AGENDA REPORT

CITY OF SAN CLEMENTE

CITY COUNCIL MEETING

910 Calle Negocio
2nd Floor
San Clemente, California
www.san-clemente.org

Meeting Date: September 14, 2023 Agenda Item: 7N

Department: Public Works
Prepared By Shawn Ryan, Senior Civil Engineer

Subject:
CONSIDERATION OF A RESOLUTION AWARDING A PROFESSIONAL CONSULTANT SERVICES AGREEMENT TO PACIFIC ADVANCED CIVIL ENGINEERING INC. FOR ENGINEERING CONSULTING SERVICES FOR THE HEADWORKS GRIT CYCLONE REPLACEMENT PROJECT, CIP PROJECT NO. 13202; AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE AGREEMENT

Fiscal Impact:
Yes. The proposed agreement in an amount not to exceed $151,665 is within the approved project budget of $200,000 from the Sewer Fund Depreciation Reserve, Account No. 054-476-45300-000-13202.

Summary:
This is a Professional Consultant Services Agreement (PCSA) for an engineering consultant to provide preliminary design review, final design and construction support services to replace two grit classifiers, screw conveyors, and grit pumping systems at the San Clemente Water Reclamation Plant (WRP) for the Headworks Grit Cyclone Replacement Project.

Before the City Council is the approval of a Professional Consultant Services Agreement with Pacific Advanced Civil Engineering, Inc., in an amount not to exceed $151,665, for engineering consulting services for the Headworks Grit Cyclone Replacement Project.

Background:
The City currently has two aerated grit tanks, two grit classifiers, and two screw conveyors to separate rock, sand and grit from the screened wastewater, in the WRP. The current system is coming to the end of its useful life and is in need of significant repairs. The project will include an evaluation of alternative technology, the airflow requirements, and Computational Fluid Dynamics (CFD) modeling of the current aerated grit tanks.

Discussion:
The City initiated requests for proposals (RFP) in June 2023 for the above design work. Proposals were solicited via the PlanetBids website. Staff is not aware of local companies who might be qualified to perform the work. Following the end of the solicitation, on July 17, 2023, the City received a total of two (2) proposals from qualified firms, Lee + Ro and Pacific Advanced Civil Engineering.

	Firm Name	Proposal Amount
1.	Lee + RO	$147,624
2.	Pacific Advanced Civil Engineering	$151,665

City staff reviewed the submittals (none of which were from local companies) at length and determined that Pacific Advanced Civil Engineering, Inc (with a principal place of business in California in the City of Fountain Valley) provided the best approach for the Headworks Grit Cyclone Replacement Project and their fee is fair and reasonable. Fee proposals from Lee + Ro and Pacific Advanced Civil Engineering, Inc. ranged from $147,624 to $151,665, respectively. Pacific Advanced Civil Engineering, Inc. is very familiar with the City of San Clemente's WRP, and staff believes that they will provide excellent services for the Headworks Grit Cyclone Replacement Project.

Council Options:

- Adopt Resolution No. 23-103, awarding a Professional Consultant Services Agreement to Pacific Advanced Civil Engineering, Inc., and authorizing the City Manager to execute the agreement in an amount not to exceed $151,665.

- Adopt Resolution No. 23-103, with modifications.

- Do not adopt Resolution No. 23-103.

- Continue the item and direct staff to provide additional information.

Environmental Review/Analysis:

The work under this Professional Consultant Services Agreement is not a "project" under the California Environmental Quality Act (CEQA).

Recommended Actions:

Staff Recommendation

Adopt Resolution 23-103, which would:

1. Award a Professional Consultant Services Agreement to Pacific Advanced Civil Engineering, Inc. for engineering consulting services for the Headworks Grit Cyclone Replacement Project, CIP Project No. 13202; and

2. Authorize the City Manager to execute the Agreement in an amount not to exceed $151,665.

Attachment:

1. Resolution 23-103
2. Professional Consultant Services Agreement with Pacific Advanced Civil Engineering, Inc.

Notification:

All bidders.

RESOLUTION NO. 23-103

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN CLEMENTE, CALIFORNIA, AWARDING A PROFESSIONAL CONSULTANT SERVICES AGREEMENT TO PACE ADVANCED CIVIL ENGINEERING, INC. FOR ENGINEERING CONSULTING SERVICES FOR THE HEADWORKS GRIT CYCLONE REPLACEMENT PROJECT, CIP PROJECT NO. 13202, AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE AGREEMENT

WHEREAS, on June 15, 2023, the Engineering Division solicited proposals from qualified firms to provide engineering consulting services for the Headworks Grit Cyclone Replacement Project, CIP Project No. 13202; and

WHEREAS, on July 17, 2023, the City of San Clemente received two (2) proposals from qualified firms LEE + RO and Pacific Advanced Civil Engineering; and

WHEREAS, City staff reviewed the submitted proposals and determined Pace Advanced Engineering, Inc. provided the best approach for the Headworks Grit Cyclone Replacement Project; and

WHEREAS, the fee proposal from Pace Advanced Engineering, Inc. is fair and reasonable.

NOW, THEREFORE, the City Council of the City of San Clemente does hereby find, determine and resolve as follows:

Section 1. Recitals. The above recitals are considered findings by the City Council and incorporated into the body of this resolution.

Section 2. A Professional Consulting Services Agreement is hereby awarded to Pace Advanced Civil Engineering, Inc. for engineering consulting services for the Headworks Grit Cyclone Replacement Project, CIP Project No. 13202.

Section 3. The City Manager is authorized to execute the Agreement in an amount not to exceed $151,665 in a form substantially similar to that presented to the City Council on September 14, 2023.

Section 4. The City Clerk shall certify to the passage and adoption of this resolution and enter it into the book of original resolutions.

PASSED AND ADOPTED this _____ day of _____, 2023.

ATTEST:

_____
City Clerk of the City of
San Clemente, California

_____
Mayor of the City of San
Clemente, California

STATE OF CALIFORNIA)
COUNTY OF ORANGE) §
CITY OF SAN CLEMENTE)

I, LAURA CAMPAGNOLO, City Clerk of the City of San Clemente, California, do hereby certify that Resolution No. _____ was adopted at a regular meeting of the City Council of the City of San Clemente held on the _____ day of _____, _____, by the following vote:

AYES:

NOES:

ABSENT:

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of San Clemente, California, this _____ day of _____, _____.

_____
CITY CLERK of the City of
San Clemente, California

Approved as to form:

_____
Elizabeth A. Mitchell, City Attorney

CITY OF SAN CLEMENTE

PROFESSIONAL CONSULTANT SERVICES AGREEMENT

1. PARTIES AND DATE.

This Agreement is made and entered into this _____ day of _____, 20___, by and between the City of San Clemente, a municipal corporation, organized under the laws of the State of California, with its principal place of business at 910 Calle Negocio , San Clemente, California, 92673 ("City") and **Pacific Advanced Civil Engineering, Inc.**, **a california corporation,** with its principal place of business at **17520 Newhope Street, Ste 200, Fountain Valley, California 92708** ("Consultant"). City and Consultant are sometimes individually referred to herein as "Party" and collectively as "Parties."

2. RECITALS.

2.1 Consultant.

Consultant desires to perform and assume responsibility for the provision of certain professional **engineering** consulting services required by the City on the terms and conditions set forth in this Agreement. Consultant represents that it is experienced in providing professional **engineering** consulting services to public clients, is licensed in the State of California, if applicable, and is familiar with the plans of City.

2.2 Project.

City desires to engage Consultant to render such professional **engineering** consulting services for the **HEADWORKS GRIT CYCLONE REPLACEMENT PROJECT** ("Project") as set forth in this Agreement.

3. TERMS.

3.1 Scope of Services and Term.

3.1.1 General Scope of Services. Consultant promises and agrees to furnish to the City all labor, materials, tools, equipment, services, and incidental and customary work necessary to fully and adequately supply the professional **engineering** consulting services necessary for the Project ("Services"). The Services are more particularly described in Exhibit "A" attached hereto and incorporated herein by reference. All Services shall be subject to, and performed in accordance with, this Agreement, the exhibits attached hereto and incorporated herein by reference, and all applicable local, state and federal laws, rules and regulations.

3.1.2 Term. The term of this Agreement shall be from **October 15, 2023** until the services are complete to the satisfaction of the City, unless earlier terminated as provided herein**.**

3.2 Responsibilities of Consultant.

3.2.1 Independent Contractor; Control and Payment of Subordinates. The Services shall be performed by Consultant or under its supervision. Consultant will determine the means, methods and details of performing the Services subject to the requirements of this Agreement. City retains Consultant on an independent contractor basis and not as an employee.

Consultant retains the right to perform similar or different services for others during the term of this Agreement. Any additional personnel performing the Services under this Agreement on behalf of Consultant shall also not be employees of City and shall at all times be under Consultant's exclusive direction and control. Neither City, nor any of its officials, officers, directors, employees or agents shall have control over the conduct of Consultant or any of Consultant's officers, employees, or agents, except as set forth in this Agreement. Consultant shall pay all wages, salaries, and other amounts due such personnel in connection with their performance of Services under this Agreement and as required by law. Consultant shall be responsible for all reports and obligations respecting such additional personnel, including, but not limited to: social security taxes, income tax withholding, unemployment insurance, disability insurance, and workers' compensation insurance.

3.2.2 Schedule of Services. Consultant shall perform the Services expeditiously, within the term of this Agreement, and in accordance with the Schedule of Services set forth in Exhibit "B" attached hereto and incorporated herein by reference. Consultant represents that it has the professional and technical personnel required to perform the Services in conformance with such conditions. In order to facilitate Consultant's conformance with the Schedule, City shall respond to Consultant's submittals in a timely manner. Upon request of City, Consultant shall provide a more detailed schedule of anticipated performance to meet the Schedule of Services.

3.2.3 Endorsement on PS&E/ Other Data. Consultant shall sign all plans, specifications, estimates (PS&E) and engineering data furnished by Consultant, and where appropriate will indicate Consultant’s authorized signature and professional registration number.

3.2.4 Conformance to Applicable Requirements. All work prepared by Consultant shall be subject to the approval of City.

3.2.5 Substitution of Key Personnel. Consultant has represented to City that certain key personnel will perform and coordinate the Services under this Agreement. Should one or more of such personnel become unavailable, Consultant may substitute other personnel of at least equal competence upon written approval of City. In the event that City and Consultant cannot agree as to the substitution of key personnel, City shall be entitled to terminate this Agreement for cause. As discussed below, any personnel who fail or refuse to perform the Services in a manner acceptable to the City, or who are determined by the City to be uncooperative, incompetent, a threat to the adequate or timely completion of the Project or a threat to the safety of persons or property, shall be promptly removed from the Project by the Consultant at the request of the City. The key personnel for performance of this Agreement are as follows: **Robert Murphy, PE, Senior Project Manager**.

3.2.6 City's Representative. The City hereby designates **Shawn Ryan, Senior Civil Engineer**, or his/her designee, to act as its representative in all matters pertaining to the administration and performance of this Agreement ("City's Representative"). City's Representative shall have the power to act on behalf of the City for review and approval of all products submitted by Consultant but not the authority to enlarge the Scope of Work or change the total compensation due to Consultant under this Agreement. The City Manager shall be authorized to act on City's behalf and to execute all necessary documents which enlarge the Scope of Work or change the Consultant's total compensation subject to the provisions contained in Section 3.3 of this Agreement. Consultant shall not accept direction or orders from any person other than the City Manager, City's Representative or his/her designee.

