PROFESSIONAL SERVICES CONTRACT BETWEEN
THE CITY OF HUNTINGTON BEACH AND
PACIFIC ADVANCED CIVIL ENGINEERING, INC.
FOR
ON-CALL CIVIL ENGINEERING
& PROFESSIONAL CONSULTING SERVICES

THIS AGREEMENT ("Agreement") is made and entered into by and between the City of Huntington Beach, a municipal corporation of the State of California, hereinafter referred to as "CITY," and PACIFIC ADVANCED CIVIL ENGINEERING, INC., a California Corporation hereinafter referred to as "CONSULTANT."

WHEREAS, CITY desires to engage the services of a consultant to provide On-Call Civil Engineering & Professional Consulting Services; and

Pursuant to documentation on file in the office of the City Clerk, the provisions of the Huntington Beach Municipal Code, Chapter 3.03, relating to procurement of professional service contracts have been complied with; and

CONSULTANT has been selected to perform these services,

NOW, THEREFORE, it is agreed by CITY and CONSULTANT as follows:

1. SCOPE OF SERVICES

CONSULTANT shall provide all services as described in **Exhibit "A,"** which is attached hereto and incorporated into this Agreement by this reference. These services shall sometimes hereinafter be referred to as the "PROJECT."

CONSULTANT hereby designates Duncan Lee who shall represent it and be its sole contact and agent in all consultations with CITY during the performance of this Agreement.

2. CITY STAFF ASSISTANCE

CITY shall assign a staff coordinator to work directly with CONSULTANT in the performance of this Agreement.

3. TERM; TIME OF PERFORMANCE

Time is of the essence of this Agreement. The services of CONSULTANT are to commence on _____, 20____ (the "Commencement Date"). This Agreement shall automatically terminate three (3) years from the Commencement Date, unless extended or sooner terminated as provided herein. All tasks specified in **Exhibit "A"** shall be completed no later than three (3) years from the Commencement Date. The time for performance of the tasks identified in **Exhibit "A"** are generally to be shown in **Exhibit "A."** This schedule may be amended to benefit the PROJECT if mutually agreed to in writing by CITY and CONSULTANT.

In the event the Commencement Date precedes the Effective Date, CONSULTANT shall be bound by all terms and conditions as provided herein.

4. COMPENSATION

In consideration of the performance of the services described herein, CITY agrees to pay CONSULTANT on a time and materials basis at the rates specified in **Exhibit "B,"** which is attached hereto and incorporated by reference into this Agreement, a fee, including all costs and expenses, not to exceed Two Million Dollars ($2,000,000.00).

5. EXTRA WORK

In the event CITY requires additional services not included in **Exhibit "A"** or changes in the scope of services described in **Exhibit "A,"** CONSULTANT will undertake such work only after receiving written authorization from CITY. Additional compensation for such extra work shall be allowed only if the prior written approval of CITY is obtained.

6. METHOD OF PAYMENT

CONSULTANT shall be paid pursuant to the terms of **Exhibit "B."**

7. DISPOSITION OF PLANS, ESTIMATES AND OTHER DOCUMENTS

CONSULTANT agrees that title to all materials prepared hereunder, including, without limitation, all original drawings, designs, reports, both field and office notices, calculations, computer code, language, data or programs, maps, memoranda, letters and other documents, shall belong to CITY, and CONSULTANT shall turn these materials over to CITY upon expiration or termination of this Agreement or upon PROJECT completion, whichever shall occur first. These materials may be used by CITY as it sees fit.

8. HOLD HARMLESS

A. CONSULTANT hereby agrees to protect, defend, indemnify and hold harmless CITY, its officers, elected or appointed officials, employees, agents and volunteers from and against any and all claims, damages, losses, expenses, judgments, demands and defense costs (including, without limitation, costs and fees of litigation of every nature or liability of any kind or nature) arising out of or in connection with CONSULTANT's (or CONSULTANT's subcontractors, if any) negligent (or alleged negligent) performance of this Agreement or its failure to comply with any of its obligations contained in this Agreement by CONSULTANT, its officers, agents or employees except such loss or damage which was caused by the sole negligence or willful misconduct of CITY. CONSULTANT will conduct all defense at its sole cost and expense and CITY shall approve selection of CONSULTANT's counsel. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as limitation upon the amount of indemnification to be provided by CONSULTANT.

B. To the extent that CONSULTANT performs "Design Professional Services" within the meaning of Civil Code Section 2782.8, then the following Hold Harmless provision applies in place of subsection A above:

"CONSULTANT hereby agrees to protect, defend, indemnify and hold harmless CITY and its officers, elected or appointed officials, employees, agents and volunteers, from and against any and all claims, damages, losses, expenses, demands and defense costs (including, without limitation, costs and fees of litigation of every nature or liability of any kind or nature) to the extent that the claims against CONSULTANT arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of CONSULTANT. In no event shall the cost to defend charged to CONSULTANT exceed CONSULTANT's proportionate percentage of fault. However, notwithstanding the previous sentence, in the event one or more other defendants to the claims and/or litigation is unable to pay its share of defense costs due to bankruptcy or dissolution of the business, CONSULTANT shall meet and confer with CITY and other defendants regarding unpaid defense costs. The duty to indemnify, including the duty and the cost to defend, is limited as provided in California Civil Code Section 2782.8.

C. Regardless of whether subparagraph A or B applies, CITY shall be reimbursed by CONSULTANT for all costs and attorney's fees incurred by CITY in enforcing this obligation. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by CONSULTANT.

9. PROFESSIONAL LIABILITY INSURANCE

CONSULTANT shall obtain and furnish to CITY a professional liability insurance policy covering the work performed by it hereunder. This policy shall provide coverage for CONSULTANT's professional liability in an amount not less than One Million Dollars ($1,000,000.00) per occurrence and in the aggregate. The above-mentioned insurance shall not contain a self-insured retention without the express written consent of CITY; however an insurance

policy "deductible" of Ten Thousand Dollars ($10,000.00) or less is permitted. A claims-made policy shall be acceptable if the policy further provides that:

A. The policy retroactive date coincides with or precedes the initiation of the scope of work (including subsequent policies purchased as renewals or replacements).

B. CONSULTANT shall notify CITY of circumstances or incidents that might give rise to future claims.

CONSULTANT will make every effort to maintain similar insurance during the required extended period of coverage following PROJECT completion. If insurance is terminated for any reason, CONSULTANT agrees to purchase an extended reporting provision of at least two (2) years to report claims arising from work performed in connection with this Agreement.

If CONSULTANT fails or refuses to produce or maintain the insurance required by this section or fails or refuses to furnish the CITY with required proof that insurance has been procured and is in force and paid for, the CITY shall have the right, at the CITY's election, to forthwith terminate this Agreement. Such termination shall not effect Consultant's right to be paid for its time and materials expended prior to notification of termination. CONSULTANT waives the right to receive compensation and agrees to indemnify the CITY for any work performed prior to approval of insurance by the CITY.

10. CERTIFICATE OF INSURANCE

Prior to commencing performance of the work hereunder, CONSULTANT shall furnish to CITY a certificate of insurance subject to approval of the City Attorney evidencing the foregoing insurance coverage as required by this Agreement; the certificate shall:

A. provide the name and policy number of each carrier and policy;

B. state that the policy is currently in force; and

C. shall promise that such policy shall not be suspended, voided or canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice; however, ten (10) days' prior written notice in the event of cancellation for nonpayment of premium.

CONSULTANT shall maintain the foregoing insurance coverage in force until the work under this Agreement is fully completed and accepted by CITY.

The requirement for carrying the foregoing insurance coverage shall not derogate from CONSULTANT's defense, hold harmless and indemnification obligations as set forth in this Agreement. CITY or its representative shall at all times have the right to demand the original or a copy of the policy of insurance. CONSULTANT shall pay, in a prompt and timely manner, the premiums on the insurance hereinabove required.

11. INDEPENDENT CONTRACTOR

CONSULTANT is, and shall be, acting at all times in the performance of this Agreement as an independent contractor herein and not as an employee of CITY. CONSULTANT shall secure at its own cost and expense, and be responsible for any and all payment of all taxes, social security, state disability insurance compensation, unemployment compensation and other payroll deductions for CONSULTANT and its officers, agents and employees and all business licenses, if any, in connection with the PROJECT and/or the services to be performed hereunder.

12. TERMINATION OF AGREEMENT

All work required hereunder shall be performed in a good and workmanlike manner. CITY may terminate CONSULTANT's services hereunder at any time with or without cause, and whether or not the PROJECT is fully complete. Any termination of this Agreement by CITY shall be made in writing, notice of which shall be delivered to CONSULTANT as provided herein. In the

event of termination, all finished and unfinished documents, exhibits, report, and evidence shall, at the option of CITY, become its property and shall be promptly delivered to it by CONSULTANT.

13. ASSIGNMENT AND DELEGATION

This Agreement is a personal service contract and the work hereunder shall not be assigned, delegated or subcontracted by CONSULTANT to any other person or entity without the prior express written consent of CITY. If an assignment, delegation or subcontract is approved, all approved assignees, delegates and subconsultants must satisfy the insurance requirements as set forth in Sections 9 and 10 hereinabove.

14. COPYRIGHTS/PATENTS

CITY shall own all rights to any patent or copyright on any work, item or material produced as a result of this Agreement.

15. CITY EMPLOYEES AND OFFICIALS

CONSULTANT shall employ no CITY official nor any regular CITY employee in the work performed pursuant to this Agreement. No officer or employee of CITY shall have any financial interest in this Agreement in violation of the applicable provisions of the California Government Code.

16. NOTICES

Any notices, certificates, or other communications hereunder shall be given either by personal delivery to CONSULTANT's agent (as designated in Section 1 hereinabove) or to CITY as the situation shall warrant, or by enclosing the same in a sealed envelope, postage prepaid, and depositing the same in the United States Postal Service, to the addresses specified below. CITY and CONSULTANT may designate different addresses to which subsequent notices, certificates or other communications will be sent by notifying the other party via personal delivery, a reputable overnight carrier or U. S. certified mail-return receipt requested:

TO CITY:

City of Huntington Beach
ATTN: Director of Public Works
2000 Main Street
Huntington Beach, CA 92648

TO CONSULTANT:

Pacific Advanced Civil Engineering, Inc.
Attn: Duncan Lee
17520 Newhope Street, Suite 200
Fountain Valley, CA 92708

17. CONSENT

When CITY's consent/approval is required under this Agreement, its consent/approval for one transaction or event shall not be deemed to be a consent/approval to any subsequent occurrence of the same or any other transaction or event.

18. MODIFICATION

No waiver or modification of any language in this Agreement shall be valid unless in writing and duly executed by both parties.

19. SECTION HEADINGS

The titles, captions, section, paragraph and subject headings, and descriptive phrases at the beginning of the various sections in this Agreement are merely descriptive and are included solely for convenience of reference only and are not representative of matters included or excluded from such provisions, and do not interpret, define, limit or describe, or construe the intent of the parties or affect the construction or interpretation of any provision of this Agreement.

20. INTERPRETATION OF THIS AGREEMENT

The language of all parts of this Agreement shall in all cases be construed as a whole, according to its fair meaning, and not strictly for or against any of the parties. If any provision of this Agreement is held by an arbitrator or court of competent jurisdiction to be unenforceable, void, illegal or invalid, such holding shall not invalidate or affect the remaining covenants and provisions of this Agreement. No covenant or provision shall be deemed dependent upon any other unless so expressly provided here. As used in this Agreement, the masculine or neuter gender and singular or plural number shall be deemed to include the other whenever the

context so indicates or requires. Nothing contained herein shall be construed so as to require the commission of any act contrary to law, and wherever there is any conflict between any provision contained herein and any present or future statute, law, ordinance or regulation contrary to which the parties have no right to contract, then the latter shall prevail, and the provision of this Agreement which is hereby affected shall be curtailed and limited only to the extent necessary to bring it within the requirements of the law.

21. DUPLICATE ORIGINAL

The original of this Agreement and one or more copies hereto have been prepared and signed in counterparts as duplicate originals, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original. Each duplicate original shall be deemed an original instrument as against any party who has signed it.

22. IMMIGRATION

CONSULTANT shall be responsible for full compliance with the immigration and naturalization laws of the United States and shall, in particular, comply with the provisions of the United States Code regarding employment verification.

23. LEGAL SERVICES SUBCONTRACTING PROHIBITED

CONSULTANT and CITY agree that CITY is not liable for payment of any subcontractor work involving legal services, and that such legal services are expressly outside the scope of services contemplated hereunder. CONSULTANT understands that pursuant to *Huntington Beach City Charter* Section 309, the City Attorney is the exclusive legal counsel for CITY; and CITY shall not be liable for payment of any legal services expenses incurred by CONSULTANT.

24. ATTORNEY'S FEES

In the event suit is brought by either party to construe, interpret and/or enforce the terms and/or provisions of this Agreement or to secure the performance hereof, each party shall bear its own attorney's fees, such that the prevailing party shall not be entitled to recover its attorney's fees from the nonprevailing party.

25. SURVIVAL

Terms and conditions of this Agreement, which by their sense and context survive the expiration or termination of this Agreement, shall so survive.

26. GOVERNING LAW

This Agreement shall be governed and construed in accordance with the laws of the State of California.

27. SIGNATORIES

Each undersigned represents and warrants that its signature hereinbelow has the power, authority and right to bind their respective parties to each of the terms of this Agreement, and shall indemnify CITY fully for any injuries or damages to CITY in the event that such authority or power is not, in fact, held by the signatory or is withdrawn.

28. ENTIRETY

The parties acknowledge and agree that they are entering into this Agreement freely and voluntarily following extensive arm's length negotiation, and that each has had the opportunity to consult with legal counsel prior to executing this Agreement. The parties also acknowledge and agree that no representations, inducements, promises, agreements or warranties, oral or otherwise, have been made by that party or anyone acting on that party's behalf, which are not embodied in this Agreement, and that that party has not executed this Agreement in reliance on any representation, inducement, promise, agreement, warranty, fact or circumstance not expressly set forth in this

Agreement. This Agreement, and the attached exhibits, contain the entire agreement between the parties respecting the subject matter of this Agreement, and supersede all prior understandings and agreements whether oral or in writing between the parties respecting the subject matter hereof.

29. EFFECTIVE DATE

This Agreement shall be effective on the date of its approval by the City Council. This Agreement shall expire when terminated as provided herein.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by and through their authorized officers.

CONSULTANT,
PACIFIC ADVANCED CIVIL ENGINEERING, INC.

By: _____
DUNCAN LEE
print name

ITS: *(circle one)* Chairman/President/Vice President

AND

By: _____
Mark Krebs
print name

ITS: *(circle one)* Secretary/Chief Financial Officer/Asst. Secretary - Treasurer

CITY OF HUNTINGTON BEACH, a municipal corporation of the State of California

_____
Mayor

_____
City Clerk

INITIATED AND APPROVED:

_____
Director of Public Works

REVIEWED AND APPROVED:

_____
City Manager

APPROVED AS TO FORM:

_____
City Attorney

EXHIBIT "A"

A. STATEMENT OF WORK: (Narrative of work to be performed)

Provide On-Call Civil Engineering and Professional Consulting Services. If Consultant chooses to assign different personnel to the project, Consultant must submit names and qualifications of these staff to City for approval before commencing work.

B. CONSULTANT'S DUTIES AND RESPONSIBILITIES:

See Attached Exhibit A

C. CITY'S DUTIES AND RESPONSIBILITIES:

1. Furnish Scope of Work and provide a request for proposal for each project.

2. City shall issue a task order for each project based upon scope of services, work schedule, and fee proposal submitted.

D. WORK PROGRAM/PROJECT SCHEDULE:

A project schedule will be developed for each project assigned by the City.

EXHIBIT A

PACE
Advanced Water Engineering

March 13, 2025

Selection Committee – City of Huntington Beach, Public Works Department
2000 Main Street | Huntington Beach, CA 92648

Re: Professional Engineering Design Services Proposal for City of Huntington Beach On-Call Civil Engineering Professional Consulting Services – Water/Sewer/Stormwater Engineering

Dear Selection Committee,

Thank you for the opportunity to submit our qualifications to the City of Huntington Beach (City) to provide On-Call Civil Engineering Professional Consulting Services. Pacific Advanced Civil Engineering, Inc. (PACE) is a C Corporation headquartered in Fountain Valley, just minutes away from the City. We propose to support the City by acting as an extension to its engineering staff, collaborating on problem-solving and design projects to improve the City's water, wastewater, and stormwater infrastructure. Our team has been working with the City on a wide range of projects dating back to 2005, and we have a wide range of experience providing similar services to local cities and utility agencies. We understand how important it is to respond quickly to the City's needs and we have the resources necessary to mobilize on short notice with experienced staff.

As a highly specialized water engineering company, PACE brings a team of senior-level engineers who have a depth of experience in the design, construction, and operation of water systems. We are familiar with the City's water system infrastructure and current water quality concerns from our work developing wellhead treatment systems for the City of Huntington Beach and other local municipalities in Orange County. Our team has been involved in the pilot testing and development of treatment systems for per- and polyfluoroalkyl substances (PFAS) within the County and we have years of experience handling the specific groundwater quality concerns in this region. In addition, we have conducted numerous pipeline condition assessments and alignment alternatives evaluations, enabling us to provide the most effective and feasible recommendations to address the City's aging infrastructure.

As Contract Manager, QA/QC Manager, and Project Manager for pipelines and master planning, to name a few, I will impart expertise that stems from over a combined 30 years of municipal/public agency and private experience, including 17 years as a Principal Civil Engineer for the City, 10 years of experience with the Los Angeles Department of Water and Power (LADWP), and 7 years as a Principal with PACE for utility infrastructure projects. I offer technical expertise in both the design role and project management role, having managed all aspects of water, wastewater, and stormwater systems including capital improvement, master planning, hydraulic modeling, rate studies, rate increases, water conservation, and construction management. With a mindset of "wearing the City's hat," our team will impart several strategies to overcome key potential issues within the City.

Our team also includes key subconsultants for support roles. We can obtain additional support services, including environmental studies or flow monitoring if such services are needed for a specific project.

- **Corrosion Engineering: Accurate Corrosion Control, Inc.**
- **Subsurface Utility Engineering Services including Potholing, Pipe locating, and CCTV: BESS Testlab**
- **Land Survey: Huitt-Zollars**
- **Architecture and Landscape Architecture / Irrigation: Square [1] Design Group**
- **Geotechnical Engineering: Terracon**
- **Traffic Control Engineering: Traffic Control Engineering, Inc.**

We are available to go over our qualifications with you at any time to discuss in more detail aspects of our team's related experience. We accept the terms and conditions described in the sample copy of the City's standard form of agreement with no exceptions. We are excited to have the opportunity to work with the City to complete infrastructure improvement projects that we can all be proud of for years to come.

Sincerely,

Duncan Lee, PE
Principal, QA/QC Manager – Utilities Division
PROJECT MANAGER

mobile: (714) 553-6967 *office: (714) 481-0662* *e-mail: dlee@pacewater.com*
17520 Newhope Street, Suite 200 - Fountain Valley, CA 92708

REQUEST FOR PROPOSAL

VENDOR APPLICATION FORM

TYPE OF APPLICANT: ☐ NEW ☒ CURRENT VENDOR

Legal Contractual Name of Corporation: Pacific Advanced Civil Engineering, Inc.

Contact Person for Agreement: Duncan Lee, PE

Corporate Mailing Address: 17520 Newhope St. Ste 200

City, State and Zip Code: Fountain Valley, CA 92708

E-Mail Address: dlee@pacewater.com

Phone: (714) 481-0662 Fax: (714) 481-7299

Contact Person for Proposals: Michelle Hoalton

Title: Vice President, Client Services E-Mail Address: mhoalton@pacewater.com

Business Telephone: (714) 481-7203 Business Fax: (714) 481-7299

Year Business was Established: 1987

Is your business: (check one)

☐ NON PROFIT CORPORATION ☒ FOR PROFIT CORPORATION

Is your business: (check one)

☒ CORPORATION
☐ INDIVIDUAL
☐ PARTNERSHIP
☐ LIMITED LIABILITY PARTNERSHIP
☐ SOLE PROPRIETORSHIP
☐ UNINCORPORATED ASSOCIATION

Names & Titles of Corporate Board Members
(Also list Names & Titles of persons with written authorization/resolution to sign contracts)

Names	Title	Phone
Mark E Krebs	President	(714) 481-7222
Cory M Severson	CEO	(714) 481-7300
James A Matthews	Vice President	(714) 481-7221
Andrew T Komor	Vice President	(714) 481-7225
Michael G Krebs	Vice President	(714) 824-6590
Gary T Tolosa	CTO	(949) 266-0260
Andrew Ronnau	Vice President	(714) 481-7257
Duncan Lee	Vice President	(714) 481-0662
Duong Do	Vice President	(714) 481-7223
Elizabeth Yang	Vice President	(714) 481-7290
Jacob Peterson	Vice President	(714) 481-0657
Jose Cruz	Vice President	(714) 481-7248
Michelle Hoalton	Vice President	(714) 481-7203
Zirang Song	Vice President	(714) 481-7212
Robert Murphy	Vice President	(714) 481-7226
Ronald Rovansek	Vice President	(714) 514-8875
Tony Howze	Vice President	(714) 481-7255
Dianne Lora	Vice President	(714) 481-7202

Federal Tax Identification Number: 33-0265538

City of Huntington Beach Business License Number: A295323
(If none, you must obtain a Huntington Beach Business License upon award of contract.)

