS LEAD
LOS ANGELES, CA

Notable Local Project:

Metropolitan Water District and Sanitation Districts of LA County, Regional Recycled Water Program Planning and Advanced Purification Center

Los Angeles, CA

James Doering served as structural engineer for the AWT Recycled Water Demonstration Facility for the Metropolitan Water District of Southern California, located within the Sanitation Districts of Los Angeles County, Joint WPC Plant in Carson.

Carollo, in collaboration with another firm, provided design and technical services related to development of the test plan and regulatory efforts for the demonstration facility. We supported Metropolitan in designing a 1-mgd Demonstration Facility to treat secondary effluent from the Districts' Carson JWPCP to produce water for indirect potable reuse (IPR).

Metropolitan Water District of Southern California's Advanced Purification Center.

The purpose of the demonstration plant was to confirm the basis of design for the full-scale facility and generate the necessary information during a one-year demonstration testing period to secure regulatory approval.

The Regional Recycled Water Program, a partnership with the Sanitation Districts of Los Angeles County, will purify wastewater to produce high quality water that can be used again.

Team members that have known and worked with each other for over 20 years.

The team members shown here have a 20+ year history of collaboration and teamwork at Carollo, and all are located in the greater Los Angeles, Southern California area.

Gil Crozes, PhD
PRINCIPAL-IN-CHARGE

Doug Lanning, PE
PROJECT MANAGER

James Doering, PE, SE
TECHNICAL DIRECTOR

Steve Hough, PE
QUALITY CONTROL

Relevant Project:

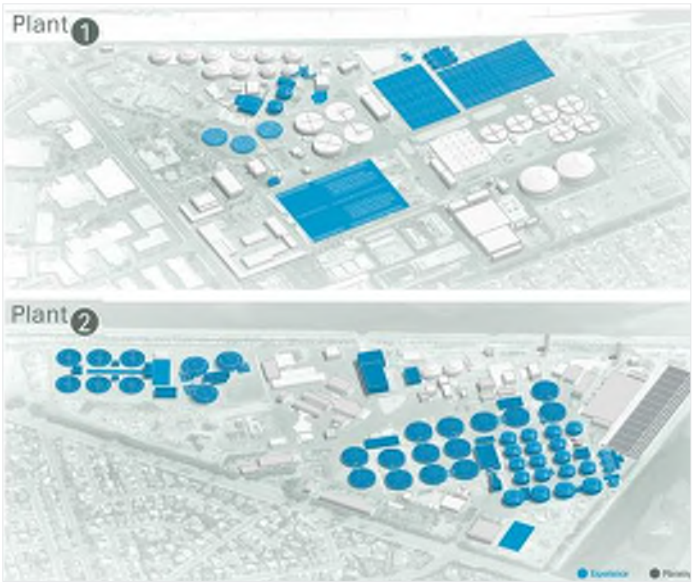
Facilities Master Plan & PS15-06 Seismic Evaluation of Structures at Plants 1 & 2 Orange County Sanitation District (OC San)

Fountain Valley, CA

Team members Doug Lanning, James Doering, Steve Hough, and Mike Dadik worked together on the Facilities Master Plan for OC San, as well as the PS15-06 seismic evaluation. The projects involved District-wide facilities, similar to the ones in the current scope. OC San is a regional wastewater agency serving 2.6 million people within 20 cities of central and north Orange County. Carollo has been serving OC San for 70 years.

Facilities Master Plan: Responding to the need for identifying recommended projects and organizing and prioritizing OC San's collection of individual master plans and related reports, Carollo developed a comprehensive plan to achieve OC San's long-term 2037 capital improvement vision. The Master Plan focused on identifying a 20-year Capital Improvement Program for repair and replacement of existing facilities while also meeting new regulatory requirements, achieving district reliability criteria, and meeting the District level of service goals and strategic initiatives for both treatment plants and the collection system. In workshops with OC San staff, Carollo reviewed the condition results on a structure-by-structure basis to identify construction projects for the next 20 years. The resulting projects and costs were fed into a financial evaluation as part of a rate study for the District.

PS15-06 Seismic Evaluation: This was a major seismic evaluation of dozens of structures at Plants 1 & 2. This study identified a significant number of seismic vulnerabilities for the two plants. Our team provided OC San with the decision making framework and a prioritized slate of capital improvement program (CIP) projects to address these vulnerabilities in a prudent and cost effective manner to improve overall seismic reliability of the two plants.



Aerial overview of OC San Plants 1 & 2.

Our key team members have well-established lines of communication.

The key team members shown here have a solid history of working together, with individual key team members collaborating somewhere between five to twenty years with each other. In addition, the majority of our key team members are familiar with the Districts' staff, policies, and procedures.

Gil Crozes, PhD
PRINCIPAL-IN-CHARGE

Ann Casey, MBA
RESILIENCY DIRECTOR

Doug Lanning, PE
PROJECT MANAGER

James Doering, PE, SE
TECHNICAL DIRECTOR

Relevant Project:

Asset Management Plan Update

Yorba Linda Water District, CA

Together, Ann Casey and James Doering led and performed work associated with the Yorba Linda Water District's Asset Management Plan for its water and sewer infrastructure. Tasks included:

- Developing a strategy for optimizing life-cycle costs, maintaining service levels, and meeting anticipated regulatory requirements.
- Identifying, configuring, and training staff on the use of AMP database modeling tools.
- Providing an asset inventory/risk assessment using a "best management" approach to produce an asset classification system, condition assessment results, remaining useful life estimates, and risk scores.
- Providing a financial evaluation that includes replacement costs, prioritized long-term capital project categories with capital investments projections, a customized Financial Planning Tool™, and recommended funding scenarios.
- Documenting a 10-year repair & replacement (R&R) CIP with implementation schedule/funding requirements, assessment methodologies, findings, recommendations, and conclusions.

Last year, Ann Casey conducted a workshop with the Districts' staff to explore how risk-based prioritization could be incorporated into the capital planning process to better manage assets to their lowest lifecycle costs while still delivering expected levels of service.

In addition to risk prioritization, Ann presented alternatives to the Districts to integrate capital funding needs into the rate budgeting process.

WEST COAST SEISMIC EVALUATION PROJECTS

The highlighted projects are included as reference projects in Section 2.

City	State	Client Name	Project Name	Project Type	No. of Structures	Structures	Criteria	Market	Year
Seattle	WA	King County	West Point Digester Capacity Evaluation	Seismic Evaluation - Planning	8	Process Buildings & Water-Bearing Structures	ASCE 41 & ACI 350	Wastewater	2022
Bellingham	WA	City of Bellingham	Post Point Biosolids Planning	Seismic Evaluation - Project	7	Process Buildings & Occupied Buildings	ASCE 41	Wastewater	2020
Orange County	CA	Orange County Sanitation District	PS15-06 - Seismic Hazard Evaluation at Plant Nos 1 & 2	Seismic Evaluation - Planning	63	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Wastewater	2019
Eugene	OR	Metropolitan Water Management Commission	Wastewater System Resiliency	Seismic Evaluation - Planning	26	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Wastewater	2019
Orange County	CA	Orange County Sanitation District	P1-105 - Plant No. 1 Headworks Rehabilitation	Seismic Evaluation - Project	5	Process Buildings & Water-Bearing Structures	ASCE 41 & ACI 350	Wastewater	2016
Chula Vista	CA	Sweetwater Authority	Perdue WTP Facilities MP Update	Seismic Evaluation - Planning	5	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Water	2023
Roseville	CA	City of Roseville	Barton Road Water Treatment Plant Condition Assessment	Seismic Evaluation - Planning	1	Occupied Buildings	ASCE 41	Water	2021
Wilsonville	OR	City of Wilsonville	Wilsonville Wastewater Treatment Facilities Plan 2020	Seismic Evaluation - Planning	5	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Wastewater	2021
El Segundo	CA	West Basin MWD	Title 22 Filters Rehabilitation and Replacement	Structural Repairs	1	Water-Bearing Structures	ACI 350	Recyled Water	2021
Big Bear Lake	CA	City of Big Bear Lake	UWMP 2020	Seismic Evaluation - Planning	15	Water-Bearing Structures	AWWA D100	Water	2021
Santa Barbara	CA	City of Santa Barbara	Cater Finished Water Reservoir Resiliency Project	Seismic Evaluation - Project	1	Water-Bearing Structures	ACI 350	Water	2021
Hillsboro	OR	Clean Water Services	Rock Creek Centrifuge Project	Seismic Evaluation & Retrofit	2	Process Buildings	ASCE 41	Wastewater	2020
San Diego	CA	City of San Diego	MOC-2 & MOC-6	Seismic Evaluation - Planning	2	Occupied Buildings	ASCE 41 - Tier 1 - 2	Water	2020
Corvallis	OR	City of Corvallis	Water Distribution & Treatment Facilities Master Plan	Seismic Evaluation - Planning	15	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Water	2020
Watsonville	CA	City of Watsonville	Watsonville Water Master Plan	Seismic Evaluation - Planning	6	Process Buildings & Water-Bearing Structures	ASCE 41 & ACI 350	Water	2020
Dana Point	CA	SOCWA	JB Latham Package B	Seismic Evaluation & Retrofit	1	Process Buildings	Building Code	Wastewater	2019
Riverside	CA	City of Riverside	Riverside Comprehensive Wastewater Master Plan	Seismic Evaluation - Planning	1	Water-Bearing Structures	ACI 350	Wastewater	2019
Santa Ana	CA	IRWD	PDF Sodium Hypochlorite Storage	Seismic Evaluation & Retrofit	1	Process Buildings & Occupied Buildings	ASCE 41	Water	2019
Carlsbad	CA	Encina Wastewater Authority	Solids Thickening Design Project	Seismic Evaluation - Project	2	Process Buildings	ASCE 41	Wastewater	2019
Santa Barbara	CA	City of Santa Barbara	Braemar Lift Station Rehabilitation Project	Seismic Evaluation - Project	1	Process Buildings	ASCE 41	Wastewater	2018
Fountain Valley	CA	Orange County Sanitation District	J-124 Gas Compressor Facilities Upgrade	Seismic Evaluation - Project	1	Process Buildings	ASCE 41	Wastewater	2018
Carlsbad	CA	Encina Wastewater Authority	Power Building Repairs	Structural Repairs	1	Process Buildings	ASCE 41	Wastewater	2018
Wilsonville	OR	City of Wilsonville	Water Master Plan Update	Seismic Evaluation - Planning	9	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Water	2017
Palm Springs	CA	City of Palm Springs	Headworks and Primary Clarifier Upgrade	Seismic Evaluation - Project	1	Water-Bearing Structures	ACI 350	Wastewater	2016
Wilsonville	OR	Tualatin Valley Water District	Willamette River WTP 2015 Master Plan	Seismic Evaluation - Planning	5	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Water	2016
Salt Lake City	UT	SLCDPU	Big Cottonwood WTP Seismic Evaluation	Seismic Evaluation - Planning	3	Process Buildings & Water-Bearing Structures	ASCE 41 & ACI 350	Water	2016
Martinez	CA	City of Martinez	2015 Seismic and Structural Upgrade Project	Seismic Retrofit	4	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Water	2016
Pasadena	CA	Pasadena Water & Power	Sunset Reservoir No. 1 Seismic valuation	Seismic Evaluation - Planning	1	Potable Water Storage Reservoir	ACI 350	Water	2015
Burlingame	CA	City of Burlingame	Wastewater Treatment Facility Master Plan	Seismic Evaluation - Planning	16	Process Buildings & Water-Bearing Structures	ASCE 41 & ACI 350	Wastewater	2015
Oxnard	CA	City of Oxnard	Public Works Integrated Master Plan	Seismic Evaluation - Planning	26	Process Buildings, Occupied Buildings, & Water-Bearing Structures	ASCE 41 & ACI 350	Wastewater	2014
Fremont	CA	Alameda County Water District	Appian Tank Seismic Upgrade	Seismic Retrofit	1	Water-Bearing Structures	AWWA D100	Water	2013
Fremont	CA	Alameda County Water District	Vineyard Heights Seismic Upgrade	Seismic Retrofit	1	Water-Bearing Structures	AWWA D100	Water	2008

Equitable Work Force and Diversity

Carollo recognizes that when we invest in building a diverse workforce, we become a stronger company, one that understands and share values with the communities that we live in and serve. We strive to break through the common narratives in our industry and provide transformational opportunities and increased visibility to women and people of color.

Carollo is committed to diversity. Carollo has great respect for those voices that have been historically disenfranchised from our industry. We recognize that minorities represent a pool of talent that ought to be included in our industry for they provide a unique perspective to our work. Carollo does not work in a vacuum. The projects we carry out are intended to serve a greater purpose.

Just like the Los Angeles County Sanitation Districts, Carollo seeks to protect public health and the environment; and just like the Los Angeles County Sanitation Districts, we do so to serve the many diverse communities in need of our services. Our CEO, a person of color himself, is an example of this talent. He began his career as a young engineer in Carollo. Trained and mentored like all our staff members, he climbed through the ranks to lead us in our mission to maintain diversity in our workforce and equity in our workplace. Carollo understands that diversity takes many forms; race, ethnicity, gender identity, sexual orientation, mental or physical ability, national origin, are all part of the many characteristics that make up a diverse workforce. Carollo strives for inclusion in every aspect of our work, including our hiring practices.

Carollo's percentage of women in management exceeds industry average by 8 percent. Among our company's engineering staff, 40 percent are women, and women make up 38 percent companywide. 30 percent of our company-wide staff are people of color.

Carollo's percentage of people of color outpaces the industry average by 10 percent.

Carollo Cares: Corporate Social Responsibility in Support of Diversity and Equity

We believe the next generation has the power to transform our world. That's why we created Carollo Cares—a program to educate students and our communities about water-related issues and inspire a sense of wonder, excitement, and passion for science.

Through our Carollo Cares program, we donate our time, energy, and resources to make our communities better places to live and work.

We invest in science, technology, engineering, arts, and math (STEAM) education by partnering with school districts and educational entities to provide mentorship for elementary, middle school, and high school students.

Carollo team members from our Los Angeles office attended the Earth Day 2023 event hosted by the Los Angeles County Sanitation Districts.

Technical Qualifications/ Past Performance

Technical Qualifications/Past Performance

Our team brings unmatched technical expertise in the seismic evaluation of wastewater treatment plant facilities and occupied buildings.

Carollo's experience is complemented by teaming with **Nabih Youssef & Associates**, who add decades of **occupied-building experience** to our team.

Within this section, we present information on the projects below, showing our experience with seismic evaluation projects similar to the proposed Scope of Work.

Wastewater Treatment Plant

OC San PS15-06 Seismic Evaluation of Structures

- ✓ Project Administration
- ✓ Background Development
- ✓ Criteria and Risk Score Technical Memorandum
- ✓ Seismic Evaluation
- ✓ Conceptual Mitigation
- ✓ Risk Analysis
- ✓ Seismic Evaluation Report

Wastewater Treatment Plant

Planning Analysis for King County, WA, Digestion Capacity

- ✓ Project Administration
- ✓ Background Development
- ✓ Criteria Technical Memorandum
- ✓ Seismic Evaluation
- ✓ Conceptual Mitigation
- ✓ Seismic Evaluation Report

Wastewater Treatment Plant

OC San P1-105 Headworks Evaluation

- ✓ Project Administration
- ✓ Background Development
- ✓ Criteria Technical Memorandum
- ✓ Seismic Evaluation
- ✓ Conceptual Mitigation
- ✓ Seismic Evaluation Report

Wastewater Treatment Plant

Bellingham, WA Biosolids Planning

- ✓ Project Administration
- ✓ Background Development
- ✓ Criteria Technical Memorandum
- ✓ Seismic Evaluation
- ✓ Conceptual Mitigation
- ✓ Seismic Evaluation Report

Wastewater Treatment Plant

Eugene/Springfield, OR, Wastewater System Resiliency

- ✓ Project Administration
- ✓ Background Development
- ✓ Criteria Technical Memorandum
- ✓ Seismic Evaluation
- ✓ Conceptual Mitigation
- ✓ Risk Analysis
- ✓ Seismic Evaluation Report

Occupied Buildings

Long Beach Resilience Plan (Nabih Youssef & Associates)

- ✓ Project Administration
- ✓ Background Development
- ✓ Criteria and Risk Score Technical Memorandum
- ✓ Seismic Evaluation
- ✓ Conceptual Mitigation
- ✓ Risk Analysis
- ✓ Seismic Evaluation Report

SEISMIC EVALUATION

- **Class of Structure Evaluated:** Occupied Buildings, Process Buildings, and Tanks/Basins
- **Evaluation Criteria Used:** ASCE 41, ACI 318, ACI 350/350.3
- **Quantity of Structures Evaluated:** 63

CLIENT CONTACT INFO

Don Cutler, PE, BCEE, PMP
P: 760-438-3941
E: dcutler@encinajpa.com

TEAM INVOLVEMENT

Doug Lanning, Strategic Planning Lead
James Doering, Structural Lead
Caleb Che, Structural Engineer
Steve Hough, Risk Analysis
Mike Dadik, Structural QA/QC
Kinsey Ryan, Cost Estimating

STATUS OF PROJECT

Completed, 2016

PS15-06 Seismic Evaluation of Structures at Plants 1 and 2, Orange County Sanitation District

Fountain Valley, CA; Huntington Beach, CA

Carollo conducted performance-based seismic evaluations of the selected structures at Plant Nos. 1 and 2 in conformance with the guidelines of ASCE 41 and ACI 350 and other applicable standards and references.

Carollo also supported the geotechnical investigation and evaluation to assess geologic site hazards, including issues related to fault rupture and seismicity, ground motion, surface rupture, liquefaction potential, differential settlement, and lateral spread.

We identified seismic hazards and corresponding geotechnical and structural mitigation measures and/or retrofits recommended to achieve resilient structures at Plant Nos. 1 and 2. Developed an American Association of Cost Engineers, International (AACEI) Class 5 cost estimate for the recommended improvements and retrofits.

Additionally, we prepared a comprehensive report that identifies a ranked list of structures that require retrofits and improvements and description of the risks and/or requirements that complies with the approach identified in ASCE 41 and the requirements of ACI 350. This prioritized list identified urgent retrofits. The ranking system allowed for the ultimate integration by OC San of the projects into their Facilities Master Plan.

Relevance to Scope:

- Carollo's scope for OC San was nearly the same as the LACSD scope!
- Similar structures and standards, wastewater treatment plant, large number of structures, risk-based prioritization of seismic projects.

SEISMIC EVALUATION

- **Class of Structure Evaluated:** Occupied Buildings, Process Buildings, and Tanks/Basins
- **Evaluation Criteria Used:** ASCE 7, ASCE 41, ACI 318, and ACI 350/350.3
- **Quantity of Structures Evaluated:** 8

CLIENT CONTACT INFO

Ashley Mihle, Senior Treatment Planner/ Project Manager
P: 206-477-2743
E: ashley.mihle@kingcounty.gov

TEAM INVOLVEMENT

James Doering, Structural Lead

STATUS OF PROJECT

Completed, 2022

Planning Analysis for West Point Digestion Capacity, King County Wastewater Treatment Division

Seattle, WA

In 2019, King County's Wastewater Treatment Division (WTD) completed a study of the process capacity to treat current and future influent flows and loadings at three regional wastewater treatment plants. The Treatment Plant Flows and Loadings Study identified solids digestion at West Point as being at or near capacity.

In conjunction with another firm to address the capacity limitation, the project team is working with the County to identify potential options and recommend next steps to address West Point digestion capacity limitations. Addressing digestion capacity at the West Point Treatment Plant (WPTP) is highly complex, involves multiple alternatives, and requires working collaboratively with County staff to identify secondary objectives for solids management beyond the primary objective of alleviating the capacity constraint.

To help the County identify viable alternatives, a seismic evaluation of (6) 100-ft diameter prestressed concrete digesters and (2) control buildings was performed. The evaluation was based on ASCE 41 for buildings and ACI 350/350.3 for the digesters. Vulnerabilities were identified and conceptual mitigation alternatives were developed along with a cost estimate for each. Additionally, the digesters were structurally evaluated for a temperature increase in going from mesophilic to thermophilic operation.

Relevance to Scope:

- Assessed existing digesters, seismic performance, associated risk, and estimated remaining useful life.
- Produced conceptual level mitigation and cost estimates.
- Similar structures and standards, wastewater treatment plant, circular pre-stressed concrete digesters.

SEISMIC EVALUATION

- **Class of Structure Evaluated:** Process Buildings, and Tanks/Basins
- **Evaluation Criteria Used:** ASCE 41, ACI 318, and ACI 350/350.3
- **Quantity of Structures Evaluated:** 5

CLIENT CONTACT INFO

Don Cutler, PE, BCEE, PMP
P: 760-438-3941
E: dcutler@encinajpa.com

TEAM INVOLVEMENT

Doug Lanning, Project Manager
James Doering, Structural Lead
Caleb Che, Structural Engineer
Mathew Esquer, Structural Engineer

STATUS OF PROJECT

Currently in construction

P1-105 – Plant No. 1 Headworks Evaluation, Orange County Sanitation District

Fountain Valley, CA

The Orange County Sanitation District's headworks facilities at Plant 1 had provided effective and reliable preliminary treatment for more than 25 years. As part of the client's comprehensive asset management approach, a host of rehabilitation and process improvements were needed to extend the life of this critical facility while increasing capacity and improving performance. OC San engaged Carollo to design P1-105 Headworks Rehabilitation at Plant 1.

Major technical and treatment objectives of the project included: Screenings handling improvements, increased pumping capacity at Headworks No. 2 to allow Headworks No. 1 demolition, new grit handling building, odor control improvements, and new generator buildings.

During the preliminary design, the existing structures at Headworks No. 2 were seismically evaluated to identify vulnerabilities. Mitigation recommendations were made that included both seismic retrofit and facility demolition and replacement.

Relevance to Scope:

- Similar structures and standards, wastewater treatment plant.
- Performed seismic evaluation of structures, with mitigation included in final design.

SEISMIC EVALUATION

- **Class of Structure Evaluated:** Occupied Buildings and Process Buildings
- **Evaluation Criteria Used:** ASCE 41 and ACI 318
- **Quantity of Structures Evaluated:** 7

CLIENT CONTACT INFO

Stephen (Steve) Day, PE, SE
P: 360-778-7944
E: smday@cob.org

TEAM INVOLVEMENT

James Doering, Structural Lead
Caleb Che, Structural Engineer

STATUS OF PROJECT

Completed, 2022

Post Point Biosolids Planning, City of Bellingham

Bellingham, WA

Over the past 20 years, Carollo has provided system-wide master planning, design, and construction phase services for the City's largest, most complex wastewater projects.

For this project, Carollo, in conjunction with another firm, supported an update to the RRP facility plan that focused on improvements to the solids stream. Carollo led evaluation of thickening, dewatering, cake loadout, and sludge screening processes to support the new Class A anaerobic digestion system that replaces the RRP's aging incineration system.

Carollo also led other planning services including cost estimating, seismic resiliency studies, scheduling, permitting, public outreach, briefings with elected officials and regulators and helping the City qualify for WIFIA funding.

Seismic resiliency studies included the seismic evaluation of the administration building, maintenance building, and solids handling buildings using ASCE 41 and ACI 318. Conceptual mitigation, including demolition and replacement, were developed along with cost estimates. Mitigation is planned for inclusion with the program's final design project.

Relevance to Scope:

- Similar structures and standards, wastewater treatment plant.
- Developed conceptual mitigation with cost estimates.

SEISMIC EVALUATION

- **Class of Structure Evaluated:** Occupied Buildings, Process Buildings, and Tanks/Basins
- **Evaluation Criteria Used:** ASCE 41, ACI 318, and ACI 350/350.3
- **Quantity of Structures Evaluated:** 26

CLIENT CONTACT INFO

Troy McAllister, MWMC Managing Engineer
P: 541-726-3625
E: tmcallister@springfield-or.gov

TEAM INVOLVEMENT

Mike Dadik, Structural
Jason Rozgony, Cost Estimating

STATUS OF PROJECT

Completed, 2019

Wastewater System Resiliency Project, Metropolitan Water Management Commission

Eugene, OR

The Metropolitan Wastewater Management Commission (MWMC) was formed in 1977 through an intergovernmental agreement between Lane County and the cities of Eugene and Springfield to provide wastewater treatment services to residents and businesses in the Eugene/Springfield metropolitan area in Oregon. Currently, the combined Eugene/Springfield metropolitan population is about 224,000.

MWMC has a strong interest in improving the resiliency of its infrastructure. With this goal in mind, Carollo led the Wastewater System Resiliency Planning project for MWMC. The purpose of the project was to provide an understanding of the resiliency and vulnerability of the MWMC infrastructure in the case of a major earthquake, a catastrophic flood event, and potential impacts of climate change. This analysis resulted in a comprehensive plan for improving infrastructure resiliency.

Work performed for the project established level-of-service goals to identify planned recovery periods, assess critical facilities for vulnerability, and identify risks associated with inter-agency and supply chain dependencies. Upgrades and strategies to improve infrastructure resiliency was identified, and costs estimated for implementing recommended upgrades and strategies.

A Disaster Mitigation and Recovery Plan was prepared that outlined the recommended upgrades and/or strategies to improve infrastructure resiliency, and a capital improvement plan was developed for implementing the work.

Relevance to Scope:

- Similar scope and structures.
- Large number of structures.
- Risk analysis.

SEISMIC EVALUATION

- **Class of Structure Evaluated:** Occupied Buildings
- **Evaluation Criteria Used:** REDi Gold
- **Quantity of Structures Evaluated:** 3

CLIENT CONTACT INFO

Marilyn Surakus, City of Long Beach
P: 562-570-5793
E: marilyn.surakus@longbeach.gov

TEAM INVOLVEMENT

Owen Hata, Lead
Marios Panagiotou, Structural
Scott Stewart, Structural

STATUS OF PROJECT

Completed 2019

Long Beach Civic Center

(Nabih Youssef & Associates)

Long Beach, CA

The project included a new eleven-story City Hall tower, eleven-story Port Headquarters tower, and a single-story elliptical-shaped City Hall Council Chamber that sit on top of a common two-story subterranean parking garage.

The design utilizes innovative engineering solutions and invaluable design and construction team collaboration with the City that led to a conscientious decision to exceed life-safety code requirements to focus on the continuity of business operations after a seismic event based on the City's priorities.

The project used the FEMA P-58 methodology and the Resilience-based Earthquake Design Initiative (REDi) rating system to provide a building design that would provide quicker re-occupancy and functional recovery times, and reduced repair costs.

In addition to life safety, the performance objectives included a seven-day re-occupancy time, thirty-day functional recovery time, and <5% repair costs after a design level earthquake.

Relevance to Scope:

- Demonstrated ability to achieve seismic resiliency standard.
- Local municipal government.
- Developed creative structural solutions to meet seismic resiliency standard.

NABIH YOUSSEF ASSOCIATES
STRUCTURAL ENGINEERS

Key Project Staff Experience and Availability

Key Project Staff Experience and Availability

Our team's reputation is based upon client service and a commitment to quality, evident in our Southern California work where our local offices have completed numerous projects for the Districts and surrounding agencies.

Full-page resumes of our key team members and abbreviated resumes of our support team members are included in this section for your review.

A Minute with Your Project Manager Doug Lanning, PE

Doug brings 35 years of experience and has managed wastewater treatment facility projects with a total construction cost of more than $1 billion. The Districts will benefit from Doug's project management skills, technical background, and ability to manage risk.

Q&A

What is your project management style and how is this a benefit to the Districts?

Collaboration is key. Direct and regular communication is the best approach. For the Districts, that means regular phone calls, emails, and meetings with the Districts' project manager and team, so everyone is always aware of progress, concerns, needs, and action items.

I will manage our team with the same focus on communication, so each of the project tasks is coordinated to successfully deliver the overall project. That's particularly important for this project, because there are diverse elements—highly technical structural/seismic tasks as well as collaborative planning tasks.

What do you see as the biggest challenge of this project?

The biggest challenge is developing the seismic criteria and risk scoring methodology that will be applied to various types of structures at all plants. Our top three strategies to address this challenge are:

1. Tap the best technical expertise for each facet of this overall task — structural/seismic (process, tanks, and occupied buildings), wastewater process knowledge, and risk-based prioritization skills.
2. Draw on our experience with other seismic resilience projects to facilitate plan development.
3. Collaborate with the Districts to find the methodology that's right for them.

What will make this project successful?

Success is a happy client. This means delivering a project with high quality deliverables that meet project objectives, on schedule and on budget.

To meet objectives, we have organized our team with both a Resiliency Director and Technical Director who excel at their respective disciplines. One of my jobs is to bring these components together into a cohesive overall plan for the Districts. We also emphasize project planning, delivery, and reporting to keep the project on track and the Districts informed. And our QA/QC procedures lead to high quality work products.

Availability: Our team for this project was selected to provide high value to the Districts, with a compelling record of service on seismic resiliency assessments and local projects. You have my personal commitment that the Carollo team and I are available and committed to your project and its success.

Douglas J. Lanning, PE

PROJECT MANAGER

OFFICE LOCATION
Orange County, CA

YEARS WITH CURRENT FIRM
35 years with Carollo

NUMBER OF YEARS OF TECHNICAL EXPERIENCE
35 years of Experience

AVAILABILITY
35%

Doug Lanning is a senior vice president with more than 35 years of experience in water and wastewater treatment planning, design, and construction. He has had a leadership role in projects involving nearly all aspects of wastewater treatment facilities, including comprehensive wastewater treatment plant expansion projects, master plans, and seismic resiliency.

PERTINENT EXPERIENCE:

- **Strategic Planning Lead for the PS15-06 Seismic Evaluation of Plant 1 and 2 Facilities for Orange County Sanitation District in Orange County, California.** The scope of work included evaluating 63 structures following ASCE 41 and ACI 350 procedures. Structures included single and multistory process and admin/service buildings, as well as, digesters, aeration basins, surge towers, clarifiers, and gas holders. Both ground shaking and the response to ground deformations due to liquefaction were evaluated to identify vulnerabilities. Conceptual structural and geotechnical mitigation strategies were then developed and prioritized using a risk-based analysis to assist the District with implementation into their Capital Improvement Plan.

- **Project manager for the Headworks Rehabilitation and Expansion at Plant 1 (P1-105) project for the Orange County Sanitation District, California.** Carollo is leading the design of a major upgrade of headworks and associated facilities at OC San's Plant No. 1. This project, P1- 105, is a complex retrofit of critical facilities that must remain in service throughout construction. This project repairs, refurbishes, replaces, and upgrades the Plant 1 Headworks facilities to a "like new" level of service. When finished, the Plant 1 Headworks, with a peak capacity of 320 mgd, will operate reliably for at least another 20 years with only routine maintenance and operator attention.

LABOR CATEGORY
Project Manager

EDUCATION
MS Civil and Environmental Engineering, California State University

BS Civil Engineering, Arizona State University

LICENSES
Civil Engineer, California

Douglas Lanning *Resume continued*

- **Project director for the Orange County Sanitation District, California, 2017 Facilities Master Plan.** This Master Plan developed a 20-year capital improvement plan for OC San's treatment plant and collection system sewers and pump stations, with a total capital expenditure of approximately $5 billion. This Master Plan identifies the rehabilitation/replacement needs and develops a preliminary Scope of Work, project schedule, and planning level cost estimate for each project.