3.2.7 Consultant's Representative. Consultant hereby designates **Robert Murphy, PE, Senior Project Manager**, or his/her designee, to act as its representative for the

performance of this Agreement ("Consultant's Representative"). Consultant's Representative shall have full authority to represent and act on behalf of the Consultant for all purposes under this Agreement. The Consultant's Representative shall supervise and direct the Services, using his/her best skill and attention, and shall be responsible for all means, methods, techniques, sequences, and procedures and for the satisfactory coordination of all portions of the Services under this Agreement.

3.2.8 Coordination of Services. Consultant agrees to work closely with City staff in the performance of Services and shall be available to City's staff, consultants and other staff at all reasonable times.

3.2.9 Standard of Care; Performance of Employees. Consultant shall perform all Services under this Agreement in a skillful and competent manner, consistent with the standards generally recognized as being employed by professionals in the same discipline in the State of California. Consultant represents and maintains that it is skilled in the professional calling necessary to perform the Services. Consultant warrants that all employees and subconsultants shall have sufficient skill and experience to perform the Services assigned to them. Finally, Consultant represents that it, its employees and subconsultants have all licenses, permits, qualifications and approvals of whatever nature that are legally required to perform the Services, and that such licenses and approvals shall be maintained throughout the term of this Agreement. As provided for in the indemnification provisions of this Agreement, Consultant shall perform, at its own cost and expense and without reimbursement from the City, any services necessary to correct errors or omissions which are caused by the Consultant's failure to comply with the standard of care provided for herein. Any employee of the Consultant or its sub-consultants who is determined by the City to be uncooperative, incompetent, a threat to the adequate or timely completion of the Project, a threat to the safety of persons or property, or any employee who fails or refuses to perform the Services in a manner acceptable to the City, shall be promptly removed from the Project by the Consultant and shall not be re-employed to perform any of the Services or to work on the Project.

3.2.10 Laws and Regulations. Consultant shall keep itself fully informed of and in compliance with all local, state and federal laws, rules and regulations in any manner affecting the performance of the Project or the Services, including all Cal/OSHA requirements, and shall give all notices required by law. Consultant shall be liable for all violations of such laws and regulations in connection with Services. If Consultant performs any work knowing it to be contrary to such laws, rules and regulations, Consultant shall be solely responsible for all costs arising therefrom. Consultant shall defend, indemnify and hold City, its officials, directors, officers, employees, agents, and volunteers free and harmless, pursuant to the indemnification provisions of this Agreement, from any claim or liability arising out of any failure or alleged failure to comply with such laws, rules or regulations.

3.2.11 Safety. Consultant shall execute and maintain its work so as to avoid injury or damage to any person or property. In carrying out its Services, the Consultant shall at all times be in compliance with all applicable local, state and federal laws, rules and regulations, and shall exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed. Safety precautions, where applicable, shall include, but shall not be limited to: (A) adequate life protection and lifesaving equipment and procedures; (B) instructions in accident prevention for all employees and subconsultants, such as safe walkways, scaffolds, fall protection ladders, bridges, gang planks, confined space procedures, trenching and shoring, equipment and other safety devices, equipment and wearing apparel as are necessary or lawfully required to prevent accidents or injuries; and (C) adequate facilities for the proper inspection and maintenance of all safety

measures.

3.2.12 Insurance. Consultant agrees to procure and maintain, at Consultant's expense all insurance specified in Exhibit "C" attached hereto and by this reference incorporated herein. Consultant shall require all subconsultants to carry the same policies and limits of insurance that the Consultant is required to maintain, unless otherwise approved in writing by the City.

3.3 Fees and Payments.

3.3.1 Compensation. Consultant shall receive compensation, including authorized reimbursements, for all Services rendered under this Agreement at the rates set forth in Exhibit "D" attached hereto and incorporated herein by reference. The total compensation shall not exceed **one hundred and fifty-one thousand six hundred sixty-five** (**$151,665**) without written approval of the City Council or City Manager as applicable. Extra Work may be authorized, as described below, and if authorized, will be compensated at the rates and manner set forth in this Agreement.

3.3.2 Payment of Compensation. Consultant shall submit to City a monthly invoice which indicates work completed and hours of Services rendered by Consultant. The invoice shall describe the amount of Services provided since the initial commencement date, or since the start of the subsequent billing periods, as appropriate, through the date of the invoice. City shall, within 30 days of receiving such invoice, review the invoice and pay all non-disputed and approved charges thereon. If the City disputes any of Consultant's fees, the City shall give written notice to Consultant within thirty (30) days of receipt of an invoice of any disputed fees set forth therein.

3.3.3 Reimbursement for Expenses. Consultant shall not be reimbursed for any expenses unless authorized in writing by City, or included in Exhibit "D" of this Agreement.

3.3.4 Extra Work. At any time during the term of this Agreement, City may request that Consultant perform Extra Work. As used herein, "Extra Work" means any work which is determined by City to be necessary for the proper completion of the Project, but which the Parties did not reasonably anticipate would be necessary at the execution of this Agreement. Consultant shall not perform, nor be compensated for, Extra Work without written authorization from the City.

3.3.5 Rate Increases. In the event that this Agreement is renewed pursuant to Section 3.1.2, the rate set forth in Exhibit "D" may be adjusted each year at the time of renewal as set forth in Exhibit "D."

3.3.6 Labor Code Requirements.

3.3.6.1 Prevailing Wages. Consultant is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on "public works" and "maintenance" projects. **If** the Services are being performed as part of an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and **Since** the total compensation is $1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. Consultant shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to execute the Services available to interested parties

upon request, and shall post copies at the Consultant's principal place of business and at the project site. Consultant shall defend, indemnify and hold the City, its officials, officers, employees, agents, and volunteers free and harmless from any claim or liability arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

3.3.6.2 Registration. If the Services are being performed as part of an applicable "public works" or "maintenance" project, in addition to the foregoing, then pursuant to Labor Code sections 1725.5 and 1771.1, the Consultant and all subconsultants must be registered with the Department of Industrial Relations ("DIR"). Consultant shall maintain registration for the duration of the project and require the same of any subconsultants. This project may also be subject to compliance monitoring and enforcement by the DIR. It shall be Consultant's sole responsibility to comply with all applicable registration and labor compliance requirements, including the submission of payroll records directly to the DIR. Notwithstanding the foregoing, the contractor registration requirements mandated by Labor Code sections 1725.5 and 1771.1 shall not apply to Services performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code sections 1725.5 and 1771.1.

3.4 Accounting Records.

3.4.1 Maintenance and Inspection. Consultant shall maintain complete and accurate records with respect to all costs and expenses incurred under this Agreement. All such records shall be clearly identifiable. Consultant shall allow a representative of City during normal business hours to examine, audit, and make transcripts or copies of such records and any other documents created pursuant to this Agreement. Consultant shall allow inspection of all work, data, documents, proceedings, and activities related to the Agreement for a period of four (4) years from the date of final payment under this Agreement.

3.5 General Provisions.

3.5.1 Termination of Agreement.

3.5.1.1 Grounds for Termination. City may, by written notice to Consultant, terminate the whole or any part of this Agreement at any time, with or without cause, by giving written notice to Consultant of such termination, and specifying the effective date thereof, at least seven (7) days before the effective date of such termination. Upon termination, Consultant shall be compensated only for those services which have been adequately rendered to City, and Consultant shall be entitled to no further compensation. Consultant may not terminate this Agreement except for cause.

3.5.1.2 Effect of Termination. If this Agreement is terminated as provided herein, City may require Consultant to provide all finished or unfinished Documents and Data and other information of any kind prepared by Consultant in connection with the performance of Services under this Agreement. Consultant shall be required to provide such document and other information within fifteen (15) days of the request.

3.5.1.3 Additional Services. In the event this Agreement is terminated in whole or in part as provided herein, City may procure, upon such terms and in such manner as it may determine appropriate, services similar to those terminated.

3.5.2 Delivery of Notices. All notices permitted or required under this Agreement shall be given to the respective parties at the following address, or at such other address as the respective parties may provide in writing for this purpose:

Consultant:	**Pacific Advanced Civil Engineering, Inc.** **17520 Newhope Street, Ste 200** **Fountain Valley, CA 92708** ATTN: **Robert Murphy, PE, Senior Project Manager**
City:	City of San Clemente 910 Calle Negocio San Clemente, CA 92673 ATTN: **Shawn Ryan, Senior Civil Engineer**

Such notice shall be deemed made when personally delivered or when mailed, forty-eight (48) hours after deposit in the U.S. Mail, first class postage prepaid and addressed to the party at its applicable address. Actual notice shall be deemed adequate notice on the date actual notice occurred, regardless of the method of service.

3.5.3 Ownership of Materials and Confidentiality.

3.5.3.1 Documents & Data; Licensing of Intellectual Property. This Agreement creates a non-exclusive and perpetual license for City to copy, use, modify, reuse, or sublicense any and all copyrights, designs, and other intellectual property embodied in plans, specifications, studies, drawings, estimates, and other documents or works of authorship fixed in any tangible medium of expression, including but not limited to, physical drawings or data magnetically or otherwise recorded on computer diskettes, which are prepared or caused to be prepared by Consultant under this Agreement ("Documents & Data"). Consultant shall require all subconsultants to agree in writing that City is granted a non-exclusive and perpetual license for any Documents & Data the subconsultant prepares under this Agreement. Consultant represents and warrants that Consultant has the legal right to license any and all Documents & Data. Consultant makes no such representation and warranty in regard to Documents & Data which were prepared by design professionals other than Consultant or provided to Consultant by the City. City shall not be limited in any way in its use of the Documents & Data at any time, provided that any such use not within the purposes intended by this Agreement shall be at City's sole risk.

3.5.3.2 Confidentiality. All ideas, memoranda, specifications, plans, procedures, drawings, descriptions, computer program data, input record data, written information, and other Documents & Data either created by or provided to Consultant in connection with the performance of this Agreement shall be held confidential by Consultant. Such materials shall not, without the prior written consent of City, be used by Consultant for any purposes other than the performance of the Services. Nor shall such materials be disclosed to any person or entity not connected with the performance of the Services or the Project. Nothing furnished to Consultant which is otherwise known to Consultant or is generally known, or has become known, to the related industry shall be deemed confidential. Consultant shall not use City's name or insignia, photographs of the Project, or any publicity pertaining to the Services or the 'roject in any magazine, trade paper, newspaper, television or radio production or other similar medium without the prior written consent of City.

3.5.3.3 Confidential Information. The City shall refrain from releasing Consultant's proprietary information ("Proprietary Information") unless the City's legal counsel determines that the release of the Proprietary Information is required by the California Public Records Act or other applicable state or federal law, or order of a court of competent jurisdiction, in which case the City shall notify Consultant of its intention to release Proprietary Information.

Consultant shall have five (5) working days after receipt of the Release Notice to give City written notice of Consultant's objection to the City's release of Proprietary Information. Consultant shall indemnify, defend and hold harmless the City, and its officers, directors, employees, and agents from and against all liability, loss, cost or expense (including attorney's fees) arising out of a legal action brought to compel the release of Proprietary Information. City shall not release the Proprietary Information after receipt of the Objection Notice unless either: (1) Consultant fails to fully indemnify, defend (with City's choice of legal counsel), and hold City harmless from any legal action brought to compel such release; and/or (2) a final and non-appealable order by a court of competent jurisdiction requires that City release such information.

3.5.4 Cooperation; Further Acts. The Parties shall fully cooperate with one another, and shall take any additional acts or sign any additional documents as may be necessary, appropriate or convenient to attain the purposes of this Agreement.

3.5.5 Attorney's Fees. If either party commences an action against the other party, either legal, administrative or otherwise, arising out of or in connection with this Agreement, the prevailing party in such litigation shall be entitled to have and recover from the losing party reasonable attorney's fees and all other costs of such action.