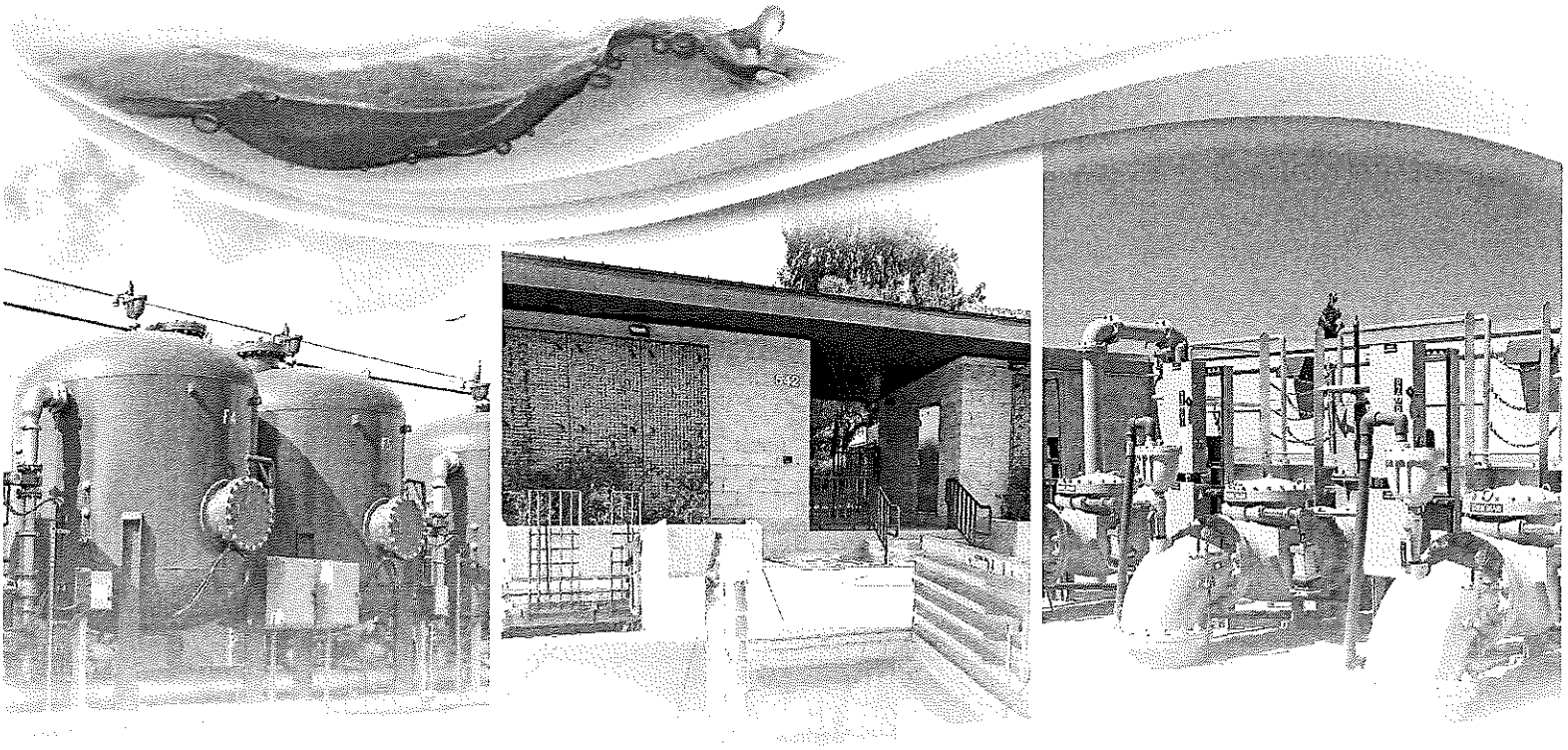
City of Huntington Beach License Expiration Date: 2/28/2026

Disciplines of Civil Engineering Services Application Form

Circle all that apply

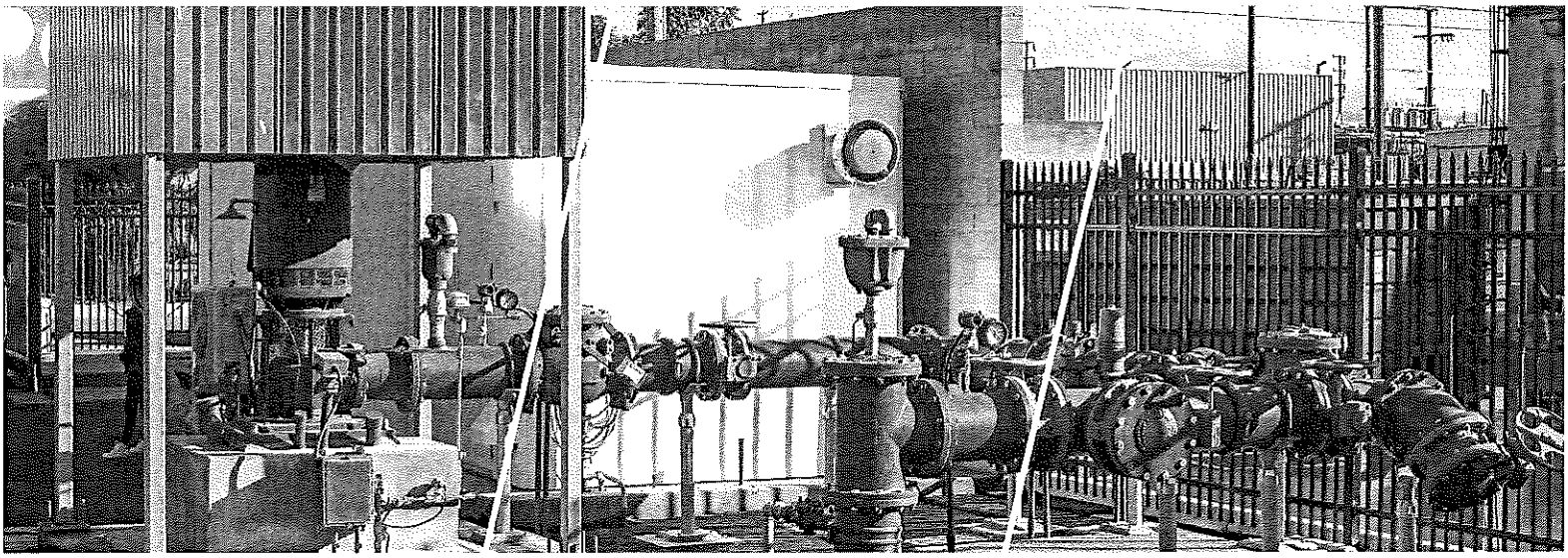
Civil Engineering Service Area	Bidding? Y/N (circle)
• Water/Sewer/Storm Water Engineering	(Yes) / No
• General Civil Engineering	Yes / (No)
• Ocean Engineering	Yes / (No)
• Environmental/Water Quality	Yes / (No)

Background and Project Summary



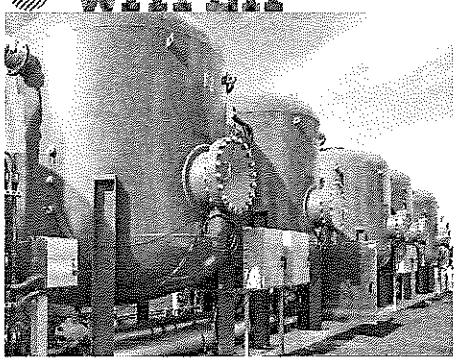
PROJECT **UNDERSTANDING**

The City is comprised of a mix of residential and commercial uses and is a top regional travel destination, with around 200,000 residents and millions of visitors each year. The City's service area is approximately 28 square miles and also supplies water to the Sunset Beach area. The Public Works Department is responsible for the planning, engineering, and operation of the City's extensive wet utilities, consisting of water, wastewater, and stormwater infrastructure. With the City being nearly built out, annual capital improvement projects (CIPs) are necessary to perform routine replacement and rehabilitation of vital distribution, collection, and pumping facilities for all wet utilities. The City has separate dedicated enterprise funds to operate and enhance the water and wastewater system, while stormwater must rely on the highly competitive City General Fund.



▲ City of Vernon Well #22 Rehabilitation

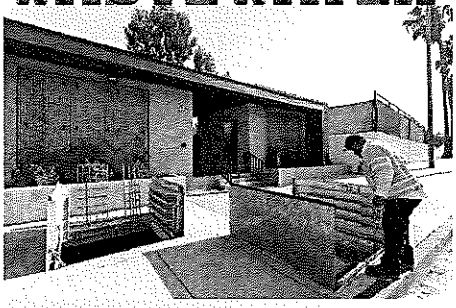
WATER



The City is delivering approximately 28,000 acre-feet of water to its customers annually, with the primary water system infrastructure consisting of nine wells with 19,000 gpm pumping capacity, three import connections with 22,000 gpm flow capacity, four reservoirs with 55 million gallons of storage capacity, five booster stations to maintain pressures in two pressure zones, 611 miles of distribution and transmission mains, and 20 miles of transmission mains shared with various adjacent cities and water purveyors. The City's Water Master Plan (WMP) includes a 20-year projection of future CIPs. The WMP was last updated in 2023 and historically is typically updated every 5 years, along with a Financial Plan to anticipate the next rate increase. According to the City's 2024/25 five-year budget projection, water CIP expenditures will primarily replace aging and/or undersized pipelines and address needed well improvements. PACE's senior staff are familiar with City's water facilities, as we have had the opportunity to work closely with the City to provide numerous essential water system upgrades. The City has utilized our services, including assessment, planning, concept development, final design and engineering, construction engineering support, and startup support.

PACE is currently designing multiple PFAS treatment systems for Orange County Water District (OCWD) using ion exchange media. Our recent experience has shown that more and more active groundwater wells will eventually detect PFAS as they continue to pull and extract water at the wellhead. Therefore, "available space planning" to accommodate future PFAS treatment improvements is critical when improvements are designed at the City's well locations. In addition, like many regional water purveyors, most of the City's pipelines are made of brittle asbestos cement, installed around 60 plus years ago, and are steadily approaching the end of their useful life. PACE has the capabilities to design pipe replacement using a conventional open-cut approach, as well as trenchless methods using slip-lining with high strength flexible Primus Line.

WASTEWATER

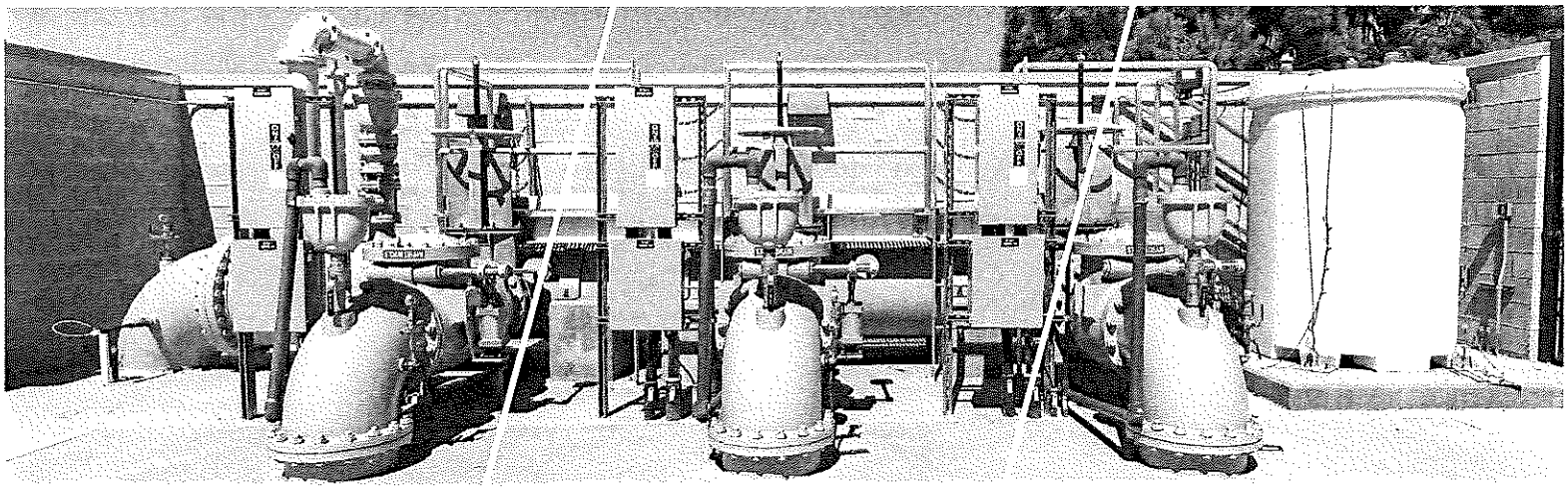


Recent Coastal Sewer Pump Station Rehabilitation / Upgrade Project Clients:

- City of Manhattan Beach
- City of Laguna Beach
- City of Anaheim
- City of Redondo Beach
- City of San Clemente
- City of Alhambra

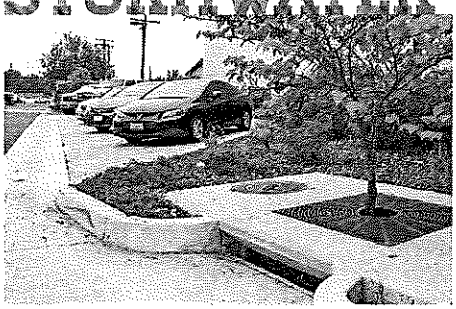
The City's primary wastewater system infrastructure consists of 27 sewer lift stations that pump on average of 9.5 million gallons of sewage daily and 360 miles of gravity and force mains. The City can reduce the risk of sewer spills from pipes clogged by fats, oils, and greases by cleaning and inspecting the entire 360 miles of gravity and force main collection system on an 18-month cycle. The annual CIPs for wastewater lift station projects are based upon the 2003 Sewer Master Plan (SMP). Historically, a lift station is replaced on a 2-year cycle with design in the first year and construction in the following year. Since 2000, the City has replaced 11 lift stations. According to the City's 2024/25 five-year budget projection, the only wastewater CIP expenditure for lift station replacement is the ongoing McFadden Sewer Lift Station project.

PACE's Project Manager, Duncan Lee, is intimately familiar with City's wastewater facilities. During his tenure at the City, he allocated a significant portion of his time and engineering staff resources to designing and managing lift station construction. It is our understanding that City's preference is for a wet well and a dry well to house mechanical and electrical equipment. At the same time, there are existing pump stations with only wet wells operating with a pair of submersible pumps. PACE has the practical experience and creative solutions to identify phasing solutions to minimize or eliminate mechanical bypass during construction to seamlessly avoid service interruptions to customers while being mindful of operators' needs and designing for a high level of reliability to prevent sewer spills. PACE's proven ability in sewer lift station design is validated by several current lift station replacement and rehabilitation projects with local public agencies in the local coastal region.



▲ Earvin "Magic" Johnson Park Stormwater Diversion Pump Station

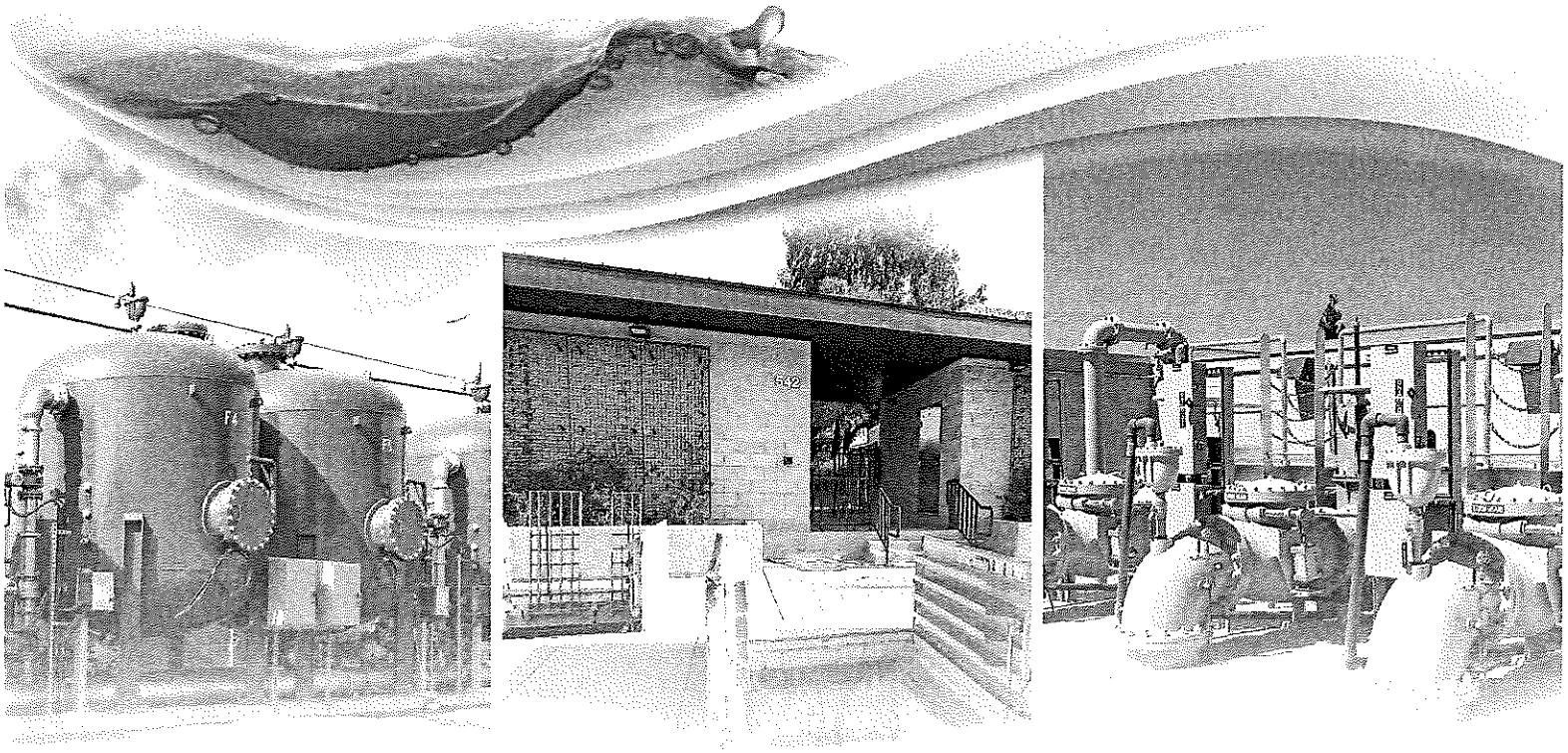
STORMWATER



The City's primary stormwater system infrastructure consists of 15 runoff pump stations, 135 miles of pipes and channels, and 1,700 catch basins. With the City's topography being relatively flat, this system is critical, as without proper stormwater control, many areas of the City would flood during storms. The City helps keep our ocean and beaches cleaner by diverting nuisance water at nine pump stations. The 2005 Citywide Urban Runoff Management Plan (CURMP) provides a broad framework for managing the quantity and quality of urban runoff that reaches receiving waters. The Master Plan of Drainage (within the CURMP) identified and created an inventory of existing storm drain facilities. Annual CIPs for stormwater are typically limited since they do not have a dedicated funding source. According to the City's 2024/25 five-year budget projection, the only planned stormwater CIP expenditures are replacing tide check valves for stormwater infrastructure in Huntington Harbor.

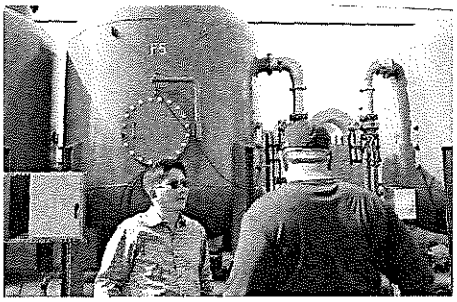
PACE's Project Manager, Duncan Lee, is familiar with City's stormwater facilities. It is our understanding that all of the pump stations consist of natural gas engines. Since historical data shows a greater chance of power outage than natural gas shortage, the City's preference for natural gas engines is justified. PACE's staff has the experience and know-how to support storm drain improvement projects from performing hydraulic and hydrology analysis and designing collection channels, pipelines, and pump stations.

Methodology



PROJECT APPROACH
AND IMPLEMENTATION

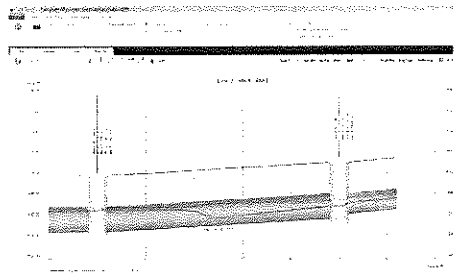
PACE's will provide a cohesive team of civil, mechanical, electrical, instrumentation and controls, and hydraulic and hydrologic engineers, supported by specialty subconsultants, who can perform evaluation, planning, design, construction, and startup services to meet the City's wet utility project objectives. PACE will work directly with the City's project manager to meet challenges head-on and ensure timely, high-quality projects.



STRATEGY 01

Involve City Engineering, Operations, and Maintenance Staff Early and Often.

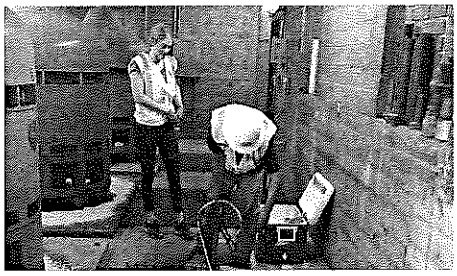
Many of our staff engineers are also licensed water and wastewater operators with significant experience in long-term operations and maintenance of water, wastewater, and stormwater facilities. Our team will meet with the City's Engineering and Operation and Maintenance staff early and often to understand and solidify project objectives. PACE's approach is to establish goals, review existing data, study record drawings, perform site visits, and identify potential issues. We always ask City staff to take us to the station they like "the best" and to the one they deem "the worst" to gain hands-on knowledge that helps us better meet the expectations of City staff.



STRATEGY 02

Validate Sizes of Proposed Improvements.

PACE has the in-house ability to perform modeling for water, wastewater, and stormwater. If needed, PACE can also add a specialty subconsultant to conduct flow monitoring. PACE will review the City's available information and data to verify any previously established pipe and equipment sizes or to provide sizing as required.



STRATEGY 03

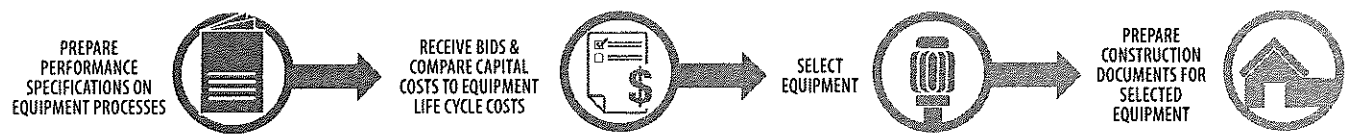
Select Equipment and Design for Reliability, Ease of Maintenance and Accessibility, and Safety.

PACE will prepare a Preliminary Design Report (PDR) for each project, define the design direction, and provide a road map to achieving the City's goals and objectives. The report will include analysis, concept plans, equipment selection, and controls strategies. Design strategies will focus on system reliability, simplicity for operators, easy and safe access by maintenance personnel with minimal traffic control, standard equipment to minimize spare parts, and reduced risks of harming pump and electrical equipment.

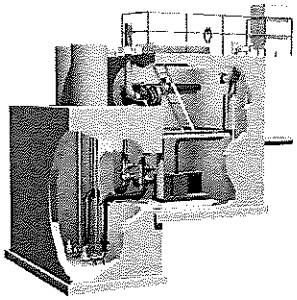
STRATEGY 04

Employ Performance-Based Specification Process for Major Equipment.

Although a popular approach for treatment projects, waiting to complete the design to allow competitive bidding on major equipment reduces potential suppliers' interest in offering value-added alternatives that may require substantial redesign to implement. Preparing Performance-Based Specifications in the equipment selection process allows clients to get competitive bids during the early design stage, evaluate capital and operational costs, and determine operational performance with "real numbers" before final design. Another major advantage is that the project team can proceed with design knowing the specific equipment that will be used in the project without losing the benefit of a competitive free market.



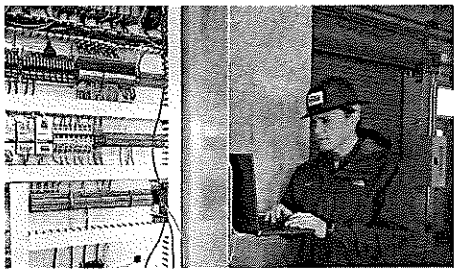
PACE



STRATEGY 05

Utilize 3D Models to Visualize the Design More Clearly and Identify Potential Conflicts.

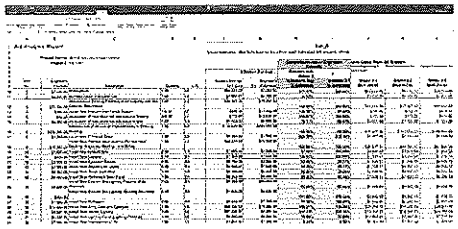
Each design will be developed as a three-dimensional model, allowing City staff and our design team to visualize the completed installation better and quickly identify potential construction and operational conflicts. From the model, PACE will generate traditional two-dimensional construction drawings for bid.



STRATEGY 06

Use In-House Instrumentation and Controls Specialists to Ensure Seamless Integration.

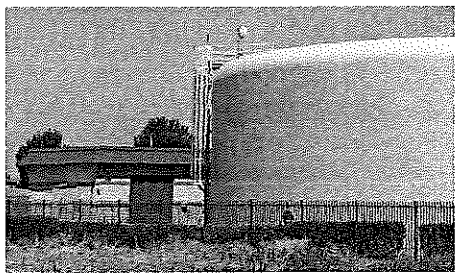
PACE can offer our extensive in-house background in the design, fabrication, programming, and commissioning of complex programmable logic controller (PLC), radio, and Supervisory Control and Data Acquisition (SCADA) systems through our direct, "real-world" operational experience of mechanical and controls facilities. The objective is to provide seamless integration of new and old systems following City standards.



STRATEGY 07

Develop Accurate Cost Estimates Based on Recent and Local Project Costs.

PACE will prepare an Engineer's Estimate of construction costs at various preliminary to final stages of the design. Such estimates will be developed by referencing recent regional applicable construction projects through PACE's local contractor experience, and from similar publicly bid projects, forming a more accurate and realistic basis for estimating construction costs.