- **Project manager for design and construction services for the P1-124 Primary Treatment Upgrades project for the Orange County Sanitation District, California.** This project provided a new primary sludge pumping configuration and new pumps to solve performance and reliability problems for 16 of the OC San's rectangular primary clarifiers at Plant No. 1. Detailed construction sequencing and commissioning plans were prepared to reduce construction risks and verify sufficient treatment capacity at all times. Electrical modifications were sequenced to maintain operations while avoiding the construction of a new building. The project also included solutions to a variety of operations and maintenance (O&M) issues associated with the clarifiers, e.g., the top deck was modified to drain properly, launders were coated, the feed channel drain was modified, and new foul air dampers addressed corrosion issues.

- **Project manager for design of the $24 million Headworks and Primary Clarifier Upgrade project for City of Palm Springs/Veolia Water, California.** This project included a new 22-mgd headworks with influent metering and sampling, screening, screenings washing and dewatering, septage receiving, and influent pumping. All facilities and equipment were enclosed and ventilated to a new two-stage biological odor scrubber. The project also included two new circular primary clarifiers, primary sludge and scum pumping, sludge degritting facilities, and an electrical building. An existing digester was rehabilitated to replace the floating cover with a fixed dome. The design team worked with the City/Veolia to scope the project and design it to match their budget.

- **Project manager for the Moreno Valley Regional Water Reclamation Facility 18-mgd Expansion for the Eastern Municipal Water District, California.** The project includes modifications to an existing headworks facility including screening facility, influent lift station, and vortex-type grit removal system; two 125-foot diameter circular secondary clarifiers; sludge and scum pumping; four cloth-media type tertiary filters; modifications and additions to existing filter influent, utility water, and tertiary effluent pump stations; four rotary drum thickeners for thickening waste activated sludge; one multi-cell acid-phase anaerobic digester; one 70-foot diameter anaerobic digester; a digester gas system with a low-pressure digester gas holder and gas boosters; a digester gas pretreatment system; a digester gas fired boiler; a fuel-cell cogeneration facility; a digester pump mixing system; a digester heating system; modifications and additions to an existing standby power generation facility; a hot water boiler facility; two chlorine contact tanks; modifications and additions to an existing bulk storage gaseous chlorine system; modifications and additions to an existing foul air scrubbing system; and all associated piping, appurtenances, electrical, instrumentation, and control work.

- **Project manager for preliminary and final design of a $125 million comprehensive wastewater treatment plant expansion for the Eastern Municipal Water District, California, San Jacinto Valley Regional Water Reclamation Facility.** The project increased headworks, primary, secondary, tertiary, and solids handling capacity to 14 mgd, with master planning to 30 mgd. Facilities include bar screens; vortex grit basins; circular primary and secondary clarifiers; aeration basins for biological nitrogen removal; a blower building; flow equalization basins; flocculation basins; cloth media tertiary filters; chlorine contact; ferric chloride, alum, and polymer chemical facilities; effluent pumping; sludge pumping; scum handling; rotary drum WAS thickening; anaerobic digestion; cogeneration; odor control soil filters; and a new operation and maintenance building.

- **Principal-in-charge for Integrated Master Plan for the City of Riverside, California.** This master plan identified expansion and replacement needs for the City's wastewater collection system and expansion of the Regional Water Quality Control Plant from 40 mgd to 52 mgd. The wastewater collection system is comprised of more than 1,100 miles of gravity sewers and 18 wastewater pump stations. The plant processes consist of headworks, primary clarifiers, a biological nitrogen removal activated sludge process, secondary clarifiers, tertiary filtration, and chlorination/dechlorination.

James Doering, PE, SE

TECHNICAL DIRECTOR: JWPCP EVALUATION AND MITIGATION

OFFICE LOCATION
Orange County, CA

YEARS WITH CURRENT FIRM
22 years with Carollo

NUMBER OF YEARS OF TECHNICAL EXPERIENCE
29 years of Experience

AVAILABILITY
40%

James Doering, a registered structural and civil engineer, is Carollo's structural lead engineer in Southern California. He manages structural design and evaluations for large and small projects. He has almost 30 years of experience in structural analysis, design, seismic evaluations and retrofits, rehabilitation, peer review, and condition assessments for a variety of structures, such as wastewater and water treatment facilities, pump stations, reservoirs, tanks, clarifiers, digesters, electrical buildings, O&M facilities, and other process structures. Additionally, James has of experience in the structural commercial market, where he designed office buildings, parking structures, stores, car dealerships, and performed numerous seismic evaluations and retrofits for buildings, including tilt-up and unreinforced masonry buildings.

PERTINENT EXPERIENCE:

- **Structural engineer for the PS15-06 Seismic Evaluation of Plant 1 and 2 Facilities for Orange County Sanitation District in Orange County, California.** The scope of work included evaluating 63 structures following ASCE 41 and ACI 350 procedures. Structures included single and multistory process and admin/service buildings, as well as, digesters, aeration basins, surge towers, clarifiers, and gas holders. Both ground shaking and the response to ground deformations due to liquefaction were evaluated to identify vulnerabilities. Conceptual structural and geotechnical mitigation strategies were then developed and prioritized using a risk-based analysis to assist the District with implementation into their Capital Improvement Plan.

- **Structural engineer for the P1-105 Headworks Rehabilitation and Expansion at Plant No. 1 Project for the Orange County Sanitation District, California.** Serving as the lead structural engineer for 320-mgd headworks facilities, he oversaw development of over 277 structural drawings for a $222 million CIP Project, which is now in construction. The scope includes several new buildings and rehabilitation to existing M&D, IPS, bar screen building, grit chambers, and utility tunnels. Concrete repairs were also specified for the M&D influent box and downstream channels.

LABOR CATEGORY
Technical Director

EDUCATION
MS Civil Engineering, University of California, Berkeley

BS Civil Engineering, University of California, Irvine

LICENSES
Structural Engineer, California, Oregon, Utah, Washington

Civil/Structural Engineer, South Dakota

Civil Engineer, California, Colorado

***James Doering** Resume continued*

Bypass pumping was designed to accommodate work on existing structures. Additionally, a Tier 1/2 seismic evaluation was prepared during pre-design for the existing structures in the scope per ASCE 41-13. Findings were used for project planning and development of mitigation strategies.

- **Structural engineer for the City of Corvallis, Oregon, Water Distribution and Treatment Facility Master Plan.** A seismic evaluation using ASCE 41-17 for the buildings and ACI 350 for water-bearing structures was performed to assess whether facilities are capable of meeting state of Oregon resiliency goals considering a M9.0 Cascadia Subduction Zone (CSZ) earthquake. Evaluations were performed for the Taylor and Rock Creek Water Treatment Plants. The evaluations also included pump stations and reservoirs outside the plants for a total of 33 structures. Vulnerabilities and mitigation recommendations were summarized in a technical memorandum.

- **Structural engineer for the Planning Analysis for West Point Digestion Capacity for King County, Washington.** The study involved a seismic resiliency evaluation of (6) 100-ft diameter prestressed concrete digesters and (2) digester control buildings. The digesters were evaluated per ACI 350 and AWWA D110. The buildings were evaluated per ASCE 41-17, Tier 1. A thermal analysis was also conducted to evaluate performance if the digesters were converted from mesophilic to thermophilic operation. Findings and recommendations were summarized in a report.

- **Structural engineer for the Post Point Wastewater Treatment Plant Biosolids Planning, City of Bellingham, Washington.** This project established a preliminary plan for upgrading the solids handling facilities at Post Point WTP. As part of the effort, Carollo performed a seismic evaluation of (7) existing buildings, including the Administration Building, Lab Building, Shop Building, and Solids Handling Buildings. The buildings were evaluated per ASCE 41-17, Tier 1/2 considering Risk Category III performance for the BSE-1E seismic hazard. Additionally, the existing buildings were evaluated to determine vulnerability to tsunamis loading per ASCE 7-16. Mitigation strategies, including seismic retrofit and structure replacement were developed along with cost estimates. The recommendations are planned for implementation in a final design project.

- **Structural engineer for the City of Wilsonville, Oregon, Wastewater Treatment Facilities Plan 2020.** A seismic evaluation using ASCE 41-17 for the buildings and ACI 350 for water-bearing structures was performed to assess whether facilities at the City's wastewater treatment plant are capable of meeting state of Oregon resiliency goals considering a M9.0 Cascadia Subduction Zone (CSZ) earthquake. Structures included were the Operations Building, Process Gallery Building, Workshop, Aeration Basins, and Solids Storage Basins. Vulnerabilities and mitigation recommendations were summarized in a technical memorandum.

- **Structural engineer for the design of three seismic valve vaults for Los Angeles Department of Water Power's Los Angeles Reservoir UV Disinfection Plant Project in Los Angeles, California.** The valve vaults allow for locations where the 120-inch diameter steel pipe can be accessed for isolation.

- **Structural engineer for the AWT Recycled Water Demonstration Facility for the Metropolitan Water District of Southern California, located at the Sanitation Districts of Los Angeles County, Joint WPC Plant in Carson.** The $14 million project includes aeration tanks, chemical containment slabs, process equipment support, and a 50 ft x 160 ft open canopy founded on drilled concrete caissons.

- **Lead structural engineer for the Los Angeles Bureau of Engineers (LABOE) Tertiary Expansion to the Terminal Island Water Reclamation Plant in Los Angeles, California.** The project was a design-build effort that included a new 2.0-MG rectangular concrete equalization tank and advanced water treatment facilities. Challenges included liquefaction mitigation using stone columns.

- **Structural engineer for the F.E. Weymouth Ozone Retrofit Program – Ozone Generation Building for the Metropolitan Water District of Southern California.** The project included design of a 35,000-square foot concrete tilt-up building with a 50-foot-tall cast-in-place concrete tower and two colonnades. The building was designed for a site-specific seismic response for an earthquake with a return period of 950 years.

Ann M. Casey, MBA

RESILIENCY DIRECTOR

OFFICE LOCATION
Nashville, TN

YEARS WITH CURRENT FIRM
5 years with Carollo

NUMBER OF YEARS OF TECHNICAL EXPERIENCE
33 years of Experience

AVAILABILITY
40%

Ann Casey is a Vice President and Service Delivery Lead for the Strategic Management Group which includes solutions for Asset Management, Organizational Management, and Technology Optimization. She has over 30 years of experience working with operational, managerial, and financial aspects of water, wastewater, and energy utilities. Her comprehensive experience leverages industry best practices and advanced techniques to provide utilities the balance of risk and capital, while continuing to provide the service expected by their customers.

PERTINENT EXPERIENCE:

Project manager for the Risk-Based Asset Management and Capital Planning Program Development, Brazos River Authority (BRA), Texas. This program will formalize processes necessary to define the relative risk posed to operations from any single asset, as well as assess the BRA's risk profile presented by all assets. Carollo is assisting in the development of tools in the asset management system software, SCADA, and other systems to successfully utilize automated data collection for decision support and management. Components of the project include program development and management support, levels of service, asset inventory, risk management, reliability centered maintenance, capital improvement planning, and long-range financial planning.

Project manager for the North, South, West, and Greatwood Wastewater Treatment Plants and Elevated Storage Tanks Condition Assessment and Asset Management, City of Sugar Land, Texas. These facilities are being evaluated to determine rehabilitation needs due to aging infrastructure, regulatory changes, and capacity needs. In line with the City's asset management policy, Carollo's effort includes developing an asset management framework tailored to wastewater treatment facilities that assess the risk and level of service impacts of these four plants. In addition, the City engaged Carollo to conduct an asset management effort to determine condition and assess risk at three elevated storage

LABOR CATEGORY
Resiliency Director

EDUCATION
MBA Finance, Rockhurst University

BS Business Administration, Loyola University of Chicago

***Ann Casey** Resume continued*

tanks. The asset management effort includes development of the risk framework, visual condition assessment, and the development of prioritized capital needs and maintenance recommendations for the elevated storage tanks and related appurtenances.

- **Condition assessment lead and asset management subject matter expert for the Clackamas County Water Environment Services (WES), Oregon, Willamette Facilities Plan.** The goal of the Willamette Facilities Plan is to develop a 20-year capital plan that identifies improvements to the District's Kellogg Creek and Tri-Cities facilities and associated conveyance infrastructure to provide the best value to WES ratepayers by maximizing the use of existing infrastructure and optimizing system operation while continuing to protect water quality and human health and support economic development. Ms. Casey led the tasks to complete condition assessment for the Kellog Creek and Tri-Cities plants which will be incorporated into the overall Facilities plan in subsequent project tasks scheduled for late 2020.

- **Asset management technical lead for the City of Houston, Texas, Northeast Water Purification Plant Expansion – Owner's Advisor.** The goal of this project is to better understand the capital and operational needs of the existing facility over the next 20 years. Key tasks included completing a condition assessment and business risk exposure profile for the facility's assets to ensure the ability to meet the established levels of service to the community. The project ultimately will provide the City with information to make better-informed long-term decisions.

- **Project manager for the City of Aurora, Colorado, Griswold Water Purification Facility Asset Management Plan.** Ms. Casey is currently leading a project team to develop a comprehensive Asset Management Plan for the Griswold Plant as part of the system-wide Total Asset Management Plan for the Utility. Key tasks anticipated to complete the project include the Condition Assessment to understand the current state of the plant, establishing levels of service, developing risk protocol and understanding business risks, resulting in O&M strategies and a long-term funding strategy.

- **Partner-in-charge for the Madera Irrigation District (MID), California, Asset Management Gap Assessment and Capital Improvement Program Development.** In this ongoing project, Carollo will assist MID in the evaluation of its existing practices, technologies, and data, in an effort to develop a framework for a robust asset management business practice. The framework will be used to define risk protocols and evaluate the District's critical assets by applying those protocols. Following this evaluation, Carollo will develop a risk-based prioritized capital improvement plan for the next five years to efficiently plan near-term annual funding needs.

- **Program advisor for the Dallas Water Utilities, Texas, Water Delivery Comprehensive System Assessment and Update.** Ms. Casey is currently serving as Program Advisor and Condition Assessment Lead to complete a comprehensive system assessment and update for the City of Dallas Water Delivery System. This assessment is expected to address projected water demands; aging infrastructure; service reliability, water quality, security, water loss and recommendations of applications/procedures to maximize operation efficiency.

- **Project manager for the Albuquerque Bernalillo County Water Utility Authority (ABCWUA), New Mexico, Utility-wide Asset Management Plan – Phase 1.** Phase 1 of the Plan consists of reviewing the Utility's existing asset management reports and data; becoming familiar with ABCWUA's GIS system; and reviewing their CMMS system.

- **Project advisor and QA lead for the Union Sanitary District, California, Alvarado Wastewater Treatment Plant Asset Condition Assessment and Update.** Ms. Casey served as Project Advisor to team to update the asset condition and refine asset replacement costs from the 2006 Master Plan and 2009 Master Plan Update for the Alvarado Wastewater Treatment Plant facilities. The project supported the utility leadership to set the course for managing asset risk and optimizing asset investment into the future.

- **Project manager for the Asset Management Implementation Plan, Coachella Valley Water District (CVWD), California.** Ms. Casey served as the Project Manager to support the development and full implementation of asset management at CVWD.

Ali Ahmadi, PhD, PE, PMP

CONSEQUENCES OF FAILURE ANALYSIS LEAD

OFFICE LOCATION
Los Angeles, CA

YEARS WITH CURRENT FIRM
1 year with Carollo

NUMBER OF YEARS OF TECHNICAL EXPERIENCE
22 years of Experience

AVAILABILITY
30%

Ali Ahmadi is an Associate Vice President at Carollo. Areas of focus include preliminary (headworks, fine screens), primary, secondary/tertiary (activated sludge, membrane bioreactor, tertiary filters), disinfection (UV, chlorine), solids handling (thickening, digestion, and dewatering), odor control, and energy recovery. He has worked on projects from start to finish, including preparation of feasibility and predesign reports, alternatives analysis, life cycle cost analysis, detailed design, equipment preselection packages, preparation of plant-wide O&M manuals, and construction support services.

PERTINENT EXPERIENCE:

- **Project/process engineer for Water Reclamation Facility Upgrades project for the City of Visalia, California. Project involved upgrades of an existing 22-mgd conventional WWTP to a tertiary treatment facility.** Treatment processes included MBR system, UV disinfection, and solids handling facilities. Besides involvement in predesign and detailed design, performed hydraulic and process calculations and computer modeling (BioWin) to ensure proper system performance. Coordinated design among different disciplines (civil, architectural, structural, mechanical, electrical, I&C, and drafting). Provided engineering support services during construction. Managed a team consisting of process, electrical, and I&C engineers for production of plant-wide electronic O&M manual.

- **Project/process engineer the Los Angeles County Sanitation Districts Joint Water Pollution Control Plant, Carson, CA.** Project involved construction of effluent outfall tunnel (18-ft diameter) and associated infrastructures for Joint Water Pollution Control Plant. Besides outfall tunnel, infrastructures included shaft, joint, valve, and manifold structures. Provided engineering support services during construction. Coordinated with design team to respond to client and contractor's questions, review submittals, update 3D model to accommodate manufacturer's products in structures, and resolved miscellaneous issues encountered during construction.

LABOR CATEGORY
Lead Engineer

EDUCATION
PhD Civil and Environmental Engineering, University of Minnesota, Twin Cities, MN

MS Civil and Environmental Engineering, Colorado State University, Fort Collins, CO

BS Civil Engineering, Amirkabir University of Technology, Tehran, Iran

LICENSES
Civil Engineer, California, Hawaii

CERTIFICATION
Certified Project Management Professional, Project Management Institute

Ali Ahmadi *Resume continued*

- **Design manager and process engineer for the Regional Plant 5 (RP-5) project for Inland Empire Utilities Agency, California.** Project included preparation of predesign report and detailed design documents, and construction support services for implementation of 30-mgd membrane bioreactor (MBR) system within existing RP-5. Scope also included evaluation and design of new solids handling facilities. Developed headworks and MBR system design alternatives at RP-5 and compared alternatives through business case evaluation (BCE). Participated in preparation of predesign report and detailed design documents, including equipment preselection packages. Led design team in providing construction support services.

- **Design manager and process engineer for the Regional Water Reclamation Facility project for Elsinore Valley Municipal Water District, Lake Elsinore, California.** Project included preparation of predesign report and detailed design documents for expansion of facility to 12-mgd using MBR system (4 mgd, with provisions to expand to 8 mgd) and UV disinfection system. Scope also included evaluation and design of solids handling facility. Participated in preparation of predesign report and detailed design documents for headworks and MBR, including MBR preselection package. Led design team in finalizing design documents.

- **Process engineer for the Wastewater Treatment Plant project for the City of Redlands, California.** Project included providing design and construction support services for the City of Redlands to replace existing membranes in MBR system with new membranes, install new fine screens, and replace the existing scour air blowers. Led process design for fine screens and MBR system, including preselection of membranes, for 6 mgd in Phase 1, expanding to 9.5 mgd in Phase 2.

- **Project/process engineer for the Wahiawa WWTP Upgrades project, Wahiawa, Hawaii.** Project involved upgrading an existing 2.3-mgd WWTP from conventional tertiary treatment to MBR system with goal of producing recycled water. Upgrades also included UV disinfection system and solids handling facilities. Prepared predesign report. Prepared equipment pre-selection package for MBR system. Besides involvement in design and preparation of specifications, performed hydraulic and process calculations and computer modeling (BioWin) to ensure proper system performance. Coordinated design effort among different disciplines (civil, architectural, structural, mechanical, electrical, I&C, and drafting). Prepared facility-wide O&M manual and operators training materials.

- **Project/process engineer for the Regional Wastewater Reclamation Facility (RWRF) project for the City of Fresno, California.** Evaluated incorporation of membrane bioreactor (MBR) system into an existing 88-mgd wastewater treatment plant (WWTP) during pre-design phase with goal of producing recycled water. Prepared specifications and was involved in detailed design of 5-mgd MBR system with provisions for expansion to 15 mgd and 30 mgd in future. Also, performed hydraulic and process analyses. Managed and coordinated design effort and engineering support services during bid and construction phases among different disciplines (civil, architectural, structural, mechanical, HVAC, electrical, and I&C). Provided engineering support services during construction, including preparation of a facility-wide O&M manual. Provided startup, commissioning, and post-commissioning support services for MBR and UV disinfection systems including process optimization and troubleshooting.

- **Project/process engineer for the Edward C. Little Water Recycling Facility for West Basin Municipal Water District, El Segundo, California.** Participated in design/build project with goal of expanding capacity of existing water recycling facility to 63 mgd. Treatment processes included microfiltration (MF), reverse osmosis (RO), ozone oxidation, UV/AOP system, and solids handling facilities. Besides involvement in design, coordinated design effort among different disciplines (civil, architectural, structural, mechanical, electrical, I&C, and drafting), and provided engineering support during construction. Developed/managed preparation of standard operating procedures (SOPs) for expansion project facilities.

Owen Hata (Nabih Youssef & Associates)

OCCUPIED BUILDING LEAD

OFFICE LOCATION
Los Angeles, CA

YEARS WITH CURRENT FIRM
30 years with with Nabih Youssef & Associates

NUMBER OF YEARS OF TECHNICAL EXPERIENCE
32 years of Experience

AVAILABILITY
30%

Own Hata has extensive experience in response to building excitations. The range of advanced structural analyses he performs includes non-linear static, and dynamic analyses, as well as evaluation and design of passive energy dissipation systems and seismic isolation systems. Since 1993, Mr. Hata has played a key role in developing and maintaining Nabih Youssef & Associates' exceptional reputation for innovation and collaboration.

PERTINENT EXPERIENCE:

- **Principal-In-Charge for the City of Long Beach Seismic Resilience Program. An inventory of Soft, Weak, Open-Front (SWOF) buildings was performed to assess citywide exposure and provide a firm count of vulnerable buildings.** The inventory process consisted of developing criteria defining the characteristics of a SWOF building; screening tax assessor data to identify potential SWOF buildings; performing virtual street survey/screening/inspection using an inspection management platform that allowed for an efficient inspection process; and performing in-person street surveys to overcome limitations and resolve uncertainties encountered during the virtual screening phase. GIS database and final report was provided to the City of Long Beach with recommended technical criteria for future seismic upgrade ordinance.

- **Principal-In-Charge for the City of Long Beach Seismic Resiliency Case Study. This study reviewed seismic retrofit programs from 15 jurisdictions in California.** Research included review of technical standards, performance requirements, and interviews with building officials. Final report provided the City of Long Beach with best practices and recommendations for the development of a Seismic Resilience Program.

- **Structural Engineer for Long Beach Civic Center.** The Civic Center complex included a new 11-story City Hall tower, 11-story Port Headquarters tower, and single-story elliptical-shaped City Council Chamber on top of a common two-story parking garage. The project used the FEMA P-58 methodology and the Resilience-based Earthquake Design Initiative (REDi)

LABOR CATEGORY
NYA Project Manager

EDUCATION
PhD Candidate
University of Southern California

M.S. Applied Mechanics
University of Southern California

B.S. Applied Mechanics
University of Southern California

***Owen Hata** Resume continued*

rating system to provide a building design that would provide quicker re-occupancy and functional recovery times, and reduced repair costs. In addition to life safety, the performance objectives include a seven-day re-occupancy time, thirty-day functional recovery time, and <5% repair costs after a design level earthquake.

- **Principal-In-Charge for the Seismic Evaluation and Seismic Strengthening for Amgen, Inc in Juncos, Puerto Rico.** Using ASCE 41, Owen performed seismic evaluations on 12 industrial building structures, major pipe rack structures traversing the facility, MEP equipment and distribution systems, and tank farms. The seismic performance objective was that any building damage and equipment or component failure had to be repaired or replaced within 6 months. NYA worked closely with Amgen and their contractor to identify seismic deficiencies and develop correction measures.

- **Principal-In-Charge of Seismic Evaluations for Critical Infrastructure buildings and structures at the Amgen Campus in Thousand Oaks, CA.** The seismic evaluation process consisted of reviewing available existing documentation, establishing the evaluation approach, analyzing buildings/ structures, and providing feasibility of mitigation to ensure life safety and/or immediate occupancy performance.

- **Principal-In-Charge for the USC Seismic Evaluation Program in Los Angeles, CA.** In collaboration with USC, Owen developed a program to evaluate over 200 buildings using ASCE 41 and provide a score to help the university prioritize retrofits.

- **Principal-In-Charge for the ASCE 41-17 Tier 1 Evaluation of 16 buildings located on the UCLA campus.** Owen evaluated the building's anticipated seismic performance expressed in terms of Performance Levels I through VII with respect to degree of risk to life and safety of persons based on implied seismic damageability in accordance with UC seismic policy.

- **Structural Engineer for the Voluntary Seismic Strengthening and Modernization of the Title Insurance Building located at 433 South Spring Street in Los Angeles, CA.** The 10-story building was constructed in 1927 with a 3-story mechanical pent-house and full basement level. Seismic strengthening consisted of adding concrete/ shotcrete walls and perforated concrete shear walls, diaphragm and foundation strengthening. Existing structural elements were strengthened to support new mezzanine floor, outdoor decks, and mechanical equipment.

- **Structural Engineer for the Seismic Evaluation and Renovation at 7th and Santa Fe in Los Angeles for Warner Music Group.** Owen performed the seismic evaluation of the existing structure to meet current seismic design standards and oversaw the retrofit and extensive tenant improvement for this historic concrete building.

- **Principal-In-Charge of the Seismic Up-grade for USC Leavey Library in Los Angeles, CA.** The retrofit was undertaken to improve performance and was an ASCE 41-17 upgrade with rating level III as performance objective.

- **Principal-In-Charge for the Feasibility Study, Seismic Upgrade and Adaptive Reuse of the United University Church located on the USC campus in Los Angeles, CA.** The adaptive reuse incorporated programming elements requested by the client, including a theater, offices, and standard classrooms. The renovation also included seismic, utility and fire-life-safety upgrades, envelope repairs, and a 3-story addition of approximately 6,000sf. Seismic improvements complied with the non-ductile concrete building requirements.

- **Structural engineer for the Seismic Evaluation and Retrofit of the USC Hoffman Medical Research Building in Los Angeles, CA.** This voluntary seismic retrofit was based on a seismic strengthening scheme developed by Owen to improve the seismic performance. The building was able to remain occupied during construction.

- **Principal-In-Charge for the Seismic Evaluation and Upgrade for the Taft Building, located at 1680 North Vine Street in Los Angeles, CA.** In addition to the seismic risk assessment, Owen developed the conceptual strengthening scheme for the voluntary seismic upgrade of this 12-story concrete frame building which was originally constructed in 1928.

- **Principal-In-Charge for Hudson Pacific Properties Earthquake Response Program for an office portfolio consisting of 117 buildings located in the Vancouver, Seattle, San Francisco Bay and Los Angeles areas.** Owen reviewed building information and assessed seismic performance to develop a post-EQ response protocol and prepare post-EQ inspection packages for each building.

In addition to the resumes for the key team members, please review the brief bios of the supporting team members.

Please also see the organization chart included in Section 1 for a graphical overview of the overall team structure.

Project Supporting Staff

OFFICE LOCATION
Los Angeles, CA

YEARS WITH CURRENT FIRM
28 years with Carollo

Gil Crozes, PhD

PRINCIPAL-IN-CHARGE

Dr. Gil Crozes is a senior vice president at Carollo with 35 years of experience specializing in water quality, water and wastewater facilities planning, treatment processes, studies, and treatment plant design. His field of expertise encompasses conventional water and wastewater treatment processes as well as membrane treatment processes. He has become well recognized in the water industry.

HIGHLIGHTED EXPERIENCE: Principal-in-charge for the LA County Sanitations Districts/Santa Clara Valley Sanitation District Chloride Compliance Treatment Facility Design. The Districts retained Carollo to design a 7-mgd project to treat the Valley's wastewater with ultraviolet disinfection and microfiltration (MF)/reverse osmosis (RO). A high recovery process was designed to limit the brine produced by the RO process, resulting in less than 45,000 gallons per day of brine that would require offsite disposal.

EDUCATION

PhD Environmental Engineering, Institut National Des Sciences, Appliquees, France

MS Environmental Engineering, Institut National Des Sciences Appliquees, France

BA Biochemistry, University Paul Sabatier, Toulouse, France

PROFESSIONAL AFFILIATIONS

American Water Works Association, Membrane Technology Research Committee (Former Committee Member), Disinfection Systems Committee (Former Chair)
Water Environment Federation

OFFICE LOCATION
Orange County, CA

YEARS WITH CURRENT FIRM
40 years with Carollo

Stephen G. Hough, PE

QUALITY CONTROL - RESILIENCY PLANNING

Steve Hough, a senior vice president in Carollo Engineers with 50 years of professional experience, has managed multi-million-dollar planning, design, and construction projects involving multi-faceted complex issues.

HIGHLIGHTED EXPERIENCE: Project manager for the Orange County Sanitation Districts 2017, 20-year Facilities Master Plan. This Master Plan developed a 20-year capital improvement plan for OCSD's treatment plant and collection system sewers and pump stations. Over the 20-year planning period, numerous OCSD treatment facilities and collection system sewers and pumping facilities will need rehabilitation or replacement, with a total capital expenditure of approximately $5 billion. This Master Plan identifies the rehabilitation/replacement needs and develops a preliminary Scope of Work and planning level cost estimate for each project.

EDUCATION

MS Environmental Engineering, University of California, Berkeley

BS Civil Engineering, University of California, Berkeley

Graduate, Burklyn Business School

LICENSES

Civil Engineer, Hawaii, Nevada, California

Professional Engineer, Florida

OFFICE LOCATION
Walnut Creek, CA

YEARS WITH CURRENT FIRM
23 years with Carollo

Michael E. Dadik, PE, SE

QUALITY CONTROL - PROCESS STRUCTURES

Mike Dadik, a principal structural engineer and vice president with Carollo, has 31 years of experience in structural design of water, wastewater, transportation, and civil engineering projects. Since joining Carollo, he has overseen the structural design of numerous projects ranging from water and wastewater treatment plant construction and expansion to pump station seismic retrofits. Mike has extensive experience in rehabilitation and seismic vulnerability assessments.

HIGHLIGHTED EXPERIENCE: Structural engineer for the City of Richmond, California, Wastewater Treatment Plant (WWTP) Critical Improvements Project. This project features major process upgrades that improve the overall reliability and condition of the WWTP including plant-wide seismic evaluations. The major project elements include a new 40-mgd screening and grit removal facility and 15-mgd aeration and secondary clarifier upgrades. Two designs were developed for the grit removal facility to allow for competitive bidding of two different grit removal technologies. The aeration upgrades include replacing an existing surface aerator system with a more efficient diffused aeration system and included a seismic retrofit of the existing aeration basins.