3.5.6 Indemnification.

3.5.6.1 To the fullest extent permitted by law, Consultant shall defend (with counsel of City's choosing), indemnify and hold the City, its directors, officials, officers, employees, volunteers and agents free and harmless from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage or injury of any kind, in law or equity, to property or persons, including wrongful death, in any manner arising out of, pertaining to, or incident to any alleged acts, errors or omissions, or willful misconduct of Consultant, its officials, officers, employees, subcontractors, consultants or agents in connection with the performance of the Consultant's Services, the Project or this Agreement, including without limitation the payment of all damages, expert witness fees and attorney's fees and other related costs and expenses. Consultant's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by Consultant, the City, its officials, officers, employees, agents, or volunteers.

3.5.6.2 If Consultant's obligation to defend, indemnify, and/or hold harmless arises out of Consultant's performance as a "design professional" (as that term is defined under Civil Code section 2782.8), then, and only to the extent required by Civil Code section 2782.8, which is fully incorporated herein, Consultant's indemnification obligation shall be limited to claims that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the Consultant, and, upon Consultant obtaining a final adjudication by a court of competent jurisdiction, Consultant's liability for such claim, including the cost to defend, shall not exceed the Consultant's proportionate percentage of fault.

3.5.7 Entire Agreement. This Agreement contains the entire Agreement of the parties with respect to the subject matter hereof, and supersedes all prior negotiations, understandings or agreements. This Agreement may only be modified by a writing signed by both parties.

3.5.8 Governing Law. This Agreement shall be governed by the laws of the State of California. Venue shall be in Orange County.

3.5.9 Time of Essence. Time is of the essence for each and every provision of this Agreement.

3.5.10 City's Right to Employ Other Consultants. City reserves right to employ other consultants in connection with this Project.

3.5.11 Successors and Assigns. This Agreement shall be binding on the successors and assigns of the parties.

3.5.12 Assignment or Transfer. Consultant shall not assign, hypothecate, or transfer, either directly or by operation of law, this Agreement or any interest herein without the prior written consent of the City. Any attempt to do so shall be null and void, and any assignees, hypothecates or transferees shall acquire no right or interest by reason of such attempted assignment, hypothecation or transfer.

3.5.13 Construction; References; Captions. Since the Parties or their agents have participated fully in the preparation of this Agreement, the language of this Agreement shall be construed simply, according to its fair meaning, and not strictly for or against any Party. Any term referencing time, days or period for performance shall be deemed calendar days and not work days. All references to Consultant include all personnel, employees, agents, and subconsultants of Consultant, except as otherwise specified in this Agreement. All references to City include its elected officials, officers, employees, agents, and volunteers except as otherwise specified in this Agreement. The captions of the various articles and paragraphs are for convenience and ease of reference only, and do not define, limit, augment, or describe the scope, content, or intent of this Agreement.

3.5.14 Amendment; Modification. No supplement, modification, or amendment of this Agreement shall be binding unless executed in writing and signed by both Parties.

3.5.15 Waiver. No waiver of any default shall constitute a waiver of any other default or breach, whether of the same or other covenant or condition. No waiver, benefit, privilege, or service voluntarily given or performed by a Party shall give the other Party any contractual rights by custom, estoppel, or otherwise.

3.5.16 No Third-Party Beneficiaries. There are no intended third party beneficiaries of any right or obligation assumed by the Parties.

3.5.17 Invalidity; Severability. If any portion of this Agreement is declared invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions shall continue in full force and effect.

3.5.18 Prohibited Interests. Consultant maintains and warrants that it has not employed nor retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Agreement. Further, Consultant warrants that it has not paid nor has it agreed to pay any company or person, other than a bona fide employee working solely for Consultant, any fee, commission, percentage, brokerage fee, gift or other consideration contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, City shall have the right to rescind this Agreement without liability. For the term of this Agreement, no member, officer or employee of City, during the term of his or her service with City, shall have any direct interest in this Agreement, or obtain any present or anticipated material benefit arising therefrom.

3.5.19 Equal Opportunity Employment. Consultant represents that it is an equal opportunity employer and it shall not discriminate against any subconsultant, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex

or age. Such non-discrimination shall include, but not be limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination. Consultant shall also comply with all relevant provisions of City's Minority Business Enterprise program, Affirmative Action Plan or other related programs or guidelines currently in effect or hereinafter enacted.

3.5.20 Labor Certification. By its signature hereunder, Consultant certifies that it is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions of that Code, and agrees to comply with such provisions before commencing the performance of the Services.

3.5.21 Authority to Enter Agreement. Consultant has all requisite power and authority to conduct its business and to execute, deliver, and perform the Agreement. Each Party warrants that the individuals who have signed this Agreement have the legal power, right, and authority to make this Agreement and bind each respective Party.

3.5.22 Counterparts/Electronic Signatures. This Agreement may be signed in counterparts, each of which shall constitute an original. This Agreement may be signed electronically with the same force and effect as an original ink signature.

3.6 Subcontracting.

3.6.1 Prior Approval Required. Consultant shall not subcontract any portion of the work required by this Agreement, except as expressly stated herein, without prior written approval of City. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed on the respective dates set forth opposite of their signatures.

CITY OF SAN CLEMENTE

By:_____
Andy Hall, City Manager

Dated: _____, 2023

ATTEST:

_____
CITY CLERK of the City of
San Clemente, California

APPROVED AS TO FORM:

_____
Elizabeth A. Mitchell, City Attorney

APPROVED AS TO AVAILABILITY OF FUNDING:

_____
Finance Authorization

Pacific Advanced Civil Engineering, Inc., a california corporation
("CONSULTANT")

By: _____
Cory M. Severson, Chief Executive Officer

Dated: _____, 2023

By: _____
Mark E Krebs, Secretary and Chief Financial Officer

Dated: _____, 2023

EXHIBIT "A"

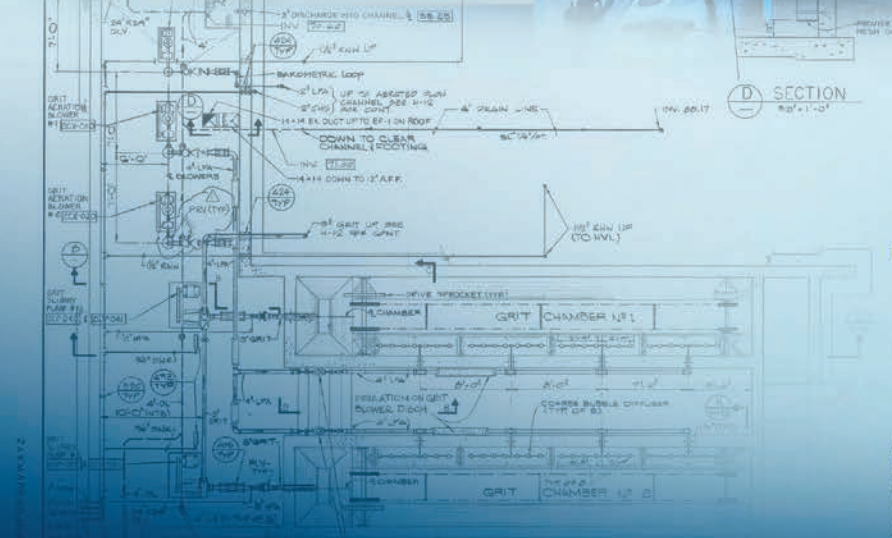
SCOPE OF SERVICES

Consultant shall perform the following services ("Services"):

PROFESSIONAL ENGINEERING DESIGN
PROPOSAL FOR THE CITY OF SAN CLEMENTE

HEADWORKS GRIT CYCLONE REPLACEMENT PROJECT

PROJECT NO. 13202



PREPARED FOR:

CITY OF SAN CLEMENTE CALIFORNIA

Attn: Mr. Shawn Ryan *Senior Civil Engineer*
City of San Clemente
910 Calle Negocio, Suite 100
San Clemente, CA 92673
CONFIDENTIAL

PREPARED BY:

PACE
Advanced Water Engineering

17520 Newhope Street, Suite 200
Fountain Valley, CA 92708
714.481.7300 | www.pacewater.com

C168 | JULY 17, 202

contents

July 17, 2023

Mr. Shawn Ryan *Senior Civil Engineer*
City of San Clemente, 910 Calle Negocio, Suite 100 | San Clemente, CA 92673

Re: Professional Engineering Services Design Proposal for the
HEADWORKS GRIT CYCLONE REPLACEMENT PROJECT

The City of San Clemente is seeking a highly qualified team of engineering design professionals to provide the design and support during construction of the removal and the replacement of their aging grit removal system. The existing grit removal system consists of two spiral aerated grit chambers, blowers, grit pumps, and a grit classifier.

Our team has prepared the enclosed proposal, including initial thoughts on design approach strategies to most efficiently execute the project.

ADDITIONALLY, OUR TEAM OFFERS THE FOLLOWING KEY BENEFITS TO THE CITY:

- **ADVANCED UNDERSTANDING OF HEADWORKS SCREENING, GRIT REMOVAL AND EXTRACTION, AND GRIT WASHING/CLASSIFICATION SYSTEMS** Advanced understanding of the screening and grit removal system technologies and manufacturers from new and rehabilitation projects will allow for PACE to provides designs incorporating feedback from the City's operations staff.
- **15+ HEADWORKS SYSTEMS DESIGNED IN THE PAST FIVE YEARS** This extensive experience includes facility renovations and will yield valuable lessons learned from the design, construction support and operations support of these facilities to ensure the appropriate components are replaced as part of the system upgrade, the electrical and controls are properly integrated and feedback from ongoing operations of those facilities as well as dozens of others is incorporated into the design and equipment selection process.
- **SAME PACE DESIGN TEAM AS OTHER RECENTLY COMPLETED REHABILITATION PROJECT AT THE FACILITY** PACE's is proposing to provide the same design team as other recently completed City of San Clemente rehabilitation projects such as the gravity belt thickeners. PACE's staff will utilize the same previously successful approach to tackle this project, specifically providing the City with an evaluation of alternative technologies for review and consideration.
- **ENGINEERS WHO ARE OPERATORS TO RELATE BEST TO CITY NEEDS** Engineers who are operators to relate best to city needs since our team includes Principal, James Matthews, licensed as both professional engineer and certified operator, leading to understanding and ability to relate well to operators' objectives, understanding of how important it is to gain their input and perspective and from that we will design improvements that best meet their needs.
- **SOPHISTICATED VISUAL PLANNING TOOLS** Sophisticated visual planning tools to allow engineers, operators and non-technical personnel to visualize the grit process connections and piping and collaborate more effectively, producing a superior end-product.
- **CONSTRUCTIBILITY AND OPERABILITY REVIEW INHERENT IN DESIGN** Constructibility and operability review inherent in design through extensive design-build-operate experience which will lead to not only a sound technical design, but also ensures that the facility will be easy to construct and operate, with reduced time of delivery, and reduced capital and operational costs.

As the Project Manager, I will be involved with the day-to-day needs of the project and be the primary contact to the City staff, just as I have been on several previous plant projects. With such a highly experienced team, we are able to execute the project very efficiently.

We hope to continue strong partnership with the City to move in a positive direction with the WRP to ensure the City can be proud of its vital utility. We have enclosed our engineering services proposal following the

guidelines prescribed in the Request for Proposal dated July 17, 2023. Please contact me directly to further discuss our proposal. Our fee proposal is valid for 90 days from the date of our proposal and our work effort will be managed and conducted from our headquarter office in Orange County. Our contact address and my personal contact details are provided below.

We look forward to supporting the City's efforts to have the best possible water reclamation plant possible for the City.