STRATEGY 08

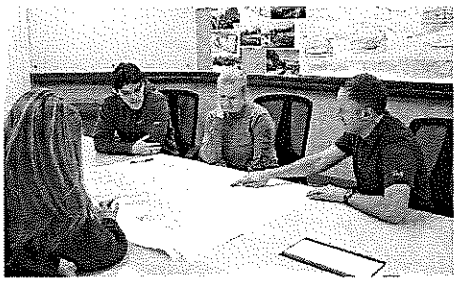
Improve Site Security with Practical and Implementable Measures.

Site security at pump stations is important for multiple reasons, such as to prevent vandalism, theft, and injuries to staff from intrusion events. The City can avoid excessive expenditures for security breaches and prevent damage to the facilities with basic security measures such as intrusion switches and alarms. The City can require security cameras for sites deemed to have greater risk and exposure to crime.

STRATEGY 9

Provide Startup, Training, and Operational Support.

PACE's staff is adept at supporting the City's project team, including the operations staff, and can offer startup planning and training manuals. Our engineers have the experience and skillsets to work side by side with the City's operations staff during the implementation, startup, and ultimate day-to-day operation of the upgraded facilities we design.



STRATEGY 10

Project Management and Implementation Plan.

The Project Manager coordinates all planning and design work with all subconsultants and staff. Regular meetings or teleconferences will be held with applicable Project Team members and consultants to coordinate engineering study and/or design issues. Meeting minutes will be kept and retained in project files.

Stakeholder Coordination

The Project Manager, Duncan Lee, will be the project's primary contact with the client on contracting matters. All correspondence to the client, whether incoming or outgoing, will be through the Project Manager. The Project Manager will keep the client informed of the project's progress on a monthly basis unless otherwise indicated in the work plan or contract work scope. The monthly progress reports will, at a minimum, include:

- Progress To Date
- List of Issues Which May Affect Project Schedule / Objectives
- Schedule Status
- Work Planned for Upcoming Month

In addition to the progress reports, an Action Items Matrix (AIM) will be prepared, updated monthly, and provided to the City. The AIM will identify actions to be accomplished, description of the activity, date for completion, and lead person/party responsible for ensuring the action is completed.

Subconsultant Management

Agreements with our subconsultants will be followed by detailed task orders delineating the budget, schedule, and scope. These task orders will be monitored for progress and compliance. We will track the resources and the costs against the planned targets to ensure the resources are efficiently employed. Our working history with subconsultants and the skill of our subconsultant team provide the basis for a well-managed project delivery.

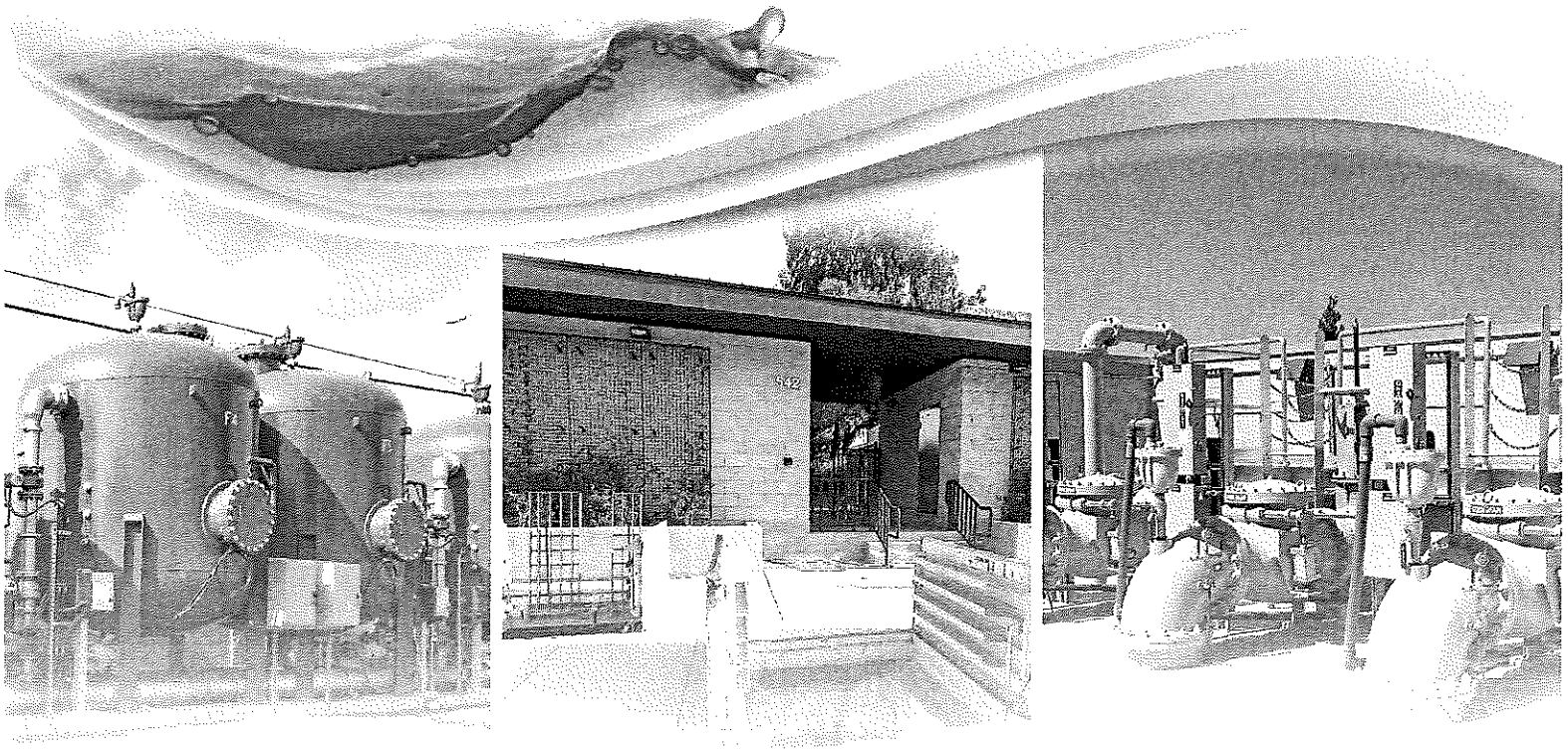
Budget Control

Engineering costs will be controlled by frequent monitoring and early identification of any scope/design change affecting project costs. Construction cost estimates will be developed based on the preliminary design effort and using current costs for construction materials and techniques based on our recent/current experience and costing indexes. The estimate will then be compared to the City's budget expectations, and if a gap is present, discussions will take place to determine if value engineering or other actions are necessary. Invoicing will follow City guidelines established at the start of each project. All invoices are reviewed by the Project Manager for accuracy and compliance prior to submittal to the City.

Project Scheduling

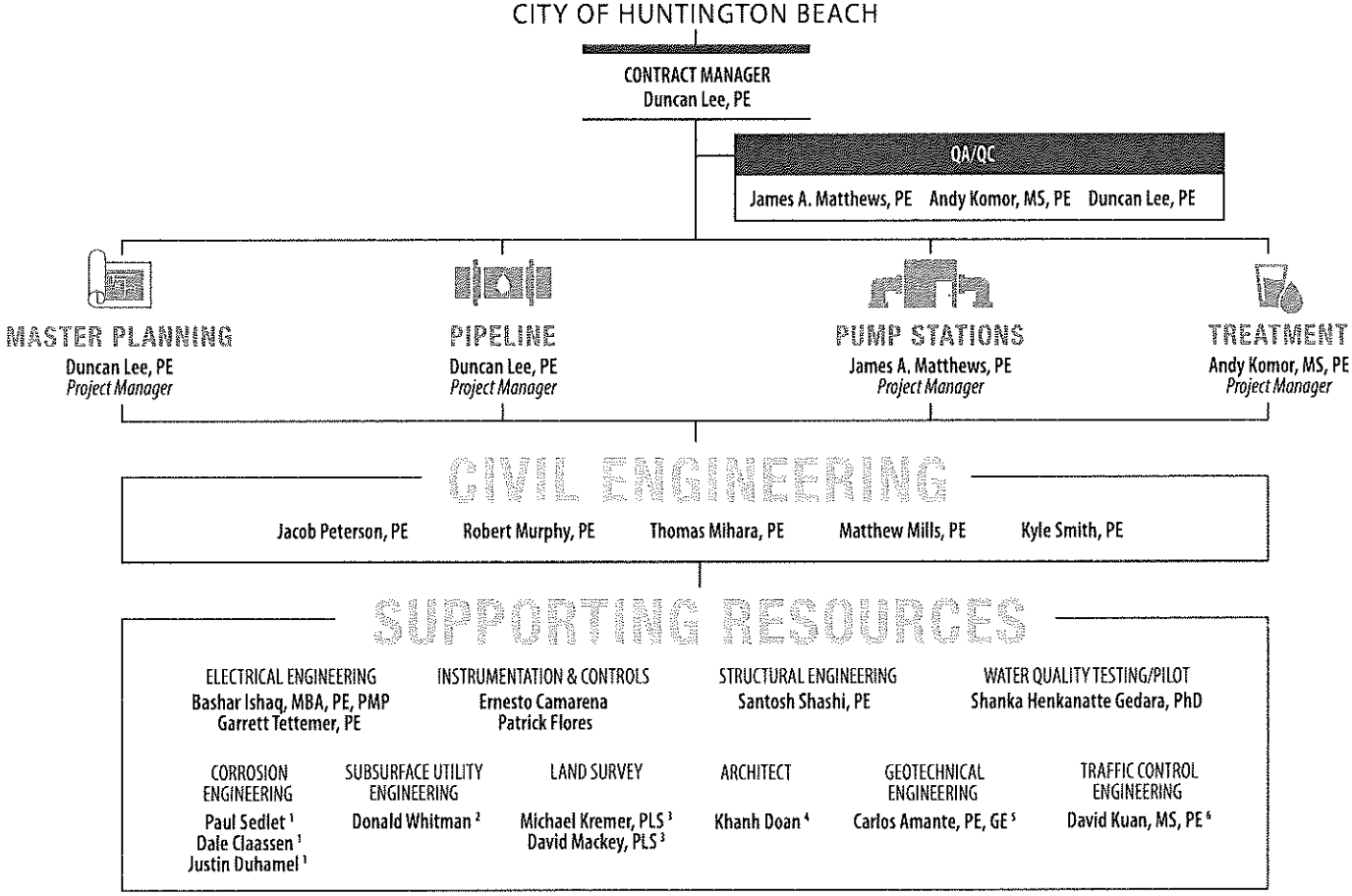
PACE will use the MS Project scheduling system to continuously monitor project costs, labor, and progress. We will develop a conceptual milestone schedule based upon anticipated needs of the project and major task items. With each monthly progress report, PACE will submit an updated 4-week horizon schedule reflecting planned work. PACE will promptly notify the City of any changes in anticipated project progress and will submit an updated project schedule to the City.

Staffing



ORGANIZATION **CHART**

subconsultants
1. Accurate Corrosion Control, Inc.
2. BESS Testlab
3. Huitt-Zollars
4. Square-1 Design Group
5. Terracon
6. Traffic Control Engineering, Inc.



KEY **PERSONNEL**

Name, Role, Experience, Education, and Professional Registration	Scope of Services Expertise Areas	Related Project Experience
PACE		
Duncan Lee, PE *Project Manager* 36+ years BS Civil Engineering, California State University, Long Beach CA PE: 44825	• Municipal water, sewer, and storm drain improvements • Water and wastewater infrastructure • Construction management • Rate studies • Operations and maintenance • Project management • Construction cost estimating	• City of Huntington Beach Wells 3, 6, and 8 Characterization – Huntington Beach, CA • City of Huntington Beach Well 9 GAC Treatment System – Huntington Beach, CA • City of Huntington Beach Replacement of Well 1 with Well 1A – Huntington Beach, CA • Peck Reservoir Pump Station Improvements – Huntington Beach, CA • Beach Boulevard Sewer Improvement – Huntington Beach, CA • OCWD PFAS Well Treatment – Orange County, CA • City of Riverside Garner B Well Treatment Condition Assessment – Riverside, CA • LA County Waterworks District No. 29 Encinal Canyon Water System Improvements – Malibu, CA • Manhattan Beach Sewer Lift Stations and Sewer Line Upgrade – Manhattan Beach, CA • City of Anaheim Center Greens Sanitary Sewer Improvements – Anaheim, CA • City of Redondo Beach Legado Development Sewer Upgrades – Redondo Beach, CA • City of Alhambra Sewer Lift Station and Pipeline Rehabilitation – Alhambra, CA • City of Newport Beach Balboa Island Storm Drain Pump Station and Pipeline – Newport Beach, CA • City of Long Beach Storm Drains and Pump Stations Flood Resiliency Project – Long Beach, CA • City of Riverside Phoenix Storm Drain Dry Weather Flow Diversion – Riverside CA

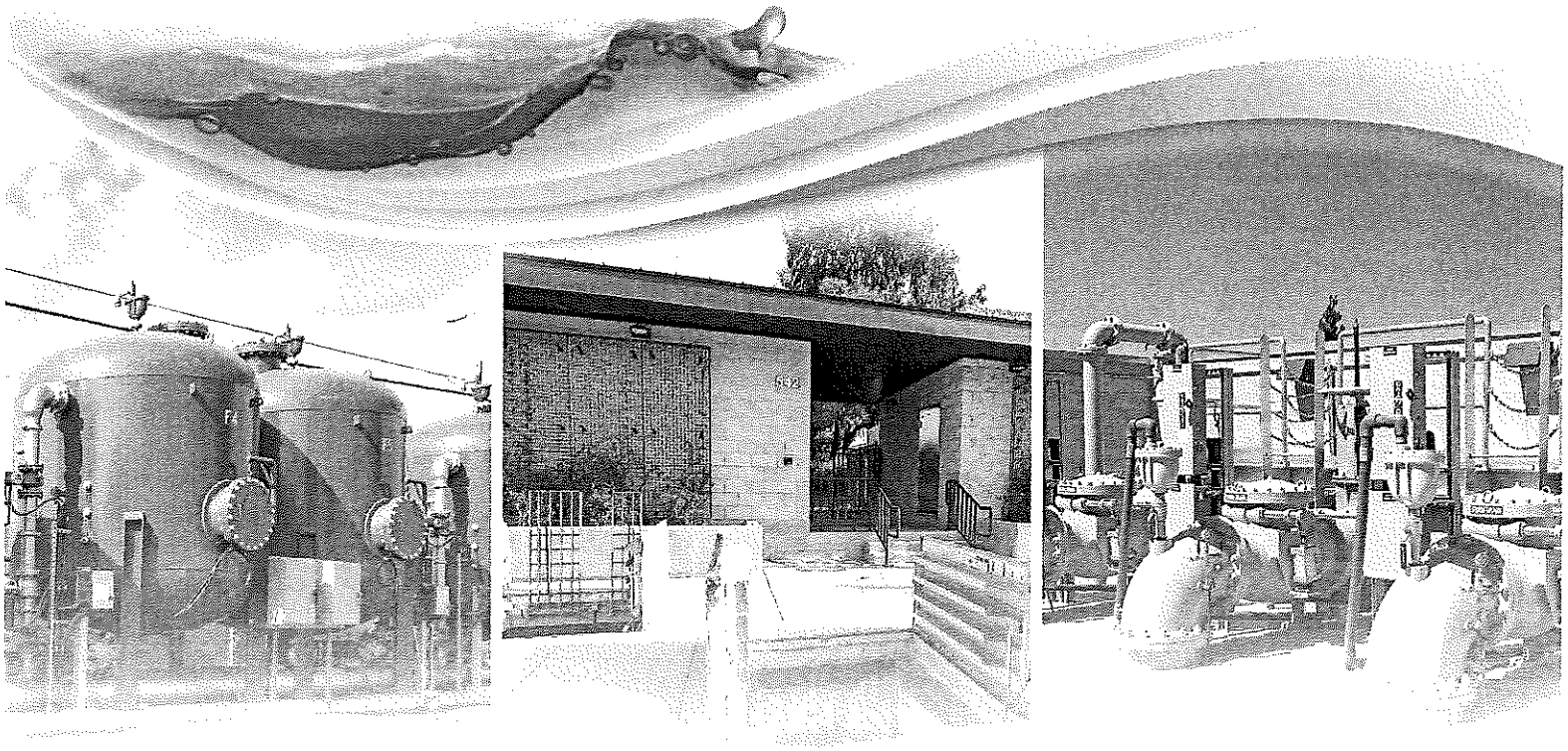
Name, Role, Experience, Education, and Professional Registration	Scope of Services Expertise Areas	Related Project Experience
James Matthews, PE *Sr. Consulting Engineer / QA/QC* 33 Years BS Civil Engineering, San Diego State University CA PE: 57446 Additional States: AZ, CO, FL, HI, ID (inactive), NM (inactive), TX, UT, VA AZ WWT Operator: WW023812 (inactive)	• Groundwater Treatment / Wellhead Systems • Water conveyance • Water storage facilities • Sewer collection • Pump stations / mechanical • Pipeline / hydraulics • Water storage facilities • QA/QC	• City of Huntington Beach Well 9 Wellhead Treatment – Huntington Beach, CA • City of San Clemente Main Pump Station Rehabilitation – San Clemente, CA • City of Manhattan Beach Larsson Street and 2nd Street Booster Pump Station Upgrade – Manhattan Beach, CA • City of Manhattan Beach Sewer Pump Station – City of Manhattan Beach, CA • Rancho Mission Viejo Mutual Water Company On-Call Engineering Services – South Orange County, CA • Balboa Island Storm Drain Pump Stations and Pipeline – Newport Beach, CA • Liberty Utilities Monument Well – Goodyear, AZ • Forest Lawn Domestic Water Booster Pump Stations and Instrumentation & Controls Systems – Covina Hills, CA • Palmdale Water District Pure Water Post Treatment System – Palmdale, CA • California City Water System Instrumentation & Controls Systems Improvements – California City, CA
Andy Komor, MS, PE *Sr. Technical Advisor* 24 Years MS Civil and Environmental Engineering, Arizona State University BS Civil Engineering, University of Minnesota CA PE: 64928 AZ PE: 46719 LA PE: PE.0034854 (inactive) OR PE: 95149PE (inactive)	• Targeted pollutant stormwater treatment systems • Advanced water/wastewater treatment and water reuse • Pump stations/mechanical • Pipeline systems/hydraulics • Water storage facilities • TMDL compliance/TMDL modeling • Biological nutrient removal/ water quality treatment systems • Wetland design	• Huntington Beach Well 9 Wellhead Treatment System – Huntington Beach, CA • Huntington Beach Wells 3, 6, and 8 Characterization and Pilot Studies – Huntington Beach, CA • Huntington Beach Central Park Parking Lot Drainage Improvements and LID System - Huntington Beach, CA • Peck Reservoir Pump Station Improvements – Huntington Beach, CA • City of Redondo Beach Sewer Pump Stations Upgrades - Redondo Beach, CA • Los Angeles County Public Works Compton Creek Urban Runoff Capture and Reuse at Earvin Magic Johnson Park - Los Angeles, CA • Santa Monica Services Building Rainwater and Well Treatment Project - Santa Monica, CA • Santa Monica Advanced Stormwater and Wastewater Recycling Facility - Santa Monica • Eisenhower Medical Center Stormwater Pump Station - Rancho Mirage, CA • Elk Grove Stormwater Quality Pump Station - Elk Grove, CA • City of Riverside Garner B Well PFOA/PFOS Treatment Pilot Testing – Riverside, CA • City of Seal Beach Lampson Water Well Hydrogen Sulfide Removal – Seal Beach, CA • City of Vernon Source Water Quality Assessment and Treatment Design – Vernon, CA • Balboa Island Storm Drain Pump Station and Pipeline – Newport Beach, CA • SoFi Stadium Advanced Stormwater Management Pump Station and Pipeline – Inglewood, CA
Jacob Peterson, PE *Sr. Project Engineer* 21 Years BS Civil Engineering, California Polytechnic University, San Luis Obispo CA PE: 79146 Certified Water Efficiency Professional: 128195 (inactive)	• Pump stations / mechanical • Wellhead treatment and equipping • Water storage reservoirs/ tanks • Water and wastewater treatment • Reclaimed water systems • Water/sewer master planning • Urban water management plans	• OCWD PFAS Well Treatment – Orange County, CA • City of Riverside Garner B Well Rehab PFOA/PFOS Future Equipping – Riverside, CA • City of Seal Beach Lampson Well Treatment and Sewer Siphon – Seal Beach, CA • City of Vernon Source Water Quality Assessment and Treatment Design – Vernon, CA • County of Riverside Phoenix Storm Drain Dry Weather Flow Diversion – Riverside, CA • City of Anaheim Pressure Regulation Station Rehabilitation – Anaheim, CA • Wellhead Iron and Manganese Treatment – South Orange County, CA • Pico Zone A Recycled Water Pump Station C-1494D and Talega Lift Station Modifications C-1511K – San Clemente, CA
Robert Murphy, PE *Sr. Project Engineer* 18 Years BS Civil Engineering, California State University, Long Beach CA PE: 83207	• Pump stations / mechanical • Wellhead treatment and equipping • Water storage reservoirs/tanks • Water and wastewater treatment • Reclaimed water systems • Water/sewer master planning	• Well 9 Wellhead Treatment System and Sewer Line Improvement – Huntington Beach, CA • Peck Reservoir Pump Station Improvements – Huntington Beach, CA • LA County Waterworks District No. 29, Encinal Canyon Water Infrastructure Improvements – Malibu, CA • City of San Clemente Main Pump Station Upgrade - San Clemente, CA • Poinsettia, Voorhees and Pacific Sewer Lift Stations Upgrades – City of Manhattan Beach, CA • City of Laguna Beach Anita Street Sewer Lift Station and Beach Access Stairs Project – Laguna Beach, CA • Balboa Island Storm Drain Pump Station and Pipeline – Newport Beach, CA

Name, Role, Experience, Education, and Professional Registration	Scope of Services Expertise Areas	Related Project Experience
Bashar Ishaq, MBA, PE, PMP *Sr. Electrical Engineer* 11 Years BS Electrical Engineering, University West MS Business Administration, Hult International Bus. School CA PE: 24590 AZ PE: 82968 ICC Commercial Electrical Inspector: 9916237 PMP: 3010684	• Power distribution design • Project planning and final commissioning of project • Oversight of electrical team • Electrical design for direct on-line low voltage motors	• City of Seal Beach Lampson Wellhead Treatment and Sewer Siphon – Seal Beach, CA • Voorhees and Poinsettia, Sewer Collection and Sewer Lift Station Upgrade – Manhattan Beach, CA • Phase III Expansion of Lathrop Consolidated Treatment Plant – Lathrop, CA • City of Patterson Wastewater Treatment Plant Expansion – Patterson, CA • West County Wastewater Water Quality and Resource Recovery Plant (WQRRP) Arc Flash, Short Circuit, and Coordination Study – Richmond, CA • Vallejo Waste Treatment Plant System Upgrades Project for the Arc Flash and Coordination Study – Vallejo, CA • Hamilton Cove Sewer Lift Station Renovation – Avalon, CA
Ernesto Camarena *Sr. Instrumentation and Controls Specialist* 32 Years AA Applied Science, Computer Aided Drafting, ITT Technical Institute	• Controls and automation design for wells/pump stations • Storage reservoirs • Water treatment • Water treatment process and instrumentation design • Process flow schematics • Conceptual design exhibits • QA / QC	• City of Vernon Source Water Quality Assessment and Treatment Design – Vernon, CA • Huntington Beach Well 9 Wellhead Treatment System – Huntington Beach, CA • City of Manhattan Beach Sewer Collection and Sewer Lift Stations Upgrade – Manhattan Beach, CA • City of Laguna Anita Street Sewer Lift Station – Laguna Beach, CA • Balboa Island Storm Drain Pump Station and Pipeline – Newport Beach, CA • Los Angeles Stadium of Champions and Entertainment District Lake and Advanced Water Polishing Treatment – Inglewood, CA • Peck Reservoir Pump Station Improvements – Huntington Beach, CA • Vernon Water Well 22 Water Line Improvements and Treatment System – Vernon, CA • San Clemente Main Pump Station Rehabilitation – San Clemente, CA
Shanka Henkanatte Gedara, PhD, EIT *Pilot Testing/Water Quality Specialist* 11 Years PhD Civil Engineering, New Mexico State University MS Environmental Engineering, New Mexico State University	• Energy and nutrient recovery • Pilot scale demonstrations • Membrane-based potable water recovery and reverse osmosis (RO) concentrate management • Algae-based wastewater treatment systems • Water quality analyzation	• City of Riverside Garner B Treatment Plant Condition Assessment and PFOS/PFOA Full Scale Pilot System – Riverside, CA • Huntington Beach Well 9 Sulfide Removal Treatment System – Huntington Beach, CA • Hydrogen Sulfide Removal at the Lampson Water Well – Seal Beach, CA • Golden State Water Imperial Plant PFAS Treatment Facility – Imperial, CA • National City Well Iron and Manganese Treatment System – National City, CA • Golden State Water Company Del Monte Well 4 Arsenic Removal – San Dimas, CA • Santa Monica Sustainable Water Infrastructure Project (SWIP) Advanced Water Treatment Facility – Santa Monica, CA • Novel Photo-biological Technology for Reverse Osmosis Brine Treatment – Alamogordo, NM
Santosh Shahi, PhD, SE, PE *Sr. Structural Engineer* 26 Years PhD Structural Engineering, University of California, Irvine Professional Structural Engineer / CA S5149 Professional Civil Engineer / CA C61811	• Seismic Resistant Structural Design • Equipment Anchorage & Bracing Design • Seismic Retrofits • Structural Plan Check for Building Code Compliance	• City of Vernon Water Well 22 Treatment System – Vernon, CA • Crescenta Valley Water District Well No. 2 and Related Facilities – La Crescenta, CA • Peck Reservoir Pump Station Improvements – Huntington Beach, CA • Central Lathrop Specific Plan (CLSP) Potable Water Storage Tank and Booster Pump Station – Lathrop, CA