EDUCATION

BS Civil Engineering, Arizona State University

LICENSES

Civil Engineer, California

Structural Engineer, California, Nevada, Hawaii

Civil/Structural Engineer, Washington, Oregon

OFFICE LOCATION
Los Angeles, CA

YEARS WITH CURRENT FIRM
19 years with Nabih Youssef & Associates

Ryan Wilkerson, SE

(Nabih Youssef & Associates)

QUALITY CONTROL – BUILDINGS

Ryan Wilkerson has 25 years of experience as a practicing structural engineer. He has been the lead designer, project manager, and principal-in-charge for a multitude of projects of varying size and complexity within the institutional, industrial, residential, commercial, and government sectors for just about any type of material that a building can be constructed with. Mr. Wilkerson plays a prominent technical and management oversight role in NYA's Los Angeles office.

HIGHLIGHTED EXPERIENCE: Ryan was the Principal-In-charge for the evaluation, renovation, and modernization of the Los Angeles Memorial Coliseum. The project included fully re-grading the stadium bowl, seat upgrades and the construction of a new press box, loge, and suite tower. The $315 million project, covering approximately one million square feet, took considerable care to honor the heritage and architecture of the original building.

EDUCATION

BS Civil Engineering, University of Idaho, Moscow

LICENSES

Structural Engineer, California

Civil Engineer, California

OFFICE LOCATION
Los Angeles, CA

YEARS WITH CURRENT FIRM
8 years with Nabih Youssef & Associates

Marios Panagiotou, PhD, PE
(Nabih Youssef & Associates)

RISK ANALYSIS METHODOLOGY

Marios Panagiotou has served as senior consultant and senior analyst for many of NYA's most technically complex projects. His expertise is in the fields of earthquake engineering of reinforced concrete structures, earthquake-resilient structures using seismic isolation, energy dissipation, and low-damage rocking components, advanced seismic analysis and design, experimental large-scale seismic testing of components and structures, and engineering characterization of earthquake ground motions. He has 20 journal and 33 conference publications and received the 2012 ASCE Alfred Noble Prize.

HIGHLIGHTED EXPERIENCE: Marios was the internal consultant on advanced seismic analysis and design issues, including resilience and damage control, for the Long Beach Civic Center. The Civic Center complex included a new 11-story City Hall tower, 11-story Port Headquarters tower, and single-story elliptical-shaped City Council Chamber on top of a common two-story parking garage. The project used the FEMA P-58 methodology and the Resilience-based Earthquake Design Initiative (REDi) rating system.

EDUCATION

PhD Structural Engineering, University of California, San Diego

Dissertation: Seismic Design, Testing, and Analysis of Reinforced Concrete Wall Buildings

MS Structural Engineering, University of California, San Diego

Diploma in Civil Engineering, National Technical University of Athens, Greece

LICENSES

Civil Engineer, California

OFFICE LOCATION
Orange County, CA

YEARS WITH CURRENT FIRM
18 years with Carollo

Caleb Che, PE

FIELD ASSESSMENTS, TANKS AND BASINS, AND BUILDING STRUCTURES

Caleb Che is a structural engineer with 20 years of experience in civil engineering. He has been responsible for designing water and wastewater treatment facility structures in accordance with current standards of building codes and responsible for providing structural specifications for the project. He has reviewed structural shop drawings and responded to requests for information (RFIs) in regard to construction issues.

HIGHLIGHTED EXPERIENCE: Structural engineer for the PS15-06 Seismic Study at Plant No. 1 and 2 for the Orange County Sanitation District, California. Tasks include performance of an ASCE 41-13, Tier 1 and Tier 2 seismic evaluations for the various existing structures.

EDUCATION

BS Civil Engineering, University of California, Berkeley

LICENSES

Civil Engineer, California, Washington

OFFICE LOCATION
Orange County, CA

YEARS WITH CURRENT FIRM
2 years with Carollo

Felicia Fan, PE, SE

PROCESS BUILDINGS AND BUILDING STRUCTURES

Felicia Fan is a civil and structural engineer with 12 years of experience. Previously a Senior Project Manager/Engineer for the Gouvis Engineering Consulting Group, Felicia was directly responsible for structural design of various mix-use structures, apartments, townhomes, custom homes, and remodels. Congruently, Felicia was able to comply with local building codes and city standards. With these same years of she gained experience in the design of concrete, masonry, steel, wood structures. As an Associate Engineer for JWL Associate's, Felicia was involved with dealing with the permit process and handling projects from beginning to end under the direction of the engineer of record. Some of these tasks included job site visits, taking measurements in the field, meeting with clients to discuss initial design criteria, writing proposals, and preparing construction documents.

HIGHLIGHTED EXPERIENCE: Provided ESDC as a structural engineer for the P1-105 Headworks Rehabilitation at Plant 1, Orange County Sanitation District, California.

EDUCATION

MS Civil Engineering, California State University, Fullerton

BS Civil Engineering, Southeast University, Nanjing, China

LICENSES

Structural Engineer, California, Hawaii

Civil Engineer, California

Professional Engineer, Hawaii

OFFICE LOCATION
Los Angeles, CA

YEARS WITH CURRENT FIRM
8 years with Nabih Youssef & Associates

Scott Stewart, SE

(Nabih Youssef & Associates)

PROCESS BUILDINGS, OCCUPIED BUILDINGS

Scott Stewart is a senior project engineer and has been involved with a wide variety of projects including new building design and seismic retrofits. He performs advanced structural analyses including nonlinear dynamic analyses and performance-based design.

HIGHLIGHTED EXPERIENCE: Scott was the senior project engineer for the Long Beach Civic Center. The Civic Center complex included a new 11-story City Hall tower, 11-story Port Headquarters tower, and single-story elliptical-shaped City Council Chamber on top of a common two-story parking garage. The project used the FEMA P-58 methodology and the Resilience-based Earthquake Design Initiative (REDi) rating system to provide a building design that would provide quicker re-occupancy and functional recovery times, and reduced repair costs. In addition to life safety, the performance objectives include a seven-day re-occupancy time, thirty-day functional recovery time, and <5% repair costs after a design level earthquake.

EDUCATION

MS in Civil and Environmental Engineering, University of Washington, Seattle, WA

Bachelor of Science in Civil Engineering, University of Idaho, Moscow, ID

LICENSES

Structural Engineer, California

Civil Engineer, California

OFFICE LOCATION
Denver, Broomfield, CO

YEARS WITH CURRENT FIRM
5 years with Carollo

Jason Rozgony, PE

COST ESTIMATING – MITIGATION

Jason Rozgony is a construction professional with 28 years of experience specializing in cost estimating for water and wastewater treatment plants, pump stations, and distribution systems. The majority of his work experience was obtained while working for general contractor emphasizing CMAR delivery. Prior to his cost estimating experience, he worked as a project engineer, superintendent, and construction manager on a variety of water treatment and remediation projects in Illinois, Texas, Michigan, Iowa, Missouri, Connecticut, Colorado, Utah, and Wyoming. Since transitioning from a construction operations role to cost estimating he and his teams have developed at-risk bids and guaranteed maximum price proposals exceeding $2 billion for water/wastewater treatment plant work while producing of over 500 opinion of probable cost estimates.

HIGHLIGHTED EXPERIENCE: Construction manager at-risk for the Hillcrest Reservoirs and Pump Station, Denver Water, CO. Estimator for the Tualatin Valley Water District, OR, Willamette Water Supply project, including an expanded in-take, pump station, 20 MG reservoir.

EDUCATION

BS Civil Engineering, South Dakota School of Mines and Technology

LICENSES

Professional Engineer, Colorado

OFFICE LOCATION
Orange County, CA

YEARS WITH CURRENT FIRM
5 years with Carollo

Kinsey Ryan, PE

COST ESTIMATING – FACILITY VALUE

Kinsey Ryan is an environmental engineer with more than five years of experience. She has worked on various projects emphasizing civil design, grit system design, and engineering services during construction.

HIGHLIGHTED EXPERIENCE: Cost estimating lead for the Seismic Evaluation of Plants No. 1 and No. 2 for the Orange County Sanitation District, California. She assisted in developing a cost estimate for both plants based on seismic retrofitting requirements.

EDUCATION

BS Environmental Engineering, California Polytechnic State University, San Luis Obispo

AA Chemistry, Santa Barbara City College

AA Liberal Arts, Santa Barbara City College

LICENSES

Professional Engineer, California

OFFICE LOCATION
Orange County, CA

YEARS WITH CURRENT FIRM
9 years with Carollo

Mathew Esquer, PE

TANKS AND BASINS AND BUILDING STRUCTURES

Mathew Esquer, a structural engineer with Carollo Engineers, specializes in wastewater and water treatment plant design and engineering services during construction. He has assisted with design of wastewater treatment facility structures in accordance with current standards and building codes. He has also worked on seismic evaluations of structures and design of retrofit and rehabilitation projects. He has reviewed structural shop drawings and responded to requests for information (RFIs) in regard to construction issues.

HIGHLIGHTED EXPERIENCE: Design structural engineer for Orange County Sanitation District PS15-06 Seismic Evaluation of Structures at Plants 1 and 2. The project included seismic evaluation of 60 structures across two plants using ASCE 41-13 procedures for existing structures. Based on the identified seismic vulnerabilities, retrofit options were evaluated for each structure.

EDUCATION

BS Civil and Environmental Engineering, University of California, Berkeley

MS Civil and Environmental Engineering, University of California, Berkeley

LICENSES

Civil Engineer, California

Approach to Completing Specified Work

Approach to Completing Specified Work

The Districts' Scope of Work is well-defined, and Carollo has a thorough understanding of your project goals and objectives.

UNDERSTANDING

Southern California is a region of very high seismicity and has experienced strong ground motion. Large earthquakes include the M 6.7 Northridge Earthquake in 1994 and the M 7.1 Ridgecrest Earthquake in 2019. These earthquakes caused widespread structural damage, particularly in those areas nearest the epicenter.

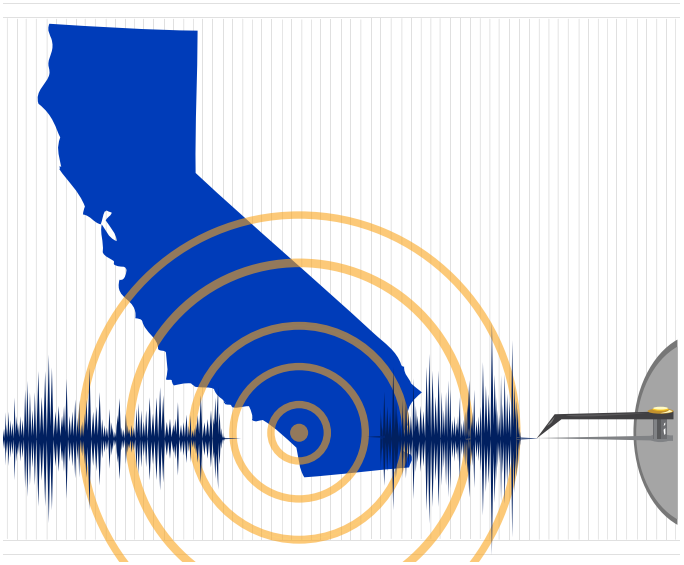
The Districts' facilities are all relatively close to major active faults that are also capable of generating a severe ground shaking response that can potentially damage existing structures, jeopardize the life safety of building occupants, and cause long-term disruption of service.

To improve the seismic resiliency of its facilities, the Districts will execute this Seismic Resilience Program Criteria and Joint Water Pollution Control Plant (JWPCP) Evaluation project. The resulting Seismic Resiliency Program (SRP) will ultimately be applied Districts-wide. The SRP will establish the seismic evaluation criteria and risk analysis methodology, with focus on the following:

- Define seismic hazard levels.
- Select structural performance and return-to-service goals.
- Determine evaluation and mitigation procedures/standards.
- Establish risk analysis and scoring methodology for mitigation prioritization.

The purpose for this project is to collaborate with the Districts to establish the SRP and then apply it to selected structures at the JWPCP.

JWPCP began operations in 1928 and has expanded over the years. Since the time of original construction, building code requirements prescribed



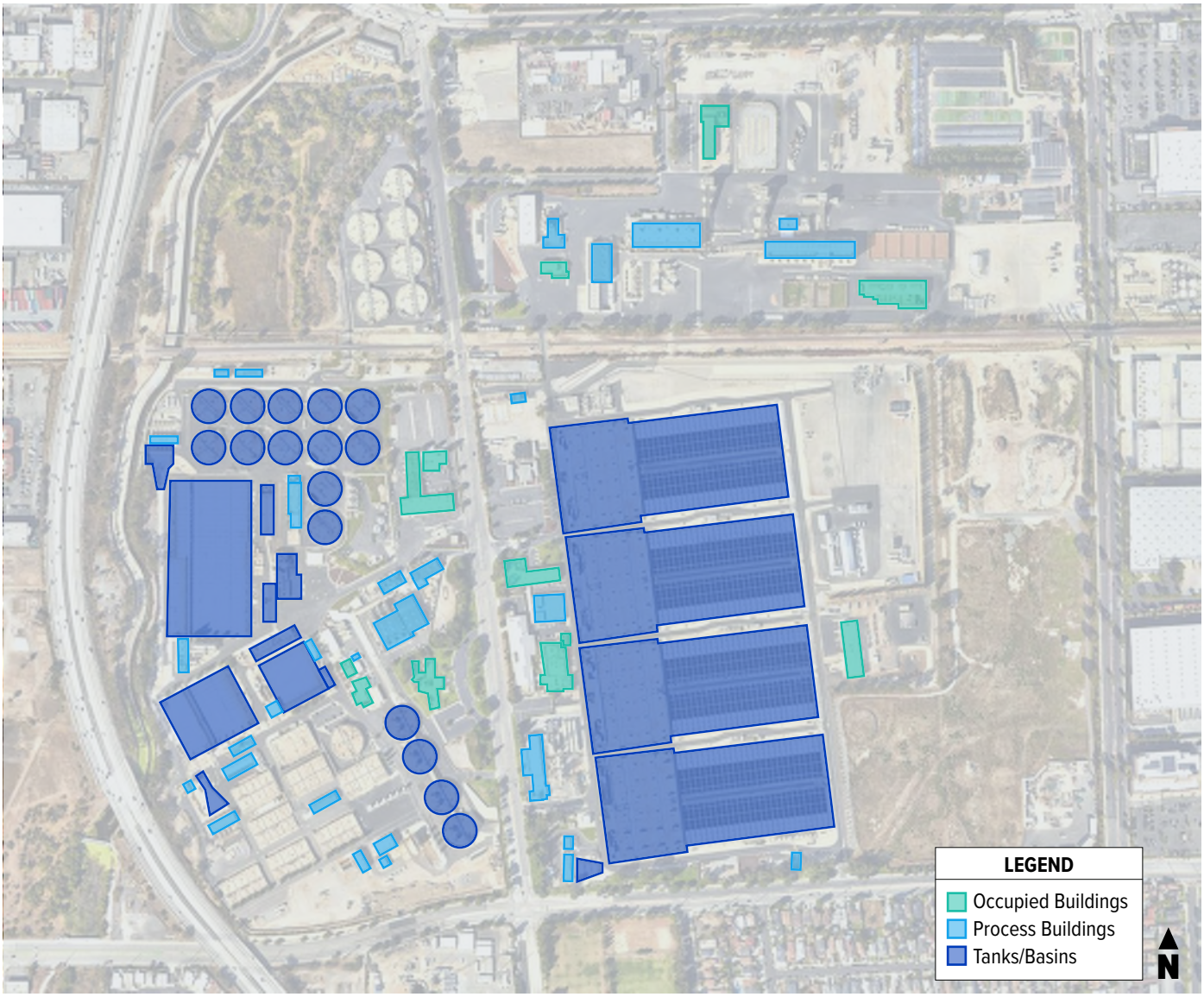
for seismic performance have become more stringent and ground shaking response used to determine the seismic load demands have also increased.

The scope of work will evaluate structures that were designed prior to the year 2000 and includes 67 facilities, which are comprised of occupied buildings, process buildings, and various tanks/basins.

Most of the buildings are constructed of reinforced concrete masonry and conventional cast-in-place concrete construction. Rectangular tanks and basins are constructed with reinforced cast-in-place concrete construction and digesters are constructed of prestressed concrete construction.

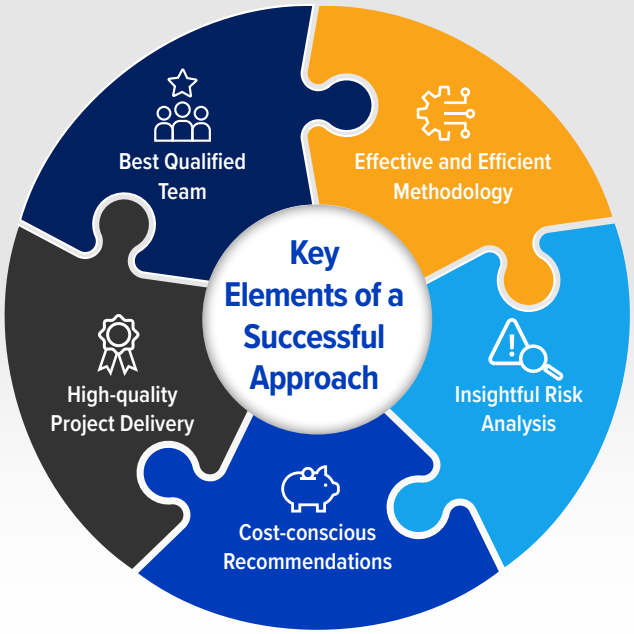
Geo-seismic hazard studies or evaluations are not included in the project, nor are non-structural elements, such as appurtenances, mechanical equipment, and utilities. Parapets, canopies, and building appendages will be included as part of the structure.

The Districts' Joint Water Pollution Control Plant



The SRP will establish the Districts' seismic evaluation criteria and risk analysis methodology for all plants. The SRP will then be applied to selected occupied buildings, process buildings, and tanks/basins at the JWPCP.

Carollo has a thorough understanding of the project based on our experience on similar projects for other agencies and based on our work with the Districts developing the scope of work and proposal for the seismic evaluation of the San Jose Creek Water Reclamation Plant.



APPROACH

Upon reviewing your scope and discussions with you and your staff, our team has developed an approach that will focus on the following to deliver a successful project for the Districts:

- Best Qualified Team
- Effective and Efficient Methodology
- Insightful Risk Analysis
- Cost-conscious Recommendations
- High-quality Project Delivery

Best Qualified Team

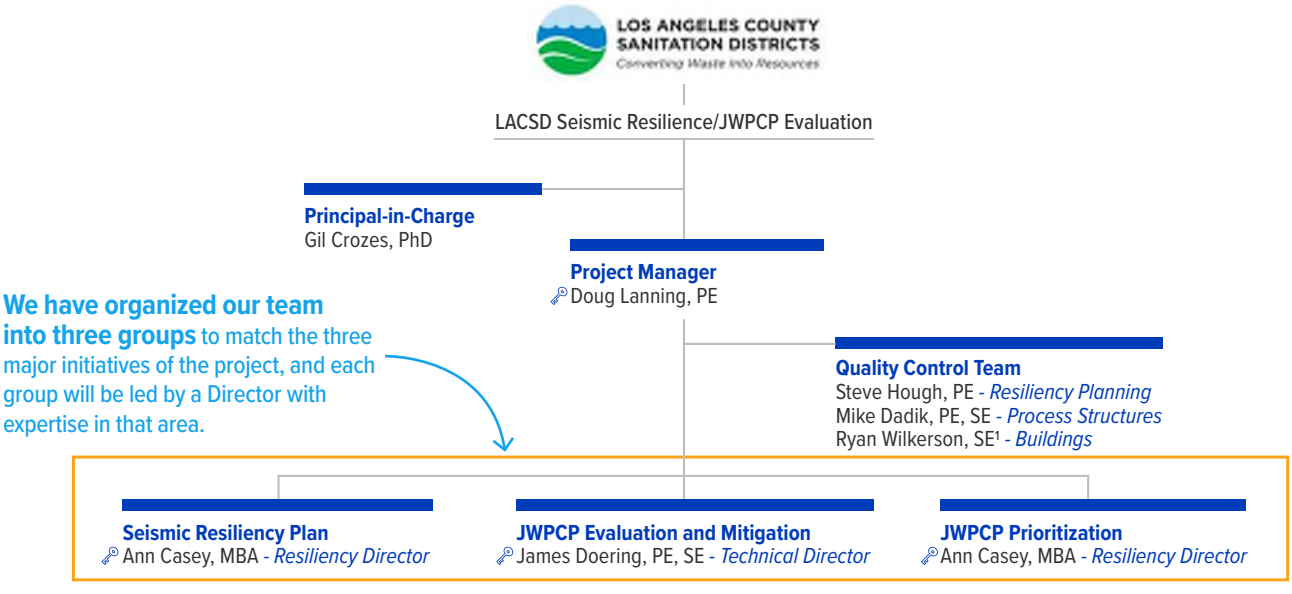
This project requires a team that brings expertise and experience in multiple, diverse areas:

- Seismic Design and Evaulation.
- Occupied Buildings.
- Process Buildings.
- Wastewarer Treatment Facilities.
- System-wide Resiliency Planning.

A team that is well-qualified in some areas may lack the experience to meet your expectations in others. To avoid that risk, your team must include experts in each of the areas and be led by a project manager who can bring all the pieces together.

Carollo's Technical Directors Provide Comprehensive Expertise

The Carollo team comprises experts in both seismic evaluations, led by James Doering as Technical Director, and resiliency planning, led by Ann Casey as Resiliency Director. James and Ann have worked together on similar resiliency projects and have a keen understanding of how to apply them to wastewater treatment facilities, because Carollo's sole focus is water and wastewater engineering services. Our team's understanding of wastewater treatment facilities is extremely important for this project because it means we can accurately evaluate a structure's criticality and consequences of failure.



Doug Lanning will serve as Project Manager. Doug has 35 years of experience planning, designing, and managing wastewater treatment plant projects, including projects that involved seismic evaluations. He also served as Strategic Planning Lead for the Orange County Sanitation District's 63-structure seismic evaluation study (Project PS15-06), which had almost the same scope as this project.

On the PS15-06 project, Doug and James worked together, with James leading the structural/seismic evaluations. Their work together on a very similar, large project provides the experience needed to guide the Districts and deliver a high-quality project efficiently.

Specialty Subconsultant Nabih Youssef & Associates (NYA) Brings Additional Expertise to Building Evaluations

NABIH YOUSSEF ASSOCIATES STRUCTURAL ENGINEERS

Local structural engineering consultant Nabih Youssef & Associates has joined with Carollo to further strengthen the team's expertise in both development of the Seismic Resiliency Program and the evaluation of buildings, particularly occupied buildings. NYA's bread and butter is providing seismic evaluation and planning services for buildings.

Owen Hata will lead the NYA team and has 30 years of experience with seismic evaluation and design of buildings. He led the design of the Long Beach Civic Center, one of the first buildings to be designed to meet seismic resilience criteria and is working with the City of Long Beach on developing their seismic resilience program.

Dr. Marios Panagiotou, who has worked on many technically complex projects, will serve as technical advisor. Marios worked on the Long Beach Civic Center and served on the NIST-FEMA Project Review Panel for Post-Earthquake Re-Occupancy and Functional Recovery (FEMA P-2090/NIST SP-1254). NYA also provides a deep bench of engineers who regularly perform complex finite-element and non-linear analyses of entire structures. While we do not anticipate having to dig deep into a high-powered analysis for this study, we have a team that knows how to do it if necessary.

Technical Staff Support Resiliency and Prioritization Teams

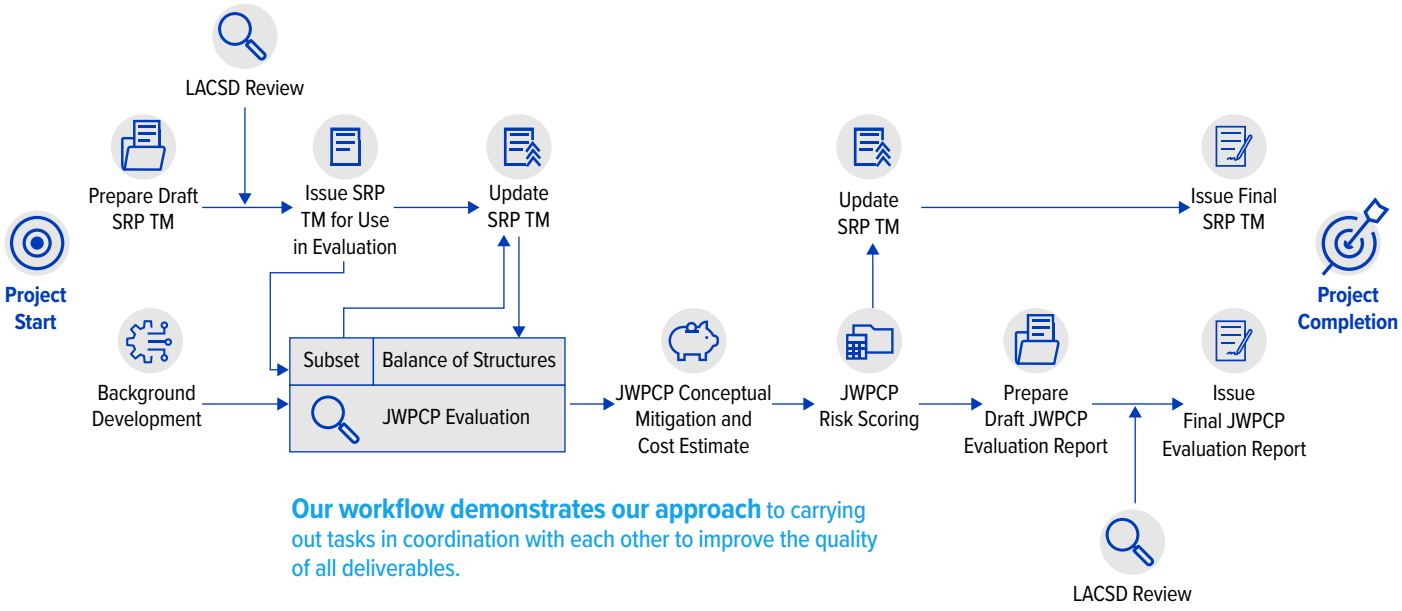
James and Owen will also have important roles on Ann's Seismic Resiliency Plan team to develop seismic criteria and the evaluation methodology. And Ali Ahmadi, an experienced wastewater process engineer, will serve a critical role on Ann's JWPCP Prioritization team to evaluate consequences of failure for structures with seismic deficiencies.

Ali will draw on his knowledge of wastewater processes, facilities, and systems to identify and evaluate the plant's ability to maintain the expected level of service upon a structure's seismic failure.

With the Carollo/NYA team, we provide the Districts with the best qualified team in all critical aspects of the project. James, NYA, and Ann have the expertise to deliver the technical and resiliency aspects of the project, and Doug has a big-picture understanding of the seismic work, the risk analysis, and wastewater treatment requirements to bring these components together.

The value this team brings to the Districts is a sound, comprehensive Seismic Resiliency Program that is based on actual, similar, past project experience with seismic studies at wastewater treatment facilities, along with reliable JWPCP recommendations.

Carollo has teamed with specialty structural subconsultants like NYA on other seismic evaluation projects with much success, including the OC San PS15-06 seismic evaluation study and one with 26 wastewater treatment buildings and tanks for Metropolitan Wastewater Management Commission in Eugene, Oregon. This is a model we know how to use to add value to your project.



Our workflow demonstrates our approach to carrying out tasks in coordination with each other to improve the quality of all deliverables.

Effective and Efficient Methodology

Seismic evaluations have many factors and decisions to be made that will impact the overall findings of the study. Proper sequencing and scheduling of tasks, Districts input, and decisions are needed for an effective and efficient project. In addition, the quality of the study will be significantly improved by incorporating key approaches to the methodology, as discussed below.

Team Organization Maintains Alignment with Project Goals

Carollo's project execution methodology starts with clear roles and responsibilities that draw on the strengths of each of our team members. We have organized our team into three groups, each with a focus on one of the three major initiatives of the project: Seismic Resiliency Plan, JWPCP Evaluation/ Mitigation, and JWPCP Prioritization. Each group will be led by a Director who will be responsible for ensuring that the execution of the work under their purview is performed in a manner that is in alignment with the team approach. This organization provides the ideal framework for effective and efficient completion of initiative tasks and streamlines collaboration with Districts staff.

Thorough Background Development

Comprehensive and accurate information is a must for this project. Before we dive into the JWPCP evaluation, we will collect all necessary background information that is available for the structures at the JWPCP and place that information on a server that is accessible to the entire team, including the Districts' team. Information collected will include the following:

- **Drawings –** to include civil, architectural, structural, and mechanical drawings of original construction and subsequent alterations.
- **Specifications –** to include original construction and subsequent alterations.
- **Shop Drawings –** to include structural designs completed during the construction phase, such as prestressing systems for digesters and large equipment mounted to the structures.
- **Geotechnical Reports** relevant to the structures included in the study.
- **Seismic Evaluations –** previous reports.
- **Structural Condition Assessments –** relevant reports.

We will review this information and conduct an initial site walk to get the team familiar with the JWPCP facilities. Our experience on similar projects for other agencies is that facilities often have been altered since original construction or have conditions that do not match record drawings. Sometimes, record drawings are not even available. This may not be an issue for the Districts, but if it is, we will identify information gaps and coordinate with your team to determine how to close those gaps. This will help prevent any delays during Task 4 - Seismic Evaluation.

Feedback from JWPCP Evaluations Optimizes Risk Memorandum and SRP

The Criteria and Risk Score Technical Memorandum is critical for setting the stage for how all facilities will be evaluated. During this task, our team will work closely with the Districts to identify the appropriate seismic hazards, performance goals for each structure, and procedures for use in evaluation, mitigation development, and risk analysis.

Based on our experience on similar seismic studies, the overall Seismic Resiliency Program will be improved by implementing the "draft" SRP on a subset of representative structures first. We will then make procedural adjustments to the SRP based on feedback from the initial structure evaluations.

Once the risk analysis is complete, we will review the findings as a whole and, working with the Districts, determine if additional adjustments to the evaluation and/or SRP are warranted so that the evaluation outcomes are in general alignment with your resiliency goals. We will use this iterative approach to provide a more refined and proven SRP that the Districts can confidently apply to the structures at all your plants.

Approach to JWPCP Seismic Evaluation Maintains Consistency

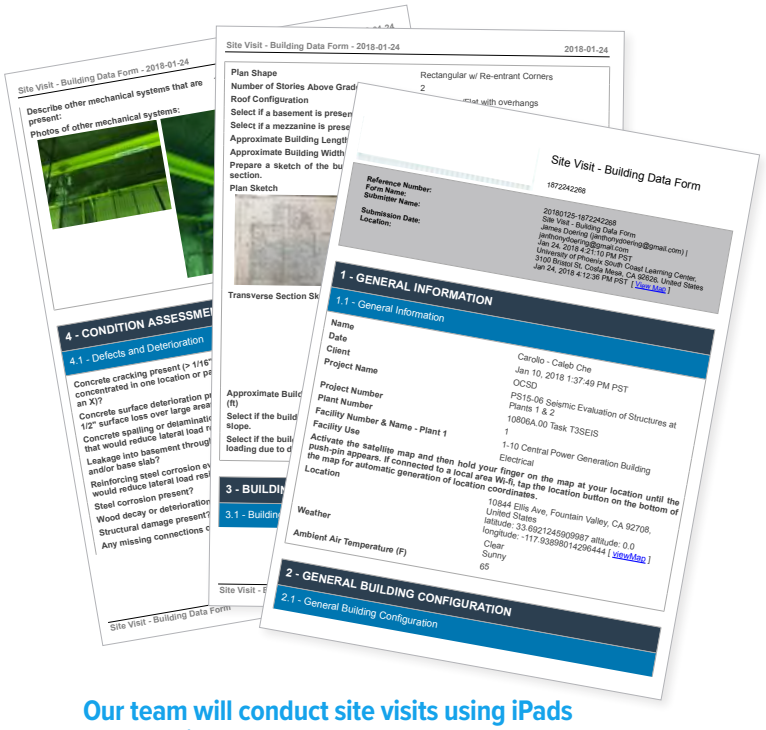
In addition to the initial site visits during background development, we will conduct detailed site visits for all structures included in the JWPCP study. The purpose of these site visits is to complete the visual assessment requirements of the ASCE 41-17, Tier 1 screening for buildings and similar assessments for tanks/basins. To make sure that collection of field information is accurate, comprehensive, accessible, and user-friendly, we will use a data collection application called Prontoforms. Our engineers will bring an iPad with them to the site and complete the relevant form entries for each structure.