Sincerely,

Robert Murphy, PE
Sr. Project Manager – Environmental Water Division

mobile: (714) 376-6943 *office: (714) 481-7226* *e-mail: rmurphy@pacewater.com*
17520 Newhope Street, Suite 200 - Fountain Valley, CA 92708

BACKGROUND AND APPROACH

BACKGROUND AND APPROACH

PROJECT BACKGROUND

The City of San Clemente owns and operates a 7.0 MGD rated water reclamation plant (WRP). The headworks of the facility is located along the western edge of the treatment plant and provides screening and grit removal through two x 1/2-inch mechanical bar screens and spiral aerated grit chambers and associated components.

The two grit chambers were originally designed to operate with an average flow of 3.5 million gallons per day (MGD) per basin and utilize coarse bubble diffusers to create a spiral mixing action to remove grit from the process. The removed grit collects at the bottom of the grit chamber for a set of collector flights and chains to convey the grit into a hopper for future processing. Two grit pumps (operating on a repeat cycle time delay relay) installed within a dry pit adjacent to the grit chambers pump the grit slurry to two combined grit cyclone-classifiers located on the floor above. From here, the captured grit is separated from the organics and water and discharged into a trash bin for offsite disposal.

The current grit extraction and classification system has reached the end of its useful life and the City is looking for a consultant to provide design services for the removal and replacement of the existing grit cyclone-classifiers, screw conveyors, and grit pumping systems. The existing aeration blowers are also intended to remain in service.

PROJECT APPROACH

PACE's approach to this project will be similar to the recently completed gravity belt thickening project. The first step will be to understand the performance and condition of the existing grit extraction and classification system, recent historical operating data, and more importantly work with the City's operators to determine their desired improvement goals for this project. Recent conversations with the City's operators indicate that ease of maintenance is a top priority for any proposed improvements.

PRELIMINARY DESIGN ELEMENTS

From here PACE will develop a Preliminary Design Report summarizing the existing operating conditions, improvement goals, as well as developing recommended preliminary designs considering the information gathered from the first step. The preliminary designs will also include alternative grit washing/classification systems that are compatible with the existing process, as well as any potential modifications required. Each preliminary design will be evaluated and scored based on the proposed capital costs, life cycle costs, maintenance requirements, and performance (estimated organic and moisture content remaining in grit). This will allow for the City's engineering and operations staff to review and determine which design option to proceed with. Similar to the GBT job, site tours of proposed equipment can be arranged, if requested by the City as long as the selected manufacturers have installations nearby.

CONSTRUCTION SEQUENCING TO PREVENT OPERATION IMPACTS

Construction sequencing will also be presented in this first deliverable to ensure the proposed designs will allow for the City's plant to continue to operate during construction. By the end of the preliminary design report, PACE will have a clear road map on completing the design that has been coordinated with the City's staff needs. Additionally, as request in the RFP, PACE will conduct a CFD model of the existing aerated grit chambers for the primary purpose of determine the removal efficiency and if any improvements can be implemented such as new baffle walls or varying air flow patterns. The CFD modeling will be conducted at varying influent flow rates, modifications, and air patterns to determine the recommended operating strategy for the improvements.

FIELD VERIFICATION OF EXISTING CONDITIONS

Lastly, considering the design will be based off of partially complete record drawings, PACE's design staff for this project are located in Fountain Valley and will have the ability to field verify existing conditions to prior to the completion of the bid documents to prevent unwanted surprises during construction.

METHODOLOGIES

METHODOLOGIES

01 STRATEGY 01

PACE design scope and approach will be similar to the recently completed WRP gravity belt thickening project. The Preliminary Design Report development will be the most critical element of the project to determine the appropriate components to upgrade and select the preferred equipment. After reviewing the existing conditions, PACE will work with the City's operators to determine their desired improvement goals and objectives for the project. From here, PACE will develop preliminary designs utilizing the same and alternative grit extraction/classification technologies and evaluate and score each alternative to provide recommendations for the City's staff selection. Ultimately, the selection of the equipment will be designed by PACE, but selected utilizing objectives/goals provided by the City's engineering and operations staff.

02 STRATEGY 02

Conduct CFD modeling of the existing aerated grit chambers to verify the performance capacity of the existing system. The performance of an aerated grit removal system is highly influenced by the influent flow rate and air flow patterns. PACE will work with the City's operations staff to obtain historical influent flows to the plant which will be used in combination with CFD modeling to determine the efficiency of the existing aerated grit system, and if additional improvements, such as baffles, are required.

03 STRATEGY 03

Utilize PACE engineering and design staff who have direct experience and in-depth knowledge of the City's facility, the specific process and control systems and have worked with the City's staff on prior projects. PACE has completed several rehabilitation projects with the City and therefore has extensive knowledge and background of the plant's infrastructure, specifically the condition of the existing power and control systems. PACE will utilize this knowledge to provide designs that will allow for the existing infrastructure to be upgraded and integrated into the plant's SCADA system.

04 STRATEGY 04

Involve City Engineering and Operations staff early and often in the development of project designs, specifically the proposed construction sequencing. The proposed bid documents will need to present a design and construction sequencing requirements that will allow for the City's operations staff to continue to run facility during construction and startup of the new equipment.

WORK PLAN

WORK PLAN

Based on the stated objectives of the project and our understanding of the work to be completed, PACE has prepared the following proposed Work Plan broken down by task. All work will be completed internally by PACE's staff and managed out of PACE's headquarter office in Fountain Valley, CA.

TASK 0.0 – PROJECT MANAGEMENT AND MEETINGS

TASK 0.1
REIMBURSABLE EXPENSES

PACE has included all reimbursable expenses within our project proposal cost, which are expected to be incurred by performing the proposed Scope of Work. These include all reasonable travel, reproduction, shipping and other miscellaneous direct project expenses incurred by PACE's design team as a result of performing the services proposed.

TASK 0.2
PROJECT MANAGEMENT, BILLING AND INVOICING

PACE will provide the services of a dedicated Senior Project Manager, Robert Murphy, PE, who will review the technical design documents and deliverables for quality control, compliance with the stated project objectives and the application of sound engineering practices. He will work with the City's Project Team and will act as the lead point of communication and management with the City.

Robert will be responsible for collaborating with the City in the development of the technical design, design plans, specifications and technical reports, preparation of consultant and sub-consultant invoices, and will have responsibility of the overall competence of the project design. Robert will also be responsible for coordinating and providing Quality Assurance / Quality Control of the design documents with the Principal Engineer, to ensure a cohesive, consistent and technically competent design. Robert will lead all aspects of the technical design preparation, working with PACE's internal design team members and external design team sub-consultants, to prepare and submit the completed technical work in a timely manner. This will ensure a successful and well-thought-out project, delivered on time and on budget.

Robert will prepare and update project management documents, including detailed monthly written progress updates, invoice preparation, and critical path identification.

TASK 0.3
MEETINGS

The following meetings will be scheduled and coordinated by PACE and attended by the appropriate PACE and City Staff members. The following are anticipated meetings for the Design Services:

1. **Project Kick-off Meeting:**
   PACE will coordinate a Project Kick-off Meeting with our team and the City's Operations and Engineering Staff for the purpose of defining the project objectives, reviewing the Work Plan, identifying data needs and collecting pertinent information for the work to be completed from the City. As part of this meeting PACE will:

   a. Review Design Scope of Work and Preliminary Schedule
   b. Review Roles & Responsibilities, Lines of Communication and Coordination
   c. Review Project Objectives and Requirements
   d. Exchange Existing / Requested Design Documentation and Information
   e. Review City wish list items and any existing operational issues. As part of the preliminary design, PACE will conduct an evaluation of alternative treatment systems, compatible with the existing

configuration for the City's Review. If requested, PACE will coordinate site visits of existing installations of alternate manufacturer for the City's staff to attend.

2. **Project Progress Review Meetings**
   Throughout the duration of the project, PACE will conduct project progress meetings on an "as-needed" basis with the City's designated Project Manager and Staff for the purpose of reviewing progress on tasks, project schedule and project needs. We have assumed a total of three meetings occurring as follows:

   – Submittal and Review of the Process Assessment and Preliminary Design Report
   – Submittal and Review of the 60% Plans
   – Submittal and Review of the 90% Plans

   Additionally, it is assumed that conference calls or web-based meetings will be used on a bi-weekly (2-times per month) basis to identify and address items which arise in between formal design submittals and reviews. PACE shall set up conference calls or virtual meetings as needed to address items during the course of design.

TASK 1.0 – PRELIMINARY DESIGN

TASK 1.0
PRELIMINARY DESIGN

The preliminary design of the project will consist of the following scope of work items.

a. Review and discuss with the City's engineering and operations staff to determine the desired improvement goals and objectives for this project in relation to the proposed scope of work.
b. Review of the facilities existing as built drawings and conduct site visits to verify critical components/ dimensions of the existing system, specifically in regards to the recent improvements to the grit extraction/classification system not shown on the current record drawings.
c. Review the performance capacities of the existing HVAC components for the headworks building. As part of NFPA 820, proper ventilation will be required in order to ensure the electrical improvements meet the current electrical code requirements.
d. Review historical influent flow data and summarize the minimum, average, and maximum dry and wet weather influent flow rates.
e. Conduct CFD modeling of the existing aerated grit chambers at the minimum, average, and maximum wet and dry weather conditions to determine the removal efficiency of the existing system as well as potential modifications (such as baffle walls, varying air flow rates) to increase the removal efficiency if desired.
f. Development preliminary improvement designs include potential alternative equipment technologies compatible with the existing process.
g. Evaluate each preliminary improvement design, with the evaluation scored for the City's review and consideration based on the proposed capital costs, life cycle costs, maintenance requirements, and performance (estimated organic and moisture content remaining in the grit).
h. Develop preliminary engineer's opinion of probable construction costs for the proposed design options
i. Develop a preliminary sequence of construction for the City's review and feedback to ensure the proposed design and construction sequencing requirements will be compatible with the ongoing operation of the facility.

j. PACE will prepare Draft and Final copies of a Preliminary Design Report which will detail the finding of the items above. Additionally, the PDR will also include preliminary design plans encompassing the following:

1) Preliminary Process and Instrumentation Drawings (P&IDs) of the proposed modifications.
2) Preliminary process area mechanical layout (Developed as 3D Model)
3) Preliminary electrical one-line diagrams and power requirement calculations
4) Preliminary PLC control network diagram and control description

TASK 2.0 – DESIGN PLANS AND SPECIFICATIONS

TASK 2.1
PREPARE 60% PLANS AND SPECIFICATIONS

Based on staff approval of the Preliminary Design Report and selection of design alternatives, PACE will prepare 60% plans and specifications for the project. In addition to further development of the report elements listed above in Task 1.0, the 60% plans will include the following major elements:

1) Strategic construction phasing plan
2) Electrical equipment and conduit layout plans
3) Piping and equipment support details
4) Elementary control panel and field wiring diagrams and details
5) Technical specifications (includes process control descriptions)

PACE will update the Preliminary Engineer's Estimate of Probable Construction Cost presented in the Preliminary Design Report based on the completed 60% design drawings.

PACE will review the 60% plans and specifications with the City's operations and engineering staff and incorporate comments received within the next milestone submittal.

TASK 2.2
PREPARE 90% PLANS AND SPECIFICATIONS

Based on staff approval of the 60% plans and specifications, PACE will prepare 90% bid documents for the project which will include technical specifications. This will generally consist of additional development and detail of the 60% plans and incorporation of comments received on the 60% specifications. It is anticipated that the Bid Plan set will consist of the following sheet sections:

G – General Information Plans & Specifications
C – Civil Plans & Specifications – Contractor Access and Staging Areas
M – Mechanical Plans & Specifications
S – Structural Plans, Specifications & Calculations
E – Electrical Plans, Specifications & Calculations
I – Instrumentation and Control Plans & Specifications – including control narratives

PACE will review the 90% Bid Documents with the City's operations and engineering staff and incorporate comments received in the Final Bid Document set.