Name, Role, Experience, Education, and Professional Registration	Scope of Services Expertise Areas	Related Project Experience
ACC		
Paul Sedlet *President* 35 Years BS Mechanical Engineering, University of Arizona AMPP Corrosion Specialist: 4110	• Project management • Cathodic protection design, installation • Monitoring for pipelines • Strong experience in CP troubleshooting, interference testing, and all ECDA type testing	• Palo Verde Nuclear Generating Station – Maricopa County, AZ • Orange County Water District – Fountain Valley, CA • Southwest Gas – Victorville, CA • Kinder Morgan Energy Partners – Houston, TX
Dale Claassen *Engineer* 37 Years BS Materials Engineering, California Polytechnic State University, San Luis Obispo NV PE: 21354	• Design, installation, and testing cathodic protection systems for pipelines, water tanks, and treatment plants	• Southern Nevada Water Authority – Clark County, NV • Las Vegas Valley Water District – Las Vegas, NV
Justin Duhamel *Engineer* 15 Years BS Mechanical Engineering, Grand Canyon University	• CIS, DCVG, ACVG, depth of cover and soil resistivity surveys • Annual and routine cathodic protection testing and monitoring on distribution and transmission natural gas pipelines • Maintain and test ICCP and Galvanic CP systems.	• Arizona Public Service – Phoenix, AZ • Salt River Project – Tempe, AZ • Palo Verde Nuclear Generating Station – Maricopa County, AZ
BESS Testlab		
Donald Whitman *Project Manager* 15 Years BS Mechanical Engineering, Grand Canyon University	• Utility locating • Pothole excavation (hydro and air) • CCTV camera inspection • Traffic control • Project management	• LA County Department of Public Works On Call Potholing Service Contract – Los Angeles, CA • Coachella Valley District Irrigation Lateral 119.64-7.5 Improvement Project – Coachella Valley, CA • LA country Department of Public Works Project #PW15042 – Los Angeles, CA • San Bernardino Country Department of Public Works #T21-001 – San Bernardino, CA
Hunt-Zollars		
Michael Kremer, PLS *Survey Manager* 49 Years Rancho Santiago College CA PLS: 8425	• Design and topographic surveys • Construction surveys	• On-Call Survey and Mapping – Simi Valley, CA • The Village Lot 8, 9, And 10 Staking – Oxnard, CA • On-Call Surveying Services – Santa Ana, CA • Canyon Booster Pump Expansion – Santa Paula, CA • Hollywood Reservoir Water Quality Improvement Project – Los Angeles, CA • Wishing Tree Park – Torrance, CA • Omnitrans On-Call Architectural and Engineering Services (MNT20-02) – San Bernardino, CA

Name, Role, Experience, Education, and Professional Registration	Scope of Services Expertise Areas	Related Project Experience
David Mackey, PLS *Land Surveyor* 25 Years BS Civil Engineering, California State Polytechnic University, Pomona CA PLS: 8912	• Design and topographic surveys	• Wishing Tree Neighborhood Park – Los Angeles County, CA • On-Call Surveying Services, Planning Area 2 – Rancho Mission Viejo, CA • Topographic Surveys – Long Beach, CA • On-Call Surveying Services – Santa Ana, CA • On-Call Architectural and Engineering Services (MNT20-02) – San Bernardino, CA • Pacific Electric Bike Trail – Upland, CA
Square-1		
Khanh Doan *Project Architect* 28 years BS Architecture, California State Polytechnic University, Pomona	• Building layout and design concepts • Code compliance • Building aesthetics • Colors and materials specifications • Sustainability and high-performance architecture. • Cost-effective approach	• Canyon Springs High School Aquatics Center – Moreno Valley, CA • Newport Coast Community Center – Newport Coast, CA
Terracon		
Carlos V. Amante, PE, GE *Sr. Project Manager* 30+ years MS Geotechnical Engineering, University of British Columbia MS Earthquake Engineering, Kanazawa University BS Civil Engineering, University of the Philippines, Metro Manila CA GE: 2724 CA PE: 57831	• Seismic ground motion and geologic hazard evaluations • Geotechnical explorations and engineering analyses • Shallow and deep foundation engineering design • Earthworks/ subgrade preparation • Pavement design • Water and wastewater treatment • Stormwater management • Groundwater replenishment • Sewer and drainage systems	• City of Vernon Well No. 22 Structures and Site Improvements – Vernon, CA • City of Laguna Beach Bluebird SOCWA Lift Station Odor Control Improvements – Laguna Beach, CA • Orange County Water District (OCWD) Groundwater Replenishment System Final Expansion Project – Fountain Valley and Huntington Beach, CA • Elsinore Valley Municipal Water District (EVMWD) Diamond Regional Sewer Lift Station – Lake Elsinore, CA • City of West Covina Cameron Avenue Sewer Main Rehabilitation Project – West Covina, CA
Traffic Control Engineering		
David Kuan, MS, PE *Traffic Control Design Lead* 40 years BS Civil Engineering, University of California, Irvine MS Transportation Engineering, University of California, Berkeley CA PE: 57387 CA TE: 1429	• Traffic control design/ planning	• Los Angeles County Waterworks District No. 29, Malibu Waterline, Upper Encinal Tank, and Lower Encinal Pump Station Improvements Project – Malibu, CA • LBWD Emergency Water Line Repairs – Long Beach, CA • LBWD Water Meter Upgrade2650 E. Broadway - Long Beach, CA • City of Manhattan Beach Larsson Street Booster Pump Station and 2nd Street Pump Station Upgrades – Redondo Beach, CA • Katella Ave. Widening Project at State College Blvd. in Anaheim, Sewer Improvements for Crescent Ave., Loara St. and North St. – Anaheim, CA • Newhope-Placentia Trunk Sewer Replacement in State College Blvd. – Fullerton and Anaheim, CA • JOF "C" Unit 4B Trunk Sewer Rehab. For LACSD – Long Beach, CA

Qualifications



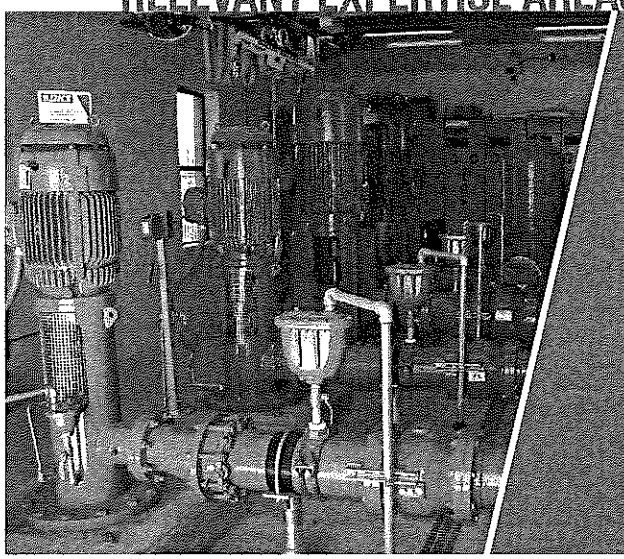
ABOUT **PACE**

PACE is a civil engineering firm located in Fountain Valley, only 6 miles from the City's offices. PACE specializes in advanced water engineering services, drawing from an extensive construction and operations background that supports practical and sound engineering solutions that are constructible and easy to operate. All engineers proposed herein have been trained in the field with a specific focus on materials of construction, controls and automation, and accessibility. ***The City benefits from the direct project involvement of PACE's senior-level staff, who have experience working with the City and on similar projects***. PACE has been the principal design engineer for numerous infrastructure facilities throughout Southern California for districts and municipalities.

Incorporated Year **1987** / State of **California**

100 Employees (approx.) Firm

RELEVANT EXPERTISE AREAS PROVIDED FOR THE LAST 30+ YEARS



- Water Mains
- Pipeline Alignment and Facility Siting Studies
- Pressure Regulating Stations
- Pump Stations
- Water Storage and Distribution
- Well Head Equipping and Treatment
- Water Quality / Water Treatment
- Specialty Hydraulic Structures
- Recycled Water Distribution
- Wastewater Treatment / Recycling
- Water Master Planning
- Water Supply Assessments & Investigations
- Instrumentation & Controls
- Urban Drainage Systems / Facilities

Record of Success with Local Cities and Agencies

The PACE team has worked on a wide range of CIP water and sewer infrastructure and treatment projects throughout Southern California both recently and currently in an on-call and individual project capacity, as listed below. This experience gives us a great understanding of unique environmental conditions, constraints, and requirements, leading to the application of the best practices and most efficient project execution on the City's projects.

- City of Adelanto
- City of Alhambra
- City of Anaheim
- City of Avalon
- City of Burbank
- City of Hesperia
- City of Huntington Beach
- City of Laguna Beach
- City of Lancaster
- City of Long Beach
- City of Lynwood
- City of Manhattan Beach
- City of Newport Beach
- City of Pacific Grove
- City of Rancho Cucamonga
- City of Redondo Beach
- City of San Bernardino
- City of San Clemente
- City of Santa Clarita
- City of Santa Monica
- City of Seal Beach
- City of Vernon
- City of Yucaipa
- Irvine Ranch Water District
- Las Virgenes Municipal Water District
- El Toro Water District
- Los Angeles County Public Works
- Los Angeles County Sanitation Districts
- Los Angeles County Waterworks District No. 29
- Orange County Public Works
- Orange County Sanitation District
- Riverside County Flood Control and Water Conservation District
- San Bernardino Municipal Water Department
- Santa Margarita Water District
- Sweetwater Authority
- Ventura County Watershed Protection District

PACE Unique Qualifications

01

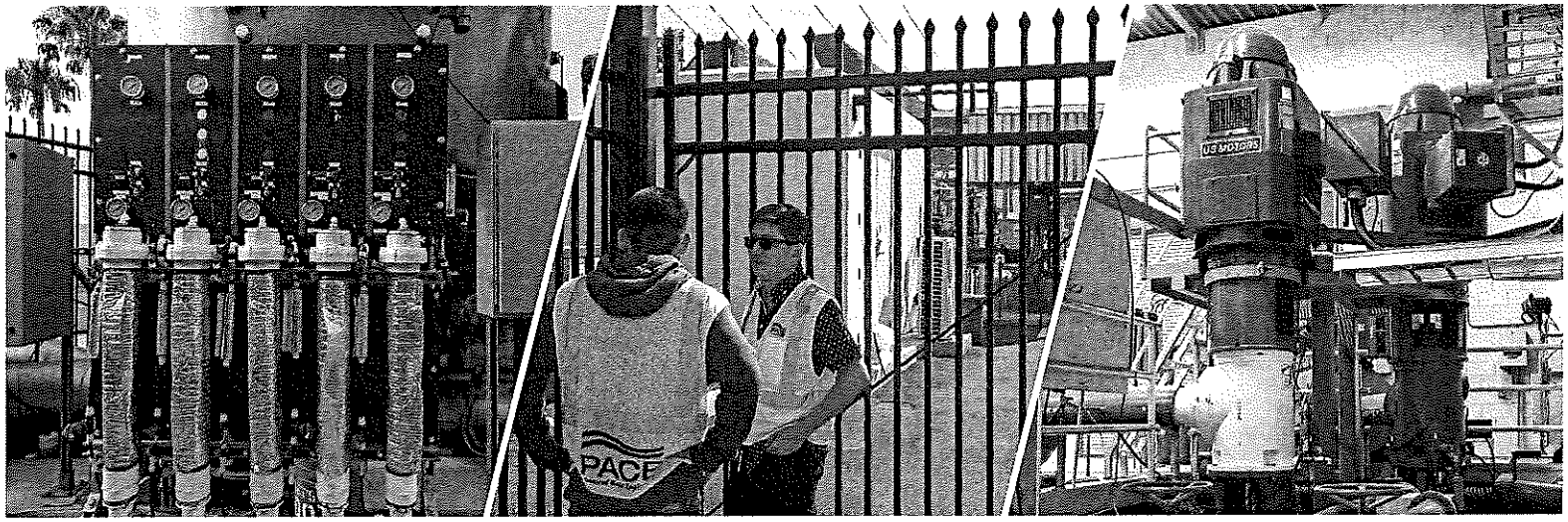
Demonstrated Success with Proven Performance on Numerous Completed Municipal Projects Provides Confidence to City Staff: More than 15 projects performed in the past 15 years including accurate cost estimates and efficient and robust configurations, such as Peck Reservoir and Well 9 Water Quality Improvements.

02

Senior Level Staff Directly Involved in Communication, Design Solutions, and Start-Up Services: Duncan Lee, Andy Komor and other key senior PACE staff involved in City projects are directly connected to the design and City communication as Project Managers on critical project efforts.

03

Wear "the City's Hat" With Key Team Member that is Former Senior Engineer with City: Duncan Lee, PE, the team's Contract Manager, will impart his in-depth understanding of the City's facilities and challenges to seamlessly integrate the PACE team to serve as an extension of City staff.



04

Constructability and Operability Background Ensures Buildable and Low-Cost Reliable Operation: PACE has an extensive background in design-bid-build, design-build, CMAR, and operations that provide a unique insight into project designs to improve constructability and minimize construction cost.

05

Creative Solutions for the rehabilitation of water mains, sewer collection, pumping facilities, pressure regulating facilities, storage, and recycled water systems with access challenges.

06

Advanced Complex Hydraulics analysis and design capabilities and specialized techniques and applications to analyze existing water, wastewater, and stormwater systems.

07

In-House Laboratory to Identify Crucial Next Steps on Important Water Quality Projects: Worked closely with City staff performing on-site testing and piloting providing essential data to validate proposed solutions.

08

Accurate Construction Cost Estimating: PACE has a positive track record working closely with City's engineering and operations staff to carefully select improvements that would be simple to construct and meet budget constraints while satisfying operations requirements. PACE cost estimates are frequently within 5% of the average of the low two bids.

SUB**CONSULTANTS**

Corrosion Engineering

Accurate Corrosion Control, Inc. (ACCI) is a 1,200-person employee owned corporation specializing in corrosion control and cathodic protection. Established in 1984 in Phoenix, Arizona, the Company maintains the same high standards it was founded on 38 years ago, providing quality corrosion control engineering, monitoring, installation and materials, on time and within budget.

Subsurface Utility Engineering

BESS is a certified MBE & UNION Underground Utility Service Company established in 1967 as a privately owned C-Corporation. BESS provides a complete range of underground utility designation and utility mapping services to both private and public companies throughout California, Nevada, and Arizona. They are committed to providing quality service that exceeds client's needs and expectations using the most advanced technologies available.

Land Surveying

Huitt-Zollars, Inc., a corporation, is a full-service engineering and surveying firm with 20 offices throughout the U.S. Founded in October 1975, Huitt-Zollars has a staff of 482 professionals, technical and support personnel with diversified skills, capable of handling highly complex multi-discipline assignments. Huitt-Zollars is consistently ranked as a top design firm by Engineering News-Record and Architectural Record.

Architecture and Landscape Architecture

Founded in 2005, **SQUARE-1 Design Group** (formerly, KXD studio) is a full-service architecture firm focused on innovative excellence and delivering outstanding service to clients of all industries. Drawing on our creative visions and over 50 years of combined experience, our firm offers innovative solutions to complex design problems. The firm is centrally located within Southern California in Huntington Beach. Work is generated in collaboration with the client in the field, from design sessions to construction administration.

Geotechnical Engineering

Since their founding in 1965, **Terracon** has grown into a thriving, employee-owned, multidiscipline engineering consulting firm delivering facilities, environmental, geotechnical, and materials services. Their more than 7,000 employees include engineers, scientists, architects, facilities experts, and field professionals focused on solving engineering and technical challenges from more than 180 locations nationwide.

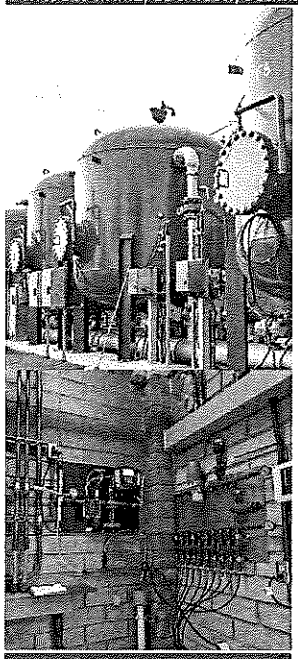
Traffic Control

Organized in 1989, **Traffic Control Engineering, Inc.** specializes in traffic and transportation engineering including preparing traffic control plans and detour plans for construction work in or about public streets, and conducting traffic impact studies and alternative alignment evaluation for constructing underground utility lines. Traffic Control Engineering, Inc. has prepared traffic control plans for Caltrans as well as various cities, counties, water districts, and private contractors throughout Southern California over the course of the past 36 years.

RELEVANT **PROJECT REFERENCES**

WATER

PROJECT NAME, LOCATION, SUMMARY OF SERVICES PROVIDED & RELEVANT FEATURES	DATES, AGENCY INFO, PROJECT MANAGER & KEY PERSONNEL



City of Huntington Beach Well 9 Wellhead Treatment *Huntington Beach, CA*

PACE provided multiple phases of project development, laboratory services, piloting, concept development, water treatment facility engineering, planning division graphics, and startup and operations support services on this innovative and unique treatment system for the City of Huntington Beach. Sophisticated desktop, bench-scale, pilot-scale, and full-scale demonstrations were provided for confirmation of the proposed biological treatment of reduced (non-oxidized) drinking water quality constituents in the potable supply at Well 9 and other City wells.

Design of the complete 3,000 gpm (4.3 MGD) treatment facility included six 10-foot diameter biological activated carbon (BAC) filtration vessels, with complete structural, mechanical, electrical, and controls integration for reliable and simple operation. A custom filtration control panel was tied into the City's centralized Supervisory Control and Data Acquisition (SCADA) system for fully automated controls Since monthly backwashing was needed for this treatment system, PACE designed a 200-foot long 8-inch PVC sewer pipeline located under Warner Avenue to to divert backwash wastewater into the new sewer line.

Relevant Features:

- 4.3 MGD (3,000 gpm) groundwater treatment
- GAC filtration system
- Water quality analysis
- Treatment system piloting
- Instrumentation and controls

January 2013 – 2023 (post construction monitoring)

City of Huntington Beach
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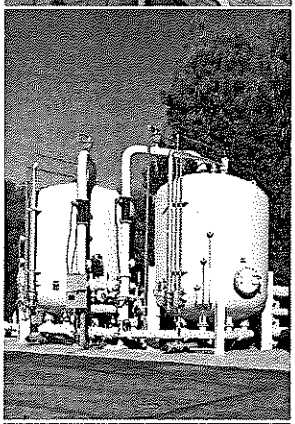
Andy Komor, MS, PE
Project Manager

James Matthews. PE
Sr. Consulting Engineer

Duncan Lee, PE (as client) – Principal Manager for City of Huntington Beach

Robert Murphy, PE
Sr. Project Engineer / Field Engineer

Ernesto Camarena
Sr. Instrumentation and Controls Specialist



OCWD PFAS Well Treatment *Orange County, CA*

OCWD hired PACE to provide well PFAS treatment design for six water well sites located in Stanton, Garden Grove, and Placentia for Golden State Water Company. The pressure vessel treatment system will treat flows between 400 and 3,500 gallons per minute. Based on the design well capacity at each site, the treatment system selected by OCWD will be sized and designed to meet the pilot study recommended treatment objectives. Alternative concept plans will be prepared and provided to stakeholders to review.

Relevant Features:

- 400 to 3,500 gpm PFAS well treatment systems
- Evaluation of alternative concepts
- Pre-treatment filtration to improve performance
- Coordination with the Water District and multiple cities

July 2024 – Ongoing

Orange County Water District
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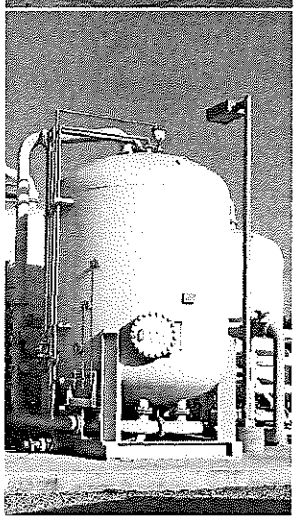
Jacob Peterson, PE
Sr. Project Engineer

Santosh Shahi, PhD, SE, PE
Sr. Structural Engineer



City of Riverside Garner B Well Treatment Condition Assessment and PFOA/PFOS Treatment Pilot Testing *Riverside, CA*

In response to new Notification Levels for PFOA and PFOS, the City of Riverside initiated a full-scale pilot project to treat water pumped from the Garner B well. PACE conducted a complete condition assessment to determine the feasibility of rehabilitating an out-of-service GAC treatment system to treat PFOA/PFOS. Upon determining that the rehabilitation was feasible, PACE prepared improvement plans and specifications to reactivate the treatment system, designed modifications to accommodate either GAC or ion exchange media, and specified components to be replaced, including the flow meter and tank lining.

Relevant Features:

- Condition assessment and recommendations for reactivating an existing well treatment system
- Modifications to accommodate either GAC or ion exchange media for PFOA/PFOS removal
- Improvement plans and specifications for replacement components

September 2020 – June 2022

City of Riverside
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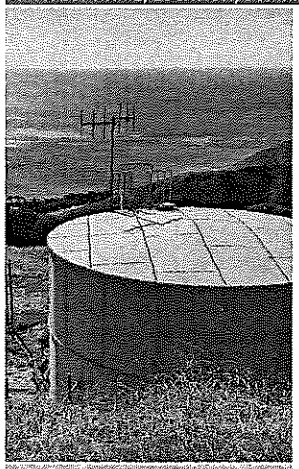
Jacob Peterson, PE
Sr. Project Engineer

Shanka Henkanatte Gedara, PhD, EIT Pilot Testing and Water Quality Analysis Engineer

PROJECT NAME, LOCATION, SUMMARY OF SERVICES PROVIDED & RELEVANT FEATURES	DATES AGENCY INFO, PROJECT MANAGER & KEY PERSONNEL



Los Angeles County Waterworks District No. 29 Malibu Upper Encinal Tank, Lower Encinal Pump Station, and Water Line Improvements
Los Angeles County, CA
The Los Angeles County Waterworks District No. 29, which provides water supply to the City of Malibu, selected PACE to perform engineering design services for the Upper and Lower Encinal Canyon zones. Approximately 5,600 linear feet of water line improvements addressed system deficiencies in both zones. PACE also designed a new Upper Encinal Tank to increase storage capacity and prepared design upgrades to the Lower Encinal Pump Station equipment and electrical systems.