Even with well-defined criteria, the process of assessing potential seismic failures and mitigating risk can become inconsistent and introduce bias due to the number of structures and number of engineers performing evaluations. To avoid inconsistency, Carollo will focus sufficient attention and deliberate control on the evaluation work to stay well-coordinated. We will provide the team with clear evaluation guidance to apply standards uniformly, make appropriate assumptions, and use preferred references.

To prevent evaluation bias from creeping in during execution of the evaluations, we will have periodic check-ins and update guidelines as needed. One of the early updates will occur at the beginning of Task 4 - Seismic Evaluation. We will take a small representative subset of the subject structures and perform an initial evaluation for each, with calculations to demonstrate and vet the application of the SRP. These initial evaluations will be shared with the Districts for review and comment so adjustments to the SRP can be made as necessary. With these measures, we will both improve the SRP and maintain consistency in JWPCP evaluations.

For evaluations, we will follow the 3-tiered procedures for buildings set forth in ASCE 41-17, and we will develop a similar 3-tiered evaluation process for tanks/basins that is based on ACI 350-20 and ACI 350.3-20 with necessary modifications. To focus the evaluation team's efforts, we will develop a screening-level checklist for tanks/basins. This checklist will help serve to flag common structural vulnerabilities that require an evaluation check. This measure will help make sure that tank/basin evaluations have a similar level of consistency compared to the buildings, which have established evaluation procedures.

Findings of vulnerabilities will be documented for each structure by annotating record drawings and/or photographs.



Our team will conduct site visits using iPads loaded with Prontoforms for data collection that is accurate, comprehensive, and user-friendly. (A complete example of a Prontoform survey form is provided in Appendix B.)

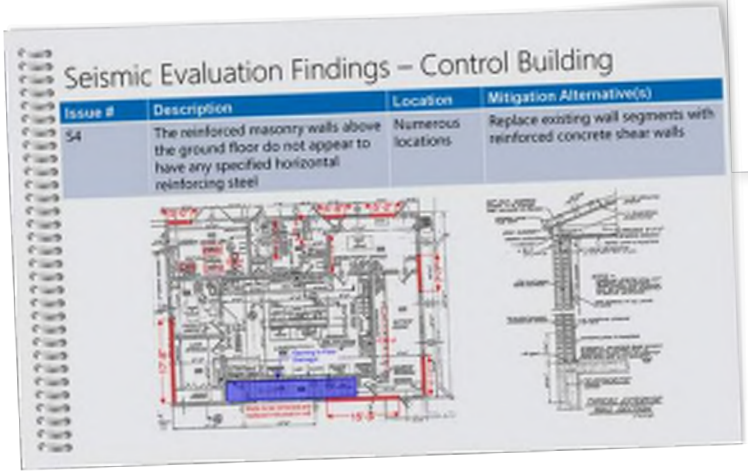
JWPCP Conceptual Mitigation Includes Visual Documentation and Accurate Cost Estimates

The Conceptual Mitigation task is development of conceptual level mitigation for both buildings and tanks/basins. For consistency, mitigation recommendations for buildings will be proportioned to meet the Tier 2 provisions of ASCE 41-17 unless a more stringent approach is necessary. The Tier 1 level is intended to be used for screening purposes only and will not be used as a criteria for mitigation.

ACI 350-20 and ACI 350.3-20 will be used as the standards for developing mitigation for tanks/basins. Applying standards serves to provide a level from which to base development of the mitigation and will also help to limit the potential for bias to occur. Conceptual mitigation recommendations will be documented for each structure by annotating record drawings and/or photographs so that the mitigation concepts are clearly communicated.

An important part of the conceptual mitigation task is estimating the construction cost of each mitigation measure. Cost estimating will be led by Jason Rozgony in coordination with the structural engineers who best understand the proposed mitigation requirements.

For improved accuracy, Jason's approach to cost estimating is specifically designed to replicate the pricing methods used by general contractors who submit pricing for such projects. He uses estimating software that interfaces with external pricing databases to reflect industry cost trends, such as inflation and supply chain interruptions, that are now having a dramatic effect on pricing. In this way, the Carollo team provides accurate estimates that the Districts can use to make informed budgeting decisions about future resiliency projects.



We will clearly and succinctly document identified vulnerabilities and recommended mitigation alternatives using annotated record drawings and/or photographs.

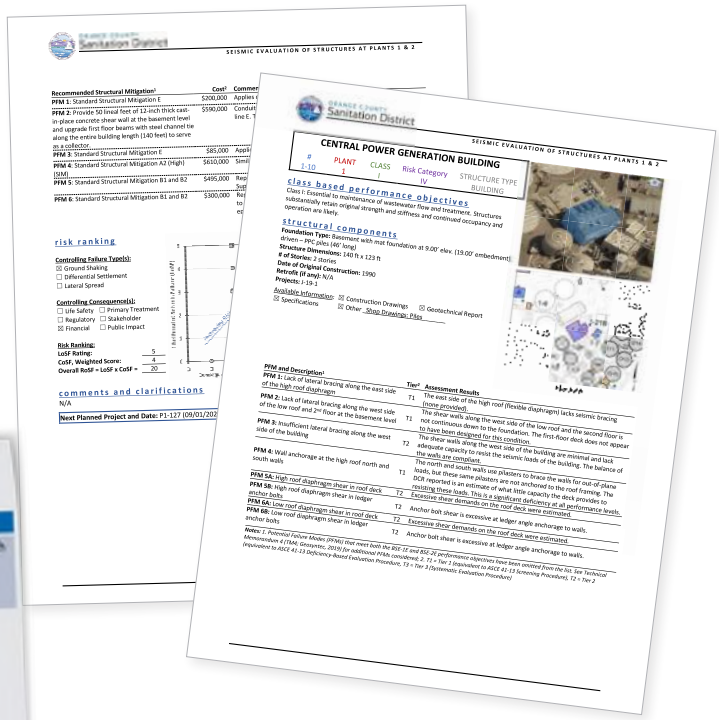
JWPCP Risk Analysis

The JWPCP risk analysis will be performed in accordance with the Criteria and Risk Score Technical Memorandum. Our approach to this topic is discussed later in this section under the heading "Insightful Risk Analysis."

JWPCP Seismic Evaluation Report Includes Easily Accessible Summaries

The JWPCP Seismic Evaluation Report will compile the findings of the evaluation tasks, Tasks 4 through 6. As a value-added feature of the report, we will develop structure summary sheets for each structure to provide a high-level description of key structural attributes, findings, recommended mitigation, mitigation cost estimates, and risk scoring. We will populate these sheets as the work progresses and include them as an appendix to the report.

We used similar summary sheets for the OC San PS15-06 project and received many positive comments from the client about how useful these were in gaining a quick understanding of the findings for each structure.



We will provide convenient structure summary sheets that provide a quick understanding of the findings for each structure.

Insightful Risk Analysis

The two most important steps of the JWPCP risk analysis are 1) determining the likelihood of seismic failure score for each structural deficiency, and 2) determining the consequence of failure score for each. The risk score is then the product of these two scores. The strategies used to score likelihood and consequences will have a major impact on prioritization as discussed below.

Likelihood of Failure

In general, the structural analysis and determination of seismic deficiencies is an objective process that provides definitive findings. In contrast, scoring the likelihood of failure of a structure due to those deficiencies is a subjective process that will require input from the Districts. For each structure, we will calculate a likelihood of failure score for each vulnerability that was identified from the evaluation. This scoring can potentially include multiple scoring criteria that are each weighted and then combined to arrive at a score for each vulnerability.

As presented in the table on the right, Carollo has developed potential scoring criteria that we are ready to discuss with you in the meetings and Risk Scoring Workshop.

Using the approved scoring criteria and selected weighting, we calculate the likelihood of failure score for each vulnerability. The greatest score amongst the vulnerabilities is generally taken as the governing likelihood of failure score for the entire structure. While we have found this to be the most defensible approach, additional adjustments to the structure score could also be considered.

Likelihood of Failure Scoring Criteria	Benefit
Severity	Highly deficient elements and connections will have a greater likelihood of failure. This scoring measure is straightforward in its application, and it will help to make sure that highly deficient structures are emphasized.
Redundancy	Structural redundancy or alternative load paths may be present in a structure. In such a case, the structure may be capable of partially or fully mitigating a vulnerability. Scoring redundancy will help to prevent prioritizing structures that have some degree of inherent mitigation.
Condition	Structural members that are in poor condition with corrosion, cracking, or damage will not perform as well compared to being in excellent condition. This scoring will help to capture the additional vulnerability that poor condition may present.
Damage Influence	Some deficiencies may affect large portions or small portions of a building. The larger the affected area, the greater the potential will be for a structural failure to disrupt the use/operation of the structure. This will help to prevent highly localized deficiencies from being disproportionately prioritized.
Limited Information Knowledge Factor	Seismic evaluations are usually based on material strengths and properties that are specified on record documents. Where that information is lacking, assumptions will be made based on the year of construction. This approach will tend to reduce the confidence one has in the findings. Scoring could be made to reflect this lower confidence when information is lacking by increasing the likelihood of failure.

Consequences of Failure

To determine the consequences of failure, our team will evaluate life and safety concerns for Districts staff — particularly for occupied buildings — and we will use our extensive background in wastewater treatment engineering to identify negative impacts on the Districts' ability to protect public health and the environment due to seismic failure of JWPCP facilities. Potential consequences to be scored in this analysis are presented in the table on the next page.

Similar to the scoring for likelihood of failure, scoring for consequences of failure can include criteria weighting. For example, life and safety typically has the highest weight, and other consequences, such as ability to meet regulatory requirements, are somewhat lower.

In the Risk Scoring Workshop, we will discuss with you alternative criteria, weighting, and examples from other projects to help you decide the right approach for the Districts. Using the approved criteria and selected weighting, we calculate the consequences of failure score for each structure.

Score	Social	Financial	Environmental		
	Life and Safety	Cost to Restore Service	Regulatory Compliance	Disruption Impact	Disruption Severity
1 Low	Seismic event would not impact asset routine work nor involve confined space entry.	$	Seismic event causing asset failure would draw no regulatory attention	Asset failure due to seismic event would cause no disruption to service	None
2 Moderate	Sesimic event would impact asset routine work and require confined space entry or lockout/tagout of equipment.	$$	Seismic event resulting in asset failure would casue some regulatory authority concern	Asset failure due to seismic event would cause limited impact to treatment capacity at contractual level; equipment downtime is less than 50%.	Low
3 Concern	Seismic event would have low potential for asset failure to have a non-OSHA reportable impact. Asset failure results in potential for injury to staff or customer.	$$$	Seismic event causing asset failure would result in Minor Notice of Violation	Asset failure due to seismic event would cause moderate impact to treatment capacity at contractual level; equipment downtime is less or equal to 75%.	Medium
4 High	Seismic event would have likely potential for asset failure to result in Non-OSHA reportable impact. High likelihood of injury.	$$$$	Seismic event resulting in asset failure would casue Major Notice of Violation	Asset failure due to seismic event would result in significant impact to treatment capacity at contractual level; equipment downtime is greater than 75%.	High
5 Critical	Seismic event would cause asset failure with likely potential for OSHA reportable impact. Possible fatal injury.	$$$$$	Seismic event causing asset failure would result in agreed orders, fines and/or penalties	Asset failure due to seismic event would result in disruption to treatment capability; equipment downtime is much longer than anticipated.	Very high

An example scoring criteria matrix for asset performance after a seismic event.
This facilitates the determination of asset criticality and overall risk.

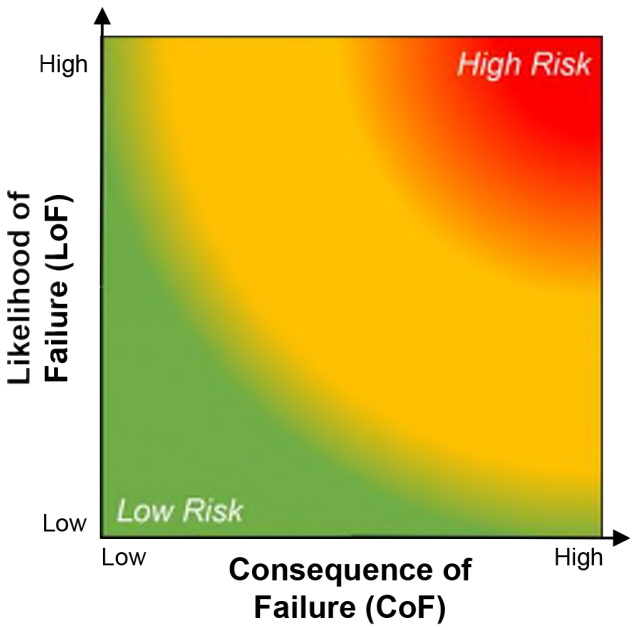
Comprehensive Assessment of Risk

For each structure, the product of the likelihood of failure score and consequences of failure score is the seismic risk score for that structure. We will use the risk score to prioritize seismic mitigation projects, with the highest-risk structures having the highest priority. In addition to assessing the seismic risk of your facilities, our approach would position the Districts to align the criteria developed during this task to all capital needs and develop an "apples-to-apples" approach when considering risk-prioritized capital planning needs.

The JWPCP risk analysis will include a summary table showing pertinent information for each structure, including likelihood of failure score, consequences of failure score, risk score, mitigation cost estimate, and estimated facility value. An estimate of facility replacement value will help the Districts put the mitigation cost in perspective to facilitate CIP decisions.

For example, if the mitigation cost is a large percentage of the facility's value and the existing facility has level-of-service issues or a short remaining useful life, then the Districts may decide to replace the facility rather than complete a seismic mitigation project.

For OC San's most recent Facilities Master Plan, we estimated the replacement value of all their facilities at both plants and the collection system. For that project, we developed estimating strategies that we will also use for the JWPCP, providing the appropriate level of accuracy for you to evaluate mitigation vs. replacement.



Upon completion of the risk scoring for JWPCP, we will conduct a Risk Analysis Workshop to review developed scoring, high-risk assets for seismic mitigation, proposed risk mitigation strategies, mitigation cost estimates, and facility values. Results from this workshop will be incorporated into the Seismic Evaluation Report.

Cost-Conscious Recommendations

One of the primary purposes for this project is to flag vulnerabilities for mitigation, but the cost of implementing mitigation projects can be substantial. We are conscious of the potential financial burden that can grow out of this study, and we have tools that we can employ to help you control seismic mitigation costs, discussed below. As part of the prioritization process, we will collaborate with you on how to use these tools as appropriate for the Districts.

System Redundancy

Much of the sizing of wastewater treatment plants is based on peak demands, and these demands are unlikely to coincide with a major earthquake. In fact, one can argue that wastewater flows and loads are likely to drop after a major earthquake due to temporary water supply/ wastewater collection disruptions and a downturn in economic activity.

For certain treatment processes, this presents an opportunity to reevaluate the required number of units that must remain in service to meet the Districts' minimum required level of service. This evaluation would be part of the consequences of failure analysis to portray more accurately the anticipated risk.

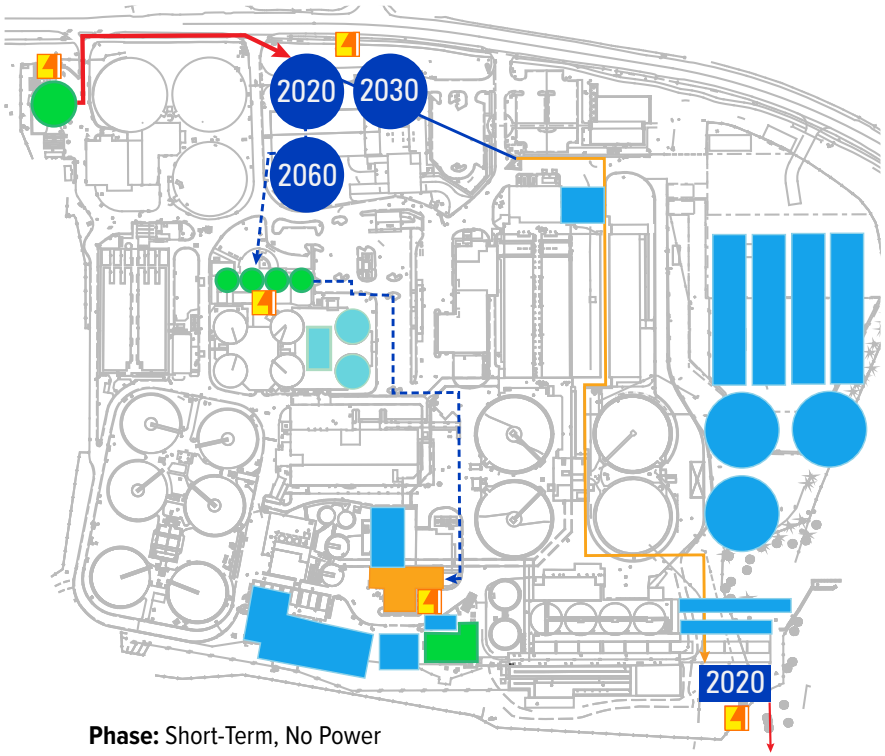
Facility Criticality

The criticality of each facility may be considered as part of both the required seismic performance level and the consequences of failure. Performance goals for structures that are less critical can be reduced, which results in fewer mitigation requirements. Simultaneously elevating consequences of failure for critical facilities would allow the Districts to further target risk reduction for facilities that provide a minimum level of service following a major earthquake.

For example, the Districts and our team could collaborate to identify the minimum facilities required to accept and discharge wastewater flows through the plant. These water in/water out "plant backbone" facilities may be given the highest criticality – after life safety – and non-backbone structures would be judged to have a lower priority.

As another example, primary treatment and anaerobic digestion could be prioritized, which was the approach adopted by OC San for the PS15-06 project. Use of a facility-criticality strategy allows the Districts to focus risk reduction wherever you decide. Less risky mitigation projects can then drop off your priority list, potentially reducing seismic resilience costs by 30 percent or more.

If desired to reduce seismic resiliency costs, we will collaborate with you to identify high priority facilities that provides a minimum level of service following a major earthquake, allowing less critical facilities to drop off the Districts' proposed CIP. This is the approach we used for Eugene, OR, shown here.



Phase: Short-Term, No Power
Goal: Primary Treatment + Disinfection

Legend

- Powered by standby generator
- Existing resilient facility
- Existing resilient facility not being used
- Future resilient facility currently in CIP
- Future resilient facility in CIP used to meet resiliency goal
- New facility or major pipe required to meet resiliency goals
- Existing facility that requires upgrades to meet resiliency goals
- Liquid
- Solids

Outage Duration

Another approach to lower the risk scores of some of the structures is to evaluate expected outage durations following a major earthquake. If an outage is short term, consequences can be scored lower based on its acceptability in the aftermath of a major catastrophe – even though the plant may temporarily be unable to meet normal level of service requirements.

Long-period Response Issues

We anticipate that the seismic hazards developed for this evaluation will be based on ASCE 7-16 using the latest seismic data. However, for Site Class D, ASCE 7-16 now includes a penalty factor of 1.50 to be applied to the response spectra response for periods greater than Ts, which would end up being applied to the hydrodynamic analyses.

This penalty factor can be avoided if a site-specific ground motion hazard analysis (GMHA) is performed. It has been our experience that this approach results in reduced loads and sloshing wave height estimates. A site-specific GMHA applied to all the structures may realize a reduction to the inertial response spectra at lower periods as well.

We understand the Districts preference is to accept the 1.50 penalty factor and have your on-call geotechnical consultant support any geotechnical requirements on an as-needed basis. If it does make sense to get the site-specific GMHA during project execution, our team is qualified and experienced with preparing site-specific GMHA that meets the provisions set forth in ASCE 7-16 and ASCE 41-17.

Emergency Funding

The Districts could choose to defer indefinitely any seismic projects that do not have a severe consequence of seismic failure. This strategy reduces the financial impact of seismic projects and makes use of the emergency funding that becomes available following a natural disaster.

Carollo will work with you to apply these cost-reduction tools based on your preferences to establish a seismic resilience program cost that fits your budget.

High-Quality Project Delivery - Keeping the Project On Track and the Districts Informed

Carollo has set a goal to provide the Districts with exceptional projects and the highest quality service. Strong project management is essential to meeting this goal, and Doug Lanning has demonstrated his ability to deliver high quality projects on time and within budget. The cornerstones of his project management approach are:

- Detailed Planning and Scheduling
- Open Communication
- Collaborative Meetings
- Project Control and Reporting
- Quality Assurance/Quality Control

Detailed Planning and Scheduling

One of our first tasks on the project will be development of the Project Management and Quality Management Plans. These plans document project processes and procedures that serve as the key tools of our planning and scheduling, including the project staffing organizational chart, the scope of work, a detailed schedule of project tasks, task budgets, subconsultant services descriptions, project monitoring and reporting procedures, communication protocol, record keeping requirements, and quality assurance/quality control procedures.

We will submit these plans to the Districts for review and confirmation. They then serve as our roadmap to successful project delivery.

At the end of this section, we have included a preliminary project schedule in accordance with the time frames outlined in the RFP.

Open Communication

Doug Lanning will be the primary point of contact with the Districts. He will conduct bi-weekly project coordination meetings with the Districts' staff and be available to discuss the project whenever there is a need. Gil Crozes, Carollo's Client Service Manager for the Districts, will serve as Principal-in-Charge, providing a second high-level point of contact and maintaining communication continuity across Carollo-Districts projects.

Nearly all our team is located here in Southern California, so we can easily meet to discuss issues immediately, minimizing project delivery risks. One of the tools of our Project Plan is a communication protocol that will establish appropriate contacts with the Districts project team, plant staff, Carollo staff, NYA, and other parties involved with the project.

For your project, we recommend and propose the following in-person workshops, in addition to 40 virtual bi-weekly project coordination meetings:

- Kickoff Workshop
- Seismic Criteria Workshop
- Risk Scoring Workshop
- Seismic Evaluation Workshop
- Risk Analysis Workshop
- Draft Report Workshop

Collaborative Meetings

We will use a collaborative meeting and workshop approach to listen to your concerns, discuss ideas, and present our findings for your review. We will conduct technical meetings to get Districts and plant staff input prior to the submittal of any deliverables, such that stakeholder feedback is captured in the initial draft, and subsequent review comments serve to fine-tune the final deliverable.

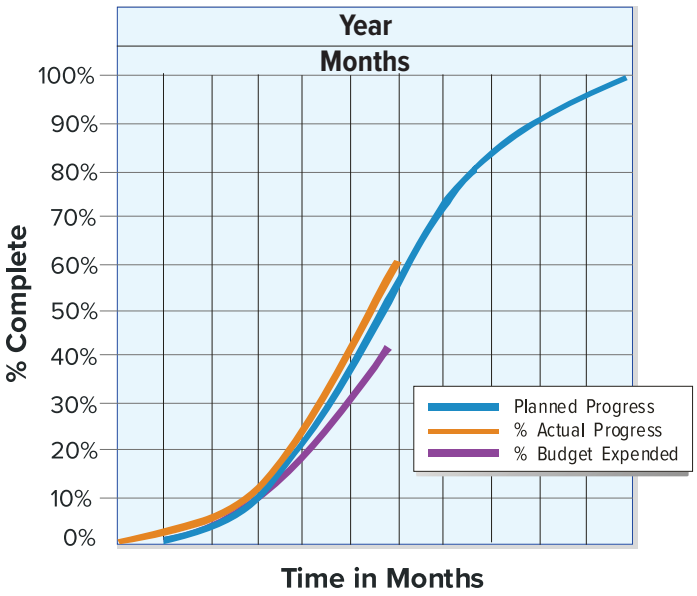
This saves Districts staff time, helps maintain schedule, and improves the quality of reviews. Several tools are used as part of our standard meeting procedures. First, we issue meeting minutes after each meeting to document the discussion. Second, we prepare a project Decision Log that tracks all project decisions throughout the project.

And third, we prepare a project Action Item log that tracks all action items throughout the project, including the person responsible for completing the action item and the due date. Including the Decision Log and Action Item Log with the meeting minutes provides an opportunity for the Districts to review and confirm the Log additions. Documentation/tracking of the decisions maintains project quality, provides a framework for orderly project progression, and avoids rework costs due to misunderstandings about project direction. Tracking and fulfillment of action items avoids delays while any party is waiting for information, so it keeps the project on track.

Project Controls and Reporting

The essence of our approach to management is "goals and controls." As illustrated throughout this proposal, we have assimilated a list of goals based on a clear understanding of your expectations. Doug will utilize Carollo's standardized company management procedures, including Earned Value Management tracking, to measure schedule and budget progress on a monthly basis, providing essential data for project controls.

Project status will be reported to the Districts in a monthly Progress Report that details the work effort completed in the past month, the tasks scheduled for the next month, budget status, schedule status, and any project issues. Doug will be prepared to discuss the Progress Reports at the bi-weekly project coordination meetings. This provides an opportunity to answer any of your questions and address any concerns.



The earned value curve is a graphical illustration of project controls, showing how the project will be monitored to successful completion.

Quality Assurance/Quality Control

Our approach to quality is based on proper up-front planning, which we document in our Project Management and Quality Management Plans, and applying the right reviews at the right time to make sure that each project gets started off correctly and ends successfully.

As discussed within this Approach section, we will use an effective and efficient methodology to conduct the project that includes many quality assurance (QA) measures. These **QA measures will implement improvements to the Seismic Resiliency Plan based on initial JWPCP evaluations and maintain consistently appropriate evaluations and recommendations across the entire team. In addition, we will conduct quality control (QC) reviews of each major work item.**

QC checks will be performed by an independent checking team as indicated in our organizational chart. Independent checkers are senior staff who have been selected based on their expertise and experience with similar projects, including seismic resiliency studies.

One of our tools to maximize the benefits of submittal reviews is the Comment Log. This log captures all Districts review comments. A similar log is used to capture all independent checking team comments. We use the logs to assign each comment to a member of the project team, and that member is responsible for providing a response to the comment in the log and addressing the comment in the deliverable.

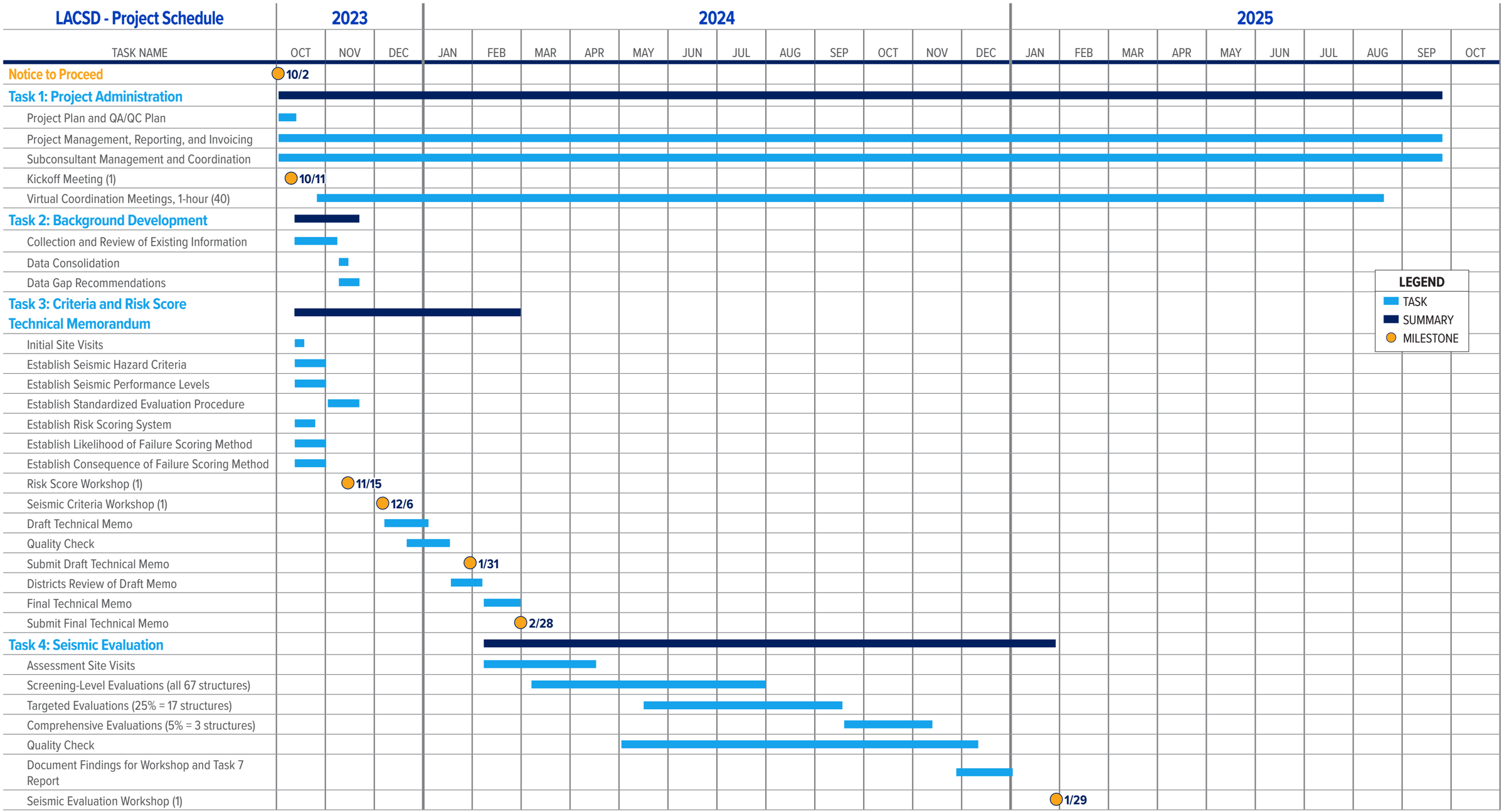
When the project team has responded to all comments, the logs are issued to the Districts and checker team to confirm that each comment has been addressed appropriately.

Carollo's approach to QA/QC will provide a technically sound Seismic Resiliency Plan and high-quality recommendations for JWPCP seismic mitigation measures.