TASK 2.3
PREPARE FINAL BID DOCUMENTS

Based on staff approval of the 90% Design Plans, PACE will prepare a set of Final Bid Documents to be delivered to the City for reproduction into a formal public bid set. Plans and technical specifications will be delivered in electronic format (PDF) for rapid reproduction along with an original stamped and signed printed set. PACE shall also provide to the City an electronic copy of all AutoCAD drawing files used for the project.

PACE will develop and submit a Project Bid Manual which will consist of the project Plans and Technical Specifications, the City's supplied "front-end" Specifications, Bid Requirements, Bid Schedule (Form) and instructions to bidding contractors. In addition to the Bid Documents, PACE will also provide a Final Engineer's Estimate of Probable Construction Cost.

TASK 3.0 – CONSTRUCTION BID ASSISTANCE SERVICES

Upon selection of a qualified contractor, PACE will provide the services of its engineering staff during the construction of the project as follows:

TASK 3.1
PRE-BID SUPPORT

PACE shall attend a Pre-Bid conference to assist the City with describing the scope of work to be performed by bidding contractors. PACE will provide the services of its engineering staff to supply written responses to questions from bidding contractors. Our responses will be provided to the City for incorporation in the City-issued bid addendums. We have assumed one addendum period.

TASK 3.2
CONSTRUCTION MEETING AND START-UP / COMMISSIONING SUPPORT

PACE will attend a pre-construction meeting on-site with the City, the City's selected contractor and equipment manufacturer's representatives. Additionally, PACE will also include scope for onsite engineering services for two days for the purpose of system start-up and observation.

PACE shall provide the services of a project engineer for three (3) days for the purpose of system start-up and observation. During that period, PACE will provide a Final Inspection of the installation and provide the City with a punch-list of items to be completed by the contractor.

After successful completion of Start-up, the contractor, equipment manufacturer and controls integrator shall commission the equipment and systems and demonstrate the proper operation and function of the systems to PACE and City Operations Staff for Acceptance.

Following completion of commissioning, PACE will assist the City Operations staff in minor optimization of the completed system over a 3-day period to observe performance and make minor adjustments to the operation of the system.

TASK 3.3
CONSTRUCTION SUBMITTAL REVIEW AND RFIs

PACE shall provide technical responses to fifteen (15) Requests for Information (RFIs) and clarifications from the project contractor, as needed or requested by the City, for compliance with the project drawings and specifications. PACE shall provide technical review and comments on up to fifteen (15) shop drawing submittal packages.

PACE shall provide clarifications, details and additional calculations for clarifications or modifications to original design drawings as requested by the City. 15 RFI reviews are assumed. All pipe and equipment anchorage sizing and calculations shall be supplied by the equipment manufactures or the contractor for review and approval by PACE.

TASK 3.4
RECORD DRAWINGS

Upon completion of all construction work and submittal of the red-lined field plan set by the contractor, PACE will prepare and provide Record Drawings to the City for their use. Record Drawings will be submitted in electronic format (PDF) with an additional copy of all ACAD files used for the project.

TASK 4.0 – PROJECT DELIVERABLES

DELIVERABLES

The Project Deliverables for this project shall consist of the following:

1. **Draft Preliminary Design Report & Cost Estimate – Delivered in Electronic Format (PDF)**
2. **Final Preliminary Design Report & Cost Estimate – Delivered in Electronic Formant (PDF)**
3. **60% Plans and Specifications - Delivered in Electronic Format (PDF)**
4. **90% Plans and Specifications - Delivered in Electronic Format (PDF)**
5. **Final Conforming Plans, Specifications, (including modified City front end specifications), and Engineer's Opinion of Probable Construction Costs - Delivered in Electronic Format (PDF)**
6. **Updated Engineer's Cost Estimates at 60%, 90% and Final Design**
7. **Record Drawings - Delivered in Electronic Format (ACAD & PDF)**
8. **Substantial & Final Completion Notices**

PROJECT ORGANIZATION AND STAFFING

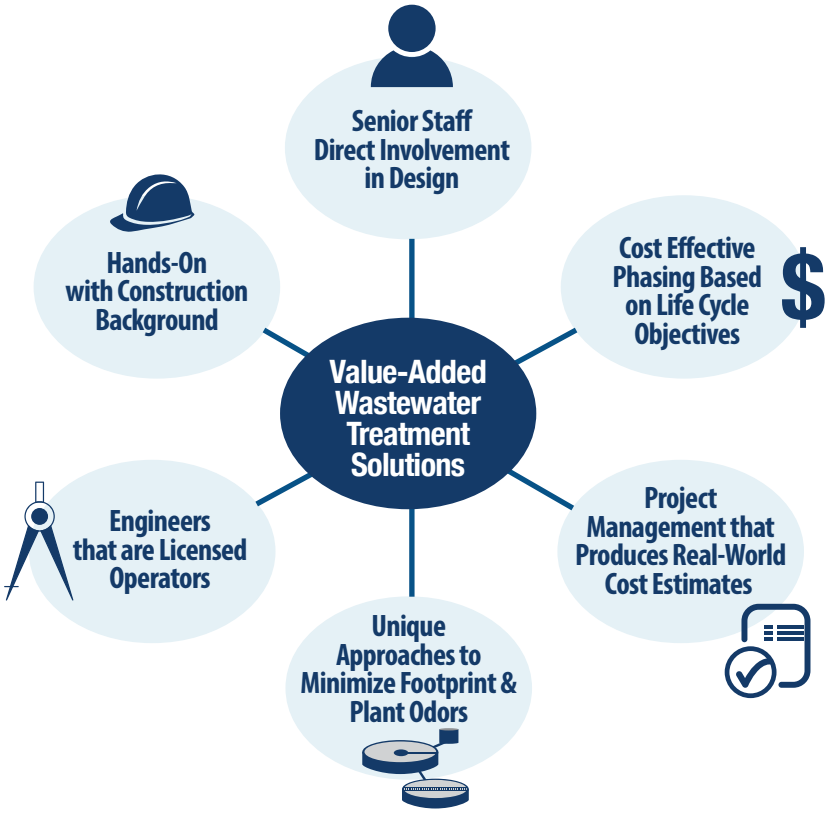
PROJECT ORGANIZATION AND STAFFING

ABOUT **PACE**

PACE is a specialized civil engineering firm offering advanced water resource services. We offer a wide range of engineering services related to water, wastewater, stormwater management and water resource permitting and regulatory compliance to ensure projects are both economically viable and environmentally sustainable. PACE staff members include licensed professional engineers with PhDs, scientists, university instructors and policy-makers in the water resource arena.

In the last 10 years alone, PACE has performed design on more than 40 advanced wastewater treatment facilities.

We offer in-house advanced modeling capabilities, a water quality laboratory and piloting facility for use on projects to ensure designs are functional and operable in practice. PACE has experience designing and permitting a wide range of process technologies, based on project needs.



EXTENSIVE WATER RECLAMATION PLANT AND CITY EXPERIENCE ENSURES IN DEPTH UNDERSTANDING OF PROJECT NEEDS

- WRP Solids Handling Rehabilitation
- WRP Aeration Blowers Replacement
- WRP BNR Process Assessment
- WRP Progressive Cavity Pump Replacement
- WRP Gravity Belt Thickener Replacement
- WRP Laboratory Audit
- WRP Emergency Generator Upgrade
- Los Molinos Pump Station Generator Replacement
- Main Pump Station Rehabilitation
- Main Pump Station HVAC Improvements
- Trafalgar Canyon Outlet Water Quality Improvements
- WRP Contract Utility Power Rates Assessment

TEAM'S **KEY UNIQUE QUALIFICATIONS**

01 ADVANCED UNDERSTANDING OF HEADWORKS SCREENING, GRIT REMOVAL, EXTRACTION, AND GRIT WASHING/CLASSIFICATION SYSTEMS

Advanced understanding of the screening and grit removal system technologies and manufacturers from new and rehabilitation projects will allow for PACE to provides designs incorporating feedback from the City's operations staff.

02 15+ HEADWORKS SYSTEMS DESIGNED IN THE PAST FIVE YEARS

This extensive experience includes facility renovations and will yield valuable lessons learned from the design, construction support and operations support of these facilities to ensure the appropriate components are replaced as part of the system upgrade, the electrical and controls are properly integrated and feedback from ongoing operations of those facilities as well as dozens of others is incorporated into the design and equipment selection process.

03 SAME PACE DESIGN TEAM AS OTHER RECENTLY COMPLETED REHABILITATION PROJECT AT THE FACILITY

PACE's is proposing to provide the same design team as other recently completed rehabilitation projects similar to the gravity belt thickeners. PACE's staff will utilize the same previously successful approach to tackle this project, specifically providing the City with an evaluation of alternative technologies for review and consideration.

04 ENGINEERS WHO ARE OPERATORS TO RELATE BEST TO CITY NEEDS

Engineers who are operators to relate best to city needs since our team includes Principal, James Matthews, licensed as both professional engineer and certified operator, leading to understanding and ability to relate well to operators' objectives, understanding of how important it is to gain their input and perspective and from that we will design improvements that best meet their needs.

05 SOPHISTICATED VISUAL PLANNING TOOLS

Sophisticated visual planning tools to allow engineers, operators and non-technical personnel to visualize the blower room connections and piping and collaborate more effectively, producing a superior end-product.

06 CONSTRUCTIBILITY AND OPERABILITY REVIEW INHERENT IN DESIGN

Constructibility and operability review inherent in design through extensive design-build-operate experience which will lead to not only a sound technical design, but also ensures that the facility will be easy to construct and operate, with reduced time of delivery, and reduced capital and operational costs.

SUB**CONSULTANTS**

IBIS GROUP

CFD MODELING

Ibis Group Inc. is a technical support company providing numerical fluid modeling and analysis services. The bulk of the projects undertaken by Ibis Group are in the waste and potable water treatment industry. In this field, an expertise with process elements that have fluid flow characteristics critical to system efficacy has been established. Work with these elements includes reservoir hydraulic efficiency, lift station evaluation, headworks flow distribution, optimization and through-flow analysis of clarifier, anoxic zone, aeration basin and outfall contact tanks. In addition to water treatment, Ibis Group has expertise in free surface modeling projects including open channel flow and interaction of ocean waves with stationary and moving structures. Emphasis at Ibis Group is to provide analysis and evaluation of designs that will aid clients in attaining predictable and economical life cycle costs for their installations.

CLIENT COORDINATION

The Sr. Project Manager (Robert Murphy, PE) will be the project's primary source contact with the City. The Sr. Project Engineer (Thomas Mihara, PE) will be a secondary contact but only in the event that the Project Manager is not available. All correspondence to the City, whether incoming or outgoing, will be through the Sr. Project Manager. The Sr. Project Manager will keep the City informed of the project progress on a bi-weekly basis unless otherwise indicated in the work plan or contract work scope. The bi-weekly progress reports will at a minimum include:

- Schedule status
- Work planned for upcoming month
- Progress to date
- List of issues which may affect schedule or deliverables and proposed resolution approach

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

SCHEDULE MANAGEMENT

Adherence to the project schedule is achieved by managing the project through a continuous analysis of staffing requirements and production schedule monitoring. Taking into account the information contained in the detailed production schedule and transforming it into staffing requirements results in a staffing requirements plan.