Relevant Features:
- Potable pipeline replacement
- Water tank replacement
- Pump station rehabilitation
- Generator installation
- Permitting assistance

June 2019 – Ongoing

Los Angeles County Public Works
Katrine Usi *Project Manager*
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Duncan Lee, PE Project Manager
James Matthews, PE
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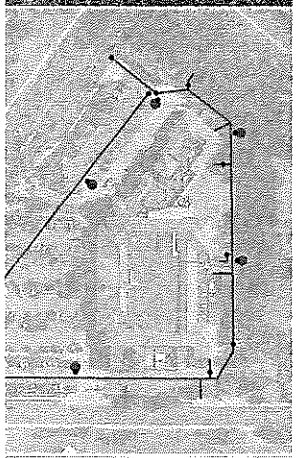
Sr. Project Engineer
Santosh Shahi, PhD, SE, PE
Sr. Structural Engineer



City of San Clemente Gateway Village Plaza DIP Replacement *San Clemente, CA*
PACE designed the replacement of approximately 2,000 linear feet of the 8-inch diameter DIP in the Gateway Village Plaza parking lot and appurtenances using PVC pipe. Three sections of the pipe network will be rehabilitated through slip-lining to protect private on-site elements such as planter boxes, retaining walls, and decorative concrete pavement. PACE provided potential pipe alignments and suggestions to extend the useful life of new pipes, met all project needs, and overcame site constraints.

Relevant Features:
- Approximately 2,000 linear feet of potable transmission main replacement
- Permitting assistance
- Cathodic protection
- Utility investigation
- Asbestos cement pipe removal
- Developed a sequence of work to maintain services during construction

October 2022 – Ongoing

City of San Clemente
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ryans@san-clemente.org

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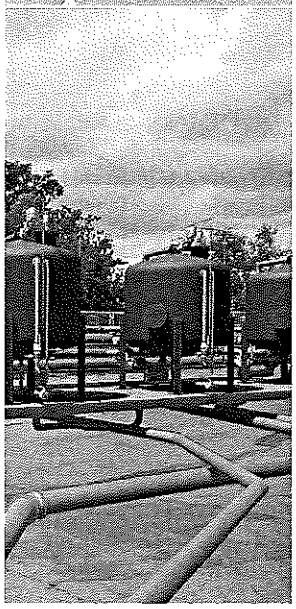
Robert Murphy, PE QA/QC



City of Seal Beach Lampson Wellhead Treatment and Sewer Siphon *Seal Beach, CA*
The Lampson water well produces up to 4,000 gpm. Historically high hydrogen sulfide (H2S) concentration levels have caused the well to be underutilized. PACE was contracted by the City to evaluate treatment alternatives and employed on-site pilot testing to evaluate the viability of a biological treatment process under various operating conditions. The final system design effectively removes H2S odors and reduces chlorine chemical dosage using four 12-foot diameter steel pressure vessels, and also allows for future incorporation of PFAS treatment. PACE also designed the electrical and controls system for the new equipment, including lighting. Additionally, since the filter vessels need periodic backwashing and the wastewater can be discharged to the existing sewer system, PACE designed an inverted sewer siphon to increase flow capacity through an existing choke point. Approximately 100 feet of 6-inch pipeline was designed and located along an adjacent roadway. PACE also assisted the City in obtaining the DDW permit.

Relevant Features:
- 4,000 gpm biological treatment system
- Treatment pilot study to determine the feasibility of a biological treatment process using GAC
- Four 12-foot steel pressure vessels
- Invert siphon for backwash discharge to the existing sewer system

January 2020 – Ongoing

City of Seal Beach
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Andy Komor, MS, PE QA/QC
Jacob Peterson, PE
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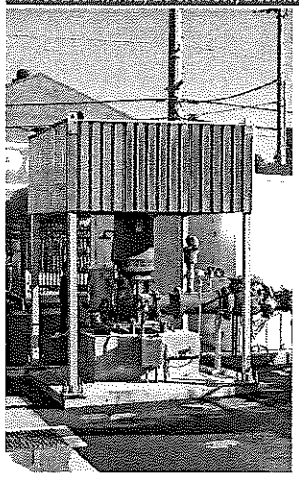
Bashar Ishaq, MBA, PE, PMP
Sr. Electrical Engineer
Shanka Henkanatte Gedara, PhD, EIT Pilot Testing and Water Quality Analysis Engineer
Santosh Shahi, PhD, SE, PE
Sr. Structural Engineer

PROJECT NAME, LOCATION, SUMMARY OF SERVICES PROVIDED & RELEVANT FEATURES	DATES AGENCY INFO, PROJECT MANAGER & KEY PERSONNEL



City of Vernon Source Water Quality Assessment and Treatment Design *Vernon, CA*

The City contracted with PACE to evaluate water quality concerns at the City's seven active well locations and design a treatment system to reduce levels of manganese, iron, and PFAS. As part of the assessment, PACE will also develop a Master Plan approach for treatment systems at all seven wells to ascertain the most effective and feasible treatment options and streamline future treatment designs for the remaining wells.

Relevant Features:

- Water quality assessment of seven active water wells
- PFAS treatment system design
- Master Plan concept approach to prioritize the most effective treatment options and streamline future treatment design

March 2025 – Ongoing

City of Vernon
Joanna Moreno *Civil Engineer*
(323) 583-8811
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Jacob Peterson, PE
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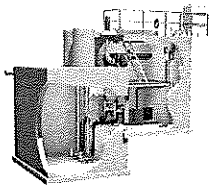
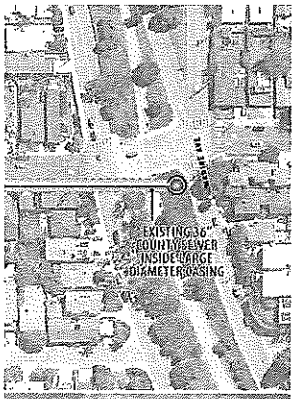
Shanka Henkanatte Gedara, PhD, EIT Pilot Testing
Santosh Shahi, PhD, SE, PE
Sr. Structural Engineer

WASTEWATER (SANITARY SEWER)

PROJECT NAME, LOCATION, SUMMARY OF SERVICES PROVIDED & RELEVANT FEATURES	DATES AGENCY INFO, PROJECT MANAGER & KEY PERSONNEL





City of Manhattan Beach Poinsettia, Voorhees, and Pacific Sewer Lift Stations Upgrade *Manhattan Beach, CA*

PACE completed feasibility studies and concept plans and is currently designing upgrades to three sewer force mains and three sewer lift stations for the City of Manhattan Beach at the Pacific Avenue Wastewater Pump Station (WWPS), Poinsettia Avenue WWPS, and Voorhees WWPS. PACE determined that, as an alternative to improving the Pacific Avenue WWPS, the station could be replaced with 800 linear feet of 12-inch gravity pipe. Upgrades at the Voorhees WWPS include approximately 1,200 linear feet of 6-inch force main, and the Poinsettia Avenue WWPS will be upgraded with 120 linear feet of 4-inch force main and 80 linear feet of 8-inch gravity pipe. All three lift stations are located in sensitive areas, including in front of or adjacent to homes and in a driveway to a local church.

Relevant Features:

- Replacement of 3,350 feet of sewer pipeline ranging from 4 to 12 inches
- Phased construction to avoid the need to operate a separate temporary bypass system during construction
- Trenchless pipeline installation
- Coordinated utility relocation

July 2020 – Ongoing

City of Manhattan Beach
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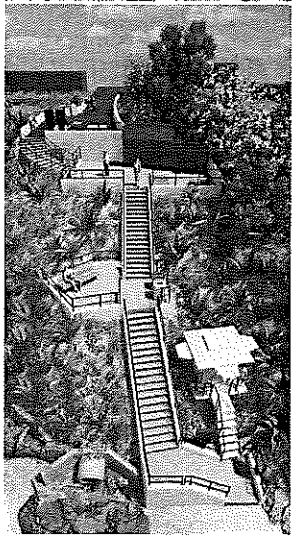
James Matthews, PE
Principal QA/QC
Robert Murphy, PE
Pumping System / Sr. Project Engineer / Mechanical Design
Bashar Ishaq, MBA, PE, PMP
Sr. Electrical Engineer
Ernesto Camarena
Sr. Instrumentation and Controls Specialist
Santosh Shahi, PhD, SE, PE
Sr. Structural Engineer



City of Laguna Beach Anita Street Sewer Lift Station *Laguna Beach, CA*

The City of Laguna Beach's Anita Street Sewer Lift Station, servicing an average daily flow of up to 80,000 gallons per day, is at the end of its useful service life and in need of an upgrade to ensure ongoing reliable operation. The lift station infrastructure shares its site with the public beach access stairs, which are also in need of improvements to meet current standards. PACE developed design plans and to meet the City's goals for better maintenance access, reliability, and increased capacity for the lift station, with several viewing platforms and new public facility amenities integrated into the design to enhance the public coastal site. The access stairs will be restructured, and the upper portion of the site will also be regraded to facilitate better access. Construction is being carefully planned to avoid hindering beach access during the summer.

Relevant Features:

- Sewer lift station replacement design
- Site renderings to support public outreach and address aesthetic impact concerns
- Improved beach access stairway
- Combined aesthetic and functional design elements

November 2021 – Ongoing

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(949) 497-0328
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James Matthews, PE
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Ernesto Camarena
Sr. Instrumentation and Controls Specialist

PROJECT NAME, LOCATION, SUMMARY OF SERVICES PROVIDED & RELEVANT FEATURES	DATES AGENCY INFO, PROJECT MANAGER & KEY PERSONNEL

City of Anaheim Center Greens Sanitary Sewer Improvements *Anaheim, CA*

PACE provided the City of Anaheim a fast-track design to relocate and upsize an existing 6-inch sewer pipeline running through the Center Greens Park. With the high-profile park improvements and sewer improvements located adjacent to City Hall, as well as a row of condominiums located northeast of the park, the project team collaborated with the City's stakeholders and utility companies to identify alternate pipeline alignments to minimize impacts. The final alignment consisted of approximately 180 feet of 8-inch VCP sewer pipe.

Relevant Features:

- Replacement of 6-inch sewer line with 180 feet of 8-inch VCP
- Utility coordination and relocation with SoCalGas
- Fast-tracked design
- Construction engineering support

June 2021 – Ongoing

City of Anaheim
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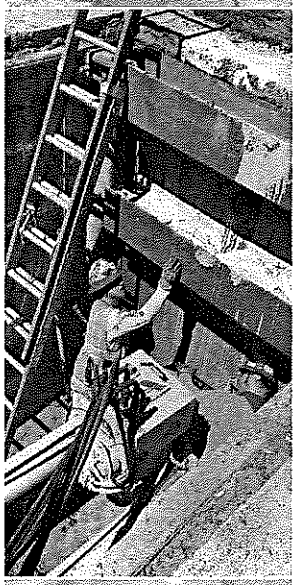
Duncan Lee, PE Project Manager



City of Redondo Beach Legado Development Sewer Upgrades *Redondo Beach, CA*

PACE designed approximately 550 feet of new 12-inch sewer pipe and multiple manholes through major intersections and along Pacific Coast Highway to provide additional conveyance capacity for the City of Redondo Beach. The pipeline traverses a Caltrans highway and the City of Torrance right-of-way, so multiple encroachments were required for the project. PACE evaluated alignment alternatives and trenchless construction technologies and was able to identify an alignment to cross both over and under existing underground utilities. During construction, the contractor submitted an alternate trenchless construction approach called "Pilot-Tubing." PACE evaluated the new construction method and agreed it was beneficial for the City to proceed. This trenchless method significantly reduced construction traffic impact with some cost savings to the City.

Relevant Features:

- Designed 550 feet of 12-inch sewer pipe requiring permits from multiple public entities
- Retained existing sewer pipe in operation for added redundancy
- Evaluated multiple pipeline alignments to avoid existing underground utilities
- Construction engineering support

November 2018 – November 2021

City of Redondo Beach
Geraldine Trivedi *Civil Engineer*
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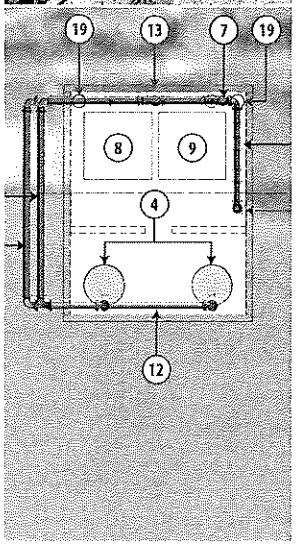
Duncan Lee, PE Project Manager



City of Alhambra Sewer Lift Station Replacement and Pipeline Rehabilitation *Alhambra, CA*

With Sewer Lift Station #5 approaching the end of its useful life, the City of Alhambra hired PACE to provide engineering design services to replace the lift station. PACE reviewed and evaluated current conditions to identify viable alternatives and prepared hydraulic modeling with flow monitoring to efficiently size the wet well, pumps, and other equipment. The new pump station has dual 150 gpm pumps, and improvements also included 100 feet of new 8-inch pipe, slip-lining of 550 feet of 6-inch pipe, and 30 feet of new 4-inch force main. The existing dry and wet wells were converted into emergency storage. PACE also assessed and rehabilitated 280 feet of 8-inch sewer main adjacent to Lift Station #3 that crosses beneath a freeway on-ramp.

Relevant Features:

- Pump station replacement and pipeline rehabilitation
- New gravity sewer pipeline and sewer force main
- Stationary backup generator and SCE utility coordination
- Phased construction

January 2022 – Ongoing

City of Alhambra
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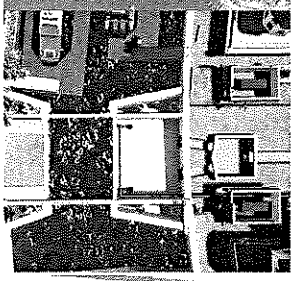
Duncan Lee, PE Project Manager

STORMWATER

PROJECT NAME, LOCATION, SUMMARY OF SERVICES PROVIDED & RELEVANT FEATURES	DATES, AGENCY INFO, PROJECT MANAGER & KEY PERSONNEL



Balboa Island Storm Drain Pump Station and Pipeline *Newport Beach, CA*

A series of valves on the exterior of Balboaisland are manually opened and closed daily to allow stormwater to drain into the ocean and prevent ocean water from flooding the island. When storm events occur during high tide, portable pumps with generators are used to pump stormwater over the seawall. PACE was initially contracted to develop several stormwater drainage concepts. Based on high-level hydrology and hydraulics analyses of these concept designs, PACE recommended constructing six equivalent duplex stormwater pump stations on the perimeter of the island, connected to a 24-inch diameter collector ring drain system. The analysis and models demonstrated that this proposed stormwater drainage system would function sufficiently during high tide and storm events.

Relevant Features:

- Submersible / non-clog pump stations
- Automated flood evacuation
- Planning and design for new gravity drainage collection system
- Sub-watershed mapping analysis for drainage scenarios
- Pipeline upgrade / replacement design

May 2018 – Ongoing

City of Newport Beach
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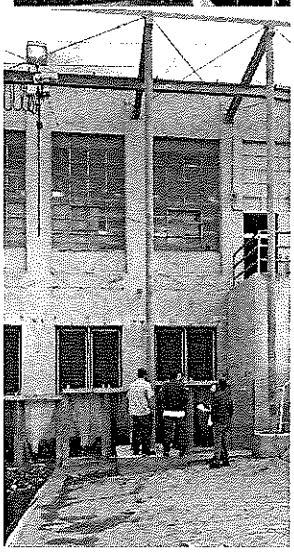
Duncan Lee, PE
Sr. Consulting Engineer

Robert Murphy, PE
Mechanical Design / Project Engineer

Ernesto Camarena
Sr. Instrumentation & Controls Specialist



City of Long Beach Storm Drains and Pump Stations Flood Resiliency Project
Long Beach, CA

The City of Long Beach has a total of 24 stormwater pump stations, some of which date back to the early 1900s and, as a result, many are in need of improvements. The City obtained a federal EDA grant to fund a portion of the improvements. PACE was hired to design improvements for seven drainage areas and rehabilitate up to seven existing pump stations throughout the City. Out of the seven storm drain sites, two required additional hydrology and hydraulic calculations to size the new storm drain pipes to meet City's design standards. Site condition assessments of pump stations were performed to identify critical necessary improvements. The improvements under design consist of 1,200 feet of 36-inch RCP, 700 feet of 30-inch RCP, slip-lining 140 feet of 18-inch CMP, minor street regrading, new catch basins, pumps, MCCs, one new roof and other instrumentation and control improvements.

Relevant Features:

- New storm drains and catch basins
- Pipeline rehabilitation
- Street drainage improvements
- Pump station condition assessment
- Pump station rehabilitation

October 2019 – Ongoing

City of Long Beach
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Robert Murphy, PE
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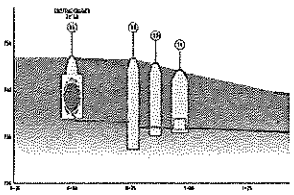
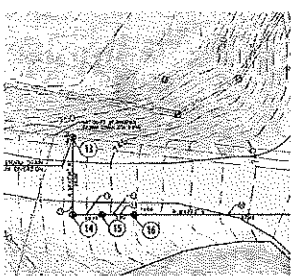
Santosh Shahi, PhD, SE, PE
Sr. Structural Engineer





County of Riverside Phoenix Storm Drain Dry Weather Flow Diversion *Riverside, CA*

PACE designed a diversion structure from the County-owned 72-inch Phoenix storm drain to divert dry weather flows to the City of Riverside-owned 24-inch sewer main. This "Smart" system can also divert wet weather flows, with built-in controls and a rain gauge to allow the end user to limit the flow into the sewer system. The diversion system diverts up to 1 cfs of flow and includes a treatment device to remove floatable trash, oil, and sediments; a valve vault; discharge pipe flow measuring assembly; uninterruptible power supply (UPS) battery backup in case of power outage; and controls such as a rain gauge to detect storm events. These improvements allow the City to maintain the dry weather diversion system and meet the Middle Santa Ana River Comprehensive Bacteria Reduction Plan (CBRP) objectives.

Relevant Features:

- Planning and design of diversion structures
- Diversion pipe
- On-going flow monitoring
- Municipal stormwater and sewer diversion system

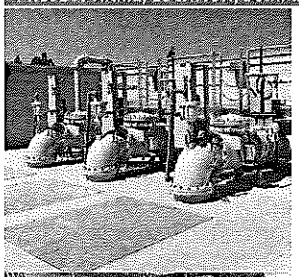
July 2019 – July 2021

Riverside County Flood Control and Water Conservation District
Ava Moussavi
Assist. Engineer/Project Planning
(951) 955-4954
amoussav@rivco.org

Duncan Lee, PE Project Manager

Jacob Peterson, PE
Sr. Project Engineer

PROJECT NAME, LOCATION, SUMMARY OF SERVICES PROVIDED & RELEVANT FEATURES	DATES AGENCY INFO, PROJECT MANAGER & KEY PERSONNEL



Earvin Magic Johnson Park Stormwater Diversion, Capture, and Reuse System
Los Angeles, CA

PACE designed a unique new stormwater system that serves as a sustainable water source at Earvin Magic Johnson Park. An urban runoff diversion structure taps into an existing 84-inch diameter storm drain to divert flows of up to 33 cfs to a new pump station. Captured flows are pumped into a treatment facility with ozone, coagulation, circulation, aeration, and water conditioning prior to discharge to the wetland planter areas of the renovated lake system, providing maintenance access and further treatment. This system collects, retains, and reuses 60% of the first-flush flows of the 375-acre watershed, amounting to approximately 7 acre-feet of flows from a significant wet weather event.

Relevant Features:

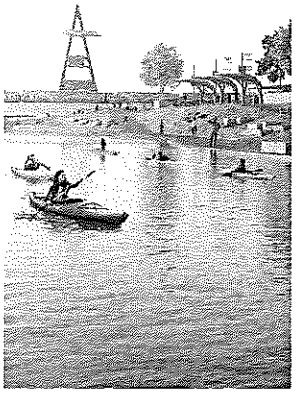
- Planning and design of diversion structures
- LID application to capture 85th percentile storm event
- Capture and treatment of dry and wet weather flows
- Water quality treatment addresses TSS, turbidity, color, odor, nutrients, pathogens, and metals
- BMP monitoring and quarterly reporting

August 2016 – December 2020

AHBE Landscape Architects for the Los Angeles County Community Development Commission
Thuan Nguyen *Civil Engineer*
(626) 458-7165
tnguyen@dpw.lacounty.gov

Andy Komor, MS, PE
Sr. Consulting Engineer: Diversion Structure / Pump Station

Ernesto Camarena
Sr. Instrumentation and Controls Specialist



OC River Walk Storm Drain Diversions *Anaheim, CA*

The OC River Walk project site is comprised of a 450-foot wide by 9,000-foot long segment of the Santa Ana River corridor that the City of Anaheim aims to transform into a world-renowned urban recreation destination. PACE led the engineering feasibility study and is now in the design phase for the project. Two rubber dams located within the Santa Ana River will impound water in the river during dry weather conditions, creating aesthetic and recreational benefits and promoting recharge into the underlying aquifer, which supplies potable water to the community. During storm events, the inflatable rubber dams would deflate in order to maintain the river's hydraulic capacity for flood conveyance. A number of stormwater diversion stations will be designed to divert dry weather flow away from the impoundments through the use of gravity pipes or pump stations to maintain high water quality in the impoundments.

Relevant Features:

- Assessment and design of diversion system for 26 storm drains
- Dry weather diversion pump station design
- Hydraulic analysis of proposed improvements
- PS&E preparation
- State / federal grant funding administration

August 2020 – Ongoing

City of Anaheim
Jose "JJ" Jimenez *Parks Manager*
(714) 765-4463
jjimenez@anaheim.net

Andy Komor, PE
Lead Mechanical Systems Engineer

Jacob Peterson
Sr. Project Engineer

FORM

References of Work Performed Form

(List 5 Local References)

Comany Name: Pacific Advanced Civil Engineering, Inc.