For the Seismic Resilience Program and JWPCP Evaluation project, an experienced, independent checking team will conduct five quality control reviews:

- QC check of Task 3: Criteria and Risk Score Technical Memorandum (Draft)
- QC check of Task 4: Seismic Evaluations
- QC check of Task 5: Conceptual Mitigation
- QC check of Task 6: Risk Analysis
- QC check of Task 7: JWPC Seismic Evaluation Report (Draft)

Preliminary Project Schedule in Accordance with the Time Frames Outlined in the RFP.



LACSD - Project Schedule

TASK NAME	2023 OCT	NOV	DEC	2024 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2025 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
Task 5: Conceptual Mitigation																									
Develop Mitigation Alternatives																									
Prepare Mitigation Cost Estimates																									
Quality Check																									
Document Findings for Task 7 Report																									
Task 6: Risk Analysis																									
Determine Likelihood of Failure																									
Determine Consequences of Failure																									
Estimate Facility Values (67 structures)																									
Risk Tabulation and Findings for Task 7 Report																									
Quality Check																									
Risk Analysis Workshop (1)																				5/28					
Task 7: JWPCP Seismic Evaluation Report																									
Draft Report																									
Quality Check																									
Submit Draft Report and Updated SRP																							8/20		
Draft Report Workshop (1)																							9/3		
Districts Review of Draft Report																									
Final Report																									
Submit Final Report and Final Updated SRP																								9/30	

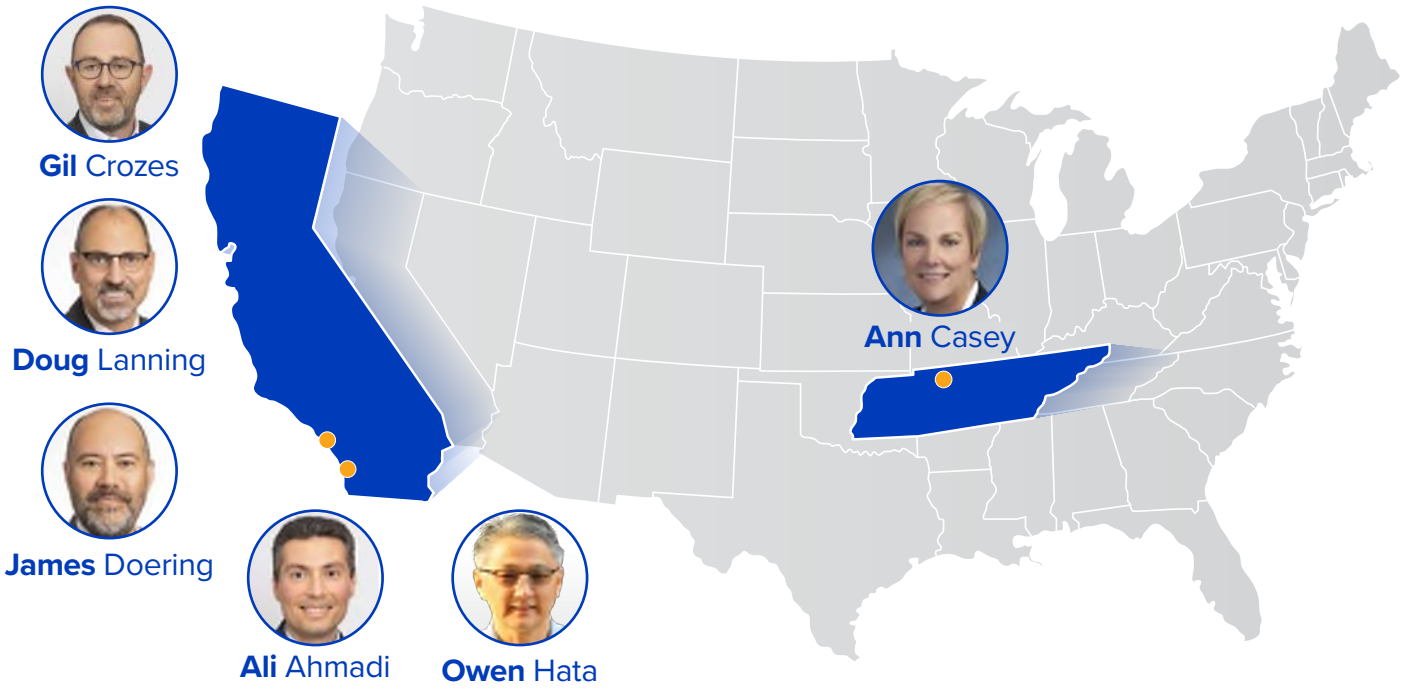
Location of Project Staff

Location of Project Staff

All team members, from the key staff to our support team, are physically located within the United States of America.

Your important project makes it necessary that all team members have timely and effective communications during all phases of the work. The entire proposed team is physically located within the United States of America. The office location for each team member is also noted on their individual bios in Section 3. We **qualify as a Regional Business Enterprise (RBE)** and have include evidence thereof in **Appendix A.**

All but one of our Key Team works out of our Southern California Offices.



Eight of our nine Supporting Team members (shown below) are based in Southern California.


Caleb Che (CA)


Kinsey Ryan (CA)


Marios Panagiotou (CA)


Felicia Fan (CA)


Mathew Esquer (CA)


Scott Stewart (CA)


Jason Rozgony (CO)


Mike Dadik (CA)


Ryan Wilkerson (CA)

Appendices

Appendix A

Regional Business Enterprise (RBE) Incentive:
Los Angeles Business License

Appendix B

Sample Data Collection Form
Published WaterWorld article:
OC San's PS15-06 project

Appendix C

List of Proposed Subcontractors
Reference List
Non-Collusion Declaration Form
Workers' Compensation Form
Vendor Registration Form
W-9 Tax Form

Appendix A

Regional Business Enterprise (RBE) Incentive: Los Angeles Business License

Regional Business Enterprise Incentive

Carollo has maintained offices for decades within the Districts' service areas.

Please see evidence of our active Los Angeles office 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
0000659039-0001-1	L049	PROFESSIONS / OCCUPATIONS	8/1/1988	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

"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."

ISSUED BY:

Claire Bartels

DIRECTOR OF FINANCE

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

Appendix B

Sample Data Collection Form

Published WaterWorld article: OC San's PS15-06 project

Site Visit - Building Data Form

1872242268

Reference Number:	20180125-1872242268
Form Name:	Site Visit - Building Data Form
Submitter Name:	James Doering (janthonydoering@gmail.com) | janthonydoering@gmail.com
Submission Date:	Jan 24, 2018 4:21:10 PM PST
Location:	University of Phoenix South Coast Learning Center, 3100 Bristol St, Costa Mesa, CA 92626, United States Jan 24, 2018 4:12:36 PM PST [View Map]

1 - GENERAL INFORMATION

1.1 - General Information

Name	Carollo - Caleb Che
Date	Jan 10, 2018 1:37:49 PM PST
Client	OCSD
Project Name	PS15-06 Seismic Evaluation of Structures at Plants 1 & 2
Project Number	10806A.00 Task T3SEIS
Plant Number	1
Facility Number & Name - Plant 1	1-10 Central Power Generation Building
Facility Use	Electrical

Activate the satellite map and then hold your finger on the map at your location until the push-pin appears. If connected to a local area Wi-fi, tap the location button on the bottom of the map for automatic generation of location coordinates.

Location	10844 Ellis Ave, Fountain Valley, CA 92708, United States latitude: 33.6921245909987 altitude: 0.0 longitude: -117.93898014296444 [viewMap]
Weather	Clear Sunny
Ambient Air Temperature (F)	65

2 - GENERAL BUILDING CONFIGURATION

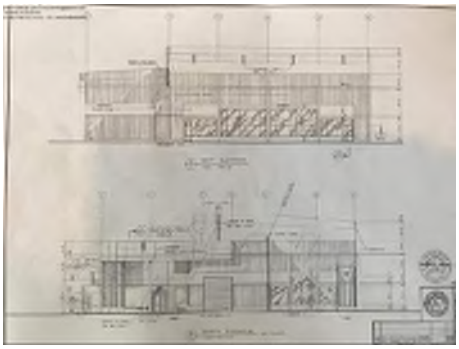
2.1 - General Building Configuration

Plan Shape	Rectangular w/ Re-entrant Corners
Number of Stories Above Grade	2
Roof Configuration	Monoslope/Flat with overhangs
Select if a basement is present.	Yes
Select if a mezzanine is present.	Yes
Approximate Building Length (ft)	123
Approximate Building Width (ft)	140

Prepare a sketch of the building plan with the North Arrow pointing up and a transverse section.

Plan Sketch

Transverse Section Sketch



Approximate Building Height Above Grade (ft)	39
Select if the building site is adjacent to a slope.	No
Select if the building is subject to net lateral loading due to differential backfill.	No

3 - BUILDING SYSTEMS

3.1 - Building Exterior

North Elevation Photographs

West Elevation Photographs

South Elevation Photographs

East Elevation Photographs

Exterior Finishes	Formed Fluting or Liner
Select if exterior dead loads are present.	Yes
Describe exterior dead loads by photographing and sketching up information on the photos as required.	
Describe Exterior Dead Load 1	Stair southeast corner (see east elevation)
Select if there is an adjacent building within 4% of building height.	Yes
Building Separation (in.)	3

Building Separation Photo/Sketch	
Exterior Framing System	Cast-in-place Concrete Bearing Walls
Exterior Wall Thickness (in.)	11
Select if pilasters are present on the interior side of the walls.	Yes
Pilaster spacing (ft)	25

3.2 - Lateral Load Resisting System

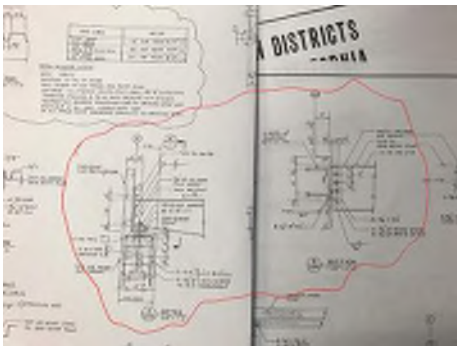
ASCE 41-13 Building Type	C2A: Concrete Shear Walls with Flexible Diaphragms
Vertical Lateral Load Resisting Elements of Main Building	Shear Walls
Roof Diaphragm Type	Corrugated Steel Decking
Photos of Roof Diaphragm	
2nd Floor Diaphragm Type	Cast-in-place Concrete
Shear Wall Type	Cast-in-place Concrete Shear Wall

Photographs of Shear Walls

Wall Anchorage Observed? Yes

Wall Anchorage Photos

Wall Anchorage Sketches



Re-entrant Corners Observed? Yes

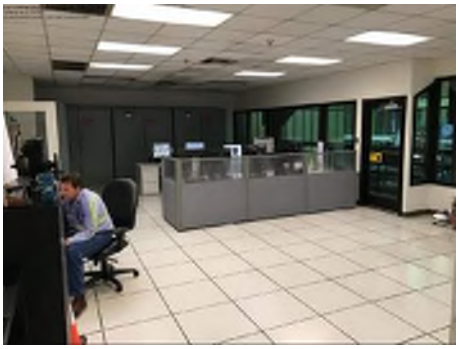
Re-entrant Corner Photos

Select if the vertical lateral load resisting system is discontinuous anywhere. Yes

Describe discontinuities:

East wall windows below high roof level
Interior Shear wall discontinuous between first floor to basement
West wall windows all along wall at first floor level

3.3 - Roof Framing System

Roof Sub-framing Members	Wide flange steel
Roof Framing Beams	Tapered steel girder
Roof Framing Photos	
Select if there is a ceiling.	Yes
Describe ceiling system	Second floor control room lobby restroom at second floor
Ceiling Photos	
Select if roof diaphragm openings are present.	Yes
Roof diaphragm openings are:	Medium
Photos of diaphragm openings	
Describe dead load supported from the bottom of the roof framing:	Ceiling at control/lobby, MEP elsewhere
Photos of suspended dead load from the roof	

Describe dead load on top of the roof: Platform and equipment

Roof Top Photos

Select if interior columns supporting the roof are present. Yes

Type of columns supporting roof Cast-in-place concrete

Photograph of roof columns

3.4 - Second Floor Framing System

Second Floor Sub-framing Members None (floor diaphragm or concrete deck)

Second Floor Framing Beams Cast-in-place concrete beam

Second Floor Framing Photos


Select if there is a ceiling below the second floor. No

Select if second floor diaphragm openings are present. No

Describe dead load suspended from the second floor framing: Piping, conduit, MEP

Photos of suspended dead loads from the second floor:


Describe dead loads on top of the second floor: HVAC equipment

Photos of dead loads on top of the second floor:

Select if interior columns supporting the second floor are present. No

3.6 - First Floor Framing System

First Floor Sub-framing Members None (floor diaphragm or concrete deck)

First Floor Framing Beams Cast-in-place concrete beam

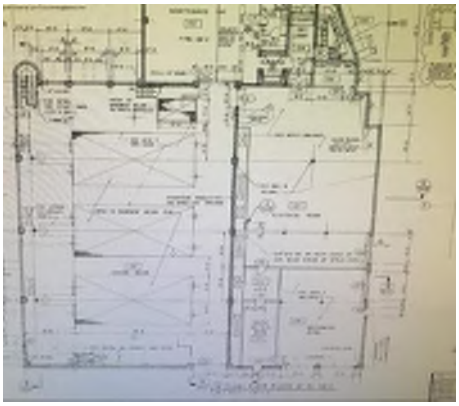
First Floor Framing Photos

Select if there is a ceiling below the first floor. No

Select if first floor diaphragm openings are present. Yes

First floor diaphragm openings are: Large - 12'x and larger

Photos of first floor diaphragm openings:



Describe dead load suspended from the first floor framing: Pipes, cable trays, conduit

Photos of suspended dead loads from the first floor:


Describe dead loads on top of the fist floor: Generators + equipment

Photos of dead loads on top of the first floor:

Select if interior columns supporting the first floor are present. Yes

Type of columns supporting first floor Cast-in-place concrete

Photos of fist floor columns:


3.7 - Mezzanine(s)

Describe mezzanine location, framing, ceiling, dead loads (on top and suspended), lateral load resisting system(s), etc... Raised mezzanIne platform around generators in main bay

Photographs of mezzanine(s):


3.9 - Basement

Floor Type Concrete slab supported on piles

Photos of Basement Floor

Describe dead loads on the basement floor: Mechanical pipes and equipment

Basement Wall Type Cast-in-place Concrete

3.10 - Mechanical Systems

Information regarding equipment that is supported on the roof and elevated floors of the building should be recorded and described on the section for those building systems. This section is reserved for mechanical systems that are significant that are not supported on a floor level.

Select if a bridge crane system is present. Yes

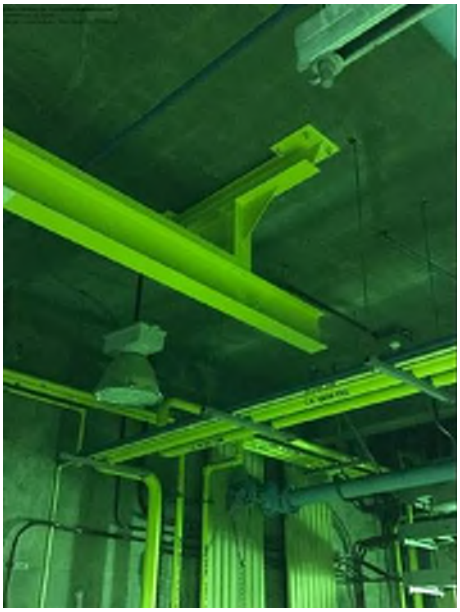
Bridge Crane Capacity 20

Bridge Crane Photos


How is the bridge crane supported? Cast-in-place concrete corbels

Describe other mechanical systems that are present:	1 ton monorail in basement

Photos of other mechanical systems:



4 - CONDITION ASSESSMENT

4.1 - Defects and Deterioration

Concrete cracking present (> 1/16" and concentrated in one location or patterned in an X)?	Yes
Concrete surface deterioration present (> 1/2" surface loss over large areas)?	No
Concrete spalling or delamination present that would reduce lateral load resistance?	No
Leakage into basement through buried walls and/or base slab?	Yes
Reinforcing steel corrosion evident that would reduce lateral load resistance?	No
Steel corrosion present?	No
Wood decay or deterioration present?	No
Structural damage present?	No
Any missing connections or hardware?	No

Photos of Defects and Deterioration:

Sketch Showing Location of Defects/Deterioration:

Evidence of Building/Foundation Settlement? No

4.2 - Condition Rating

Condition Rating for the Main Lateral Load Resisting System:

Excellent - The members, connections, and hardware within the load path have no defects and are free of corrosion and other deterioration that would reduce the capacity of the system.

Good - The members, connections, and hardware within the load path have minor defects, such as hairline cracking, surface rusting, small spalls, and damage that have a negligible to minor reduction to the lateral load resisting capacity of the system.

Fair - The members, connections, and hardware within the load path have moderate defects that are expected to create a minor reduction in the lateral load resisting capacity of the system. Moderate defects may include concrete cracking that is greater than 1/16" in width, but limited in length and frequency; surface deterioration that is no greater than 1/2" and not generally widespread; larger spalls and areas of delamination; and moderate steel corrosion with very limited pitting and delamination.

Poor - The members, connections, and hardware within the load path have significant defects that are expected to create a moderate to substantial reduction in the lateral load resisting capacity of the system. Such defects may include large concrete cracks (> 1/8")

that are frequent, patterned, or pervasive; surface deterioration that exceeds 1" in depth; significant reinforcing steel corrosion with associated cracking, spalling, and delamination present; severe steel corrosion that involves visible section loss, moderate to severe pitting, and obvious delamination; and missing or severely damaged members, connections, and hardware.

Condition Rating for the Lateral Load Resisting System:	Good
Condition Rating for Secondary Structural Elements:	Good

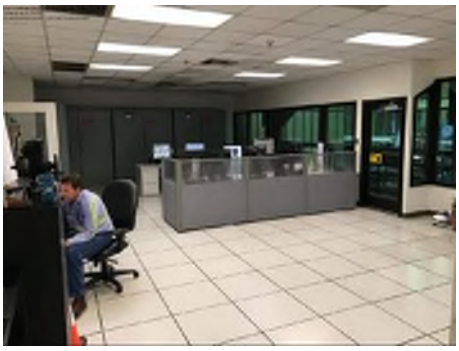
5 - NON-STRUCTURAL FEATURES

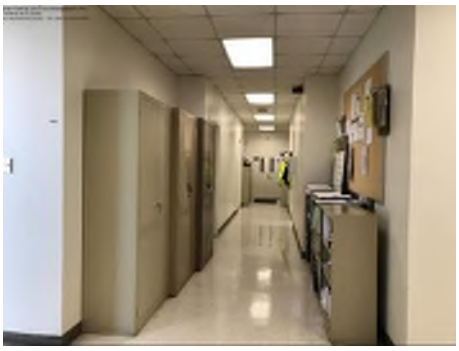
5.1 - Interior Walls

Use this section to document non-bearing separation/partition walls. Note any transverse structural walls on the General Building Configuration Sketch.

Select if interior partition walls are present.	Yes
Describe interior wall finishes (if any):	Drywall partitions in control room and break area
Interior Partition Wall Type	Light gauge steel walls

Photos of interior partition walls





5.3 - Exterior Appurtenances

Describe any significant exterior building appurtenances that are mounted to the structure, such as canopies, metal building additions, awnings, etc...	Stairs on southeast corner - Building Exterior Section for photo At the high roof area, there is a metal platform consisting of steel columns, beams, and braces. The platform is is 11ft tall, 11’-9” wide and 62’ long. Also, three large roof mounted cylindrical tanks were observed.

Photos of exterior building appurtenances:

6 - ASCE 41-13 TIER 1 OBSERVATIONS

IMMEDIATE OCCUPANCY - C2: Concrete Shear Walls with Stiff Diaphragms and C2A: Concrete Shear Walls with Flexible Diaphragms

COMPLETE FRAMES: Steel or concrete frames classified as secondary components form a complete vertical-load-carrying system.	C
REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	C
WALL ANCHORAGE AT FLEXIBLE DIAPHRAGMS: Exterior concrete or masonry walls that are dependent on flexible diaphragms for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7.	U
TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of loads to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms.	U
FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation.	C
OVERTURNING: All shear walls have aspect ratios less than 4-to-1. Wall piers need not be considered.	C

WALL REINFORCEMENT AT OPENINGS: There is added trim reinforcement around all wall openings with a dimension greater than three times the thickness of the wall.	U
WALL THICKNESS: Thicknesses of bearing walls are not less than 1/25 the unsupported height or length, whichever is shorter, nor less than 4 in.	C
DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints.	C
OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length.	C
PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities.	U
DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	N/A
CROSS TIES (Flexible Diaphragms): There are continuous cross ties between diaphragm chords.	C
STRAIGHT SHEATHING (Flexible Diaphragms): All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	N/A
SPANS (Flexible Diaphragms): All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing.	N/A
DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS (Flexible Diaphragms): All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and shall have aspect ratios less than or equal to 3-to-1.	N/A
NONCONCRETE FILLED DIAPHRAGMS (Flexible Diaphragms): Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1.	NC
OTHER DIAPHRAGMS (Flexible Diaphragms): The diaphragms do not consist of a system	C

other than wood, metal deck, concrete, or horizontal bracing.	
SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story high.	N/A

NONSTRUCTURAL CHECKLIST - Parapets, Cornices, Ornamentation, and Appendages

LS-LMH; PR-LMH. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or conrnices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5.	N/A
LS-LMH; PR-LMH. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft; for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft.	N/A
LS-MH; PR-LMH. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement.	C
LS-MH; PR-LMH. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft. This checklist item does not apply to parapets or cornices covered by other checklist items.	NC

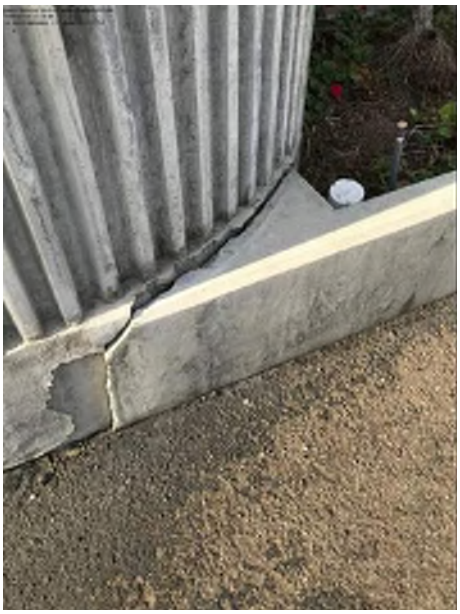
7 - FREE FORM

Note Pad

The Free Form Section allows you to use the form to capture your hand written notes, audio notes, and photographs without all of the questions. Use this Section to supplement the form as required.

Photo Group 1

Photo Group 3



Text Area 1

Along the west side of the building there is a metal platform with steel braces. It is separated from the wall by 3” gap to beam. The platform is 14’-6” tall which is within 4% of the height separation requirement.

Text Area 3

We found cracks at the planter area which is not considered to be structural.

WaterWorld

WATER UTILITY MANAGEMENT

Seismic Evaluation

For Southern California's Orange County Sanitation District, resiliency planning means thinking about earthquake damage before the next big quake.

Don Cutler, Chris Conkle, James Doering

Resiliency is a major concern for the stewards of wastewater infrastructure, and this is particularly true for Southern California's Orange County Sanitation District (OC San). Located 30 miles southeast of Los Angeles in a seismically active region, OC San provides wastewater collection, treatment, and disposal services for approximately 2.6 million people. Because OC San's facilities are exposed to seismic hazards, the potential for earthquake damage and associated service disruptions is a significant threat to their $11 billion infrastructure.

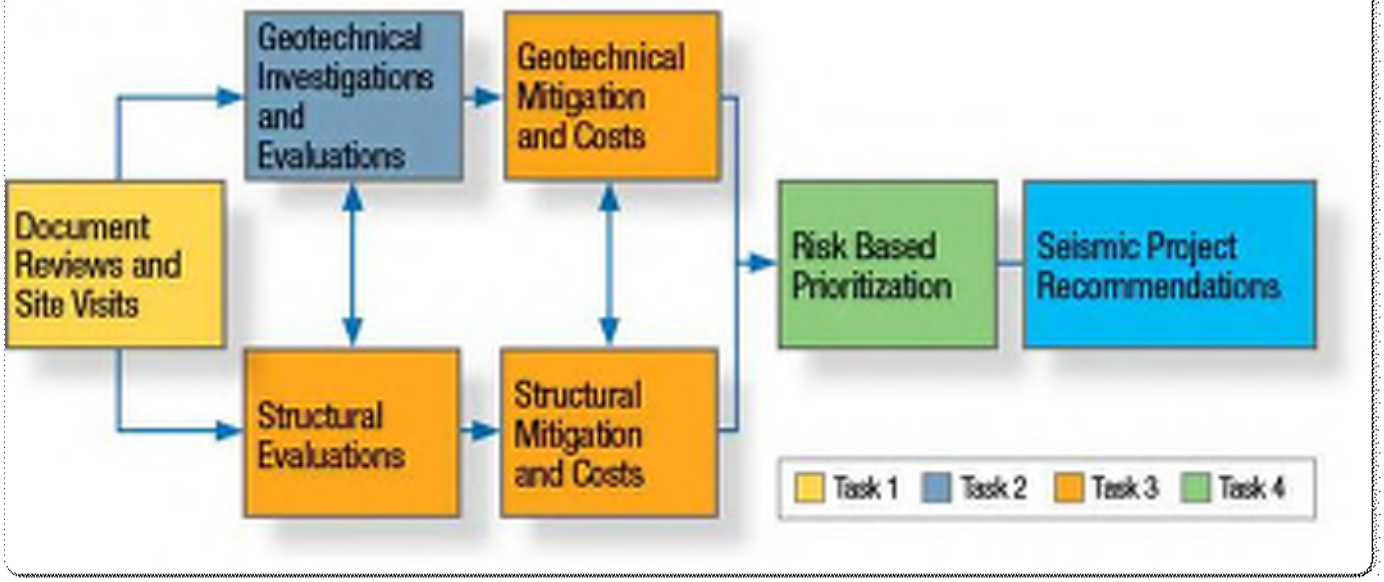
Earthquake Dangers: Strong Shaking and Soil Liquefaction

OC San provides wastewater treatment services at two treatment plants. Plant No. 1 is located in Fountain Valley, along the Santa Ana River, and has an average inflow of 120 MGD. Plant No. 2, located along the Santa Ana River in Huntington Beach, has an average inflow of 65 MGD.

Numerous active faults contribute to the region's seismic risk and include the Newport-Inglewood and San Andreas Faults, each capable of producing earthquakes of magnitude 7.0 or greater. Such earthquakes can cause severe structural damage through ground shaking and through ground deformation that results from soil liquefaction and lateral spread.

Furthermore, both plants are near the Santa Ana River and are underlain by alluvial soils that are susceptible to liquefaction, a phenomenon in which water-laden soil liquefies when shaken hard enough, potentially resulting in large-scale settlement. Lateral spread can also manifest where liquefaction occurs in conjunction with a sloping site grade, which typically occurs along riverbanks.

Figure 1: Project Workflow And Tasks



Resiliency Study

Many structures at OC San's treatment plants were built prior to the year 2000, using building codes that generally used lower estimates of seismic ground motion and did not adequately recognize the potential for seismic-induced ground deformations. With this realization, in 2017, OC San organized a team comprised of Geosyntec Consultants, Carollo Engineers, and Infraterra, and proactively completed a resiliency study to evaluate the utility's treatment facilities for potential seismic hazards and to develop mitigation strategies to improve operational resiliency. A total of 63 structures (34 at Plant No. 1 and 29 at Plant No. 2) were evaluated. These included process buildings, operations facilities, basins, and tanks constructed with varying materials (concrete,

masonry, steel), as well as foundation systems comprised of shallow footings and driven piles.

The study was conducted with four main tasks:

- Gathering information on the existing structures.
- Performing geotechnical investigation and evaluations.
- Performing structural evaluations and developing geotechnical and structural mitigation measures.
- Performing risk-based prioritization.

Relevant background data, including record drawings and historical geotechnical information, was reviewed to identify data gaps and additional data needs. Field visits were conducted to validate background data and to visually inspect the integrity of structural systems.

Geotechnical Investigations and Evaluations

Geotechnical investigations were conducted to construct a stratigraphic model for each plant to support evaluation of geo-seismic hazards. Soil borings and cone penetration test (CPT) data from previous investigations were reviewed to identify data gaps. To supplement the existing background information, six soil borings and 28 cone penetration tests were advanced to ground depths ranging from 65 to 100 feet. The soil data and other site characteristics were used to estimate liquefaction-induced differential settlements and lateral spreading deformations.

Ground motions were developed at each plant for two earthquake hazard levels having a 20 percent and 5 percent probability of exceedance in 50 years, which are referred to as the BSE-1E and BSE-2E seismic hazards, respectively. These earthquake hazard levels correlate to a lower level shaking hazard that is more likely to occur during the life of the structure and a higher-level shaking hazard that is infrequent and far less likely to occur. Additional geotechnical parameters

integrated into the structural evaluation included bearing capacities, pile/soil anchor capacities, soil stiffness, differential settlement patterns, lateral spread estimates, and earth pressures.

Figure 2: Structural Performance Evaluation Criteria

Structure	Class	Seismic Hazard Level	Structural Performance Level
Essential Buildings	I	BSE-1E	Immediate Occupancy
		BSE-2E	Life Safety
Non-Essential Buildings	II	BSE-1E	Life Safety
		BSE-2E	Collapse Prevention
Non-Building (Liquid Containing Structures)	II	BSE-1E	Immediate Occupancy
		BSE-2E	Life Safety

Structural Evaluations

The team elected to use ASCE 41-13, a well-developed and widely accepted standard for the seismic evaluation of structures. Performance level goals were established consistent with ASCE 41-13 for each structure. These included immediate occupancy, life-safety, and collapse prevention. Immediate occupancy is a structure condition with minimal damage, thereby reducing the likelihood of service interruption. Life-safety is a condition with moderate damage necessitating repairs that may take several weeks to months before operation can be restored, but its performance is expected to maintain life-safety to occupants. Collapse prevention is a condition where the structure has sustained severe damage but does not collapse; the structure would no longer be serviceable and would require replacement, potentially taking years to restore service. Structures were evaluated at two hazard levels to estimate whether the defined performance levels could be met. OC San identified the required structural performance levels based on the relative importance of each structure within the system.

The ASCE 41-13 standard is flexible and intuitive, allowing the team to extend its use to non-building structures, such as tanks. It has a three-tiered approach to facilitate an efficient evaluation process:

- Tier 1 is a screening phase that includes checklists for various building types. Checklist statements are determined to be Compliant, Non-compliant, Not applicable, or Unknown.

- Tier 2 is a targeted evaluation with more in-depth structural analysis of non-compliant Tier 1 statements.
- Tier 3 is a systematic where the entire structure is analyzed using finite element software. Tier 3 was performed to estimate structure response to ground deformations.