WORK LOCATIONS

All PACE project management efforts will be coordinated out of our headquarter office in Fountain Valley, CA. Regular coordination meetings will occur at the City's offices, or using one of the many meeting and coordination resources we have available such as Teams (video conferencing), which allow us to minimize budget for travel and meetings. However, in-person meetings will be encouraged at critical project durations (kick-off, conclusion of conceptual design, final design submittals, public outreach / agency coordination meetings, etc.).

QA/QC PROCEDURES

THE PACE QA/QC PHILOSOPHY

PACE's concept for Quality Assurance/ Quality Control is to remove barriers so that each team member can perform each element of the project correctly, the first time. This starts with the designation of individuals with appropriate experience and availability to manage the project, lead tasks and accomplish technical work. A second element is to gain understanding and commitment from each team member on the scope of work, their responsibilities, within the works scope as well as the budget and schedule. The third element is to provide a structured process for reviews.

THE QA/QC PROCESS

The Quality Assurance / Quality Control Program as stated, places responsibility at the level of the organization closest to production of each work element. The peer reviewer is designed to check/back check, make conclusions on analysis methods, calculations, and decisions. The task managers and peers are encouraged to discuss approach and identify points of agreement and disagreement. Areas of disagreement will be noted and discussed with the Project Manager.

LEVELS OF REVIEW

Project Managers and independent senior level reviews are designed to go beyond a "2+2" check format to provide guidance on alternatives to the analysis planning, logic checks of the analysis assumptions and conclusions, and to review compatibility with other disciplines' work which may affect the task. Finally, the Project Manager checks each submittal to assure City standards and conformance with project concepts. Quality Assurance/ Quality Control (James Matthews, PE) provides an on-going review of the process. This includes spot checks as well as structured audits to assure that the process is fully implemented and working within the entire team.

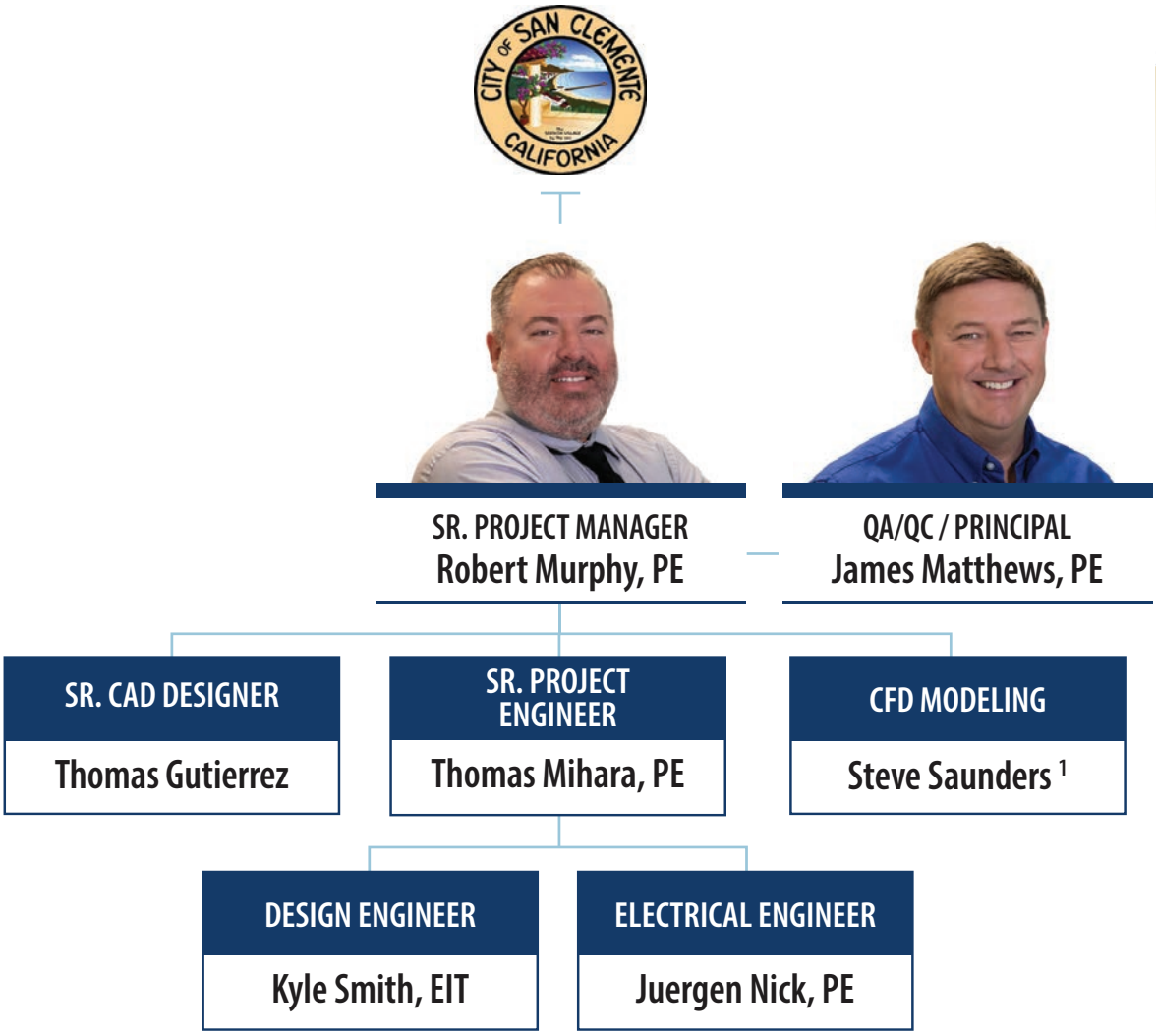
ORGANIZATION **CHART**

rmurphy@pacewater.com
Cell: (714) 376-6943

SR. PROJECT MANAGER – ROBERT MURPHY has Civil Engineering experience spanning back to 2006. His experience includes design of wastewater treatment plants, sewer / stormwater / potable / reclaimed pump stations, water treatment and storage design. Mr. Murphy has served in key roles performing construction services and developing design and operation and maintenance manuals for several wastewater and water conveyance and treatment systems and facilities. He has also served as the resident engineer for the construction of several wastewater treatment facilities, water distribution, and sewer collection and pump station projects. Mr. Murphy is adept in coordinating project plans, specifications, and reports with multiple consultants to obtain an efficient buildable and operable system. ***He has been involved in over 30 WWTP projects, eight of which have been projects for the City of San Clemente alone, ensuring deep understanding of WWTP operations, challenges and City project delivery standards.***

subconsultants

1. IBIS Group CFD



TEAM MEMBER HOURS AND AVAILABILITY

TASK	DESCRIPTION OF WORK	PRINCIPAL	SR. PROJECT MANAGER	SR. CONSULTING ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL ENGINEER	SR. PROJECT ENGINEER	PROJECT ENGINEER	SR. CAD DESIGNER	PROJECT COORDINATOR	MAN-POWER HOURS TOTAL
0.0	Project Management & Meetings										
0.1	Reimbursable Expenses (Included in Task Fees Below)										N/A
0.2	Project Management, Billing, and Invoicing		16							6	22
0.3	Meetings and Data Gathering	1	7				7	4		2	21
1.0	Preliminary Design										
1.1	Process Assessment and Preliminary Design Report	2	20	36		2	36	50	36	4	186
2.0	Design Plans and Specifications										
2.1	60% Design Plans and Specifications	4	8			8	24	50	60	2	156
2.2	90% Bid Documents	1	12			32	12	26	50	1	134
2.3	Final Bid Documents		8			6	8	12	24	1	59
3.0	Construction Support Services										
3.1	Pre-Bid Support		8			0.5	8	12		2	30.5
3.2	Construction Meetings and Start-Up Commissioning Support		20				20	20			60
3.3	Construction Submittal Review and RFIs		11.5			5	11.5	34			62
3.4	Record Drawings		1			1	2	16	16	1	37
4.0	Project Deliverables										

All proposed team members will be available for the duration of the project. The following is an estimated availability of each team members based on a projected project start date of September 1, 2023. Additionally, PACE has a team of 40+ members with wastewater engineering specialization that can be drawn upon to support the project, as needed.

Robert Murphy, PE – 35%
James Matthews, PE – 25%
Thomas Mihara, PE – 35%
Kyle Smith – 40%
Thomas Gutierrez – 40%
Juergen Nick – 35%
Steve Saunders – 25%

ROBERT MURPHY, PE

SR. PROJECT MANAGER

EDUCATION
B.S. / Civil Engineering
California State University, Long Beach
2007

YEARS OF EXPERIENCE
17+ Years
Joined PACE in 2006

REGISTRATIONS
Professional Engineer
2014 / C83207

AFFILIATIONS
Water Environment Federation (WEF)

American Society of Civil Engineers (ASCE)

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.

Robert Murphy has Civil Engineering experience spanning back to 2006. His experience includes design of wastewater treatment plants, sewer / stormwater / potable / reclaimed pump stations, water treatment and storage design. Mr. Murphy has served as the resident engineer for the construction of several wastewater treatment facilities, water distribution, sewer collection, and pump station projects. He has developed several performance-based equipment specifications for process equipment selection prior to design, and created operation and maintenance manuals for several water and wastewater 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. He has been involved in over 30 WWTP projects, eight of which have been projects for the City of San Clemente alone, ensuring deep understanding of WWTP operations, challenges and City project delivery standards.

RELATED EXPERIENCE

San Clemente Wastewater Treatment Plant Upgrades – San Clemente, CA
Mr. Murphy was the Project Engineer and coordinator of the engineering design for several plant improvement projects on the City of San Clemente's 7.2 MGD facility in response to aging equipment and operational challenges. For the blower replacement project, Mr. Murphy performed preliminary design, equipment selection, final design and integration for the plant aeration blower upgrades, replace aging infrastructure in both the cake handling and sludge dewatering process areas, sludge thickening process upgrades, emergency generator replacement, as well as other smaller improvement projects.

Mountain House Water Reclamation Facility Expansion Phase III – Mountain House, CA
Mr. Murphy served as the Project Manager for the Phase III expansion from 3.0 MGD to 5.4 MGD average dry weather flow and peak hour wet weather flow of 16.7 MGD. The expansion includes a new headworks consisting of two cast-in-place concrete flow channels to house 6 mm and 2 mm center flow band screens and grit vortex chambers installed in between the two screening systems. The grit removal system consists of a continuously operated vortex style chamber consisting of a larger diameter upper separation chamber and lower collections sump.

Tuolumne Utilities District Sonora Regional Wastewater Treatment Plant – Sonora, CA
Mr. Murphy served as the Project Manager for the upgrade design of the 2.6 MGD Average Daily Flows (ADF) Sonora Regional Wastewater Treatment Plant (SRWWTP) to address the facility's declining effluent performance. To improve the facility's functionally and performance, PACE performed design upgrades to increase the capacity to 5.0 MGD of Max Day Flows (MDF) and 10.0 MGD Peak Hour Flows (PHF) treated by a new headworks, primary screening and grit removal, new dual-train extended aeration activated sludge (EAAS) basins, new secondary clarifiers, new chlorine disinfection system, new effluent disk cloth filters and a new sludge dewatering facility. The grit removal system consists of a continuously operated vortex style chamber, consisting of a larger diameter upper separation chamber and lower collections sump.

Lathrop Advanced Water Treatment and Recycling Facility Expansion – Lathrop, CA
As Sr. Project Engineer, Mr. Murphy led design and plan preparation for the expansion of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility, for the City of Lathrop, California. The Phase 2 expansion took the capacity from 1.0 MGD to 2.5 MGD, and the Phase 3 capacity currently under design will bring the facility to 4.0 MGD, with several major provisions designed as part of Phase 3 to support the ultimate buildout capacity of 6.0 MGD. The headworks that was installed during the Phase 2 expansion consists of a custom 316 stainless steel platform structure housing two parallel flow trains. Each train is equipped with a 6mm fine rotary drum screen and a 2 mm ultra-fine fine rotary drum screen separated by a vortex grit removal system followed by a grit classifier with cyclone separator. The vortex grit removal system between the fine and ultra-fine screens consists of a grit chamber with and upper diameter of 8 feet, and a sloping floor narrows the chamber down to 3 feet to the below grit collection sump.