1. Name of Reference: City of Redondo Beach

Address: 415 Diamond St, Redondo Beach, CA 90277

Contact Name: Geraldine Trivedi Phone Number: (310) 318-0661

Email: geraldine.trivedi@redondo.org

Dates of Business: 2016-ongoing

2. Name of Reference: City of San Clemente

Address: 910 Calle Negocio, Ste 100, San Clemente, CA 92673

Contact Name: Shawn Ryan Phone Number: (949) 361-8200

Email: ryans@san-clemente.org

Dates of Business: 2011-ongoing

3. Name of Reference: City of Seal Beach

Address: 211 Eighth St, Seal Beach, CA 90740

Contact Name: Iris Lee Phone Number: (562) 431-2527

Email: ilee@sealbeachca.gov

Dates of Business: 2020-2021

4. Name of Reference: City of Huntington Beach

Address: 2000 Main St, Huntington Beach, CA 92648

Contact Name: Lili Hernandez Phone Number: (714) 374-5386

Email: lhernandez@surfcity-hb.org

Dates of Business: 2005-ongoing

5. Name of Reference: City of Newport Beach

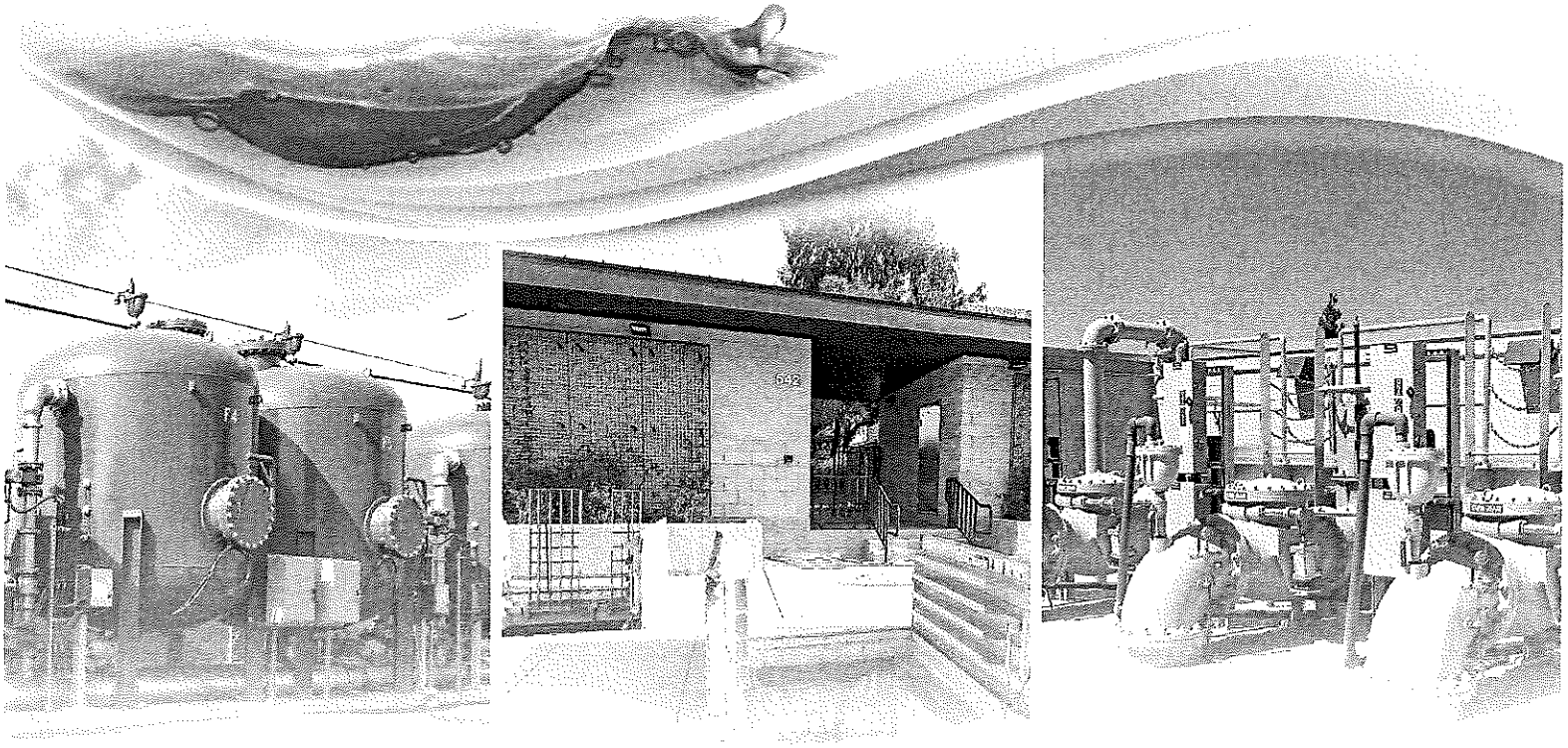
Address: 100 Civic Center Dr, Newport Beach, CA 92660

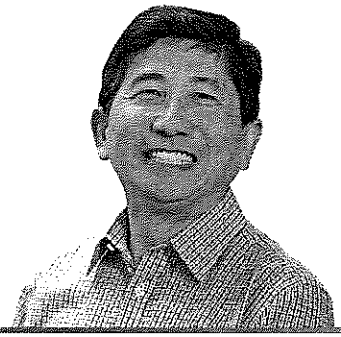
Contact Name: David Webb Phone Number: (949) 644-3328

Email: dawebb@newportbeachca.gov

Dates of Business: 2018-ongoing

Appendix





design project manager

Duncan Lee, PE

EDUCATION
BS Civil Engineering, California State University, Long Beach – 1985

YEARS OF EXPERIENCE
36 Years
Joined PACE in 2018

REGISTRATIONS
Professional Engineer / CA 44825

With more than 30 years of municipal/public agency experience, including most recently 17 years as a Principal Civil Engineer for the City of Huntington Beach and nearly 10 years of experience with the Los Angeles Department of Water and Power (LADWP) with drinking water and recycled water, Duncan Lee offers technical expertise on the engineering of municipal water infrastructure in both the design role and the City project management role. He has managed all aspects of water, sewer, and recycled water systems from capital improvement design and project implementation, master planning, rate studies, rate increases, water conservation, and construction management. The majority of the projects that he managed/designed were performed for coastal cities throughout California. He will impart several strategies to overcome key potential project issues and his value is most felt in his proven ability to unite engineering, operation, maintenance, and consultants in a productive and collaborative environment.

RELATED EXPERIENCE

City of Huntington Beach Wells 3, 6, and 8 Characterization – Huntington Beach, CA

While employed by the City of Huntington Beach, Mr. Lee led this project to address sulfide odor and/or color issues with three City wells. PACE performed water quality monitoring and profiling, then performed a GAC pilot study at each well. The data collected during the studies helped the City understand the applicability and usefulness of GAC filtration to improve the quality of drinking water from these wells and reduce operational costs.

City of Huntington Beach Well 9 GAC Treatment System – Huntington Beach, CA

Mr. Lee served as the City's Principal Engineer managing the analysis and design of a complete 3,000 gpm (4.3 MGD) GAC filtration treatment system for Well 9. The project included multiple phases of project development, laboratory services, piloting, concept development, water treatment facility engineering, planning division graphics, and startup and operations support services.

City of Huntington Beach Replacement of Well 1 with Well 1A – Huntington Beach, CA

Led by Mr. Lee while he was employed by the City, this water well replacement project was crucial to increasing the overall reliability of the City's aging well infrastructure. All equipment was placed indoors to protect it from public view, and the well room was designed with removable walls and roof to allow for major maintenance and rehabilitation activities. The well can produce up to 2,500 gpm with a 250-horsepower motor and has the option to operate with a variable frequency drive at fixed or variable speed.

Peck Reservoir Pump Station Improvements – Huntington Beach, CA

Mr. Lee served as the City's Principal Engineer for the final design plans and construction services of the structural, mechanical, and electrical modifications for the booster pump station to allow for build-out of a new hybrid pumping system, capable of using either electric-powered motors or natural gas engines.

Beach Boulevard Sewer Replacement – Huntington Beach, CA

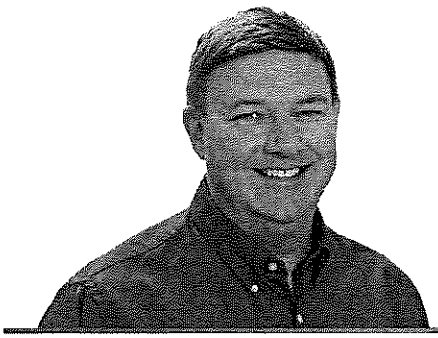
Led by Mr. Lee while Principal Engineer for the City, this project consisted of installing over 1 mile of 8-inch to 15-inch PVC sewer pipe along Beach Boulevard. The existing sewer main was left in operation and connected to the new sewer system to provide additional redundancy.

OCWD PFAS Well Treatment – Orange County, CA

Mr. Lee is serving as the Project Manager for the well PFAS treatment design for six water well sites located in Stanton, Garden Grove, and Placentia for Golden State Water Company. The pressure vessel treatment system will treat flows between 400 and 3,500 gallons per minute. Based on the design well capacity at each site, the treatment system selected by OCWD will be sized and designed to meet the pilot study recommended treatment objectives. Alternative concept plans will be prepared and provided to stakeholders to review.

Additional Project Experience

City of Manhattan Beach Poinsettia, Voorhees, and Pacific Sewer Lift Stations Upgrade, City of Anaheim Center Greens Sanitary Sewer Improvements, City of Redondo Beach Legado Development Sewer Upgrades, City of Alhambra Sewer Lift Station Replacement and Pipeline Rehabilitation, City of Newport Beach Balboa Island Storm Drain Pump Station and Pipeline, City of Long Beach Storm Drains and Pump Stations Flood Resiliency Project, City of Riverside Phoenix Storm Drain Dry Weather Flow Diversion



sr. consulting engineer / QA/QC

James Matthews, PE

EDUCATION
BS Civil Engineering, San Diego State University – 1994

YEARS OF EXPERIENCE
33 Years
Joined PACE in 1994
Prior: 2 years with City of San Diego Water Production Engineering Division

REGISTRATIONS
Professional Engineer / CA 57446
Professional Engineer / AZ 34090
Professional Engineer / CO 0054243
Professional Engineer / FL 69722
Professional Engineer / HI 13718
Professional Engineer / ID 11229 (inactive)
Professional Engineer / NM 16491(inactive)
Professional Engineer / TX 132370
Professional Engineer / UT 11893246 2202
Professional Engineer / VA 0402040716
NCEES 18-931-54
Wastewater Treatment Operator / AZ WW023812 (inactive)

AFFILIATIONS
American Water Works Association (AWWA)
Water Environment Federation (WEF)

Additional Project Experience

City of Huntington Beach Peck Reservoir Pump Station Improvements, City of Vernon Source Water Quality Assessment and Treatment Design, City of Vernon Water Well 22 Water Line Improvements and Treatment System, Rancho Mission Viejo Mutual Water Company On-Call Engineering Services, Liberty Utilities Monument Water Well, Forest Lawn Domestic Water Booster Pump Stations

James Matthews is highly regarded in the water, wastewater, recycled water, and stormwater industries for his tremendous wealth of practical knowledge and his ability to use old and new technologies, hands-on experience, and research to produce value for his clients and their projects. Mr. Matthews has created designs for a multitude of award-winning projects; saving capital and operation costs, reducing construction schedules, and minimizing operation and maintenance needs on water and wastewater treatment facilities, reservoirs, and pump stations by implementing creative ideas and concepts. As both a licensed engineer and operator, Mr. Matthews is a technical expert in infrastructure and treatment engineering design, construction, and operations. He has particular experience in leading design and design-build teams by providing "cradle to grave" services on all aspects of complex water resource projects. He has been directly involved in over 250 water projects in the U.S., Canada, and Central America.

RELATED EXPERIENCE

City of Huntington Beach Well 9 Wellhead Treatment – Huntington Beach, CA

Mr. Matthews served as the Sr. Consulting Engineer and provided QA/QC oversight for testing, alternatives analysis, and design services of a complete 2,500 gpm (3.5 MGD) GAC filtration system treatment facility. Mr. Matthews provided key technical direction on the alternatives evaluated and process selection and also led the design, construction, and programming of a custom filtration control panel.

City of San Clemente Main Pump Station Rehabilitation – San Clemente, CA

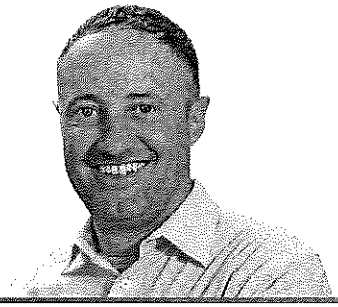
Mr. Matthews was the Principal / Project Manager overseeing the engineering design, construction management, and instrumentation and controls integration for renovation of the City's Main Pump Station, which is responsible for 70%-80% of the City's total sanitary sewer flow. Mr. Matthews's recommended and implemented improvements included replacement of one of the station's main pumps with a smaller, more energy efficient and clog-resistant unit. The project all but eliminated pump clogging and significantly reduced electrical costs.

City of Manhattan Beach Larsson Street and 2nd Street Booster Pump Station Upgrades – Manhattan Beach, CA

PACE was hired to evaluate the condition of the pumping facilities, determine the flow capacity of the associated delivery lines, design a capacity expansion for Larsson Street Booster Pump Station, determine whether to replace or leave the 2nd Street Booster Pump Station in place, and perform necessary design based on the findings. Mr. Matthews is serving as Project Manager for design of four pumps to increase the delivery capacity at Larsson to 4,400 gpm while maintaining a small footprint within the existing vault.

Balboa Island Storm Drain Pump Station and Pipeline – Newport Beach, CA

Mr. Matthews serves as the Principal / Quality Control for the design of a new pump station and drainage collection system for the City of Newport Beach to address the potential for rising sea levels, as well as storm-based flooding on Balboa Island. PACE developed a drainage solution including four 10,000 gpm underground, submersible, non-clog pumps to reduce short-term and long-term flooding and two low-flow pumps to divert dry weather runoff to the sanitary sewer instead of discharging it into the bay. PACE also developed a gravity conveyance strategy from existing sub-watersheds to the pump station utilizing existing pipelines and designing new larger pipelines.



sr. consulting engineer

Andy Komor, MS, PE

EDUCATION
MS Civil and Environmental Engineering, Arizona State University – 2001
BS Civil Engineering, University of Minnesota – 1999
Cum Laude

YEARS OF EXPERIENCE
25 Years
Joined PACE in 2000

REGISTRATIONS
Professional Engineer / CA 64928
Professional Engineer / AZ 46719
Professional Engineer / LA PE.0034854 (inactive)
Professional Engineer / OR 95149PE (inactive)

AFFILIATIONS
Adjunct Instructor of Water Reuse, Santiago Community College
Past President of Orange County Water Association (OCWA)
California Water Environment Association (CWEA)
WateReuse Foundation
National American Lake Management Society (NALMS)

PUBLICATIONS
Photobiological Treatment of RO Reject. Global Water Intelligence. 2020
Cost to Benefit Analysis of Desalination of Golf Irrigation Water. Water Reuse Symposium. Phoenix, AZ. 2011
Effects of Nitrification, Stratification, and Algaecidal Disinfection in Country's Largest Recycled Water Reservoirs. Water Reuse Symposium, Washington, D.C. 2010

Additional Project Experience

City of Huntington Beach Meredith Stormwater Pump Station Rehabilitation, City of Huntington Beach Central Park Parking Lot Drainage Improvements and LID System, City of Seal Beach Lampson Water Well Hydrogen Sulfide Removal, City of Newport Beach Balboa Island Storm Drain Pump Station and Pipeline, SoFi Stadium Advanced Stormwater Management Pump Station and Pipeline, Golden State Water Company Del Monte Well 4 Arsenic Removal

Andy Komor is a technical expert on engineering infrastructure having successfully performed engineering design, project management, and field services for over $700 million in capital on over 300 completed water resource projects in the past 15 years. His background as a researcher has led to several national presentations and technical papers. Mr. Komor is sought after as a technical consultant and designer on water resources projects including advanced wastewater treatment and water recycling, drinking water, water infrastructure, ocean and brackish water desalination, groundwater recharge, lake and reservoir water quality enhancements, and new technology research and development. As part of the design and engineering of such projects, Mr. Komor is adept at providing comprehensive civil, mechanical, structural, electrical, and controls designs which are innovative, cost-effective, and highly operable. He also has significant experience in field engineering, construction oversight, and start-up services through design-build projects and design-bid-build project structures. Mr. Komor has an excellent breadth and depth of experience in water resources and will ensure a value-added approach, sound design, and effective implementation of the project.

RELATED EXPERIENCE

City of Huntington Beach Well 9 Wellhead Treatment System – Huntington Beach, CA

Mr. Komor served as the Project Manager for multiple phases of project development, lab services, piloting, concept development, water treatment facility engineering, planning division graphics, and worked with the City staff through startup and operations support services on this innovative and unique treatment system. Sophisticated desktop, bench, pilot scale, and full scale demonstration was first provided for confirmation of the proposed treatment process for innovative biological treatment of reduced (non-oxidized) drinking water quality constituents in the potable supply at Well 9, and other City wells. A complete 3,000 gpm (4.3 MGD) BAC treatment facility design was then designed with complete structural, mechanical, electrical, and controls integration design for reliable and simple operation.

City of Huntington Beach Wells 3, 6, and 8 Characterization – Huntington Beach, CA

Based on the results and recommendations from the previous sulfide odor reduction project at Well 9, Mr. Komor served as Project Manager to perform water quality monitoring and profiling at Wells 3, 6, and 8, which had experienced similar hydrogen sulfide issues. After the completion of the well profiling study, PACE performed a GAC pilot study at each well. The data collected during the studies helped the City understand the applicability and usefulness of the GAC filtration process to improve the quality of drinking water from these wells and reduce operational costs.

Peck Reservoir Pump Station Improvements – Huntington Beach, CA

To increase pump station reliability and redundancy, the City hired PACE to perform value engineering of an improvement design prepared by another firm and then final design plans and construction services for the structural, mechanical, and electrical modifications. Mr. Komor was the project manager for the design of the new hybrid pumping system, which can use either electric-powered motors or natural gas engines to provide pumping needs.

City of Redondo Beach Rindge Sewer Pump Station Upgrade – Redondo Beach, CA

As the Project Manager, Mr. Komor led the innovative design using existing site components to upgrade the large Rindge sewer lift station. Two buildings were creatively integrated into a common structure for all electrical and generator equipment. The pump station features duplex pumping with a capacity of 1,520 gpm and conveys sewage approximately 2,000 feet through a 12-inch force main to the downstream gravity system.

sr. project engineer

Jacob Peterson, PE

EDUCATION
BS Civil Engineering, California Polytechnic State University, San Luis Obispo – 2008

YEARS OF EXPERIENCE
21 Years
Joined PACE in 2004

REGISTRATIONS
Professional Engineer / CA 79146
Certified Water Efficiency Professional 128195 (inactive)

PUBLICATIONS
Peterson, J.D., Murphy, R.R., Jin, Y., Wang, L., Nessl, M.B., Ikehata, K. (2011) Health effects associated with wastewater treatment, reuse, and disposal. Water Environment Research 83:10, 1853-1875.

Additional Project Experience

County of Riverside Phoenix Storm Drain Dry Weather Flow Diversion, City of Vernon Source Water Quality Assessment and Treatment Design, City of Anaheim Pressure Regulation Station Rehabilitation, City of San Clemente Pico Pump Station & Talega Lift Station Modifications, Santa Margarita Water District Booster Pump Station Copper Corrosion Prevention, City of Redondo Beach Rindge Sewer Lift Station Upgrade

Jacob Peterson has civil and environmental engineering experience spanning back to 2004. He has performed engineering design and support in several areas including water treatment, pump stations, water conveyance and distribution, and surveying services. Mr. Peterson is adept at providing comprehensive civil and mechanical designs that are inventive, cost-effective, and practical and is experienced in construction services on various water resource systems. With his combined knowledge of water resource disciplines, he has been effective in the design, construction oversight, and operational support of numerous projects, including multi-functioning systems incorporating mechanical and biological systems and processes. He offers expertise in a multitude of groundwater treatment processes, including granular activated carbon (GAC) and biological activated carbon (BAC) systems, ion exchange, reverse osmosis (RO), and other types of filtration systems, and has led field pilot testing of several technologies to refine equipping, design, and operations procedures.

RELATED EXPERIENCE

OCWD PFAS Well Treatment – Orange County, CA

Mr. Peterson is serving as the Sr. Project Engineer for the well treatment design for six water well sites, consisting of up to eight wells, for the Golden State Water Company. Three sites are within the City of Stanton, two sites are within the City of Garden Grove, and one site is within the City of Placentia. The pressure vessel treatment system will treat flows between 400 and 3,500 gallons per minute. OCWD previously completed a pilot study and determined that the treatment process will consist of pre-treatment using bag filters, followed by ion exchange (IX) media in steel pressure vessels. Based on the design well capacity at each site, the treatment system will be sized and designed to meet the treatment objective consistent with OCWD's pilot study recommendations, while providing alternative concept plans for stakeholders to review. PACE will also prepare feasibility studies for two separate private pump-to-waste drain lines to connect to the existing public storm drain system.

City of Riverside Garner B Well PFOA/PFOS Treatment Pilot Testing – Riverside, CA

Mr. Peterson served as the Sr. Project Engineer to perform a condition assessment of the out-of-service GAC treatment system to determine the feasibility of rehabilitating the system into a full-scale pilot system to treat PFOA/PFOS. The pilot study evaluated potential treatment alternatives and enhancements, including co-precipitation filtration and biological treatment, that could lower capital costs and/or annual operations and maintenance costs compared to typical treatment methods. Upon determining that the rehabilitation was feasible, PACE prepared improvement plans and specifications to reactivate the treatment system, designed modifications to accommodate either GAC or ion exchange media, and specified components to be replaced, including the flow meter and tank lining.

City of Seal Beach Lampson Well Treatment and Sewer Siphon – Seal Beach, CA

The Lampson Water Well produces up to 4,000 gpm and is one of the City of Seal Beach's four water wells. Historically high hydrogen sulfide (H2S) concentration levels have caused the well to be underutilized, operating at low flow rates to avoid odor complaints. Mr. Peterson served as the Sr. Project Engineer for the pilot studies to evaluate the viability of a biological treatment process using granular activated carbon (GAC) with and without plastic media and under various operating conditions. The pilot testing allowed for troubleshooting and refinement that led to selection of the biological activated carbon (BAC) process. The final system design effectively removes H2S odors and reduces chlorine chemical dosage using four 12-foot diameter steel pressure vessels, and also allows for future incorporation of PFAS treatment. Additionally, since the filter vessels need periodic backwashing and the wastewater can be discharged to the existing sewer system, PACE designed an inverted sewer siphon to increase flow capacity through an existing choke point. Approximately 100 feet of 6-inch pipeline was designed and located along an adjacent roadway.

sr. project engineer

Robert Murphy, PE

EDUCATION
BS Civil Engineering California State University, Long Beach -- 2007

YEARS OF EXPERIENCE
18+ Years
Joined PACE in 2006

REGISTRATIONS
Professional Engineer / CA 83207

AFFILIATIONS
Water Environment Federation (WEF)
American Society of Civil Engineers

PUBLICATIONS
Peterson, J.D., Murphy, R.R., Jin, Y., Wang, L., Nessl, M.B., Ikehata, K. (2011) Health effects associated with wastewater treatment, reuse, and disposal. Water Environment Research 83:10, 1853-1875.

Additional Project Experience

City of Huntington Beach Peck Reservoir Pump Station Improvements, City of Manhattan Beach Poinsettia, Voorhees, and Pacific Sewer Lift Stations Upgrades, City of Vernon Water Well 22 Water Line Improvements and Treatment System, City of Manhattan Beach Larsson Street and 2nd Street Booster Pump Station Upgrades, City of Redondo Beach Rindge Sewer Pump Station Upgrade, Irvine Cove Sewer Lift Station Emergency Power Generator Installation

Robert Murphy has Civil Engineering experience spanning back to 2006. His experience includes design of water treatment, storage, and distribution design, sewer collection and wastewater treatment plants, and potable / sewer / stormwater / reclaimed pump stations. Mr. Murphy has also served as the resident engineer for the construction of several wastewater treatment facilities, water distribution, and sewer collection and water, sewer and stormwater pump station projects. He has developed several performance-based equipment specifications for equipment selection prior to design, and the creation of operation and maintenance manuals for several water, sewer and stormwater conveyance and treatment systems and facilities. Mr. Murphy is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system.

RELATED EXPERIENCE

City of Huntington Beach Well 9 Wellhead Treatment System & Sewer Line Improvement – Huntington Beach, CA

Mr. Murphy served as the Process Engineer for testing, alternatives analysis, and design services at Wells 3, 6, and 9. After providing desktop, bench, pilot scale, and full scale demonstration to confirm the proposed treatment process, a complete 2,500 gpm (3.5 MGD) treatment facility design was designed including six 10-foot diameter biologically active carbon (BAC) filtration vessels and media, with structural, mechanical, electrical, and controls integration design for reliable and simple operation.