Because liquefaction and lateral spread were identified as potential hazards for most structures in the study, and because ASCE 41-13 requires a Tier 3 analysis to evaluate response to ground deformation, an efficient approach was needed. Structures were organized into ten groups with similar structural characteristics. An exemplar representing each group was then selected for Tier 3 analysis. Exemplar structures were evaluated for various patterns of differential settlement. Findings for the exemplars were then compared qualitatively to their subsidiaries.

Calculating and Prioritizing Risk

Task 4 involved calculation of risk for each structure to prioritize mitigation. First, the team estimated a relative likelihood of seismic failure (LoSF) for each potential deficiency and assigned a score ranging from 1 to 5. Scores are relative to the degree to which the failure mode is deficient.

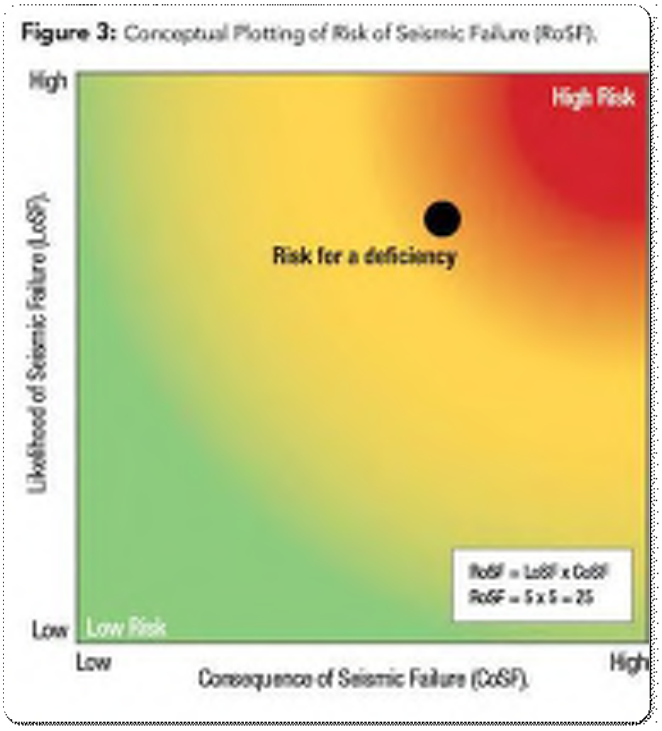


Figure 3: Conceptual Plotting of Risk of Seismic Failure (RoSF).

Second, a consequence of seismic failure (or CoSF) score was then assigned for each deficiency. The team considered six consequences and assigned a score of 1 to 5 for each. Consequences to life safety, primary treatment, and cost, among others, were considered. Scores for each consequence were proportionately

related to the overall impact assuming failure occurs. Scores were also weighted to reflect relative importance, with life safety and primary treatment having the heaviest weighting. A governing CoSF score was then determined as the maximum score from each consequence.

Finally, the risk of seismic failure, or risk score, for each structure was calculated and defined as the LoSF x CoSF (see Fig. 3). The highest risk score for each structure was then prioritized — the higher the risk score, the higher the priority.

Conclusion

By evaluating seismic risks, including liquefaction and lateral spread, OC San was able to build a prioritized listing of mitigation recommendations to promote seismic resiliency. The utility now has a list of assets with an associated risk analysis that can be referenced as additional data when planning capital improvement projects. This information was instrumental in developing the budget, scope and schedule for five new projects added to OC San's 10-year capital program to systematically improve the seismic resilience of its facilities.

In addition to considerations of physical condition and process viability, knowledge of seismic risk can also be used to help select asset management strategies, such as rehabilitation or replacement. The identified deficiencies also provide a list that can be used to prioritize post-earthquake condition assessments.

Preparing for major earthquakes before they occur is an important and necessary planning step in helping to secure service to the general public. Resilient facilities can protect communities against devastating damage to the environment and economic well-being with proper preparation. Seismic evaluation studies can help operators with their planning efforts to achieve resilient performance, in turn helping them fulfill their commitments to providing essential services to, and protecting the environment of, the communities they serve. **WW**

About the Authors: James Doering, P.E, S.E. is a structural engineer with Carollo Engineers. He has over 26 years of structural engineering experience and currently serves as Carollo's chief structural engineer. He regularly leads seismic evaluation studies for clients throughout the Western United States, evaluating treatment plants and infrastructure that includes process buildings, basins, tanks, pump stations, and reservoirs. He was the lead structural engineer for the OC San seismic evaluation project described in this article.

Chris Conkle, P.E., G.E. is a geotechnical engineer with Geosyntec Consultants. He has over 17 years of experience in geotechnical engineering and project management. He was the project manager for the OC San seismic evaluation project described in this article.

Don Cutler is an Engineering Supervisor with the Orange County Sanitation District in Southern California. He oversees civil and mechanical design for the Sanitation District's capital improvement program as it relates to their wastewater treatment facilities.

Appendix C

List of Proposed Subcontractors

Reference List

Non-Collusion Declaration Form

Workers' Compensation Form

Vendor Registration Form

W-9 Tax Form

LIST OF PROPOSED SUBCONTRACTORS
(Non-Public Works)

The prime bidder/proposer shall list below, the type of work of each subcontractor will perform or service rendered to the prime bidder/proposer in the performance of the scope of work.

Subcontractor No. 1

Company Name: Nabih Youssef & Associates (NYA)

Contact person: Owen Hata Title: Principal

Telephone No.: 213.362.0707 Email: ohata@nyase.com

Job Description: NYA will help establish guidelines for seismic evaluation criteria and apply these criteria to the buildings in the JWPCP campus.

Subcontractor No. 2

Company Name: _____

Contact person: _____ Title: _____

Telephone No.: _____ Email: _____

Job Description: _____

_____

Subcontractor No. 3

Company Name: _____

Contact person: _____ Title: _____

Telephone No.: _____ Email: _____

Job Description: _____

_____

Please add additional pages if necessary

SUBMIT THIS FORM WITH PROPOSAL.

REFERENCE LIST

Reference No. 1

Company Name: Encina Wastewater Authority

Contact person: Don Cutler Title: Engineering Manager

Telephone No.: 760-438-3941 Email: dculter@encinajpa.com

Job Description: Various Orange County Sanitation District projects, including PS15-06 Seismic Evaluation of Structures

Reference No. 2

Company Name: King County's Wastewater Treatment Division (WTD)

Contact person: Ashley Mihle Title: Senior Treatment Planner/Project Manager

Telephone No.: 206-477-2743 Email: ashley.mihle@kingcounty.gov

Job Description: Planning Analysis for West Point Digestion Capacity, and a seismic evaluation of (6) 100-ft diameter prestressed concrete digesters and (2) control buildings was performed.

Reference No. 3

Company Name: University of Southern California

Contact person: Hunter Gaines Title: Project Manager

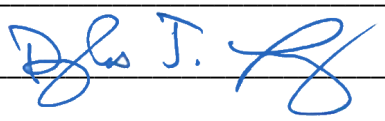
Telephone No.: 213-821-6569 Email: hgaines@usc.edu

Job Description: Carollo's subconsultant Nabih Youssef (NYA) led and coordinated efforts of a professional committee of structural engineering firms to assist the University in the development of seismic performance criteria.

SUBMITTED BY:

Company: Carollo Engineers Inc.

Name: Douglas Lanning, PE, Senior Vice President

Signature:  Date: 8/2/2023

SUBMIT THIS FORM WITH PROPOSAL.

NON-COLLUSION DECLARATION FORM

(Public Contract Code §7106)

I, Douglas Lanning, PE, declare, as follows:

I am the Senior Vice President of Carollo Enginners, 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.

8/2/2023
(Date)

Orange County, CA
(Location)

(Signature of Bidder)

SUBMIT THIS FORM WITH PROPOSAL.

CERTIFICATE REGARDING WORKERS' COMPENSATION

Labor Code Section 3700, in relevant part, provides:

"Every employer except the state shall secure the payment of compensation in one or more of the following ways:

a) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

b) By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees,…"

I am aware of the provisions of section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of this contract. I shall supply the Owner with certificates of insurance evidencing that Workers' Compensation Insurance is in effect and providing that the Owner will receive thirty (30) days' notice of cancellation.

Name: Douglas Lanning Title: Senior Vice President

Signature: _____ Date: 8/2/2023

(In accordance with Article 5 [commencing at Section 1860], Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under this contract.)

SUBMIT THIS FORM WITH PROPOSAL.

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

VENDOR REGISTRATION FORM

1955 Workman Mill Road
Whitter, California 90601
(562) 908-4288 Ext. 1400 FAX (562) 699-8665

VENDOR CODE _____ DIVISION/ADDR CODE _____ (For Districts' Use Only)

COMPANY NAME Carollo Engineers Inc.
ADDRESS 707 Wilshire Boulevard Suite 3920
CITY Los Angeles STATE CA ZIP 90017 – _____

REMIT TO: Douglas Lanning, PE, Senior Vice President
REMITTANCE ADDRESS _____ [X] SAME AS ABOVE
CITY _____ STATE _____ ZIP _____ – _____
TELEPHONE ( ) _____ REP/CONTACT _____
AR CONTACT & EMAIL _____ REP EMAIL _____

CHECK TYPE OF OWNERSHIP

[ ] INDIVIDUAL/SOLE PROPRIETOR [ ] C CORPORATION [ ] PARTNERSHIP [ ] OTHER _____
[ ] LIMITED LIABILITY COMPANY ___ [✓] S CORPORATION [ ] TRUST/ESTATE

* ATTACH CURRENT W-9 TAX FORM TO THIS REGISTRATION FORM

IF YOU ARE A CONTRACTOR, PLEASE INDICATE YOUR LICENSE NO. BELOW:
CONTRACTOR'S LICENSE NO.: 957452 DIR REGISTRATION NO.: 1000007174

BUSINESS CLASSIFICATION
[ ] MBE [ ] SBE [ ] DBE [✓] N/A
[ ] WBE [ ] DVBE [ ] OTHER: _____
BUSINESS CLASSIFICATION CERTIFICATION*:
WHERE: Los Angeles EXPIRATION DATE Active

* ATTACH PROOF OF CERTIFICATION(S) TO THIS REGISTRATION FORM

CHECK YOUR TYPE OF BUSINESS:
[✓] CONTRACTOR [ ] FACTORY REP
[ ] MANUFACTURER [ ] DISTRIBUTOR [ ] SMALL BUSINESS *
HOW LONG IN BUSINESS: 90 YRS 2 MOS NUMBERS OF EMPLOYEES 1,393

PROVIDE ANY OTHER PERTINENT INFORMATION TO FURTHER DESCRIBE YOUR COMPANY, ORGANIZATION, OPERATIONS, OR PRODUCTS (Additional sheets, with applicant or company name at top, may be attached).

COMPLETED BY: Douglas Lanning, PE, Senior Vice President DATE: 8/4/2023

Please submit this completed form and W-9 tax form to purchasing@lacsd.org.

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

Carollo Engineers, Inc.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☑ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

2795 Mitchell Drive

6 City, state, and ZIP code

Walnut Creek, CA 94598-1601

Requester's name and address (optional)

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–		–				

or

Employer identification number

8	6	–	0	8	9	9	2	2	2

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here | **Signature of U.S. person ▶** Connie Barney Digitally signed by Connie Barney Date: 2023.01.04 07:20:17 -07'00' | **Date ▶** January 4, 2023

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

carollo.com

Prepared for
LOS ANGELES COUNTY SANITATION DISTRICTS

Seismic Resilience Program Criteria and JWPCP Evaluation

COST PROPOSAL / RFP No. 04081 / AUGUST 2023

carollo

90 YEARS

707 Wilshire Boulevard, Suite 3920
Los Angeles, California 90017
213-489-1587
carollo.com

August 8, 2023

Ms. Diana Pineda, Buyer
Los Angeles County Sanitation Districts
1955 Workman Mill Road
Whittier, California 90601

Subject: **Cost Proposal** for RFP No. 04081 Seismic Resilience Program Criteria and JWPCP Evaluation

Dear Ms. Pineda and Selection Committee,

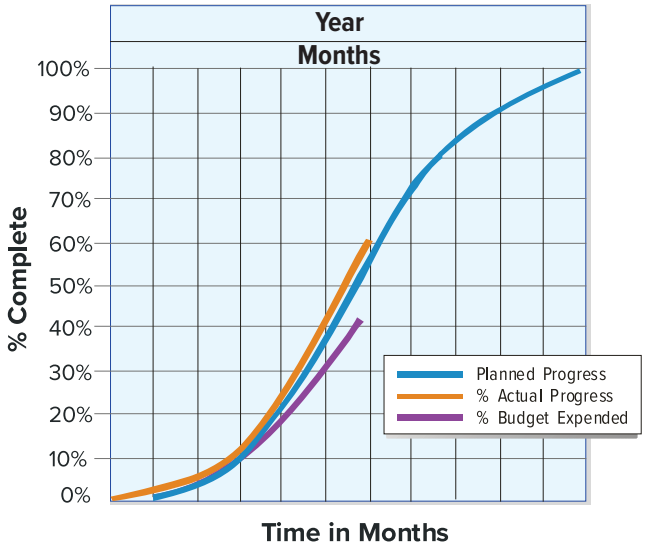
The scope of work for Seismic Resilience Program Criteria and JWPCP Evaluation clearly defines your expectations for a successful project, and we have developed our approach to meet those expectations. Accordingly, we have developed our Estimated Work Effort, attached as Exhibit A. This estimate is based on our understanding of your project goals and objectives, which is informed by our discussions with you and our experience on similar seismic resiliency projects, such as OC San's Project PS15-06. We welcome the opportunity to work with you to further refine the scope of work assumptions and labor hour estimate to meet your specific budget requirements and project needs.

Accountable Project Reporting and Invoicing

Carollo will submit Project Progress Reports and invoices monthly.

Project Progress Reports will summarize the work completed during the month for each project task as well as the anticipated work for the next month. Progress Reports will also show the percentage completion for each task and the overall project. An earned value table and earned value curve, like the one shown here, will show actual progress and actual budget expended vs. planned progress. With this information, the Districts can see immediately whether the project is on schedule and on budget. Project Manager Doug Lanning will be prepared to discuss the Progress Reports at project coordination meetings. This provides an opportunity to answer any of your questions and address any concerns.

Invoices will be broken down by task and include the hours and hourly rate for each person who has worked on the task. Task charges will then be totaled to provide the overall labor total.



The earned value curve is a graphical illustration of project controls, showing how the project will be monitored to successful completion.

Subconsultant and indirect (expense) totals will be included on the invoice, and supporting information will be attached, including our subconsultant's invoice and invoices for expenses. Our subconsultant's invoice attachment will include the same breakdown as the Carollo invoice.

While these are Carollo's standard procedures for Progress Reports and invoices, Doug is happy to work with you on modifications that may be needed to satisfy your requirements. We look forward to being of service.

Sincerely,

CAROLLO ENGINEERS, INC.

Douglas J. Lanning, PE
Project Manager/Senior Vice President

Gil F. Crozes, PhD
Principal-in-Charge/Senior Vice President

Exhibit A
Carollo Engineers, Inc. Estimated Work Effort
Seismic Resilience Program Criteria and JWPCP Evaluation
Los Angeles County Sanitation Districts

Task No.	Description	Carollo Hours								Budget						
	Rate	Project Manager & Principal $103	Technical Director $101	Resiliency Director $97	Lead Engineers $95	Staff Engineers $69	Technicians $56	Doc Processing & Support $38	Total Carollo Hours	Direct Labor Cost	Overhead Cost 195.63%	Fixed Fee 17.65%	Total Carollo Labor Cost	Indirect Costs (Expenses)	Sub Costs	Total Cost
1	**Project Administration**															
1.1	Project Plan, QA/QC Plan	40	4	4	0	0	0	4	52	$5,064	$9,907	$2,642	$17,613	$0	$0	$17,613
1.2	Project Management, Reporting, and Invoicing	176	12	8	0	0	0	0	196	$20,116	$39,353	$10,496	$69,965	$0	$0	$69,965
1.3	Subconsultant Management and Coordination	64	12	0	0	0	0	0	76	$7,804	$15,267	$4,072	$27,143	$0	$0	$27,143
1.4	Kickoff Meeting (1)	13	13	13	11	0	3	0	53	$5,126	$10,028	$2,675	$17,829	$2,000	$2,421	$22,250
1.5	Virtual Coordination Meetings, 1-hr (40)	221	196	49	0	0	25	0	491	$48,712	$95,295	$25,417	$169,425			$169,425
	Subtotal	**514**	**237**	**74**	**11**	**0**	**28**	**4**	**868**	**$86,822**	**$169,850**	**$45,303**	**$301,974**	**$2,000**	**$2,421**	**$306,396**
2	**Background Development**															
2.1	Collection and Review of Existing Information	3	24	0	82	62	0	0	171	$14,801	$28,955	$7,723	$51,479	$0	$6,634	$58,114
2.2	Data Consolidation	0	2	0	8	12	0	0	22	$1,790	$3,502	$934	$6,226	$0	$2,899	$9,125
2.3	Data Gap Recommendations	1	8	0	16	14	0	0	39	$3,397	$6,646	$1,773	$11,815	$0	$4,982	$16,797
	Subtotal	**4**	**34**	**0**	**106**	**88**	**0**	**0**	**232**	**$19,988**	**$39,103**	**$10,429**	**$69,520**	**$0**	**$14,516**	**$84,036**
3	**Criteria and Risk Score Technical Memorandum**															
3.1	Initial Site Visits	2	8	4	16	16	0	0	46	$4,026	$7,876	$2,101	$14,003	$400	$4,682	$19,085
3.2	Establish Seismic Hazard Criteria	2	8	0	4	2	0	0	16	$1,532	$2,997	$799	$5,328	$0	$486	$5,814
3.3	Establish Seismic Performance Levels	2	16	0	8	4	0	0	30	$2,858	$5,591	$1,491	$9,940	$0	$836	$10,776
3.4	Establish Standardized Evaluation Procedure	2	32	0	12	6	0	0	52	$4,992	$9,766	$2,605	$17,363	$0	$3,084	$20,447
3.5	Establish Risk Scoring System	8	8	42	16	0	0	0	74	$7,226	$14,136	$3,770	$25,133	$0	$0	$25,133
3.6	Establish Likelihood of Failure Scoring Method	2	24	42	12	6	0	0	86	$8,258	$16,155	$4,309	$28,722	$0	$2,294	$31,016
3.7	Establish Consequence of Failure Scoring Method	8	8	42	16	0	0	0	74	$7,226	$14,136	$3,770	$25,133	$0	$0	$25,133
3.8	Seismic Criteria Workshop (1)	9	17	0	7	9	3	0	45	$4,098	$8,017	$2,138	$14,253	$300	$2,907	$17,460
3.9	Risk Score Workshop (1)	10	10	16	12	0	3	0	51	$4,900	$9,586	$2,557	$17,043	$2,000	$2,907	$21,950
3.10	Draft Technical Memo	12	24	24	42	0	6	12	120	$10,770	$21,069	$5,620	$37,459	$0	$6,045	$43,504
3.11	Final Technical Memo	3	6	6	11	0	2	3	31	$2,768	$5,415	$1,444	$9,627	$800	$2,051	$12,478
3.12	QA/QC	4	4	4	26	0	0	0	38	$3,674	$7,187	$1,917	$12,778	$0	$836	$13,614
	Subtotal	**64**	**165**	**180**	**182**	**43**	**14**	**15**	**663**	**$62,328**	**$121,932**	**$32,522**	**$216,782**	**$3,500**	**$26,128**	**$246,410**
4	**Seismic Evaluation**															
4.1	Assessment Site Visits	2	34	0	60	60	0	0	156	$13,480	$26,371	$7,034	$46,885	$13,200	$24,446	$84,530
4.2	Screening-Level Evaluations (all 67 structures)	2	42	0	320	220	0	0	584	$50,028	$97,870	$26,104	$174,002	$0	$102,770	$276,772
4.3	Targeted Evaluations (25% = 17 structures)	2	26	0	160	100	0	0	288	$24,932	$48,774	$13,009	$86,716	$0	$58,039	$144,755
4.4	Comprehensive Evaluations (5% = 3 structures)	2	15	0	96	66	0	0	179	$15,355	$30,038	$8,012	$53,405	$0	$20,234	$73,639
4.5	Document Findings for Workshop and Task 7 Report	0	6	0	32	16	0	0	54	$4,750	$9,292	$2,478	$16,521	$300	$19,184	$36,005
4.6	Seismic Evaluation Workshop (1)	9	9	0	15	9	3	0	45	$4,050	$7,923	$2,113	$14,086	$300	$3,327	$17,714
4.7	QA/QC	5	13	0	67	0	0	0	85	$8,193	$16,028	$4,275	$28,496	$0	$6,032	$34,528
	Subtotal	**22**	**145**	**0**	**750**	**471**	**3**	**0**	**1,391**	**$120,788**	**$236,297**	**$63,025**	**$420,110**	**$13,800**	**$234,032**	**$667,942**
5	**Conceptual Mitigation**															
5.1	Develop Mitigation Alternatives	4	24	0	140	70	0	0	238	$20,966	$41,016	$10,940	$72,922	$0	$74,768	$147,689
5.2	Prepare Mitigation Cost Estimates	4	18	0	75	110	0	0	207	$16,945	$33,150	$8,842	$58,936	$0	$0	$58,936
5.3	Document Findings for Task 7 Report	0	6	0	32	16	32	0	86	$6,542	$12,798	$3,414	$22,754	$0	$13,094	$35,848
5.4	QA/QC	4	6	0	22	8	0	0	40	$3,660	$7,160	$1,910	$12,730	$0	$4,406	$17,136
	Subtotal	**12**	**54**	**0**	**269**	**204**	**32**	**0**	**571**	**$48,113**	**$94,123**	**$25,105**	**$167,341**	**$0**	**$92,267**	**$259,609**
6	**Risk Analysis**															
6.1	Determine Likelihood of Failure	8	28	0	40	0	0	0	76	$7,452	$14,578	$3,888	$25,919	$0	$14,416	$40,334
6.2	Determine Consequences of Failure	14	0	30	105	0	0	0	149	$14,327	$28,028	$7,476	$49,831	$0	$0	$49,831
6.3	Estimate Facility Values (67 structures)	6	0	0	27	236	0	0	269	$19,467	$38,083	$10,158	$67,708	$0	$0	$67,708
6.4	Risk Tabulation and Findings for Task 7 Report	12	18	18	24	48	0	0	120	$10,392	$20,330	$5,422	$36,144	$0	$6,090	$42,235
6.5	Risk Analysis Workshop (1)	10	10	10	17	0	3	0	50	$4,793	$9,377	$2,501	$16,670	$2,000	$2,421	$21,092
6.6	QA/QC	5	5	5	33	0	0	0	48	$4,640	$9,077	$2,421	$16,138		$1,762	$17,901
	Subtotal	**55**	**61**	**63**	**246**	**284**	**3**	**0**	**712**	**$61,071**	**$119,473**	**$31,866**	**$212,410**	**$2,000**	**$24,690**	**$239,100**
7	**JWPCP Seismic Evaluation Report**															
7.1	Draft Report	8	16	16	48	32	16	24	160	$12,568	$24,587	$6,558	$43,713	$0	$7,655	$51,368
7.2	Draft Report Workshop (1)	10	12	12	12	0	3	0	49	$4,714	$9,222	$2,460	$16,396	$2,000	$2,421	$20,817
7.3	Final Report	2	4	4	12	8	4	6	40	$3,142	$6,147	$1,639	$10,928	$1,000	$4,011	$15,939
7.4	QA/QC	3	3	3	9	0	0	0	18	$1,758	$3,439	$917	$6,114	$0	$1,762	$7,877
	Subtotal	**23**	**35**	**35**	**81**	**40**	**23**	**30**	**267**	**$22,182**	**$43,395**	**$11,574**	**$77,151**	**$3,000**	**$15,849**	**$96,000**
	TOTAL	**694**	**731**	**352**	**1,645**	**1,130**	**103**	**49**	**4,704**	**$421,292**	**$824,173**	**$219,824**	**$1,465,289**	**$24,300**	**$409,903**	**$1,899,492**

Not-to-Exceed Total Cost $ 1,899,492

carollo.com

Exhibit B

RFP

FOR

SEISMIC RESILIENCE PROGRAM CRITERIA

AND JWPCP EVALUATION

RFP NO.: 04081

QUESTCDN NO.: 8578488

CONTRACT/P.O. NO.:

DUE DATE: AUGUST 8, 2023 AT 11:00 AM

DOC NUMBER: 6955195

Plan Holder Report as of 08/09/2023 04:31 PM CDT

SEISMIC RESILIENCE PROGRAM CRITERIA AND JWPCP EVALUATION

Quest eBidDoc™ Number: 8578488

Closing Date: Tue, 08/08/2023 11:00 AM PDT **Posting Type:** Request For Proposal **Owner Name:** Los Angeles County Sanitation Districts **Solicitor Name:** Los Angeles County Sanitation Districts **Contact:** LACSD Purchasing **Phone:** 5629084288 - ext 1400 **Email:** bids@lacsd.org

Company Name & Address	Contact Name/Email Address	Phone/Fax	Bus. Cert	Bus. Desig	Entry Date	Doc Type	Comments
AECOM (Los Angeles) 300 Grand Ave, Los Angeles, CA-90071	Linda Pappas linda.Pappas@aecom.com	510-874-1786		A/E Consultant	06/27/2023	eBidDoc	
Johnson Service Group 1 East Oak Hill Drive, Suite 200, Westmont, IL-60559	Jan Powell-Rollins jpowellrollins@jsginc.com	303-520-8255		Supplier	06/28/2023	eBidDoc	
Stantec 410 17th Street, Denver, CO-80202	Mundi Wahlberg mundi.wahlberg@stantec.com	303-295-1717 303-292-0845		A/E Consultant	06/29/2023	eBidDoc	
Kern County Builders Exchange 4130 Ardmore Ave. Ste. 100, Bakersfield, CA-93309-7098	Samantha Geissel sgeissel@kcbex.com	661-324-4921 661-324-5364		Plan Room	06/29/2023	eBidDoc	
Carollo Engineers - Los Angeles 707 Wilshire Blvd, Suite 3920, Los Angeles, CA-90017	Gil Crozes mktg_socal@carollo.com	213-279-3311		A/E Consultant	06/29/2023	eBidDoc	
BidAmerica 41085 Elm Street, Murrieta, CA-92562	Tom Davis planroom@bidamerica.com	951-837-0559		Plan Room	07/03/2023	eBidDoc	
Nabih Youssef & Associates 550 S. Hope St, Suite 1700, Los Angeles, CA-90071	Nabih Youssef marketingtracking@nyase.com	(213) 362-0707		A/E Consultant	07/05/2023	eBidDoc	
Carollo Engineers, Inc.-LAO 707 Wilshire Blvd, LOS ANGELES, CA-91107	Eric Mills emills@carollo.com	(626) 241-3586		Prime Bidder	07/12/2023	eBidDoc	
PWXPress 1900 Coffeeport Rd, Jacksonville, FL-03220	Mary Miller bids@pwxpress.com	408-676-8941	TGB	Supplier	07/21/2023	eBidDoc	
Quest Construction Data Network PO Box 517, Shakopee, MN-55379	QuestCDN Support and Sales support@questcdn.com	952-233-1632		Other	07/28/2023	eBidDoc	
Structural Technologies - CA 10150 Old Columbia Rd, Columbia, MD-21046	Ari Elden aelden@structuraltec.com	858-467-5560		A/E Consultant	08/03/2023	eBidDoc	

PROPOSAL OPENING

COUNTY SANITATION DISTRICTS

OF LOS ANGELES COUNTY

DATE:	August 8, 2023	**RFP NO.:**	**04081**
TIME:	11:00 AM	**PROJECT:**	Seismic Resilience Program Criteria
LOCATION:	Whittier, CA		and JWPCP Evaluation
BUYER:	Diana Pineda		
WITNESS:	Liliana Cervantes		

ATTENDEES

Cristina Rocha, Clerk Typist, Purchasing & Risk Management

Andrew Fynaardt, Supervising Engineer II, Structural Design

Maribeth Tan, Supervisor of Purchasing

Stacey Chanan, Procurement and Risk Manager

REQUEST FOR PROPOSAL #:	04081
QUESTCDN #:	8578488
REQUEST FOR PROPOSAL TITLE:	SEISMIC RESILIENCE PROGRAM CRITERIA AND JWPCP EVALUATION
REQUESTER/SECTION:	ANDREW FYNAARDT / STRUCTURAL DESIGN SECTION
DISTRIBUTION DATE:	TUESDAY, JUNE 27, 2023
PRE-PROPOSAL ZOOM CONFERENCE:	THURSDAY, JULY 6, 2023, AT 10:00 AM
NON-MANDATORY JOB WALK:	TUESDAY, JULY 11, 2023, AT 10:00 AM
LAST DAY FOR QUESTIONS:	TUESDAY, JULY 18, 2023, BY 3:00 PM
DUE DATE:	TUESDAY, AUGUST 8, 2023, AT 11:00 AM

ORIGINAL DISTRIBUTION LIST:

1. BLACK & VEATCH
   ATTN: DAVE HAUG
   HAUGDA@BV.COM
   O: 213-312-3312; C 310-739-7413
   ATTN: ZEYNEP ERDAL
   ERDALZ@BV.COM
   949-471-3922)

2. BROWN AND CALDWELL
   ATTN: MIKE PUCCIO
   MPUCCIO@BRWNCALD.COM
   714-478-4405

3. CAROLLO ENGINEERS INC
   ATTN: ROLAND PILEMALM
   RPILEMALM@CAROLLO.COM
   O: 213-279-3313; C: 213-514-4253

4. CDM SMITH
   ATTN: JON GANZ
   GANZJD@CDMSMITH.COM
   O: 213-457.-2142; C 310-699-3128
   ATTN: ROSHAN AFLAKI
   AFLAKIR@CDMSMITH.COM

5. HDR
   ATTN: GREGORIO ESTRADA
   GREGORIO.ESTRADA@HDRINC.COM
   714-292-5494

6. PARSONS
   ATTN: EILEEN RYDER
   EILEEN.RYDER@PARSONS.COM
   C: 714-323-2068

7. HAZEN AND SAWYER (Los Angeles)
   ATTN: HAMPIK DEKERMENJIAN
   HDEKERMENJIAN@HAZENANDSAWYER.COM
   (213)234-1080

8. KENNEDY/JENKS (Pasadena)
   ATTN: ED YANG
   EDYANG@KENNEDYJENKS.COM
   (626) 568-4305

9. STANTEC (Pasadena)
   ATTN: SIMON BLUESTONE
   SIMON.BLUESTONE@STANTEC.COM
   (626) 568-6022

10. AECOM (Los Angeles)
    ATTN: LUIS LEON
    LUIS.LEON@AECOM.COM
    (909)579-3971

11. GHD INC.
    ATTN: Robin Onkka
    ROBIN.ONKKA@GHD.COM
    (949)585-5230

COPIES VIA DM:
M. TREMBLAY
M. EATON
S. ESPINOZA
M. VANDERZEE
A. FYNAARDT
A. HALL
S. CHANAN
B. TAN
D. PINEDA

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

June 27, 2023

Dear Prospective Proposer,

The Los Angeles County Sanitation Districts invites your firm to submit a proposal for:

RFP No. 04081
SEISMIC RESILIENCE PROGRAM CRITERIA AND JWPCP EVALUATION

in accordance with the enclosed documents.