ROBERT MURPHY, PE

SR. PROJECT MANAGER

Show Low Wastewater Treatment Plant Upgrades – Show Low, AZ

Mr. Murphy was the Sr. Project Engineer and coordinated the engineering design for a complete WWTP overhaul design project for the City's existing aerated lagoon WWTP. The existing WWTP process did not have the capabilities to meet stringent effluent requirements, especially for ammonia. PACE's design modified the existing aerated lagoon configuration to utilize a new headworks in combination with an extended aeration (Biolac) activated sludge treatment process, providing screening through a 6mm fine drum screen and grit removal through an aerated grit chamber and conveyor.

Winslow Wastewater Treatment Plant Renovations – Winslow, AZ

Mr. Murphy served as the Project Engineer for the Winslow WWTP evaluation and renovation project and provided process, mechanical, and civil design. The plant was plagued by operational issues, making the effective treatment capacity roughly half of its design capacity of 2.2 MGD. In order to reduce operational issues, PACE installed a new combined headworks system consisting of a 6.8 MGD rated, 6mm drum screen with an attached aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen.

Burbank WRP Aeration and Headworks Rehabilitation Projects – Burbank, CA

Mr. Murphy served as the Engineer of Record for both the Burbank WRP Aeration and Headworks Rehabiliation Projects. PACE was contracted to provide design services for the replacement of the WRPs existing aeration and headworks systems under two separate plan contracts. Upgrades for the aeration project included installation of new high-speed turbo blowers to replace the older multi-stage centrifugal blowers. Upgrades to the headworks system included replacing the aging and cumbersome single-rake and grinder system with new multi-rake bar screens and washer/compactors. Both projects also included integration and controls for the new systems, as well as development of a comprehensive sequencing/construction phasing plan to allow for the operating plant to remain online during construction improvements.

Adelanto Wastewater Treatment Plant Upgrades – Adelanto, CA

Mr. Murphy was the Project Engineer for the City of Adelanto WWTP Improvement Plan and provided process, mechanical, and civil design. The WWTP receives an average flow of 1.8 MGD, of which only 0.5 MGD can be treated with the existing plant in its current state. PACE provided engineering design and consulting services to construct new infrastructure and rehabilitate existing systems to not only regain the original plant capacity, but to increase the rated capacity to 4.0 MGD. New infrastructure included new screening and washing systems in the headworks, all new aeration and blower equipment in the existing secondary basins, two new 70' diameter circular clarifiers, an RAS/WAS pump station and new internal recycle pumping on the biological process. Modifications were made to the existing effluent filters and chlorine contact basin to produce full Title 22 compliant recycled water as well as improvements to the solids handling to improve dewatering performance and reduce cake volumes.

Tartesso Water Reclamation Facility – Buckeye, AZ

PACE provided engineering design and construction services for the Phase I Tartesso Water Reclamation Facility (WRF) in the Tartesso Development in Buckeye, Arizona. Mr. Murphy served as the Design Engineer for the design of the 1.2 MGD WRF, which includes a sequencing batch reactor that treats wastewater to Arizona Department of Environmental Quality levels of A+ effluent. The facility includes a 14,000 CFM odor control unit which includes a three-stage chemical scrubber, using both caustic / sodium hydroxide and bleach / sodium hypochlorite additions for treatment of odorous compounds. The chemical tanks use cross-linked polyethylene (XLPE) chemical tanks, consisting of one 1,000-gallon caustic tank and one 1,500-gallon bleach tank. PACE provided sizing and design of the tanks, process piping and vents, instruments, spill containment area, and safety features, including the anchorage design to account for wind and seismic activity.

Santa Paula MBR Water Recycling Facility – Santa Paula, CA

Mr. Murphy served as both the Design Engineer and as the assistant Resident Project Representative for the new Santa Paula Water Recycling Facility (WRF). The existing wastewater treatment plant had reached the end of its service life and was no longer in compliance with current regulatory requirements. The City replaced the existing facility with a new WRF and percolation basin effluent disposal system. Mr. Murphy assisted on design of the civil, grading, mechanical, and utility plans, as well as construction administration for the duration of the project. The WRF is designed as a Membrane Bio Reactor (MBR) with an initial capacity of 3.4 MGD and readily expandable to 4.2 MGD to meet wastewater flow projections for the year 2025. Also included in the new WRF design were three percolation basins with a combined surface area of about 15 acres located to the west of the WRF site. The Santa Paula WRF is the largest Koch MBR facility in the United States, and is also the first DBOF municipal WRF in California. As part of the design process, an operator-engineer forum was used to develop plans and the equipment layout. This included customizing sludge thickening equipment to allow for an overall ease in sampling and operations. High speed turbo blowers and new high efficiency aeration diffusers

JAMES A. MATTHEWS, PE

PRINCIPAL / QA/QC

EDUCATION
B.S. Civil Engineering
San Diego State University / 1994

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

REGISTRATIONS
Professional Engineer / AZ
1999 / 34090
Professional Engineer / CA
1997 / C57446
Professional Engineer / CO
2018 / 0054243
Professional Engineer / FL
2009 / 69722
Professional Engineer / HI
2009 / 13718
Professional Engineer / ID
2004 / 11229
Professional Engineer / NM
2004 / 16491
Professional Engineer / TX
2018 / 132370
Professional Engineer / UT
2020 / 11893246-2202
Professional Engineer / VA
2005 / 040716
NCEES 18-931-54
Wastewater Treatment Operator
Certification: 1997 / WW023812

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

PUBLICATIONS
EPA's Small Flows Quarterly: "Hybrid Sequencing Batch Reactors"
Santa Margarita Water District: "Advanced Processes for Water Reuse"
City of Lathrop: Title 22 Recycled Water Training Program

James Matthews is highly regarded in the water, wastewater, recycled water, and stormwater industries for his tremendous wealth of practical knowledge and 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 reservoirs, pump stations, and water & wastewater treatment facilities, by implementing creative ideas and concepts.

As both a licensed engineer and wastewater treatment operator, Mr. Matthews is a technical expert in infrastructure engineering design, construction, and operations. He has particular experience reviewing, troubleshooting, and renovation on over 250 projects in the US, Canada, and Central America. ***He has served as Principal and/or Project Manager on eight WRP projects and 12 projects for the City of San Clemente, ensuring deep understanding of WRP operations, challenges and City project delivery standards.***

However, his expertise is not limited to just water resources; having a wealth of knowledge in electrical, controls, and instrumentation. He has personally fabricated, programmed, and installed a multitude of custom control systems, which included PLC/PAC programming, radio telemetry, and Supervisory Control and Data Acquisition (SCADA) systems for numerous water, wastewater and co-generation projects.

RELATED EXPERIENCE

City of San Clemente Water Reclamation Facility Process Efficiency Upgrade Projects – San Clemente, CA

PACE provided consulting, design, construction administration, and controls and integration services for the City of San Clemente on several process efficiency upgrade projects for their 7.2 MGD WRF. With goals of gaining efficiency and cutting back on power uses and associated operational costs for the WRF, the City looked to upgrade several aspects of their facility. Mr. Matthews served as the Principal / QA/QC to provide the BNR process assessment, provide aeration blower upgrades, replace aging infrastructure in both the cake handling and sludge dewatering process areas, provided sludge thickening process upgrades, and oversaw the emergency generator replacement, as well as other smaller improvement projects.

Mountain House Water Reclamation Facility Phase II & Phase III Expansions – Tracy, CA

Mr. Matthews served as the QA / QC and Instrumentation and Controls specialist for the Phase III expansion/replacement of a 3.0 MGD treatment facility for the Mountain House Community Services District. Phase III included the design of a 5.4 MGD Tertiary Water Recycling Facility capable of meeting Title 22 – 2.2 Unrestricted Reuse effluent requirements & NPDES permit requirements for discharge to the Sacramento Delta at Old River. The Phase III expansion includes new headworks consisting of two cast-in-place concrete flow channels housing 6 mm and 2 mm center flow band screens and grit vortex chambers installed in between the two screening systems. The grit removal system consists of a continuously operated vortex style chamber consisting of a larger diameter upper separation chamber and lower collections sump.

Tuolumne Utilities District Sonora Regional Wastewater Treatment Plant – Sonora, CA

Mr. Matthews served as the Principal / QA/QC of the 2.6 MGD Average Daily Flows (ADF) Sonora Regional Wastewater Treatment Plant (SRWWTP), leading concepts to address the facility's declining effluent performance. To improve the facility's functionally and performance, PACE performed design upgrades to increase the capacity to 5.0 MGD of Max Day Flows (MDF) and 10.0 MGD Peak Hour Flows (PHF) treated by a new headworks, primary screening and grit removal, new dual-train extended aeration activated sludge (EAAS) basins, new secondary clarifiers, new chlorine disinfection system, new effluent disk cloth filters and a new sludge dewatering facility. The grit removal system consists of a continuously operated vortex style chamber, consisting of a larger diameter upper separation chamber and lower collections sump.

JAMES A. MATTHEWS, PE

PRINCIPAL / QA/QC

City of Lathrop Advanced Water Treatment and Recycling Facility Expansion – Lathrop, CA

As QA/QC Principal, Mr. Matthews provided design guidance and quality assurance oversight for the design of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility. Prior to the first expansion, the facility's capacity was 1.0 MGD. The Phase 2 expansion took the capacity to 2.5 MGD, and the Phase 3 capacity currently under design will bring the facility to 4.0 MGD, with an ultimate buildout capacity of 6.0 MGD. The headworks that was installed during the Phase 2 expansion consists of a custom 316 stainless steel platform structure housing two parallel flow trains. Each train is equipped with a 6mm fine rotary drum screen and a 2 mm ultra-fine fine rotary drum screen separated by a vortex grit removal system followed by a grit classifier with cyclone separator. The vortex grit removal system between the fine and ultra-fine screens consists of a grit chamber with and upper diameter of 8 feet, and a sloping floor narrows the chamber down to 3 feet to the below grit collection sump.

Burbank WRP Headworks Screening Upgrades – Burbank, CA

Mr. Matthews served as the Princpal for the Burbank WRP headworks screening upgrades, which were based on providing a higher degree of screening solids capture, and automated washing, conveying/compacting, and removal systems for the facility. PACE assisted with equipment selection and evaluation, and provided design plans and specifications for installation of the new equipment, as well as services during construction, and provided integration and controls services for the new screening system. The new system includes two new identical 10mm bar racks installed within the existing screening structure channels. Each screening channel and new bar rack is outfitted with a new automated mechanical multi-rake bar screen scraper and washer compactor and conveyor system for conveyance and removal of captured screenings to a new screenings storage and disposal area. The headworks improvements also include modifications and complete replacement of the existing headworks equipment electrical and control systems and infrastructure.

Show Low Wastewater Treatment Plant Evaluation and Expansion – Show Low, AZ

Mr. Matthews served as the Principal / QA/QC PACE for the evaluation, design and assistance of implementing the most appropriate and cost-effective solutions to upgrade and expand the City's existing aerated lagoon WWTP. The existing WWTP process did not have the capabilities to meet stringent effluent requirements, especially for ammonia. PACE's design modified the existing aerated lagoon configuration to utilize a new headworks in combination with an extended aeration (Biolac) activated sludge treatment process. The new headworks system provides screening through a 6mm fine drum screen and grit removal through an aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen.