Los Angeles County Waterworks District No. 29, Malibu Waterline, Upper Encinal Tank, and Lower Encinal Pump Station Improvements Project – Malibu, CA

Mr. Murphy is serving as the Sr. Project Engineer to design multiple infrastructure improvements for the Los Angeles County Waterworks District No. 29, including replacement of over 1 mile of pipeline to improve the fire flow and a new 225,000-gallon welded steel Upper Encinal Tank to replace the existing 70,000-gallon tank within the hillside area. Additionally, the Lower Encinal Pump Station will be rehabilitated, adding a new PRV station to allow reverse flow between the two different pressure zones.

City of San Clemente Main Pump Station Rehabilitation – San Clemente, CA

Mr. Murphy Served as Sr. Project Engineer to perform final engineering design and services during construction for the City's Main Pump Station, which has a 16 MGD capacity. The renovations were designed to address frequent clogging of the pumps and improve overall pump station reliability. The design also considered ventilation, sound, and safety, especially with a new generator being installed within the belowground operations area of the pump station.

City of Laguna Beach Anita Street Sewer Lift Station and Beach Access Stairs Project – Laguna Beach, CA

The City of Laguna Beach's Anita Street Sewer Lift Station, servicing an average daily flow up to 80,000 GPD, is at the end of its useful service life and in need of an upgrade to ensure ongoing reliable operation. As the Sr. Project Manager, Mr. Murphy developed plans and refined site renderings for the new lift station. The beach access stairway that shares the site will also be improved to meet current beach access standards.

Balboa Island Storm Drain Pump Station and Pipeline – Newport Beach, CA

Mr. Murphy is serving as the Mechanical Design / Project Engineer supporting design concept development for a new pump station and drainage collection system for the City of Newport Beach to address the potential for rising sea levels and storm-based flooding on Balboa Island. PACE developed a drainage solution including four 10,000 gpm underground, submersible, non-clog pumps to reduce short-term and long-term flooding and two low-flow pumps to divert dry weather runoff to the sanitary sewer instead of discharging it into the bay.

sr. electrical engineer

Bashar Ishaq, MBA, PE, PMP

EDUCATION
MS Business Analytics, Hult International Business School – 2021
MS Business Administration, Hult International Business School – 2020
BS Electrical Engineering, University West – 2014

YEARS OF EXPERIENCE
11+ Years
Joined PACE in 2023

REGISTRATIONS
Professional Electrical Engineer / CA 24590
Professional Electrical Engineer / AZ 82968
ICC Commercial Electrical Inspector #9916237
Project Management Professional #3010684
OSHA 10
OSHA Confined Spaces
Safe Electrical Work Practices (NFPA)
NFPA 70: National Electrical Code

Additional Project Experience

DL Ranch Booster Pump Station, Phase III Expansion of Lathrop Consolidated Treatment Plant, City of Patterson Wastewater Treatment Plant Expansion, West County Wastewater WQRRP Arc Flash, Short Circuit, and Coordination Study, Vallejo Waste Treatment Plant System Upgrades, Nighthawk Estates Booster Pump Station, Moccasin Powerhouse System Upgrades, North Shore Pump Station Wet Weather Improvements

Bashar Ishaq is an internationally established Electrical Engineer with 10+ years of hands-on experience in global industrial plant facilities. Bashar's key areas of experience are power distribution design, project planning, final commissioning in wastewater and petrochemical plants, and power system studies. His unique expertise includes electrical design for low-voltage power distribution systems, including switchgear, motor control centers (MCCs), generators, motors, uninterruptible power supply (UPS), and substations. Additionally, he specializes in developing power system studies, including arc flash, short circuit, protective device coordination, and harmonic studies. Recognized as a reliable and trustworthy expert, Mr. Ishaq has been granted direct access to customer facilities, where he has provided field engineering service for projects in the construction phase by directly implementing his electrical design knowledge and experience, resulting in significant project cost and time savings. Mr. Ishaq has also served as Project Engineer for a $40 million multi-disciplinary project, with primary responsibilities including managing cross-functional stakeholders and leading the development of a needs assessment report with a team of engineers. In addition to being a strategic problem-solver, Mr. Ishaq prides himself on his vast knowledge of safe working practices and potential hazards in operating plant environments and construction.

RELATED EXPERIENCE

City of Seal Beach Lampson Wellhead Treatment and Sewer Siphon – Seal Beach, CA

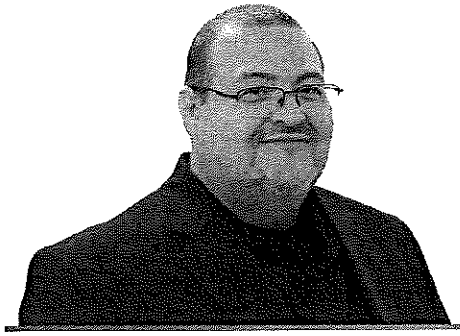
The Lampson Water Well produces up to 4,000 gpm and is one of the City of Seal Beach's four water wells. Historically high hydrogen sulfide (H2S) concentration levels have caused the well to be underutilized, operating at low flow rates to avoid odor complaints. Wastewater generated by backwashing the filter vessels will be discharged to the existing sewer system. PACE also designed an inverted sewer siphon to increase flow capacity through an existing choke point. Mr. Ishaq, serving as the Sr. Electrical Engineer/Engineer-Of-Record, provides electrical engineering support and the final review of the electrical design. The electrical design included creating all electrical calculations, including demand load, short circuit, voltage drop, and cable and conduit sizing, and reviewing and approving the final electrical design and specifications.

City of Manhattan Beach Voorhees and Poinsettia Sewer Collection and Sewer Lift Station Upgrade – Manhattan Beach, CA

As part of the City of Manhattan Beach's Wastewater Master Plan, the City identified the need to provide major rehabilitation for their Voorhees Avenue and Poinsettia Wastewater Pump Station (PS). The PS consists of wet wells and dry wells subgrade concrete structure housing the mechanical and a portion of the electrical equipment, with the site located adjacent to a residential property. Electrical improvements for this project include upgrades to the power utility service, low-voltage motor control center, and low-voltage motors. Mr. Ishaq, serving as the Sr. Electrical Engineer, is providing electrical engineering support throughout the design, creating all electrical calculations including demand load, short circuit, voltage drop, and cable and conduit sizing, and reviewing and approving the final electrical design and specifications.

Hamilton Cove Sewer Lift Station Renovation – Avalon, CA

PACE was hired by the Hamilton Cove Home Owners Association (HOA) to renovate the existing sewer lift station and provide new improvements to increase the reliability, service life, and operational flexibility of the pump station. PACE is responsible for the design of the sewer lift station including a power utility service, low-voltage MCC, and four low-voltage motors. As Sr. Electrical Engineer, Mr. Ishaq is providing electrical engineering support throughout the design, reviewing and approving the electrical plans and calculations, and stamping and signing the electrical plans.



sr. instrumentation & controls specialist

Ernesto Camarena

Ernesto Camarena has automation experience spanning back to 1994. His areas of expertise include controls and automation design for water and wastewater treatment, wells, pump stations, and storage reservoirs. Mr. Camarena's responsibilities include preparing process and instrumentation design, process flow schematics, conceptual design exhibits including termination diagrams, and QA/QC for the electrical power and controls design. Mr. Camarena is a valuable and unique designer and startup expert of water infrastructure due to his extensive background in hands-on implementation of projects, including panel building, programming, troubleshooting, and installation in the field during construction and operations. Because of his experience in performing water and wastewater-related controls designs and installations, Mr. Camarena also is well versed in water/sewer transport and treatment processes, which enables him to provide complete and accurate process and instrumentation diagrams.

EDUCATION
AA Applied Science, Computer Aided Drafting, ITT Technical Institute – 1993

YEARS OF EXPERIENCE
32+ Years
Joined PACE in 2005

SEMINARS
TESCO New Plant and SCADA Security Regulations, Cell Modem Telemetry via 4G, High Voltage Safety Codes Temecula, 2010

Sage Clear SCADA and SCADAPak Certification Los Angeles, 2009

RELATED EXPERIENCE

Huntington Beach Well 9 Wellhead Treatment System & Sewer Line Improvement – Huntington Beach, CA

Mr. Camarena served as the Sr. Instrumentation and Controls Specialist for the design of a complete 2,500 gpm (3.5 MGD) treatment facility was designed including a Granular Activated Carbon (GAC) Filtration System and media, with complete structural, mechanical, electrical, and controls integration design for reliable and simple operation. The project included multiple phases of project development, lab services, piloting, concept development, water treatment facility engineering, preparation of plans and specifications, planning division visualization graphics, and startup and operations support services on this innovative and unique treatment system. A custom filtration control panel design was also provided.

Poinsettia, Voorhees and Pacific Sewer Collection and Sewer Lift Stations Upgrade – Manhattan Beach, CA

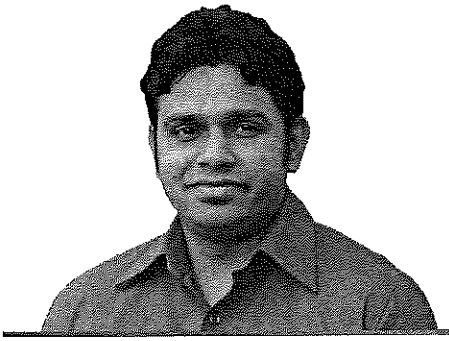
Mr. Camarena is serving as the Sr. Instrumentation and Controls Specialist for the plans and specifications for the City of Manhattan Beach for three (3) sewer force mains and to upgrade three (3) sewer lift stations, Pacific Avenue WWPS, Poinsettia Avenue WWPS, and Voorhees WWPS. These lift stations and force mains were originally constructed in the early 1960's, with mechanical and electrical upgrades implemented around the mid 1990's, and the facilities are now approaching the end of their useful lives. The City was concerned with reliability of these aging systems, which are further exasperated by frequent power outages from Southern California Edison. PACE was also tasked to determine if there are any gravity pipe option(s) that could eliminate any of these existing lift stations. Pacific Avenue will have 1,150' of 6" force main and 800' of 12" micro-tunnel gravity pipe, Voorhees will have 1,200' of 6" force main, and Poinsettia will have 120' of 4" force main and 80' of 8" gravity pipe.

City of Laguna Beach Anita Street Sewer Lift Station and Beach Access Stairs Project – Laguna Beach, CA

The City of Laguna Beach's Anita Street Sewer Lift Station, servicing an average daily flow of up to 80,000 gallons per day, is at the end of its useful service life and in need of an upgrade to ensure ongoing reliable operation. Situated at the end of Anita Street, the lift station infrastructure shares its site with the public beach access stairs, leading down to Anita Street Beach. The existing site layout with the lift station limits public viewing along this beach access corridor, which this area was intended to provide; in addition, the stairs and site amenities are showing signs of deterioration and need improvements and replacement. Mr. Camarena served as the Sr. Instrumentation and Controls Specialist for the plans and refined site renderings that PACE developed to meet the City's goals both with the addition of a new lift station and new improved beach access stairway, complete with several viewing platforms and new public facility amenities. In addition, the lift station improvements will provide City staff with better maintenance access, reliability, an increased wet well capacity, and integrated aesthetics with the lift station components that will lead to an overall enhanced public coastal site and stairway access.

Additional Project Experience

Balboa Island Storm Drain Pump Station and Pipeline, City of Vernon Source Water Quality Assessment and Treatment Design, SoFi Stadium Advanced Stormwater Management Pump Station, City of Huntington Beach Peck Reservoir Pump Station Improvements, City of Vernon Water Well 22 Water Line Improvements and Treatment System, City of San Clemente Main Pump Station Rehabilitation, City of Huntington Beach Meredith Stormwater Pump Station Rehabilitation



pilot testing / water quality specialist

Shanka Henkanatte Gedara, PHD, EIT

EDUCATION
PhD Civil Engineering, New Mexico State University – 2018
MS Environmental Engineering, New Mexico State University – 2015
BS Mining and Mineral Engineering, University of Moratuwa – 2008

YEARS OF EXPERIENCE
11+ Years
Joined PACE in 2018

REGISTRATIONS
Engineer in Training / CA

AFFILIATIONS
American Water Works Association (AWWA)
Rocky Mountain Water Environment Association (RMWEA)

PUBLICATIONS
Algal-Based, single step treatment of urban wastewaters, Bioresource Technology, 2015
Maximizing recovery of energy and nutrients from urban wastewaters, Energy, 2016
Removal of dissolved organic carbon and nutrients from urban wastewaters by Galdieria sulphuraria: laboratory to field scale demonstration, Algal Research, 2017

Additional Project Experience

Sweetwater Authority National City Well Iron and Manganese Treatment System, Golden State Water Company Del Monte Well 4 Arsenic Removal, City of Santa Monica Sustainable Water Infrastructure Project (SWIP) Advanced Water Treatment Facility, City of Huntington Beach Well 6 Sulfide Odor Removal Evaluation

Shanka Henkanatte Gedara is a technical expert in sustainable water/wastewater treatment technologies and specializes in energy and nutrient recovery. Dr. Henkanatte Gedara has experience in developing bench scale research projects to pilot scale demonstrations collaboratively with city utilities and academic institutions. He has extensive research experience in membrane-based potable water recovery and reverse osmosis (RO) concentrate management research. His extensive research in algae-based wastewater treatment systems has led to receiving extensive research grants from the National Science Foundation (NSF) and led to the "Energy Efficiency and Pollution Control Award" from the U.S. Environmental Protection Agency (EPA). His role at PACE is to lead research and development (R&D) efforts, lead pilot-, bench scale- and full-scale design testing and to extract and analyze water quality data for various water and wastewater treatment applications.

RELATED EXPERIENCE

City of Riverside Garner B Treatment Plant Condition Assessment and PFOS/PFOA Full Scale Pilot System – Riverside, CA

Dr. Henkanatte Gedara served as Pilot Testing and Water Quality Analysis Engineer for the condition assessment of the out-of-service Garner B GAC treatment system which determined the feasibility of rehabilitating the system into a full-scale pilot system to treat perfluorooctanoic acid (PFOA) / perfluorooctane sulfonate (PFOS). The assessment deemed it was feasible, and Dr. Henkanatte Gedara led the pilot testing of the reactivated treatment system. The design included modifications that would accommodate either GAC or ion exchange media and specified components to be replaced, such as a flow meter, coating, and tank lining.

Huntington Beach Well 9 Sulfide Removal Treatment System – Huntington Beach, CA

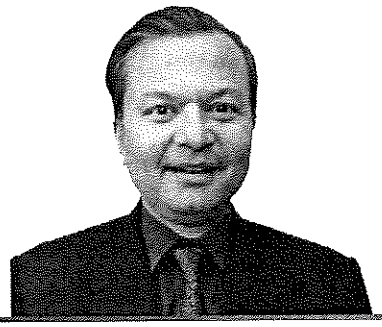
Dr. Henkanatte Gedara served as the Water Quality Expert to conduct pilot work at the Well 9 full-scale treatment facility, where the potential applicability of a proposed hybrid setup for biological treatment of reduced (non-oxidized) drinking water quality constituents in full scale was investigated. The pilot test results showed that backwash frequency could be extended to three times the existing backwash frequency to minimize annual operating expenses and provide substantial savings on water waste through backwash water and filter-to-waste disposal.

Hydrogen Sulfide Removal at the Lampson Water Well – Seal Beach, CA

The Lampson Water Well produces up to 4,000 gpm and is one of the City's four water wells. Historical water quality data showed a high range of hydrogen sulfide (H2S) concentration levels. Therefore, the well is underutilized, operating at low flow rates to avoid odor complaints. Dr. Henkanatte Gedara conducted the pilot testing and served as the Water Quality Analyst Engineer for the design of a biological treatment process (BAC) using Granular Activated Carbon (GAC) to remove H2S odor and reduce chlorine chemical dosage. Periodically, filter vessels need backwashing, and the wastewater is to be discharged to the existing sewer system. PACE also designed an inverted sewer siphon to increase flow capacity through an existing choke point.

Golden State Water Imperial Plant PFAS Treatment Facility – Imperial, CA

The project encompassed demolition of existing air stripping towers and construction of a new granular activated carbon (GAC) filter system to remove per- and polyfluoroalkyl substances (PFAS) such as perfluorooctanoic acid (PFOA) from the groundwater produced by two on-site water wells. A pre-engineered packaged GAC system from Aqueous Vets was utilized, and PACE prepared demolition plans, grading and site detail plans, concrete foundation plans and details, mechanical interconnection piping plans and details, and mechanical design and plans for a pre-treatment basket strainer system and provided construction and commissioning assistance. Mr. Gedara served as Water Quality specialist for this project.



sr. structural engineer

Santosh Shahi, PhD, SE, PE

EDUCATION
PhD Structural Engineering University of California, Irvine – 1999

MS Structural Engineering University of California, Irvine – 1994

BS Civil Engineering University of the Philippines – 1989

YEARS OF EXPERIENCE
26 Years

REGISTRATIONS
Professional Structural Engineer / CA S5149
Professional Civil Engineer / CA C61811

Additional Project Experience

City of Manhattan Beach Roundhouse Aquarium Beautification Project, Los Angeles City College, Infrastructure and Energy Upgrade, Los Angeles Valley College, Media Arts and Performing Arts Building, Santa Monica College, Student Services Building, Santa Monica College, AET Building

With over 25 years of professional experience after a doctorate degree, Mr. Shahi has a strong background in seismic engineering. Having completed projects in California and elsewhere, he brings a strong analysis, both static and performance-based design, as well as seismic detailing capabilities to the design team. Having analyzed, detailed, and plan-checked a wide variety of equipment and non-structural items, Mr. Shahi provides strong seismic anchorage support for the MEP and other disciplines in their design/plan check effort as well.

Mr. Shahi has worked on projects ranging from a few hundred dollars to a billion dollars in construction costs. He has led design efforts with particular emphasis on healthcare-related projects. He has also worked on various educational projects involving the Division of State Architects (DSA) and led retrofit analysis efforts involving Senate Bill 1952, peer reviews and non-linear analysis for existing hospital buildings. Mr. Shahi has been responsible for the structural review, design, analysis, and construction of various aviation, municipal, courthouse, and historical projects.

RELATED EXPERIENCE

City of Vernon Water Well 22 Treatment System – Vernon, CA

Mr. Shahi served as the Structural Engineer to prepare prepared plans and specifications for the structural components of the wellhead equipping and pumping system so the newly drilled water well could provide up to 2,100 gpm of potable well water into their existing distribution system. The wellhead is covered with a removable enclosure to protect the equipment. The site layout is very small and narrow, so the design minimized space used for non-essential wellhead components while leaving room to accommodate steel treatment tanks for wellhead treatment.

Crescenta Valley Water District Well No. 2 and Related Facilities – La Crescenta, CA

Mr. Shahi served as the Structural Engineer working directly for the contractor to prepare construction drawings for the Operation Building.

Peck Reservoir Pump Station Improvements – Huntington Beach, CA

As the Structural Engineer, Mr. Shahi worked directly for the contractor to prepare shop drawings, construction support, and design modification for ease of construction.

Central Lathrop Specific Plan (CLSP) Potable Water Storage Tank and Booster Pump Station – Lathrop, CA

Mr. Shahi served as the Structural Engineer for the design of a new 1.6-million-gallon potable water storage tank for the CLSP, including a tank mixing system to minimize tank dead zones and inject chlorine to maintain chlorine residual in the tank. A 6,000 gpm Booster Pump Station was also designed to meet the increased water storage and pumping demand and provide sufficient and reliable flow capacity for distribution to the potable water supply network.

Pico Zone A Recycled Water Pump Station and Talega Lift Station Modifications – San Clemente, CA

As the Structural Engineer, Mr. Shahi verified the structural capacity of the existing structure to support the proposed design.

City of Manhattan Beach Larsson Street Booster Pump Station and 2nd Street Pump Station Upgrades – Redondo Beach, CA

Mr. Shahi conducted the structural and vibration assessments of the existing vaults. Design is currently being performed for the upgrades/replacements of the two facilities, along with determining the preferred sequence of construction to minimize any impact on the current operations of the facility.

EXHIBIT "B"

Payment Schedule (Hourly Payment)

A. Hourly Rate

CONSULTANT'S fees for such services shall be based upon the following hourly rate and cost schedule:

SEE ATTACHED EXHIBIT B

B. Travel Charges for time during travel are not reimbursable.

C. Billing

1. All billing shall be done monthly in fifteen (15) minute increments and matched to an appropriate breakdown of the time that was taken to perform that work and who performed it.

2. Each month's bill should include a total to date. That total should provide, at a glance, the total fees and costs incurred to date for the project.

3. A copy of memoranda, letters, reports, calculations and other documentation prepared by CONSULTANT may be required to be submitted to CITY to demonstrate progress toward completion of tasks. In the event CITY rejects or has comments on any such product, CITY shall identify specific requirements for satisfactory completion.

4. CONSULTANT shall submit to CITY an invoice for each monthly payment due. Such invoice shall:

   A) Reference this Agreement;
   B) Describe the services performed;
   C) Show the total amount of the payment due;
   D) Include a certification by a principal member of CONSULTANT's firm that the work has been performed in accordance with the provisions of this Agreement; and
   E) For all payments include an estimate of the percentage of work completed.

   Upon submission of any such invoice, if CITY is satisfied that CONSULTANT is making satisfactory progress toward completion of tasks in accordance with this Agreement, CITY shall approve the invoice, in which event payment shall be made within thirty (30) days of receipt of the invoice by CITY. Such approval shall not be unreasonably withheld. If CITY does not approve an invoice, CITY shall notify CONSULTANT in writing of the reasons for non-approval and the schedule of performance set forth in **Exhibit "A"** may at the option of CITY be suspended until the parties agree that past performance by CONSULTANT is in, or has been brought into compliance, or until this Agreement has expired or is terminated as provided herein.

5. Any billings for extra work or additional services authorized in advance and in writing by CITY shall be invoiced separately to CITY. Such invoice shall contain all of the information required above, and in addition shall list the hours expended and hourly rate charged for such time. Such invoices shall be approved by CITY if the work performed is in accordance with the extra work or additional services requested, and if CITY is satisfied that the statement of hours worked and costs incurred is accurate. Such approval shall not be unreasonably withheld. Any dispute between the parties concerning payment of such an invoice shall be treated as separate and apart from the ongoing performance of the remainder of this Agreement.

EXHIBIT "B"

PACE
Advanced Water Engineering

2025 – 2029 HOURLY LABOR RATES

Principal	$331
Sr. Project Manager / Sr. Consulting Engineer	$287
Project Manager / Consulting Engineer / Sr. I&C Specialist	$276
Sr. GIS Analyst/Manager	$281
Sr. Electrical Engineer	$271
Sr. Project Engineer / Sr. Design Engineer	$234
Project Engineer / Design Engineer II / Electrical Engineer	$210
Instrumentation & Controls Specialist	$204
Sr. CAD Designer	$193
Design Engineer	$166
CAD Designer / GIS Analyst	$160
Technical Editor	$138
Graphic Designer	$138
Project Coordinator	$116
Administrative Support	$110
Assistant Designer	$93
Structural Engineer	$300
G.P.S. Survey Unit (w/ Operator)	$321
Expert Witness / Legal Consultation	$425 + Exp.