The Districts will only receive electronic proposals submitted through QuestCDN. All proposals are due no later than **11:00 a.m., Tuesday, August 8, 2023**. Late proposals will not be accepted; the QuestCDN digital clock is the official time. Non-acknowledgement may automatically remove your name from future proposals.

Inquiries in reference to the Request for Proposal (RFP) should be directed per the instructions listed within the RFP by the specified date and time.

Very truly yours,

Diana Pineda
Buyer

DOC 6955195

LOS ANGELES COUNTY SANITATION DISTRICTS

A Century of Service

REQUEST FOR PROPOSALS

RFP No. 04081
QUESTCDN No. 8578488

SEISMIC RESILIENCE PROGRAM CRITERIA AND JWPCP EVALUATION

CONTACT: Diana Pineda, Buyer

KEY DATES:

NON-MANDATORY JOB WALK: Tuesday, July 11, 2023, at 10:00 a.m.
LAST DAY FOR QUESTIONS: Tuesday, July 18, 2023, at 3:00 p.m.
DUE DATE & TIME: Tuesday, August 8, 2023, at 11:00 a.m. **online**

NON-MANDATORY PRE-PROPOSAL CONFERENCE VIA ZOOM:
Thursday, July 6, 2023, at 10:00 a.m.

Robert C. Ferrante
Chief Engineer and General Manager

Purchasing & Risk Management Section | 1955 Workman Mill Road | Whittier, CA 90601
Phone: 562-908-4288 ext. 1400 | **Email:** bids@lacsd.org

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

RFP No. 04081 /QUESTCDN No. 8578488
SEISMIC RESILIENCE PROGRAM CRITERIA AND JWPCP EVALUATION

Table of Contents

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

RFP No. 04081 /QUESTCDN No. 8578488
SEISMIC RESILIENCE PROGRAM CRITERIA AND JWPCP EVALUATION

TENTATIVE SCHEDULE OF EVENTS
NOTICE

From the issuance date of this RFP, until a proposal(s) is selected and until the selection is announced, Proposers shall not communicate with any Districts' staff or members of the Board regarding this procurement, except at the direction of Diana Pineda, the Districts' designee. Any unauthorized contact may disqualify the proposer from further consideration.

Description	***Tentative Date***
Release of RFP:	June 27, 2023
Non-Mandatory Virtual Pre-Proposal Conference	Thursday, July 6,2023 at 10:00 a.m.
Non- Mandatory Job Walk	Tuesday, July 11, 2023, at 10:00 a.m.
Deadline for written questions:	Tuesday, July 18, 2023, at 3:00 p.m.
Responses to Question posted on QUESTCDN by:	Wednesday, July 26, 2023,
Proposal Due Date **(Submittal Deadline):**	Thursday, August 8, 2023, 11:00 a.m.
Anticipated evaluation:	August 2023
Anticipated board approval:	September 2023

Districts' Representative(s): Diana Pineda, Buyer

Telephone Number: (562) 908-4288, ext. 1445

Web Address: www.lacsd.org

E-mail Address: dianapineda@lacsd.org

SCOPE OF WORK
June 2023

1. INTRODUCTION

The Los Angeles County Sanitation Districts (Districts) are a public agency focused on protecting public health and the environment through innovative and cost-effective wastewater and solid waste management, and in doing so convert waste into resources like recycled water, energy, and recycled materials. The agency consists of 24 independent special districts that operate cooperatively under a Joint Administration Agreement, with one administrative staff headquartered near the City of Whittier. The Districts serve about 5.5 million people in Los Angeles County over a service area that covers approximately 850 square miles and encompasses 78 cities and unincorporated territory within the County.

The wastewater system includes approximately 1,400 miles of main trunk sewers, 49 pumping plants, and 11 wastewater treatment plants that convey and treat about half the wastewater in Los Angeles County. The Districts' comprehensive solid waste management system provides about one-fifth of the countywide solid waste management needs through the operation and/or ownership of two sanitary landfills, two landfill energy recovery facilities, and two materials recovery/transfer facilities. The agency also maintains four closed landfills, operates a regional composting facility, and participates in the operation of a second composting facility. More information about the Districts is available at its website at www.lacsd.org.

2. PURPOSE

The purpose of this Request for Proposals (RFP) is to select a qualified engineering consulting firm (Consultant) to assist the Districts in the development of the Districts' Seismic Resiliency Program (SRP) through the creation of Districts-wide seismic evaluation and risk score criteria. The Consultant will also perform the seismic evaluation of the District's Joint Water Pollution Control Plant (JWPCP) and propose conceptual mitigation measures with preliminary cost estimates and risk scores. The Consultant will be responsible for gathering important and pertinent information on District assets as needed to complete the entire scope of work. This RFP describes the project, required scope of work, consultant selection process, and the minimum information that must be included in the proposal.

2.1. Seismic Resiliency Program

The Structural, Architectural, and Geotechnical Design Section (SAGE) is responsible for providing high-quality, cost-effective, and reliable engineering and design work that meets the operational

needs of all District facilities. To that end, SAGE is overseeing the Districts' SRP to review District assets, properly identify deficiencies, develop conceptual mitigation measures, prioritize retrofit work, and allocate resources strategically in order to maintain the level of service expected of the Districts following a major seismic event. The program will limit its focus to structures constructed prior to the year 2000.

District structures comprise three (3) main classes: Occupied Structures, Process Structures, and Process Tanks. The SRP will evaluate each class of structure using the appropriate industry-accepted standard. The standards include the American Society of Civil Engineers (ASCE) design standards ASCE 41-17 "Seismic Evaluation and Retrofit of Existing Buildings", ASCE 7-16 "Minimum Design Loads and Associated Criteria for Buildings and Structures", American Concrete Institute (ACI) 350-20 "Code Requirements for Environmental Engineering Structures", and ACI 350.3-20 "Code Requirements for Seismic Analysis and Design of Liquid-Containing Structures".

2.2. Joint Water Pollution Control Plant

The Joint Water Pollution Control Plant (JWPCP) comprises approximately 220 acres and is located at 24501 S. Figueroa Street in Carson, California (see Figure 1 for Location Map). The facility started operation in 1928 as the Districts' Joint Disposal Plant. JWPCP is the hub of the District's Joint Outfall System (JOS) and the largest facility in the system. The facility provides primary and secondary treatment of approximately 260 million gallons of wastewater per day and has a total permitted capacity of 400 million gallons of wastewater per day. The facility also provides centralized processing of solids removed during wastewater treatment. Treated water is sent to the Pacific Ocean through a network of tunnels and outfall pipes that extend approximately two miles off the Palos Verdes Peninsula to a depth of approximately 200 feet.

Solids collected during treatment are processed in anaerobic digestion tanks where bacteria break down organic material and produce methane gas. After digestion, the solids are dewatered and hauled off-site to composting, land application, and landfill disposal. Methane gas generated in the anaerobic digestion process is used to produce power and digester heating steam in a Total Energy Facility that utilizes gas turbines and waste-heat recovery steam generators.

Figure 1: JWPCP Location Map

2.3. List of Structures to be Evaluated

As noted in Part 2.1, the focus of the SRP will be limited to structures that were constructed prior to the year 2000. The structures at JWPCP to be evaluated as part of this RFP are identified in Table 1. The Consultant should be aware that this list may not be exhaustive but should serve as the basis for the proposal.

Table 1: Structures to be Evaluated

Structure No.	Structure Name	Class	Approx Date Built
1	Administration Office	Occupied	1970
2	Laboratory & Secondary Treatment Control Building	Occupied	1977
3	Maintenance Building - East	Occupied	1977
4	Maintenance Building - West	Occupied	1975

5	Cryogenic Oxygen Compressor Building	Process	1976
6	Primary Treatment Control Building	Occupied	1960
7	Primary Effluent Pump (PEPS) Building	Process	1961
8	Secondary Influent Pump (SIPS) Building	Process	1976
9	Secondary Effluent Pump (SEPS) Building	Process	1977
10	Primary Treatment Stationary Mechanic Building	Process	1937
11	North Digester Control Primary Treatment Maintenance & Boiler Building	Process	1970
12	Chlorination Building	Process	1973
13	Centrifuge Building No. 1	Process	1973
14	Centrifuge Building No. 2	Process	1973
15	Diesel Equipment Service Building	Process	1977
16	Welding Building - East	Occupied	1985
17	Effluent Screens Dewatering Building (Old Maintenance Building #1)	Process	1960
18	Warehouse Building	Occupied	1977
19	Primary Air Compressor Building	Process	1947
20	Anionic Polymer Building	Process	1973
21	STPO and Research Office Building	Occupied	1954
22	Digester Cleaning Building	Process	1974
23	Warehouse Building - West Electrical	Occupied	1974
24	Digester Control & Primary Treatment Storage - South	Process	1974
25	Dissolved Air Flotation Building	Process	1979
26	Washwater Chlorination Building	Process	1977
27	Maintenance Building - North	Occupied	1985
28	Electrical & Instrumentation Building	Process	1985
29	Warehouse Building - Solids	Occupied	1994
30	Inlet Works No. 1	Process/Tank	1995
31	Inlet Works No. 2	Process/Tank	1969
32	Grit Chambers No. 1 and No. 2	Tank	1959
33	Grit Chambers No. 3 and No. 4	Tank	1962

34	Grit Chambers No. 5 and No. 6	Tank	1973
35	Primary Sedimentation Tanks 15 - 22	Tank	1966
36	Primary Sedimentation Tanks 23 - 26	Tank	1949
37	Primary Sedimentation Tanks 27 - 30	Tank	1953
38	Primary Sedimentation Tanks 31 - 36	Tank	1956
39	Primary Sedimentation Tanks 37 - 42	Tank	1960
40	Primary Sedimentation Tanks 43 - 46	Tank	1961
41	Primary Sedimentation Tanks 47 - 52	Tank	1962
42	Primary Sedimentation Tanks 53-66	Tank	1971
43	Surge Tower No. 1	Process	1937
44	Effluent Screens	Process	1975
45	Effluent Pumping Plant No. 2 & Surge Tower No. 2	Process	1948
46	PEPS Forebay	Tank	1961
47	SIPS Forebay	Tank	1976
48	SEPS Forebay	Tank	1977
49	Digesters 1 - 2	Tank	1970
50	Digesters 3 - 4	Tank	1971
51	Digesters 5 - 6	Tank	1975
52	Digesters 7 - 12	Tank	1979
53	Digesters 13 - 16	Tank	1990
54	Final Clarifier Battery A - B	Tank	1977
55	Final Clarifier Battery C - D	Tank	1977
56	Final Clarifier Battery E - H	Tank	1997
57	Biological Reactor A - B	Tank	1977
58	Biological Reactor C - D	Tank	1977
59	Biological Reactor E - H	Tank	1997
60	Total Energy Facilities - Turbine Building	Process	1982
61	Total Energy Facilities - Fuel Gas Compressor Building	Process	1982
62	Total Energy Facilities - Cooling Towers	Process	1982

63	Sludge Storage Building	Process	1973
64	Water Booster Pump	Process	1988
65	Grit Dewatering Building	Process	1973
66	Boiler House No. 2	Process	1960
67	Polymer Storage Building	Process	1975

3. SCOPE OF WORK

The scope of work to be performed by the selected Consultant includes the establishment of seismic evaluation and risk score criteria and the seismic evaluation of the majority of structures at JWPCP (those constructed prior to the year 2000). The seismic evaluation and risk score criteria will form the basis for the seismic evaluation of other water reclamation plants owned and operated by the Districts. The seismic evaluation portion of work will be used by the Districts to plan for future seismic improvement projects, as needed, to maintain the expected level of service following a major seismic event. The Consultant 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 Consultant shall complete Tasks 1 through 7 below as part of the Scope of Work.

Task 1: Project Administration

The Consultant shall provide project management services, as required, to complete the entire Scope of Work. These services include project controls and reporting, preparation of invoices, progress reports, and directing Consultant's staff and internal resources in such a manner that project milestones are met and deliverables are produced on schedule.

The Consultant shall attend a kickoff meeting with Districts' staff, to be scheduled by a Districts' staff member at the beginning of the project. During the kickoff meeting, project personnel will be introduced, and any relevant technical and project management issues will be discussed.

The Consultant shall, in the proposal, identify a Project Manager. The Project Manager shall be the primary contact for the Districts and shall have thorough knowledge of all aspects of the project and its status. The Project Manager shall be responsible for quality management of the Consultant's work and shall review technical memorandums and reports prior to submitting to the Districts for review.

Task 2: Background Development

The Consultant shall perform background development as needed to complete the Scope of Work. Background development includes aggregating and reviewing existing information as it pertains to the site and structures, such as construction drawings, specifications, previous geotechnical reports,

and previous seismic evaluations. The Consultant shall consolidate the data in such a format that will facilitate rapid and centralized access for the Consultant's project team. If data required for the completion of the seismic evaluation is missing, the Consultant shall identify and recommend methods for acquiring the missing data or establish appropriate assumptions, with District concurrence, for the evaluation work.

Task 3: Criteria and Risk Score Technical Memorandum

The Consultant shall prepare a technical memorandum summarizing the approach used in performing seismic evaluations and seismic risk analysis of structures at District WRPs. The resulting technical memorandum shall serve as the basis of the seismic evaluation and seismic risk analysis work described in Task 4 through 6.

The Consultant shall work with the Districts to establish seismic hazard criteria to be used in the seismic evaluation described in Task 4 and for use in future seismic evaluations of District facilities. The hazard criteria may be different for the various classes of structures being evaluated and shall be limited to the ground shaking response spectra from the latest probabilistic United States Geological Survey (USGS) seismic data. Geo-seismic hazards such liquefaction, lateral spreading, and surface fault rupture are not required to be considered. The soil site class required to obtain response spectra can be determined from available geotechnical data obtained as part of Task 2. The hazard criteria shall be applied using ASCE 41-17, ASCE 7-16, ACI 350-20, and/or ACI 350.3-20, as appropriate. The Consultant shall work with the Districts to establish appropriate seismic performance levels for each structure. The seismic performance target may be different for the various classes of structures being evaluated and should be linked to the inherent criticality of each structure. Performance levels shall be based on the levels defined in ASCE 41-17 and shall consider the importance factors set forth in ACI 350-20 for liquid-containing structures.

The Consultant shall work with the Districts to establish a standardized evaluation procedure to be used in the seismic evaluation described in Task 4 and for use in future seismic evaluations of District facilities. A preliminary vision of the procedure is three levels of analysis with an increasing level of technical effort. The evaluation standards shall be ASCE 41-17, ACI 350-20, and ACI 350.3-20, as appropriate for the class of structure being evaluated. The first level is a screening-level evaluation intended to identify vulnerabilities with limited effort. The screening level is assumed to comprise hand calculations, checklists, spreadsheets, or similar methods of analysis. The second level of analysis is a targeted evaluation intended to further evaluate vulnerabilities identified by the screening level. The targeted evaluation level is assumed to comprise spreadsheets, analysis software, and finite element analysis. The third level of analysis is a comprehensive evaluation which is the most involved analysis procedure and is comprised of complete three-dimensional models that consider non-linear or torsional responses to seismic ground motion. However, this procedure is subject to change to suit the best interests of the Districts.

The Consultant shall work with the Districts to establish a risk scoring system for use in ranking and prioritizing future seismic resilience mitigation work. The risk scores shall consider the likelihood of

failure and the consequence of failure due to a seismic event. A likelihood of failure score shall be prepared for each identified deficiencies for each structure. In consultation with District staff, the Consultant shall identify consequences of seismic failure considering the negative impact to the Districts' mission of protecting public health and the environment. There may be several consequences of failure which will require utilizing a weighting system to capture the relative impact of each consequence. The risk score shall then be determined as the product of the likelihood of failure score and the consequence of failure score; however, this approach is subject to change to suit the best interests of the Districts.

The Consultant shall assume a three-week review period for the draft technical memorandum by the Districts. Comments provided by the Districts shall be addressed and/or incorporated prior to finalizing the Criteria and Risk Score Technical Memorandum.

The draft technical memorandum shall be submitted in PDF format. The final Criteria and Risk Score Technical Memorandum shall be submitted in PDF format and three (3) hard copies.

Task 4: Seismic Evaluation

The Consultant shall perform a structural seismic evaluation with the associated mathematical analyses required for the structures listed in Table 1 in accordance with the evaluation criteria established by the Criteria and Risk Score Technical Memorandum developed in Task 3. The structural seismic evaluations shall be limited to the actions and conditions that are brought about by the inertial response to ground shaking due to seismic activity. The seismic evaluations shall be limited to the structural elements only and is not expected to include the evaluation of non-structural components or appurtenances. Structural material testing shall not be considered as part of the Consultant scope of work. If required, the Consultant shall work with the Districts to obtain the required material information or determine the appropriate assumption for use in the seismic evaluations.

The seismic evaluations shall include site visits to review and verify as-built conditions and document observations of visible structural conditions. Site visits shall be scheduled with District staff in advance with sufficient notice for the Districts to coordinate schedules, access, and safety requirements. Site visits shall gather all information required by the Consultant for completion of the seismic evaluation, including, but not limited to, structural configuration, field measurements, visible structural defects or deterioration, identification and estimation of permanent loads, and general information related to the use of the facility. The visual assessment shall be in accordance with ASCE 41-17, as appropriate. The Consultant is responsible for supplying and providing all personal protective equipment (PPE) and safety devices and for compliance with all District safety procedures.

The structural seismic evaluations work by the Consultant shall identify and evaluate vulnerabilities for all structures listed in Table 1 in accordance with procedures set forth in the Criteria and Risk Score Technical Memorandum developed in Task 3. For the purposes of preparing a cost proposal for this RFP, the Consultant shall assume that all structures listed in Table 1 shall receive a screening level evaluation, 25 percent of structures listed in Table 1 shall receive a targeted evaluation, and 5 percent

of structures listed in Table 1 shall receive a comprehensive evaluation. If, during the course of the seismic evaluations, it is determined additional evaluation work is required, the Consultant and the Districts shall work together in accordance with the procedures set forth in Part 7 of this RFP.

Task 5: Conceptual Mitigation

The Consultant shall develop conceptual-level structural mitigation to address the deficiencies identified as part of Task 4 for each structure. The strategies to be considered shall include strengthening or retrofit of structures, replacement of structures, mass reduction, change of use, liquid level reduction, or a combination of strategies. The Consultant shall prepare a cost estimate for each structure that has a mitigation strategy identified. The cost estimate shall conform to Association for the Advancement of Cost Engineering International (AACEI) Class 5 with an accuracy range of +50 percent to -50 percent with an appropriate contingency applied.

Task 6: Risk Analysis

The Consultant shall work with the Districts to define and estimate the potential seismic risks that the deficiencies identified in Task 4 pose for each structure using the risk scoring system established by the Criteria and Risk Score Technical Memorandum developed in Task 3. Each deficiency identified shall be assigned a likelihood of seismic failure score and a consequence of failure score in order to obtain a risk score for each structure. The risk scores shall then be tabulated along with the mitigation cost estimate and the estimated facility value. The resulting table shall be included in the final seismic evaluation report addressed in Task 7.

Task 7: JWPCP Seismic Evaluation Report

The Consultant shall prepare the JWPCP Seismic Evaluation Project Report compiling information, descriptions, photos of structural deficiencies (including locations), findings, and results of Tasks 4 through 6. The report shall be organized to provide a clear separation of the evaluation and discussion for the individual structures.

The Consultant shall assume a three-week review period for the Districts. Comments provided by the Districts shall be addressed and/or incorporated prior to providing the final JWPCP Seismic Evaluation Report.

The draft report shall be submitted in PDF format. The final JWPCP Seismic Evaluation Report shall be submitted in PDF format and three (3) hard copies.

4. PROJECT SCHEDULE

The Consultant shall begin working on the project within ten (10) working days of the issuance of the Notice to Proceed (NTP) and shall meet all milestones and deadlines specified herein. The NTP shall be

working day number one (1) of the contract time. The Districts' tentative schedule for the completion of the Project is as follows:

Item	Completion Month
Issue Notice to Proceed (NTP)	1
Project Kickoff Meeting	1
Task 3 – Criteria and Risk Score Technical Memorandum	5
Progress Meeting and District Review	5
Task 4 – Seismic Evaluation of JWPCP	16
Progress Meeting and District Review	16
Task 5 – Conceptual Mitigation Development	20
Task 6 – Risk Analysis	20
Task 7 – Final Report	24

5. PROPOSAL REQUIREMENTS

The Proposal shall be of such scope and depth to sufficiently describe and demonstrate the Consultant's comprehension of and approach to the scope of work described in Part 3. The information requested below will be used to evaluate each Consultant's proposal based on the evaluation criteria outlined in Part 6 of this RFP. Proposals may be deemed non-responsive if they do not respond to all requirements set forth in Part 5 of this RFP.

Proposals shall be prepared simply and economically, providing a straightforward and concise description of how the proposal has satisfied all the requirements of this RFP. Emphasis shall be on completeness and clarity of content with sufficient detail to allow for accurate evaluation and comparative analysis. Excessive or irrelevant materials will not be favorably received.

5.1. Cover Letter

The proposal package 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 Consultant along with the name, title, address, telephone number and email address of the executive that has the authority to contract with the Districts.

5.2. General Company/Team Information

The proposal package shall include the ownership, organization, and background of the Consultant. The following information shall be provided:

- 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 Part 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.

The Consultant shall describe the history of the relationships among team members, including a description of past working relationships. The Consultant shall recognize that its key employees assigned to this project will be used as a basis for ranking and selecting firms.

5.3. Technical Qualifications

Consultants responding to this RFP shall demonstrate their ability by providing the technical qualifications of the Consultant's individual team members, and sub-consultants, if any, relevant to the Scope of Work identified in Part 3. The Districts reserve the right to conduct an independent verification of the Consultant'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 Consultant shall provide the following information to demonstrate its technical qualifications:

5.3.1. Company Experience and Past Performance

The Consultant shall provide its experience with seismic evaluation projects similar to the proposed Scope of Work identified in Part 3. The Consultant 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:

- Project Name and Location
- Client Name (include address and phone number)
- Reference contact of the client
- General description of the referenced seismic evaluation project including:
  - Class of structure evaluated (e.g., Occupied, Process, Tank, etc.)
  - Evaluation criteria used (e.g., ASCE 41, ACI 350, etc.)
  - Quantity of structures evaluated as part of the reference project.
- General description of the services provided by the Consultant
- Status of the project
- 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

5.3.2. Key Project Staff Experience and Availability

The Consultant 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 Part 3 of this RFP. The same key staff identified in the proposal shall be used in the completion of the Scope of Work. 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;
- Pertinent Areas of expertise and/or experience;
- Educational background;
- Pertinent licenses and/or certifications;
- Proposed role in project

5.4. Approach to Completing Specified Work

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

The proposal shall include any comments or suggestions the Consultant may have regarding the scope of work, or any other aspects of the work that Consultant feels would be helpful to the District in selecting a Consultant. The Consultant shall clearly identify the impact on the cost estimate that the recommendations would have if accepted.

5.5. Location of Project Staff

Due to the nature 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.

5.5.1. 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 that qualify as an RBE will receive five (5) percentage points toward total scoring points.

5.6. Cost

Cost proposals must be submitted as an appendix, UNDER SEPARATE SEALED COVER AND MARKED AS SUCH. Cost proposals will be opened and reviewed only after the technical proposals have been reviewed and ranked. Cost proposals shall include the following:

5.6.1. A breakdown by personnel including total hours and hourly rates for the work specified in Part 3. These items should be detailed by task and individuals performing the work and should include costs for the production staff. Costs shall include separate direct, indirect, overhead, sub-consultant, fixed fee, and "Not to Exceed" totals as described below.

- Direct Costs: Direct costs shall be the hourly rates paid by the Consultant to its employees for time directly chargeable to the project, exclusive of the costs for fringe benefits for said employees and other payroll costs. The Consultant shall ensure that its employees maintain accurate records of the time chargeable to the project.

- Indirect Costs: Indirect Costs shall be all identifiable costs of the Consultant directly chargeable to the project, including, but not limited to, reproduction of documents; preparation of meetings; travel costs; computer services; supplied used in the work; and communication expenses, which are necessary in order for the Consultant to fulfill its responsibilities under the Purchase Order.

- Overhead Costs: Overhead Costs shall be all the business expenses allocated by the Consultant for rendering of the consulting services, including the fringe benefits for the employees who will be utilized on this project. The Consultant's overhead cost shall be a percentage of the Direct Costs as defined above.

- Sub-Consultant Costs: The Sub-Consultant Costs shall be the cost paid by the Consultant to the sub-consultant(s) for providing services as required to assist the Consultant in the preparation of the deliverables of this project.

- Fixed Fee: The Fixed Fee shall be the profit of the Consultant and shall be a fixed percentage of the direct and overhead cost of the project.

5.6.2. A description of the anticipated method of billing for services performed with the provisions for monthly billing that will include itemized accounting of hours of personnel, hourly rates, and percent completion for each task identified.

6. REVIEW AND EVALUATION OF PROPOSALS

6.1. Selection Procedure

Proposals will be uniformly and objectively evaluated by a selection committee comprised of District's staff. The proposal shall be of such scope and depth to sufficiently describe and demonstrate the proposer's understanding of and approach to the project. Submittal of incomplete or vague responses to any section of subsection this RFP may result in rejection of the proposal. Proposals will be evaluated and ranked based on the criteria specified in Part 6.2 of this RFP. The highest ranked proposers may be interviewed and rated by the selection committee.

Based on the results of this procedure, an engineering services agreement (ESA) will be negotiated with the top-ranked proposer. If the District is unable to reach an agreement with the top-rated proposer, negotiations will be formally terminated. The District will then negotiate with the next highest-rated proposer. Once negotiations with a proposer are terminated, the District will not renegotiate with that proposer.

6.2. Evaluation Criteria

Selection will be made on the basis of the selection committee's judgement as to which proposal best serves the District's interest. The following table represents the evaluation criteria and weighted percentage (%) points that will be considered during the evaluation process:

Evaluation Criteria	**Weights**
Company Qualifications and Record of Past Performance	35%
Key Personnel and Staff, Including Availability	25%
Approach to Completing Specified Work	20%
Cost	15%
RBE per Section 5.5.1	5%
Total	**100%**

6.3. Districts Rights and Options

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

- 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 proposal submitted; and
- To waive any minor defect or technicality in any proposal received.

7. PROJECT ADMINISTRATION

7.1. Meetings

The Consultant and their sub-consultants will be required to attend a project kickoff and implementation meeting shortly after the Notice to Proceed is issued. The kickoff meeting will be held at the Districts' Joint Administration Office, 1955 Workman Mill Road, Whittier, California. The Consultant's project manager and key project staff must attend the kickoff meeting.

Project coordination meetings will be held virtually on a bi-weekly basis. The Districts reserves the right to hold any of the meetings in person, if it determines such change to be in the best interest of the District. In which case, this meeting will be held at the Districts' Joint Administration Office, 1955 Workman Mill Road, Whittier, California. The Consultant's project manager must attend these meetings.

7.2. Progress Reports and Invoices

Each month, the Consultant will submit a progress report along with an invoice for the work accomplished during the reporting period. The report will describe in detail the progress made during the previous month and the hours spent on each task. Percentage completed and anticipated date of completion for each task will be included. Invoices submitted shall be consistent with the monthly report format.

8. PROJECT CONSIDERATIONS

The proposer should specify if any of the requirements included in this section or any other section of the RFP pose a specific problem, and if so, identify the problem and its impact on the proposal.

8.1. Entire Agreement

The services required in the RFP, the successful proposal, the purchase order and any written changes or amendments to the scope of services shall represent the entire agreement between the parties and shall supersede all prior written or oral representations, discussions, and agreements. Furthermore, this RFP is not only meant to aid in the preparation of proposals, but it is also intended to serve as a binding technical guidance document for the Consultant. The successful consulting firm is deemed bound to execute all requirements as listed and prescribed in this RFP unless the Districts waive or otherwise modify aspects of the technical scope of work in writing.

8.2. 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.

8.3. Additional Services Not Specified

The Consultant may be required to provide additional services under a negotiated change order.

8.4. Changes in Schedule or Scope of Services

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. Changes that affect the scope of work, period of performance or time schedule, and costs will be affected by written notices of amendment. No payments will be made for work performed outside the original scope of work unless prior written approval was granted by the Districts.

8.5. 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.

8.6. 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.

8.7. 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.

8.8. 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.

8.9. 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.

8.10. Proposal Requirement Conformance

In submitting a response to this RFP, 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. 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.

8.11. 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.

8.12. 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 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.

8.13. 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.

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.

8.14. 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.

8.15. 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.

8.16. 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. Mark Vanderzee, Division Engineer
Structural, Architectural, and Geotechnical 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.

8.17. 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.

END OF SECTION

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

RFP No. 04081 /QUESTCDN No. 8578488
SEISMIC RESILIENCE PROGRAM CRITERIA AND JWPCP EVALUATION

TERMS AND CONDITIONS

1. **ADDENDA ACKNOWLEDGEMENT** (*if applicable)*: The Vendor shall acknowledge receipt of all RFP amendment(s) and/or addenda through the QuestCDN portal. Failure to do so may be cause for rejection and non-acceptance of proposal documents.

2. **APPLICABLE LAWS:** All applicable laws and regulations of the State of California and ordinances and regulations of the Districts shall apply. Protestors shall seek resolution of their complaints initially with the Purchasing Section. 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.

3. **ASSIGNMENT OF RIGHTS OR OBLIGATIONS.** Except as noted hereunder, successful Proposer may not assign, transfer, or sell any rights or obligations resulting from this solicitation without first obtaining the specific written consent of the Districts.

4. **ATTORNEY FEES.** In the event any suit, proceeding or action is instituted in connection with any controversy arising out of or relating to this contract, the prevailing party shall be entitled to receive, in addition to its costs, its actual attorney's fees and costs.

5. **AUTHORIZED SIGNATURES:** Every proposal must be signed by the person or persons legally authorized to bind the Vendor to a contract for the execution of the work. Upon request of the Districts, any agent submitting a proposal on behalf of a Vendor shall provide a current power of attorney certifying the agent's authority to bind the Vendor. If an individual makes the proposal, his or her name, signature, and post office address must be shown. If a firm or partnership makes the proposal, the name and post office address of the firm or partnership and the signature of at least one of the general partners must be shown. If a corporation makes the proposal, the proposal shall show the name of the state under the laws of which the corporation is chartered, the name and post office address of the corporation and the title of the person signing on behalf of the corporation. Upon request of the Districts, the corporation shall provide a certified copy of the bylaws or resolution of the board of directors showing the authority of the officer signing the proposal to execute contracts on behalf of the corporation.

6. **AWARD OF CONTRACT:** Contract awards will be made to the Proposer's whose offer provides the greatest value, in terms of suitability to purpose, quality of goods and/or services, experience, prices, and ability to deliver. The Evaluation Committee may consider any other reason deemed to be in the best interest of the Districts. Thus, the result will not be determined by price alone. Price is of the utmost importance; however, the Districts is seeking the least costly outcome that meets the needs of the Districts as interpreted as such. The Districts reserve the right to award to one or multiple Conultant(s) as best suits the interests of the Districts.

Board action on proposal will normally be taken within 90 days of receipt of proposal; however, no guarantee or representation is made herein as to the time between receipt of proposal and subsequent Board award. In submitting a response to this RFP, Vendor acknowledges that this RFP, including all exhibit and appendices, will be incorporated in its entirety, along with Vendor's entire proposal, including brochures, attachments, and supplementary information, in any award issued in response to this RFP. It is mutually understood and agreed that until a Purchase Order Contract is issued, there is no final agreement between the Districts and the Vendor. Any final agreement is conditional and dependent upon a complete and final release of Purchase Order or written Agreement executed by authorized representatives of the respective parties. Further, both parties understand and agree that they proceed at their own risk regarding all negotiations and actions taken until such time that a final, valid, agreement is released and established.

7. **CANCELLATION OF SOLICITATION:** The Districts may cancel this solicitation at any time.

8. **CLARIFICATION AND ADDENDA:** For inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to this RFP, Proposers shall submit questions through the QuestCDN online portal no later than 3:00 p.m. on Tuesday, July 18, 2023. **This is the last day for questions**. The Districts will post responses to questions via the QuestCDN portal and issue any resulting addenda.

9. **COMPLIANCE OR DEVIATION TO SPECIFICATIONS.** Proposer hereby agrees that the material, equipment, or service offered will meet all the requirements of the specifications in this solicitation unless deviations from them are clearly indicated in the Proposer's response**.** Proposer may submit an attachment entitled "Exceptions to Specifications", which must be signed by Proposer's authorized representative. An explanation must be made for each item in which an exception is taken, giving in detail the extent of the exception and the reason for which it is taken. Proposals failing to comply with this requirement will be considered non-responsive. Submittal of brochure or other manufacturer literature is desirable but may not be a substitution for this requirement.

10. **COMPLIANCE WITH LAWS:** All proposals shall comply with current federal, state, and other laws relative thereto the State of California. Proposers shall strictly observe the requirements of Government Code §1090 and §1091 in offering upon this requirement.

11. **CONTRACT CANCELLATION.** Upon 30 days written notice, either party may cancel the Purchase Order Agreement.

12. **CONTRACT DOCUMENTS, EXAMINATION OF:** It is the responsibility of the Vendor to thoroughly examine and be familiar with legal and procedural documents, general conditions, forms, specifications, drawings, plans, and addenda (if any), hereinafter referred to as Contract Documents. The Vendor shall satisfy himself as to the character, quantity, and quality of work to be performed and materials, labor, supervision, equipment, and appurtenances necessary to perform the work as specified by the Contract Documents. The failure or neglect of the Vendor to examine the Contract Documents shall in no way relieve him from any obligations with respect to the solicitation or contract. The submission of a proposal shall constitute an acknowledgment upon which the Districts may rely that the Vendor has thoroughly examined and is familiar with the contract documents. The failure or neglect of a Vendor to receive or examine any of the contract documents shall in no way relieve him from any obligations with respect to the Proposal.

No claim will be allowed for additional compensation that is based upon a lack of knowledge of any solicitation document.

13. **CONTRACT INCORPORATION.** The parties shall not be bound by or be liable for any statement, representation, promise, inducement or understanding of any kind or nature not set forth herein. No changes, amendments, or modifications of any of the terms or conditions of the contract shall be valid unless reduced to writing and signed by both parties. The complete contract shall include the entire contents of the RFP solicitation, all addenda, all of Proposer's successful submittal, supplemental agreements, general contract and/or purchase order, performance bond(s) if required, and any and all written agreements which alter, amend, or extend the contract.

14. **CONTRACT NEGOTIATIONS:** The Districts reserves the right to enter into discussions with the Vendor(s) determined to be reasonably susceptible of being selected for award, or to enter into exclusive discussions with the Vendor whose proposal is deemed most advantageous, whichever is in the Districts' best interest, for the purpose of negotiation. If exclusive negotiations are conducted, and an agreement is not reached, the Districts reserves the right to enter into negotiations with the next highest ranked Vendor without the need to repeat the solicitation process.

15. **DEBRIEF:** Upon request, anyone who submitted a proposal response to a solicitation (Proposer) may request a debriefing. Debriefings will be scheduled after contract award, and may be done orally, in writing or by any other method acceptable to the Districts. A Proposer will be accorded fair and equal treatment with respect to its opportunity for debriefing on Proposer's submitted proposal.

16. **DISQUALIFICATION OF CONSULTANT:** If there is reason for the Districts to believe that collusion exists among the Vendors, the Districts may refuse to consider proposals from suspected participants in such collusion. No person, firm, or corporation under the same or different name, shall make, file, or be interested in more than one proposal for the same work unless alternate proposals are called for. Reasonable ground for believing that any Vendor has an interest in more than one Proposal for the same work will cause the rejection of all Proposals for the work in which a Vendor is suspected of having an interest. If there is reason to believe that collusion exists among the Vendors, the Districts may refuse to consider Proposals from participants in such collusion. Vendors shall submit as part of their Proposal documents the completed Non-Collusion Declaration provided herein.

17. **DOCUMENTS TO BE RETURNED WITH PROPOSAL:** Failure to completely execute and submit the required documents before the submittal deadline may render a proposal non-responsive.

18. **DELIVERY REQUIREMENTS:** Any proposals received **after** the above stated due time and date will **not** be considered. It shall be the sole responsibility of the Vendor to have their proposal **fully** transmitted and submitted to QuestCDN for receipt **on or before** the above stated time and date. The Vendor shall be responsible for a Proposal's timely online submission to QuestCDN.

    The Districts is not responsible for Internet Service Provider (ISP) transmission, delays, or any other related issues.

19. **EXPERIENCE AND COMPETENCY:** The successful Vendor shall be skilled and regularly engaged in the general class or type of work called for under the contract. Each Vendor shall set forth their

experience and submit it with their proposal. It is the intention of the Districts to award a contract to a Vendor who furnishes satisfactory evidence that they have the requisite experience, ability, capital, and facilities to enable them to prosecute the work successfully and properly, and to complete it within the time specified in the contract. To determine the degree of responsibility to be credited to the Vendor, the Districts will weigh any evidence that the Vendor has performed satisfactorily other contracts of like nature, magnitude, and comparable difficulty and comparable rates of progress. In selecting the most advantageous Vendor, consideration will be given not only to the financial standing but also to the general competency of the Vendor for the performance of the work specified in the contract documents.

20. **FAILURE TO FULFILL/PROVIDE:** Failure to fulfill any of the RFP requirements during the term of the contract period may be considered cause to cancel the contract with the awarded Vendor(s). When any contractor or vendor shall fail to deliver any article or service or shall deliver any article or service which does not conform to the specifications, the Districts may, at its sole discretion, annul and set aside the contract entered into with said vendor or contractor, either in whole or in part, and make and enter into a new contract for the same items or service in such manner as seems to the Board to be to the best advantage of the Los Angeles County Sanitation Districts. Any failure for furnishing such articles or services by reason of the failure of the vendor, or contractor, as above stated, shall be a liability against such vendor and his sureties. The Board reserves the right to cancel any articles or services which the successful proposer may be unable to furnish because of economic conditions, governmental regulations, or other similar causes beyond the control of the proposer provided satisfactory proof is furnished to the Board, if requested.

21. **FIRM PRICE PERIOD:** Submittal of proposal constitutes an irrevocable offer for a period of 120 days or the proposed effective date (whichever is later) to furnish the Districts with the services set forth in the Scope of Work until a proposal has been duly accepted by the Districts' Board. Vendor's offer shall remain open and firm for a period of not less than 120 calendar days from the Submittal Deadline, or the proposed effective date, whichever is later.

22. **FORCE MAJEURE.** If execution of this contract shall be delayed or suspended and if such failure arises out of causes beyond the control of and without fault or negligence of the Proposer, the Proposer shall notify the Districts, in writing, within twenty-four (24) hours, after the delay. Such causes may include but are not limited to acts of God, war, acts of a public enemy, and acts of any governmental entity in its sovereign or contractual capacity, fires, floods, epidemics, strikes and unusually severe weather. Delays related to COVID-19 is not considered a force majeure event.

23. **FORMATION OF CONTRACT.** Proposers signed Proposal and the Districts written acceptance shall constitute a binding contract.

24. **GOVERNING LAW.** This contract shall be in accordance with the laws of the state of California, without giving effect to conflict of laws principles. The parties stipulate that this contract was entered into in the county of Los Angeles, in state of California. The parties further stipulate that the county of Los Angeles, California, is the only appropriate forum for any litigation resulting from a breach hereof or any questions risen here from, and each party waives any claim of inconvenient forum.

25. **HOLD HARMLESS/INDEMNITY.** The Proposer shall save, defend, hold harmless and indemnify the Districts, the Board, and their officers, employees, agents, consultants, other independent

contractors, consultants and representatives, against any and all liability, claim, damage, demand, loss, and costs of whatsoever kind and nature for injury to or death of any person and for loss or damage to any property occurring in connection with or in any way incident to or arising, either directly or indirectly, out of the occupancy, use, service, operations, or performance under the terms of this contract, resulting in whole or in part from the acts or omissions of vendor, and subcontractor, or any employee, agent, or representative of vendor and/or subcontractor, whether or not the liability, claim, demand cost, loss, damage or expense was actually or allegedly caused wholly or in part through the negligent or other tortuous conduct of any of them, except to the extent the damage was due to the sole negligence of the Districts.

26. **INDEPENDENT CONTRACTOR/CONFLICT OF INTEREST:** Vendor is an independent contractor with the authority to control and direct the performance of the details of the work, the Districts being interested only in the end results obtained. However, the work contemplated must meet the approval of the Districts. Vendor shall strictly observe the requirements of Government Code §1090 and §1091. Vendor must identify any existing or potential conflicts of interest with other clients, either existing or proposed, related to work undertaken pursuant to this scope of work for their firm and for any subcontractors, and if any conflicts or potential conflicts among clients are identified, a conflict waiver letter must be signed by both clients and, if necessary, a plan consistent with the discussion in the Proposal describing how the firm plans to resolve, mitigate, or avoid future potential conflict(s) must be submitted to the Districts for approval.

    Vendor covenants that it presently has no interest, and shall not acquire any interest, direct or indirect, financial, or otherwise, which would conflict in any manner or degree with the performance of the services hereunder. Vendor further covenants that, in the performance of this contract, no subcontractor or person having such an interest shall be employed. Vendor certifies that to the best of his knowledge, no one who has or will have any financial interest under this contract is an officer or employee of the Districts. It is expressly agreed by Vendor that in the performance of the services required under this contract, Vendor, and any of its subcontractors or employees, shall at times be considered independent contractors and not agents of the Districts.

27. **INSURANCE.** Upon award, Vendor shall provide Certificates of Insurance, with endorsements, verifying coverage and shall be delivered to the Districts within seven (7) calendar days after the Districts' Board of Directors approves award of a purchase order. The Districts reserves the right to require complete and accurate copies of all insurance policies under the Agreement. Coverage provided by the selected firm's policies shall be primary coverage without right of contribution of any other insurance carrier or on behalf of the Districts. The Districts must receive thirty (30) calendar days prior written notice of a policy cancellation or reduction in coverage. The insurance coverage shall be through insurers that have at least an "A" policyholders rating and an "X" financial rating in accordance with the current Best's Key Rating Guide. The Awarded contractor/vendor is expected to maintain and provide:

    General Liability Insurance. Vendor shall maintain general liability insurance including provisions for contractor liability, independent contractors, and broad form property damage coverage. This insurance shall be on a comprehensive, occurrence basis form with a standard cross liability clause or endorsement. The "Los Angeles County Sanitation Districts" shall be named as an additional insured, and the limit for this insurance shall be

not less than $3,000,000 per occurrence combined single limit for bodily injury and property damage.

Business Auto Insurance. Vendor shall maintain automobile liability insurance with coverage for any vehicle including those owned, leased, rented, or borrowed. This insurance shall have an endorsement naming the "Los Angeles County Sanitation Districts" as an additional insured and with a standard cross liability clause or endorsement. The limit amount for this insurance shall be not less than $1,000,000 per occurrence combined single limit for bodily injury and property damage.

Workers' Compensation. Vendor shall maintain Workers' Compensation Insurance as required by law in the State of California and Employers' Liability Insurance (indulging 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.

Professional Liability. Vendor shall maintain professional liability insurance with coverage for wrongful acts, errors, or omissions committed by Vendor in the course of work performed for the Districts under this RFP. This insurance shall include coverage for liability assumed under this RFP when such liability is caused by Vendor's negligent acts, errors, or omissions. The limit for this insurance shall be not less than $3,000,000 per occurrence.

28. **INVOICING AND PAYMENT:** Payment term is Net 30 and is made after review of the invoice. At a minimum, invoices **must** include the project title, the Purchase Order/Contract Agreement number, the time period that the invoice applies, i.e., "monthly retainer," a list of items worked on (by bill number, if applicable), and for preapproved expenses, receipts must be attached. The prices shall be the prices contained in the Vendor's proposal. **All invoices must be submitted to**: invoices@lacsd.org.

    The Districts is not responsible for payments delays, nor shall occur any additional fees, for invoices submitted not as specified. 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.

29. **LATE PROPOSALS:** The Districts will not accept late proposals. **QUESTCDN's CLOCK IS THE OFFICIAL TIME.**

30. **MINORITY BUSINESS PARTICIPATION:** The Districts support and encourage the participation of businesses owned and controlled by minorities or women (MBE/WBE) and small business enterprises in Districts projects. The Districts accepts certifications from the Federal Government's Small Business Administration 8(a) program and the State of California's office of Small and Minority Business, and the following agencies:

    - City of Los Angeles, Department of Public Works
    - WMBE Clearinghouse, Los Angeles, California (California Public Utilities Commission)
    - California Department of Transportation (CALTRANS)

- Los Angeles County Metropolitan Transportation Authority (MTA)
- County of Los Angeles Office of Affirmative Action

31. **MULTIPLE OFFERS/PROPOSALS**: Vendors are NOT allowed to submit more than one (1) proposal.

32. **NON-COLLUSION DECLARATION.** Proposers on all public proposals are required to submit a declaration of non-collusion with their submittal. The declaration is made part of the proposal form of the RFP package and must be signed and dated.

33. **PRE-PROPOSAL ZOOM CONFERENCE AND JOB WALK:** The Districts will hold a non-mandatory virtual pre-proposal conference via Zoom on Thursday, July 6, 2023, at 10:00 a.m. The meeting invite link is https://us02web.zoom.us/j/88073148728. The Districts will record the meeting; Contractor consents to recording by their attendance.

    A non-mandatory pre-proposal job walk will be held at:

    Location: Joint Water Pollution Control Plant
    24501 S. Figueroa Street
    Carson, CA 90745

    Date and Time: Tuesday, July 11, 2023, at 10:00 a.m.

    At the pre-bid job walk, proposers are required to sign-in at the security desk. By submitting a proposal for the work outlined herein, the contractor shall be deemed to have made such examination, and to be familiar with and to accept all conditions of the job and site.

34. **PRICE:** Any contemplated increase in the rate(s) shall be based on the percentage change between the previous year and current year's Consumer Price Index (CPI) or Producer Price Index (PPI), published by the U.S. Department of Labor's Bureau of Labor Statistics. The specific index to be used is the CPI or PPI for Los Angeles-Anaheim-Riverside, California.

    It is expressly understood that contract extensions and/or rate increases are not automatic nor guaranteed. The Vendor's request to extend the contract period and/or increase the current rate schedule will be evaluated and considered when such request is made. The Districts reserves the right to reject any such request and cancel or re-quote said contract. The Districts reserves the right to review price changes with other companies and purchase from the company that best serves the needs of the Districts.

35. **PROPOSAL CONTENT:** The Proposer must respond to the requested proposal content describing, in detail, how they will meet the requirements of this RFP. The Proposer may provide supporting documentation; however, it cannot be in-lieu of providing a direct response to questions.

36. **PROPOSAL DEADLINE**: Proposals may be submitted any time **before** the deadline. Proposals that are not uploaded to QuestCDN by the Proposal Deadline are late. Late proposals are not accepted.

37. **PROPOSAL DOCUMENTS:** The Districts has only authorized QuestCDN to distribute the Proposal Documents, in electronic formats, for use by proposers. The Districts does not warrant the accuracy or completeness of Proposal Documents obtained from any source other than QuestCDN, unless otherwise noted, and any use of such documents by prospective proposers or

others for any purpose is solely at the proposers' risk. Only those proposers that have obtained and properly downloaded the Proposal Documents from QuestCDN will appear on the Planholders list and may submit a proposal.

38. **PROPOSAL EXPENSES:** All expenses for making proposals to the Districts are to be borne by the Vendor.

39. **PROPOSAL OPENING AND RESULTS:** The Districts does not open proposals publicly. After the deadline and downloading of the received proposals, a listing of companies submitting proposals will be made available on the QuestCDN portal.

40. **POSTPONEMENT OF OPENING:** The Districts reserve the right to postpone the submittal deadline and opening of proposals any time before the date and time announced in the Request for Proposals or subsequent addenda.

41. **PROPOSAL SUBMITTAL:** Vendors shall upload Proposals to QuestCDN no later than **11:00 a.m. on Tuesday, August 8, 2023**, uploaded to QuestCDN.com

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

    The Technical Proposal and Cost Proposal must be uploaded as separate files.

    QuestCDN.com's bid clock is the official time. All proposals must be fully transmitted by the due date and time. The Districts are not responsible for internet transmission interruptions.

    Proposals will **ONLY** be received and accepted via the online electronic bid service through QuestCDN.com. **Paper/email proposals will not be accepted**.

    Late submissions will not be accepted. It is the proposer's responsibility to ensure its proposal is **fully transmitted** by the due date and time. THE DISTRICTS ARE NOT RESPONSIBLE FOR ELECTRONIC OR INTERNET SERVICE PROVIDER (ISP) TRANSMISSION DELAYS OF ANY KIND. Any Proposals submitted after the above time and date, or to any other person or address will be rejected.

42. **PROPOSAL WITHDRAWAL (IRREVOCABLE OFFER):** If a Vendor wishes to withdraw their proposal any time before the due date, they may do so without prejudice to themself by delivering a notice of withdrawal in writing, to the Districts' representative, and/or deleting it from the QuestCDN on-line bidding platform.

43. **REFERENCES (if applicable):** All Vendor must include a list of references when submitting offers. List references on the enclosed form.

44. **PUBLIC RECORD.** All documents received by the Districts, as a public agency, in connection with this proposal are subject to the requirements of the California Public Records Act, Government Code 6250-6270. Proposers shall identify information contained in the submission which the Proposer deems to be confidential or proprietary and wishes to be withheld from disclosure to others under the state Public Records Act. Note: A blanket statement that all contents of the proposal are confidential or proprietary will not be honored by the Districts.

45. **RESERVED RIGHTS:** The Districts reserve the right to accept or reject any and/or all proposals, to waive irregularities and technicalities, and to request resubmission. Any sole response that is received by the first submission date may or may not be rejected by the Districts depending on available competition and timely needs of the Districts. There is no obligation on part of the Districts to award the contract to the lowest bid Contractor and the Districts reserves the right to

award the contract to the lowest responsible Vendor submitting a responsive proposal with a resulting Agreement, which is most advantageous, and in the best interest of the Districts. The Districts shall be the sole judge of whether the proposal and the resulting Agreement is in its best interest and its decision shall be final. Also, the Districts reserve the right to make such investigation, as it deems necessary to determine the ability of any Vendor to perform the work or service requested. The Vendor shall provide all information the Districts, in its absolute discretion, deems necessary to make this determination. Such information may include, but shall not be limited to, current financial statement prepared by an independent CPA; verification of availability or personnel; and past performance records. No proposer may withdraw his/her bid for a period of ninety (90) days after the time set for the opening thereof.

46. **SAFETY.** Proposer agrees to comply with the provisions of the Occupational Safety and Health Act of 1970 (or latest revision), the State of California Safety Orders, and regulations issued there under, and certifies that all items furnished under this bid will conform and comply with the indemnity and hold harmless clause for all damages assessed against buyer as a result of suppliers' failure to comply with the Act and standards issued there under and for the failure of the items furnished under this order to so comply.

47. **SEVERABILITY.** If any provisions, or portion of any provision, of this contract are held invalid, illegal, or unenforceable, they shall be severed from the contract and the remaining provisions shall be valid and enforceable.

48. **SIGNATURES:** All proposals must show the firm name; must be signed by a responsible officer, or employee fully authorized to bind the organization to the terms and conditions. Obligations assumed by such signatures must be fulfilled.

49. **SUBCONTRACTING:** The Vendor 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 Vendor's personnel, subcontracted personnel, the use of inadequate equipment, or for equipment failure. Through the term of the Contract, the Districts must be notified within 30 days of changes in subcontractor relationships. Upon notification, the Districts reserves the right to request the removal of a firm, change, or review contractual conflicting relationships.

50. **ADDITIONAL TERMS & CONDITIONS.** Upon award of proposal, additional terms and conditions may apply as applicable to the binding and execution of contractual agreement.

END OF RFP

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

VENDOR REGISTRATION FORM

1955 Workman Mill Road
Whitter, California 90601
(562) 908-4288 Ext. 1400 FAX (562) 699-8665

VENDOR CODE _____ DIVISION/ADDR CODE _____ (For Districts' Use Only)

COMPANY NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____ – _____

REMIT TO: _____
REMITTANCE ADDRESS _____ ☐ SAME AS ABOVE
CITY _____ STATE _____ ZIP _____ –
TELEPHONE ( ) _____ REP/CONTACT _____
AR CONTACT & EMAIL _____ REP EMAIL _____

CHECK TYPE OF OWNERSHIP

☐ INDIVIDUAL/SOLE PROPRIETOR ☐ C CORPORATION ☐ PARTNERSHIP ☐ OTHER _____

☐ LIMITED LIABILITY COMPANY ____ ☐ S CORPORATION ☐ TRUST/ESTATE

*** ATTACH CURRENT W-9 TAX FORM TO THIS REGISTRATION FORM**

IF YOU ARE A CONTRACTOR, PLEASE INDICATE YOUR LICENSE NO. BELOW:
CONTRACTOR'S LICENSE NO.: _____ DIR REGISTRATION NO.: _____

BUSINESS CLASSIFICATION

☐ MBE ☐ SBE ☐ DBE ☐ N/A
☐ WBE ☐ DVBE ☐ OTHER: _____

BUSINESS CLASSIFICATION CERTIFICATION*:
WHERE: _____ EXPIRATION DATE _____

*** ATTACH PROOF OF CERTIFICATION(S) TO THIS REGISTRATION FORM**

CHECK YOUR TYPE OF BUSINESS:

☐ CONTRACTOR ☐ FACTORY REP
☐ MANUFACTURER ☐ DISTRIBUTOR ☐ SMALL BUSINESS *
HOW LONG IN BUSINESS: _____ YRS _____ MOS NUMBERS OF EMPLOYEES _____

PROVIDE ANY OTHER PERTINENT INFORMATION TO FURTHER DESCRIBE YOUR COMPANY, ORGANIZATION, OPERATIONS, OR PRODUCTS (Additional sheets, with applicant or company name at top, may be attached).

_____
_____
_____

COMPLETED BY: _____ DATE: _____

Please submit this completed form and W-9 tax form to purchasing@lacsd.org.

NON-COLLUSION DECLARATION FORM

(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)

SUBMIT THIS FORM WITH PROPOSAL.

CERTIFICATE REGARDING WORKERS' COMPENSATION

Labor Code Section 3700, in relevant part, provides:

"Every employer except the state shall secure the payment of compensation in one or more of the following ways:

a) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

b) By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees,…"

I am aware of the provisions of section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of this contract. I shall supply the Owner with certificates of insurance evidencing that Workers' Compensation Insurance is in effect and providing that the Owner will receive thirty (30) days' notice of cancellation.

Name: _____ Title: _____

Signature:_____ Date: _____

(In accordance with Article 5 [commencing at Section 1860], Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under this contract.)

SUBMIT THIS FORM WITH PROPOSAL.

LIST OF PROPOSED SUBCONTRACTORS
(Non-Public Works)

The prime bidder/proposer shall list below, the type of work of each subcontractor will perform or service rendered to the prime bidder/proposer in the performance of the scope of work.

Subcontractor No. 1

Company Name:_____

Contact person: _____ Title:_____

Telephone No.: _____ Email: _____

Job Description: _____

_____

Subcontractor No. 2

Company Name:_____

Contact person: _____ Title:_____

Telephone No.: _____ Email: _____

Job Description: _____

_____

Subcontractor No. 3

Company Name:_____

Contact person: _____ Title:_____

Telephone No.: _____ Email: _____

Job Description: _____

_____

Please add additional pages if necessary

SUBMIT THIS FORM WITH PROPOSAL.

REFERENCE LIST

Reference No. 1

Company Name:_____

Contact person: _____ Title:_____

Telephone No.: _____ Email: _____

Job Description: _____

_____

Reference No. 2

Company Name:_____

Contact person: _____ Title:_____

Telephone No.: _____ Email: _____

Job Description: _____

_____

Reference No. 3

Company Name:_____

Contact person: _____ Title:_____

Telephone No.: _____ Email: _____

Job Description: _____

_____

SUBMITTED BY:

Company:

_____

Name:

_____

Signature: _____ Date: _____

SUBMIT THIS FORM WITH PROPOSAL.

ATTACHMENT A

DISTRICTS HEALTH AND SAFETY SHEETS

Health and Safety Information Sheet

County Sanitation Districts of Los Angeles County

GENERAL SAFETY

REGULATORY COMPLIANCE

The contractor is responsible for controlling the manner and methods of its operations and is directly responsible for the safety of its employees and subcontractor's employees and ensuring regulatory compliance. If the contractor's or its subcontractors' employees fail to comply with Federal, State, local, or municipal regulations, the Districts has the right to refuse inspecting and accepting the performed work until the issue is rectified to the Districts' satisfaction. Furthermore, violations may be referred to the appropriate regulatory agency(s).

HAZARDOUS MATERIAL USAGE

Before work begins, the contractor shall provide to the Districts a hazardous material inventory and the corresponding Material Safety Data Sheets for all hazardous materials to be used during the construction process. Hazardous material inventories shall be submitted to the Contract Administrator.

Contractors that require fuel, paint, or other chemicals to be stored on the landfill must ensure that their storage facilities include secondary containment and meet all other applicable requirements of the Fire Department and appropriate regulatory agency(s).

Hazardous materials shall not be brought onto Districts' property until approval is received. Contractors are required to strictly enforce container labeling. Labels shall identify substance, appropriate hazard warnings, and emergency procedures. Immediately report spills to the lead operator on site. Spills must be handled in accordance with the Hazardous Materials Business Plan for each site.

AIR CONTAMINANTS AND NOISE CONTROL

Districts' employees shall not be subjected to excessive air contaminants or noise from the contractor's operations.

ASBESTOS & LEAD

Some Districts' building materials contain asbestos and/or lead. Contractors and their employees are required to handle contaminated building materials in accordance with applicable regulations.

VEHICLES & DRIVING

All written traffic signs, signals, and road markings must be obeyed. Always obey the lowest posted speed limit. Parking at any Districts' facility is at the vehicle owners' risk.

HOUSEKEEPING

Contractors are responsible for keeping the work area free and clear of hazards at all times. When the work is done, the work area must be left in a neat and clean condition.

If a contractor employee is sent off-site for medical treatment (where more than first aid is required) the Contract Administrator and the EH&S Section must be notified immediately by contractor supervision.

SAFETY EQUIPMENT

Contractors are required to provide, operate and maintain their own safety equipment. Safety equipment includes, but is not limited to, lifelines, harnesses, scaffolding, respiratory equipment, gas detectors, welding shields, ventilation equipment, and personal protective equipment.

SMOKING

A no-smoking policy has been initiated for the Districts' facilities. All Districts' indoor facilities are no-smoking areas, including all areas within twenty feet from any building entrance. Additionally, management may designate outdoor facilities as no-smoking areas. Such outdoor no-smoking areas will be posted. In general, conflicts will be resolved with the rights of Districts' employees to breathe clean air prevailing.

ADDITIONAL RESOURCES

The Districts' Environmental Health and Safety Programs (e.g., Injury and Illness Prevention Program, Material Safety Data Sheets, Fire Plan, Hazardous Materials List, etc.) are on file for anyone to review.

Health and Safety Information Sheet

County Sanitation Districts of Los Angeles County

JOINT WATER POLLUTION CONTROL PLANT

1. Hose bibs at the JWPCP may contain reclaimed water and are not to be used for drinking purposes.

2. Oxygen rich environments can occur within Cryogenic Facilities or Biological Reactors. Oxygen rich is defined as an oxygen concentration greater than 23 percent by volume. This condition may lead to combustion or explosion hazards; therefore, work cannot be performed in an oxygen rich atmosphere. The Cryogenic Oxygen Separation Plant and the roofs of the Biological Reactors at Secondary Treatment are restricted areas due to potential for oxygen enrichment.

3. Explosive environments can be created at the JWPCP as a result of the accumulation of natural gas, propane gas or digester gas. Fires, open flames, sparks and other forms of ignition and smoking are prohibited within 50 feet of sources of natural gas, propane, or digester gas.

4. Contractors and their employees should be aware that wastewater treatment at JWPCP involves disinfection with chlorine liquid or hypochlorite solution. Spilled or leaked chlorine will evaporate to form gaseous chlorine. Hypochlorite solution, a corrosive hazard itself, has the potential to evolve chlorine gas when leaked. Contractors should be aware of the chlorine station location, and that a chlorine leak can occur that requires evacuation of a work site. The chlorine station is a restricted area and training or a trained escort is required prior to entry. The contractor shall follow the direction of the Districts' personnel should an evacuation be necessary.

5. The JWPCP is a "hard hat required" area.

6. The JWPCP driving speed limit is 15 mph.

7. Numerous confined spaces exist at the JWPCP. The Districts' confined spaces are known to pose potential toxic exposure. Entry into Districts' confined spaces is allowed only through compliance with a Permit Required Confined Space Program meeting the requirements of Title 8 CCR §5157. Contact the Contract Administrator prior to working in any confined space.

8. Hydrogen sulfide gas is found in air spaces above raw wastewater, wastewater undergoing treatment, raw and digested sludge and other liquid side streams. Hydrogen sulfide gas is also found in small quantities in digester gas. Contractors shall contact the Contract Administrator for generally accepted safe work practice guidelines prior to working in areas known to contain hydrogen sulfide gas.

9. Pathogenic bacteria and viruses are present in wastewater, wastewater undergoing treatment, raw and digested sludge, process side streams and treated wastewater effluent. Contractors and their employees shall practice proper hygiene to prevent ingestion or contact with these materials. Proper hygiene includes but is not limited to, hand washing with soap and water prior to eating, and wearing appropriate personal protective equipment to minimize exposure.

10. Drowning hazards are posed by large open process tankage filled with liquids or chemicals. The configuration of the tankage with steep walls and no provision for escape require precautions to prevent contractors and their employees from falling into liquid filled tanks. Contractors working in proximity of tankage shall contact the Contract Administrator for generally accepted safe work practice guidelines.