REIMBURSABLE EXPENSE RATES*

	Units	Cost
Travel		
Mileage (Per Mile)	Mile	$0.70
Airfare, Auto Rental, Hotel		At Cost
Misc. Travel (Parking, tax, tolls, meals, etc.)		At Cost
Per Diem (Contract Rate)	DAY	Contract Rate
Outside Reproduction		At Cost
Shipping (FedEx, UPS, Courier, etc.)		At Cost
Misc. (Review Fees, Specific Charges)		At Cost
Reproduction (In-House)		
Sheet Bond - B/W Prints and Copies – All sizes	SF	$0.16
(8 ½ x 11 to 12 x18)		
Sheet - Color Prints and Copies – All sizes	SF	$1.20
Sheet - Glossy Color Print/Photo – All sizes	SF	$2.60
Roll - Plots and Copies (Roll Paper)		
- Bond (B/W)	SF	$0.88
- Bond (Color)	SF	$1.56
Roll - Vellum or Mylar Plots	SF	$2.60
Roll - Glossy Color Plot Exhibits (Roll Paper)	SF	$3.12
Report 3-Ring Binders		
< 1.5"	EA	$10.40
1.5" to 3"	EA	$15.60
> 3"	EA	$26.00
Coil or GBC Punch Binding	EA	$1.04

*Note: All reimbursable expenses will be invoiced at the above rates + 10%

ACCI 2025 - 2029 California Rate & Labor Sheet

Labor

Engineering Personnel	Units	Rate	O/T Rate
Senior Engineer	Hour	$ 260	EXEMPT
CP Specialist	Hour	$ 228	EXEMPT
Engineer	Hour	$209	EXEMPT
Associate Engineer	Hour	$ 174	EXEMPT
Senior CP Technologist	Hour	$ 167	$ 217
Technical Data Manager	Hour	$ 144	$ 187
CAD/Designer	Hour	$ 127	$ 165
Data Processor	Hour	$ 88	$ 114

Technical Personnel	Units	Rate	O/T Rate
Project Manager	Hour	$ 177	EXEMPT
Field Supervisor	Hour	$ 170	EXEMPT
Foreman	Hour	$ 143	$ 186
Technician	Hour	$ 133	$ 173
Equipment Operator	Hour	$ 133	$ 173
Technician Assistant	Hour	$ 100	$ 130

Equipment

Specialized Equipment	Units	Rate
O_2 Monitor	Day	$ 28
BAC Pin Brazing Unit	Day	$ 113
BAC Easy Reach Pin Brazing Unit	Day	$ 103
Bell Hole Inspection Equipment	Day	$ 70
Checkmate Corrosometer Portable Instrument Kit	Day	$ 91
CIS Ancillary Equipment	Day	$ 63
Coating Holiday Detector	Day	$ 62
Coating Thickness Gauge	Day	$ 21
Combustible Gas Monitor	Day	$ 23
CS-10 Portable Current Supply	Day	$ 36
ACCI portable current supply	Day	$ 31
Current Interrupter – Portable GPS	Day	$ 24
Fluke Scope Meter	Day	$ 58
GPS Range Pole with GNSS Antennae	Day	$ 87
H_2S Monitor	Day	$ 30
iBTVM Recording Voltmeter	Day	$ 69
Laptop or Tablet Computer (Ruggedized)	Day	$ 28
Milligauss Meter	Day	$ 83

Specialized Equipment (continued)	Units	Rate
Standard Pipe Locator	Day	$ 45
Rota-Cell	Day	$ 361
Pipeline Current Mapper with "A" Frame	Day	$ 98
Pit Gauge	Day	$ 10
Portable Corrosion Rate Probe & Meter	Day	$ 79
Portable Rectifier	Day	$ 69
Radiodetection Stray Current Mapper	Day	$ 398
RF-IT or CL-IT Meter	Day	$ 25
Soil Resistivity Meter – Standard Depth	Day	$ 65
Stationary Data Logger (UDL or T&R or similar)	Day	$ 36
Survey Data Logger (Allegro or similar)	Day	$ 45
Swain Meter up to 12" Loop	Day	$ 53
Swain Meter up to 24" Loop	Day	$ 81
Terrameter Resistance Meter	Day	$ 163
Trimble GPS (Hand Held)	Day	$ 89
UT-Thickness Gauge	Day	$ 33
Wire Reel (1000-ft plus)	Day	$ 10
Weld Witcher / Magnetic Locator	Day	$ 22
Fisher Split Box Locator	Day	$ 17

Construction Equipment	Units	Rate
Cement Mixer	Day	$ 40
Compactor	Day	$ 50
Cut-Off Saw	Day	$ 73
Electric Jack Hammer	Day	$ 22
Electric Pipe Threader	Day	$ 64
Generator	Day	$ 50
Grout Pump	Day	$ 351
Mini Excavator and Trailer	Day	$319
Vactor Trailer	Day	$ 368
Walk Behind Pneumatic Drill	Day	$ 342
Kor-It Hitch Mount Core Saw	Day	$300
Welder – Telwin	Day	$ 90

Transportation Equipment	Units	Rate
All-Terrain Vehicle	Day	$ 490
Trailer – Dump	Day	$ 128
Trailer – Flatbed	Day	$ 84
Trailer – Gooseneck	Day	$ 120
Truck – 1/2 Ton 4x4	Hour	$ 29
Truck – 3/4 Ton 4x4	Hour	$ 37
Boat- Motorized boat with trailer	Day	$239

Definitions and Incurred Cost Mark-ups

Rental Equipment, Material, and Subcontractors
Should rental equipment, material, or subcontractors be required, invoicing shall be submitted at cost plus 20%

Mobilization
Portal to portal for transportation equipment and labor

Travel and Lodging
Cost Plus 15%

Meal Per Diem
$55.00/Day

Overtime
O/T rates will be charged for any hours that exceed 8-hours per day

Note:
The rates are subject to change and are based on current costs, a 30 day notice prior to rate changes will be given.

Any new equipment and pricing shall be added upon notice

Material prices do not include freight costs

Sales or Use taxes are not calculated in material, equipment, or labor pricing.

BESS
UTILITY SOLUTIONS

Hayward (Corporate) | Fresno | Los Angeles | Sacramento | F. (408) 988-0101 Utility Locating - Ground Penetrating Radar (GPR) - Electromagnetic Pipe Locators Structural Concrete Scanning - Potholing Vacuum Excavation - CCTV Pipe Inspection Mobile LiDAR Scanning - 3D Scanning - 3D Utility Mapping - Gas Standy by - www.besstestlab.com
DBE 34267 - CSLB 817532 - DIR 1000007058 - MBE 1208095 - SBE 38052 - SLEB 18-00111 - ISN 400231830

BESS Utility Solutions Rate Schedule

Services	Houlry Rate	Night/OT Rate	Emergency Rate
Project Management	$225		
Project Coordination	$169		
Utility Foreman	$219		
Licensed Professional (Civil / Surveyor)	$231		
LiDAR / UAV / Data Processing and Extraction	$146		
CAD Technician	$135		
Reports / Sketches / Clerical	$124		
Administrative Support	$124		
Data Processing and Extraction	$152		
Utility Location & Gas Transmission Standby			
1-Person Utility Designation w/ GPR & EM Pipe Locator	$219	$351	$439
2-Person Utility Designation w/ Multi Antenna GPR	$439	$702	$878
1-Person Gas Transmisson Stand by w/truck and equipment	$231	$369	$461
Potholing and Vacuum Excavation			
2-Person Utility Potholing w/ air vacuum truck	$383	$497	$612
1-Person Utility Potholing w/ hydro vacuum truck	$368	$478	$589
2-Person Utility Potholing w/ hydro vacuum truck	$460	$598	$737
2-Person Utility Potholing w/ Air OX vacuum truck	$514	$669	$823
2-Person Key Hole & Surface Restoration w/ equipment	$371	$483	$594
1-Person Dump Truck Crew w/equipment	$276	$358	$441
Traffic Control			
1-Person Traffic Control w/ arrow truck	$189	$246	$303
2-Person Traffic Control w/ arrow truck	$301	$391	$481
1-Person Flagger / TC Helper	$163	$212	$261
GPR Concrete Scanning and Coring			
1-Person GPR Concrete Scanning w/ equipment	$225	$293	$360
1-Person GPR Concrete Scanning w/ equipment Prevailing Wage	$302	$392	$483
1-Person Saw Cutting & Coring w/ equipment	$180	$234	$288
1-Person Saw Cutting & Coring w/ equipment Prevailing Wage	$197	$256	$315
CCTV Camera – Video inspection			
2-Person CCTV Pipe Inspection w/ Main Line Crawler Unit	$387	$503	$619
2-Person CCTV Pipe Inspection w/ Lateral Line Push Unit	$375	$487	$600
2-Person Hydro Flushing w/ hydro vacuum truck	$460	$598	$737
Surveying and Mapping			
1-Person Survey Crew - GPS / Robotic / 3D Scanner	$228	$297	$366
2-Person Survey Crew - GPS / Robotic / 3D Scanner	$325	$423	$520
2-Person Survey Crew - Mobile LiDAR Scanner	$422	$549	$675
2-Person Survey Crew - UAV Data Collection	$325	$423	$520

NOTE: Rates are portal to portal from our nearst office. Mobilization may apply for distances further than 50 miles from nearest office.

Additional Cost			
1-Person Utility Support Truck	$186	$241	$297
1-Person General Labor Hourly Rate	$163	$212	$173
1-Person Operator Hourly Rate	$208	$271	$333
1-Person Utility Truck Mobilization Rate	$128		
Air/hydrovac Utility Truck Mobilization Rate	$337		
Hydrovac Utility Truck Mobilization Rate	$383		
Large Specialty Utility Truck Mobilization Rate	$429		
Traffic Control Plans – non-stamped (per sheet)	$450		
Traffic Control Plans – Stamped (per sheet)	$675		
Mileage, if applicable	Current IRS Rate		
Lodging and meals, applies when over 50 miles	Current GSA Rate		
Remote Hose Per 25' Section (3" 4" or 6" 10")	$45/Each		
Off site disposal of Non-Hazardous Material	$1,500/Load		
Off-Road Vehicle Rental	Cost +10%		
Outside reproductions, shipping, services and consultants	Cost +10%		
Cost of specialty field supplies,rental equipment, bridge tolls etc.	Cost +10%		

Conditions

Work site must be safe and prepared in advanced prior to scheduleing our crews (if managed by client)
Show up cost is a 4 hour minimum per our houlry rates (Per National Pipe Line agreement)
Minimum charge is 4 hours
Over time applies after eight hours of work on site and weekends Emergencies and Sundays are double time
Rates above apply to day shift (typical BESS day shift hours are 7:00 AM to 3:30 PM).
Night rate applies outside of normal shift hours.
Overtime after 8hrs on site up to 12hrs and Saturdays
Overtime after 12hrs, Emergency,Sundays and Holidays
3% escalation may apply for multi year contracts

HUITT
HZ ZOLLARS

City of Huntington Beach

On-Call Civil Engineering Professional Consulting Services
2025-2029
HOURLY RATE SHEET

Engineering/Architecture

Principal	$ 365.00
Sr. Project Manager	$ 340.00
Design Principal	$ 280.00
QA Manager	$ 270.00
Project Manager	$ 300.00
Sr. Civil Engineer	$ 270.00
Sr. Structural Engineer	$ 290.00
Sr. Mechanical Engineer	$ 270.00
Sr. Electrical Engineer	$ 270.00
Civil Engineer	$ 240.00
Structural Engineer	$ 215.00
Mechanical Engineer	$ 215.00
Electrical Engineer	$ 215.00
Plumbing Engineer	$ 215.00
EIT	$ 180.00
Sr. Architect	$ 255.00
Sr. NL Architectural Staff	$ 225.00
Architect	$ 225.00
Architect Intern 3	$ 190.00
Architect Intern 2	$ 145.00
Architect Intern 1	$ 130.00
Sr. Landscape Architect	$ 240.00
Landscape Architect	$ 170.00
Landscape Architect Intern	$ 130.00
Sr. Designer	$ 210.00
Designer	$ 170.00
Sr. CADD Technician	$ 155.00
CADD Technician	$ 130.00

Interior Design

Sr. Interior Designer	$ 185.00
Interior Designer	$ 130.00
Interior Designer Intern	$ 115.00

Survey

Survey Manager	$ 310.00
Sr. Project Surveyor	$ 250.00
Project Surveyor	$ 170.00
Survey Technician	$ 140.00

Survey Crews

1-Person Survey Crew	$ 240.00
2-Person Survey Crew	$ 390.00
3-Person Survey Crew	$ 475.00

Construction

Construction Manager	$ 195.00
Resident Engineer	$ 180.00
Inspector/Owner's Representative	$ 140.00
Sr. Project Representative	$ 135.00
Resident Project Representative	$ 110.00

Administrative

Sr. Project Support	$ 135.00
Project Support	$ 125.00

*Subject to escalation beyond the year 2028.

SQUARE 1 DESIGN GROUP

ARCHITECTURE | INTERIORS | PLANNING | ENVIRONMENTS

ATTACHMENT 'A'

HOURLY RATE SCHEDULE

PRINCIPAL ARCHITECT	280
PROJECT ARCHITECT / DESIGNER	260
PROJECT MANAGER	220
JOB CAPTAIN	200
SPECIFICATIONS	180
COST ESTIMATING	180
TECHNICAL PERSONNEL	160
CONSTRUCTION ADMIN. SUPPORT	140
INTERIOR DESIGNER	120
ADMINISTRATIVE PERSONNEL	110
STRUCTURAL ENGINEER – PRINCIPAL	280
STRUCTURAL DESIGNER/PROJECT MGR	260
MECH/PLUMB/ELEC ENGINEER PRINCIPAL	240
MPE PROJECT ENGINEER	240
MPE DESIGNER	200

Terracon

2025-2029
Schedule of Services and Fees
Geotechnical Services - Southern California

Title	Cost	
1. PERSONNEL		
Senior Principal	$ 334.00	/hour
Principal	$ 312.00	/hour
Senior Consultant	$ 296.00	/hour
Senior Engineer	$ 232.00	/hour
Senior Geologist	$ 232.00	/hour
Senior Geophysicist	$ 232.00	/hour
Senior Project Manager	$ 232.00	/hour
Project Manager	$ 200.00	/hour
Project Engineer	$ 194.00	/hour
Project Geologist	$ 194.00	/hour
Project Geophysicist	$ 194.00	/hour
Assistant Project Manager	$ 178.00	/hour
Field Supervisor	$ 166.00	/hour
Senior Staff Engineer	$ 166.00	/hour
Senior Staff Geologist	$ 166.00	/hour
Senior Staff Geophysicist	$ 166.00	/hour
Senior GIS Analyst	$ 162.00	/hour
Project Field Manager	$ 150.00	/hour
Staff Engineer - Prevailing Wage	$ 210.00	/hour
Staff Engineer	$ 150.00	/hour
Staff Geologist - Prevailing Wage	$ 210.00	/hour
Staff Geologist	$ 150.00	/hour
Staff Geophysicist	$ 150.00	/hour
CAD Operator	$ 134.00	/hour
Field Engineer - Prevailing Wage	$ 198.00	/hour
Field Engineer	$ 134.00	/hour

Terracon

2025-2029
Schedule of Services and Fees
Geotechnical Services - Southern California

Title	Cost	
Field Geologist - Prevailing Wage	$ 198.00	/hour
Field Geologist	$ 134.00	/hour
Field Geophysicist - Prevailing Wage	$ 198.00	/hour
Field Geophysicist	$ 134.00	/hour
Senior CAD Operator	$ 134.00	/hour
Assistant Geologist - Prevailing Wage	$ 198.00	/hour
Assistant Geologist	$ 124.00	/hour
Assistant Geophysicist - Prevailing Wage	$ 198.00	/hour
Assistant Geophysicist	$ 124.00	/hour
Engineering Assistant - Prevailing Wage	$ 198.00	/hour
Engineering Assistant	$ 124.00	/hour
Construction Inspector - Prevailing Wage	$ 198.00	/hour
Construction Inspector	$ 140.00	/hour
Technician V - Prevailing Wage (4 hour minimum)	$ 210.00	/hour
Technician V (4 hour minimum)	$ 146.00	/hour
Technician IV - Prevailing Wage (4 hour minimum)	$ 204.00	/hour
Technician IV (4 hour minimum)	$ 134.00	/hour
Technician III - Prevailing Wage (4 hour minimum)	$ 204.00	/hour
Technician III (4 hour minimum)	$ 124.00	/hour
Technician II - Prevailing Wage (4 hour minimum)	$ 198.00	/hour
Technician II (4 hour minimum)	$ 114.00	/hour
Technician I - Prevailing Wage (4 hour minimum)	$ 198.00	/hour
Technician I (4 hour minimum)	$ 102.00	/hour
Clerical/Administrative Staff / Senior Administrative Staff	$ 108.00	/hour
Project Coordinator	$ 108.00	/hour

An overtime premium of 1.5 times the hourly rate will apply for services provided Monday** ***through Friday that are in excess of 8 hours per day and for services provided before 7:00 AM and after 6:00 PM, as well as for services provided on Saturday, Sunday and Terracon recognized holidays.

position or court testimony at a minimum of 1.75 times the regular rate-minimum

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2025-2029
Schedule of Services and Fees
Geotechnical Services - Southern California

Title	Cost	
2. DRILLING		
Mobilization of equipment and personnel –) With-in 50 miles	$ 646.00	/minimum
All-Terrain or Track-mounted Drill With-in 50 miles	$ 802.00	/minimum
Support Vehicle	$ 216.00	/day
Difficult Moving	$ 340.00	/hour
Shelby Tube Samples	$ 54.00	/sample
Hourly charge for field personnel and drilling equipment		
Drilling w/truck-mount rig with two persons	$ 340.00	/hour
Drilling w/truck-mount rig with two persons (Overtime)	$ 388.00	/hour
Drilling w/track-mount & ATV rig with two persons	$ 366.00	/hour
Drilling w/track-mount & ATV rig with two persons (Overtime)	$ 414.00	/hour
Drill crew (2-man) surcharge for Davis Bacon or CA Prevailing wages	$ 96.00	/hour
Cost of special equipment for moving drilling equipment about site or for permits	Cost Plus 15%	
Miscellaneous items, client delay, stand-by time		
Truck-mount	$ 340.00	/hour
Track-mount & ATV	$ 364.00	/hour
Well point installation in drilled borehole, installing pipe plus	$ 394.00	/hour
Perforated pipe (3" max size) does not include drilling hole	$ 22.00	/ft
Additional charge for surface protector pipe, cap, and pad	$ 646.00	/minimum
Grouting, cement-bentonite	$ 12.00	/ft
Borehole backfill, bentonite chips	$ 14.00	/ft
3. INSITU TESTING (Cone Penetration, Dilatometer and Vane Shear Testing)		
Mobilization of equipment and personnel – CPT Rig (4.85/mile each way)	$ 802.00	/day minin
Hourly charge for operator and equipment*	$ 352.00	/hour
*** Note - Standby for client delay or difficult access greater than ½ hour per test lo**		
Electronic Cone Penetration Testing (CPT)		
CPTU (with pore pressure)	$ 20.00	/ft
Seismic Tests at 5 ft intervals	$ 68.00	/test
Pore pressure dissipation testing	$ 352.00	/hour
In-Situ Vane Shear Testing (VST-direct push, 3" x 6" vane)	$ 352.00	/hour
Dilatometer Testing (DMT) tests at 1-foot intervals	$ 30.00	/ft

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2025-2029
Schedule of Services and Fees
Geotechnical Services - Southern California

Title	Cost	
Data Reduction		
CPT sounding	$ 130.00	/each
DMT sounding	$ 164.00	/each
VST test	$ 40.00	/test
4. GEOPROBE SYSTEM		
Mobilization of equipment and personnel – GeoProbe (3.76/mile each way)	$ 822.00	/day minim
Direct Push only, 8-hr day	$ 4,040.00	/day
Consumable Geoprobe® Supplies	Cost Plus 15%	
Excess of 8-hrs, Standby/Client Delay Time - machine and operators	$ 404.00	/hour
5. GEOTECHNICAL AND MATERIALS EQUIPMENT RENTAL (Personnel Time Not I		
Nuclear Density and Moisture Measuring Equipment	$ 18.00	/test
Porosity	$ 220.00	/test
Pin Hole Dispersion	$ 324.00	/test
With Remolding of Sample	$ 356.00	/test
Sand Equivalent	$ 242.00	/test
Soil Thermal Resistivity - 4-point Dry Out Curve	$ 1,292.00	/test
Additional Points	$ 270.00	/point
Consolidation		
Constant Rate of Strain Consolidation, 2.5" diameter - ASTM D4186	$ 700.00	/test
Includes duration of 4 days, each additional day	$ 108.00	/day
Incremental Consolidation, 2.5" diameter - ASTM D2435	$ 674.00	
(Regular Load Increment to 16 TSF)		/test
Each additional Unloaded-Reload Cycle	$ 108.00	/cycle
Each additional Unloaded-Reload Cycle	$ 414.00	/test
Swell Test ASTM D4546 Method A, per specimen (requires 4 minimum)	$ 296.00	/test
Swell Test ASTM D4546 Method B, per specimen	$ 296.00	/test
Swell Test ASTM D4546 Method C, per specimen	$ 458.00	/test

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2025-2029
Schedule of Services and Fees
Geotechnical Services - Southern California

Title	Cost	
Shear Strength		
Unconfined Compression, ASTM D2166	$ 162.00	/test
With Stress-Strain Curve	$ 162.00	/each
Calibrated Hand Penetrometer or Torvane	$ 26.00	/each
Direct Shear FAST (cohesionless)	$ 324.00	/point
Direct Shear SLOW (cohesive)	$ 404.00	/point
Standard Sample Preparation	$ 102.00	/sample
Preparation on remolding for difficult samples	$ 108.00	/hour
Unconfined Compression on Cured Proctor Sample with Fly Ash	$ 134.00	/test
Triaxial Compression		
Unconsolidated Undrained Triaxial (per Confining Stress)	$ 226.00	/each
Consolidated Undrained Triaxial (per Confining Stress)	$ 442.00	/each
Consolidated Drained Triaxial (per Confining Stress) *Note: Normally requires three	$ 484.00	/each
Preparation of Remolded Samples	$ 108.00	/hour
Note:Testratesfor1.4inch,1.8inchand2.8inchdiametersamples.Ratesfor other diameter samples available upon request.		
Compaction and Density		
Laboratory CBR (does not include maximum density)	$ 324.00	/test
R-Value (ASTM D-2844)	$ 410.00	/each
Modified Proctor (ASTM D 1557)	$ 308.00	/test
Standard Proctor (ASTM D 698)	$ 290.00	/test
Relative Density (ASTM D 4253 & D 4254 wet or dry method)	$ 484.00	/each
Standard Proctor with Fly Ash (2 hour Delay)	$ 286.00	/each
Harvard Miniature	$ 270.00	/each
Field CBR * Additional charge for Coarse Aggregate Correction	$ 54.00	/each
Permeability		
Constant Head Permeability Test (ASTM D2434)	$ 254.00	/test
Falling Head Permeability Test (ASTM D5084)	$ 340.00	/each
Preparation of Remolded Samples	$ 54.00	/each

Terracon

2025-2029
Schedule of Services and Fees
Geotechnical Services - Southern California

Title	Cost	
Chemical Tests		
pH (By meter)	$ 54.00	/each
Electrical Conductivity by Miller box	$ 156.00	/each
Chloride Concentration	$ 102.00	/each
Soluble Sulfate	$ 118.00	/each
Cation Exchange Capacity of Soil	$ 172.00	/each
6. ROCK LABORATORY TESTING		
ASTM D 7012 Triaxial Compression, Method A (per confining stress)	$ 414.00	/each
ASTMD7012ElasticModuliinTriaxialCompression, Method B (per confining stress)	$ 554.00	/each
ASTM D 7012 Uniaxial Compression Test, Method C	$ 302.00	/each
ASTM D 7012 Elastic Moduli in Uniaxial Compression, Method D	$ 426.00	/each
ASTM D 3967 Indirect Brazilian Tensile Test	$ 114.00	/each
ASTM D 4644 Slake Durability Index	$ 216.00	/each
ASTM D 5607 Direct Shear Intact Rock (per normal stress)	$ 404.00	/each
ASTM D 5607 Direct Shear at Discontinuity (3 normal stresses)	$ 1,212.00	/each
ASTM D 5607 Direct Shear Saw Cut (3 normal stresses)	$ 1,212.00	/each
ASTM D 5607 Direct Shear Intact Rock with Residual Cycles (3 normal stresses	$ 1,320.00	/each
ASTM D 5731 Point Load Axial Diametrical	$ 102.00	/each
Difficult Sample Preparation	$ 108.00	/hour

TRAFFIC CONTROL ENGINEERING, INC.

FEE SCHEDULE
2025- 2029

EMPLOYEE	HOURLY RATE
Principal (Project Manager)	$ 245.00
Transportation Engineer (Project Engineer)	$ 205.00
Design Engineer	$ 105.00
CAD Technician	$ 90.00

DK:dr

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