Winslow Wastewater Treatment Plant Evaluation and Upgrades – Winslow, AZ

Mr. Matthews served as the Principal / QA/QC for an evaluation of the deficiencies of the City of Winslow's WWTP, which was struggling to meet water quality permit requirements. The plant was plagued by operational issues, making the effective treatment capacity roughly half of its design capacity of 2.2 MGD. Through the preparation of a Process, Efficiency, and Alternative Analysis Evaluation, several major process deficiencies were identified, as well as proposed improvements for each that preserved as much of the existing facility that was practical. The improvements installed a new combined headworks system consisting of a 6.8 MGD rated, 6mm drum screen with an attached aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen.

City of Santa Paula Advanced Water Treatment and Recycling Facility – Santa Paula, CA

The Santa Paula Advanced Water Treatment and Recycling Facility features all-enclosed treatment with a common-wall design and creative redundancy features. The 4.2 MGD MBR treatment facility ensures a neighbor-friendly facility and the treated effluent meets California's stringent Title 22 effluent requirements with 0.2 NTU turbidity allowing groundwater recharge. Mr. Matthews served as the Project Manager for the design of this facility which includes a 17 MGD influent lift station, twin progressive coarse-grit-fine screening headworks, two-stage surge attenuation basins, three activated sludge - biological nutrient removal trains totaling 11.4 MGD of capacity, six hollow-fiber membrane separation trains and an NWRI compliant UV disinfection system to meet California Title 22 Reuse Water Standards. Effluent from the facility is discharged to percolation basins adjacent to the plant to be returned to the Santa Clara River Basin. Waste sludge is pre-thickened and processed to EPA Class B reuse standards on-site with a 3-stage aerobic digestion process followed by a screwpress for dewatering. The facility also features high-speed, single-stage turbine blower units and ultra-fine bubble aeration, which reduced the overall energy consumption of the facility by 15 to 20%. Additionally, the use of screw presses rather than centrifuges for dewatering further reduce power demand at the plant.

THOMAS MIHARA, PE

SR. PROJECT ENGINEER

EDUCATION

B.S. Civil Engineering
California State University of Fullerton / 2016

YEARS OF EXPERIENCE

9 Years
Joined PACE in 2016
With others over 2 years

REGISTRATIONS

Professional Engineer / CA
2021 / C 92319

NASSCO Certification for Pipeline and Manhole Inspections
2019 / U-1219-70308002

Mr. Mihara has focused experience in Civil and Environmental Engineering specifically for water and wastewater dating back to 2014. With a bachelor's degree emphasis in water resources and environmental engineering, Mr. Mihara successfully performed engineering design services on several water and wastewater and rehabilitation projects and has hands-on experience with implementing and constructing designs. Mr Mihara also has a NASSCO certification for pipeline and manhole inspections.

RELATED EXPERIENCE

Mountain House Water Recycling Facility Expansion Phase III – Tracy, CA

Mr. Mihara is serving as Sr. Project Engineer for the Phase III 5.4 MGD average dry weather flow expansion for the Mountain House Community Services District. The Phase III expansion converts the secondary treatment process to a membrane bio-reactor treatment process to meet the existing waste discharge requirements and also comply with California Title 22 Recycled Water Requirements for unrestricted reuse. The expansion includes a new headworks consisting of two cast-in-place concrete flow channels to house 6 mm and 2 mm center flow band screens and grit vortex chambers installed in between the two screening systems. The grit removal system consists of a continuously operated vortex style chamber consisting of a larger diameter upper separation chamber and lower collections sump.

City of Lathrop Advanced Water Treatment and Recycling Facility Expansion – City of Lathrop, CA

Serving as the Project Engineer, Mr. Mihara provided services during construction for the Phase 2 expansion of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility that PACE designed for the City of Lathrop, California. The Phase 2 expansion took the capacity from 1.0 MGD to 2.5 MGD, and the Phase 3 capacity currently under design by PACE will bring the facility to 4.0 MGD, with an ultimate buildout capacity of 6.0 MGD. The headworks that was installed during the Phase 2 expansion consists of a custom 316 stainless steel platform structure housing two parallel flow trains. Each train is equipped with a 6mm fine rotary drum screen and a 2 mm ultra-fine fine rotary drum screen separated by a vortex grit removal system followed by a grit classifier with cyclone separator. The vortex grit removal system between the fine and ultra-fine screens consists of a grit chamber with and upper diameter of 8 feet, and a sloping floor narrows the chamber down to 3 feet to the below grit collection sump.

Burbank WRP Headworks Rehabilitation Project – Burbank, CA

Mr. Mihara served as the Design Engineer for the Burbank WRP Headwork's Rehabilitation Project in which PACE provided design services for the rehabilitation of the existing headwork's system. Upgrades for the project included new multi-rake bar screens, washer/compactors, a new recycled water wash system, improvements to the existing headwork's infrastructure, and integration and controls for the design. The new design provided the plant with full redundancy and while the new screen reduced the load sent to the primary clarifiers.

Las Virgenes Municipal Water District Tapia Water Reclamation Facility Headworks Rehabilitation Project – Calabasas, CA

PACE was retained by the Las Virgenes Municipal Water District to provide engineering design and design support for the removal and rehabilitation of components within the facility's headworks. Mr. Mihara served as the Project Engineer for the replacement of the Fiberglass Reinforced Plastic (FRP) cover system over the existing headworks flow channels, and replacement of the process air piping within the headworks that have reached the end of their service life.

THOMAS MIHARA, PE

SR. PROJECT ENGINEER

San Clemente WRF Sludge Dewatering and Cake Handling Process Upgrades – San Clemente, CA

The City hired PACE for a complete overhaul of the sludge dewatering and cake handling process. This included removal of outdated belt filter presses and design upgrades to modern sludge dewatering/decanting centrifuges, with energy savings and chemical polymer limiting features, along with a complete new automated dual-bay cake truck loading facility. The design increased solid production up to 25% cake solids overall and reduced total sludge volume for disposal by 45%. As the Project Engineer, Mr. Mihara helped develop the performance-based specification equipment selection process to allowed for significant capital savings and a streamlined design approach while providing the City with a guarantee on performance of the system. As part of the sludge dewatering upgrades, PACE also provided controls integration services for the new equipment, which seamlessly unified the design aspects with the final controls and monitoring for the entire system.

San Clemente WRF Sludge Thickening Process Upgrades – San Clemente, CA

As the Project Engineer, Mr. Mihara completed the design of the sludge thickening process for the San Clemente WRF. This design and equipment selection also featured a performance-based pre-selection process to capture the best value and equipment for the City, while streamlining the design. This project is currently in construction and includes installation of two new modern two-meter-wide gravity belt thickeners, each capable of handling inlet waste activated sludge at a concentration of 0.33% and feed of up to 340 gpm, and provides sludge thickening up to 8%. The design also includes an overhaul of the existing polymer system for the old thickeners, and integration into the existing PLC and SCADA platform.

San Clemente WRF Emergency Generator Replacement – San Clemente, CA

Mr. Mihara served as the Project Engineer for the replacement of the backup power generator at the San Clemente Water Reclamation Plant and improve reliability of the power source to critical treatment equipment under emergency conditions. A preliminary investigation was performed to test & evaluate the existing Automatic Transfer Switch (ATS) to assess the condition, reliability, and compatibility with the proposed new generation system. Following the assessment and discussions with the City on future equipment planned to be installed at the plant, PACE recommended the installation of a new 1,000-kW generator unit to meet existing and future demands. The 1,000-kW unit provided the necessary capacity to operate the existing facility, under normal operating conditions, without the need to load-shed for critical process areas. Automatic load-shedding control of non-critical processes were programmed using the plant's existing PLC and SCADA systems allowing the generator running load to stay below the 1,000-kW rating of the newly installed system.

Burbank WRP Raw Influent Pump Replacement – Burbank, CA

The City of Burbank sought to install new raw influent pumps designed and installed at the Wastewater Reclamation Plant (WRP) to increase the pump station capacity, provide better influent flow control, and more reliable pumping for the feed to the downstream treatment processes. Mr. Mihara served as the Design Engineer to conduct a technical evaluation from an efficiency, process, mechanical, structural, electrical and integration and controls perspective, and developed a Basis of Design Report (BODR). The BODR was used to provide pump replacement recommendations and the necessary design modification plans/details for the new dry pit submersible-type pump installations. PACE also assisted the City and operators, in collaboration with the manufacturer, to select the specific components and materials for the new pumps to best suit their intended application.

Las Virgenes MWD Tapia Water Reclamation Facility Raw Sludge Re-Circulation Pump Upgrades – Calabasas, CA

The Rancho Las Virgenes Composting Facility receives raw sludge from the Tapia Water Reclamation Facility where it stores, digests, dewaters, and composts into Class A Biosolids for beneficial reuse. The facility's raw sludge wet well needs to be constantly mixed in order to maintain solids suspension to avoid clogging. The pump used in the original design had failed, and the District retained PACE to evaluate the mixing requirement and to select a new pump for the process. Mr. Mihara served as the Design Engineer by assisting in the evaluation, design, and field construction services for this project, which involved detailed investigation into the existing raw sludge wet well structure and the existing piping for inflow, withdrawal, and recirculation. PACE evaluated the hydraulic condition and the mixing requirement and was able to select the proper pump for the application. Following the evaluation, PACE provide design documents for the installation of a new recirculation pump, grinder, and piping modification to include mechanical, structural, electrical and controls.

Civita Water Reclamation Facility – San Diego, CA

Mr. Mihara was the Sr. Project Engineer for the Civita Water Recycling Facility to be built in an underground parking structure located within the City of San Diego, California. The facility was designed to produce Title 22 effluent for the purposes of producing recycled water through a compact membrane bio-reactor treatment process. In addition, Mr. Mihara also designed and wrote the control description for the chlorine disinfection system which (upon approval of the proposed chlorine validation study) will allow for the plant to provide defected recycled water with lower chlorine doses. PACE also designed the influent pump station, which has a capacity of 0.3 MGD, and was designed to draw water from a new diversion structure located on the main sewer line approximately 70 ft from the WRF. Due to the potential NPSH limitation on the suction, the pumps were selected to have self-priming capabilities.

THOMAS (TOM) GUTIERREZ

SR. CAD DESIGNER

EDUCATION

A.A. / Applied Science, Computer Aided Drafting Technology
ITT Technical Institute,
1994

YEARS OF EXPERIENCE

29+ years
Joined PACE in 2001
With others more than 7 years

Thomas Gutierrez has more than 29 years of experience in design and preparation of mechanical plans, sections and details for engineered construction documents within the wastewater and water industry. He has in-depth knowledge of mechanical systems layout, mechanical assemblies, fittings, valving, pipe materials and ratings, site grading, drainage, and utility plan/profile design (pressure and gravity systems). Mr. Gutierrez also has in-depth experience with design of mechanical 3D models of wastewater treatment plants for construction drawings. His 3D design and modeling experience includes design and draft BIM-ready civil 3D pipe networks, surface models, grading and basic corridors for earthwork calculations and cross sections, process piping for complete plant layouts, and mechanical process equipment (i.e. blowers, pumps, etc.). Mr. Gutierrez is an advanced user of Autodesk AutoCAD, Civil 3D, and MEP. He has also has the responsibility of directing CAD staff and engineers to ensure project documents are accurate, professional and meet project goals. He is responsible for communicating with engineers and production staff to ensure all needs are met, this includes support, training and solving critical task obstacles.

RELATED EXPERIENCE

Mountain House Water Reclamation Facility Expansion – Tracy, CA

Mr. Gutierrez was Production Manager for two phases of expansion of the WRF from 0.45 MGD WRF to 5.4 MGD WRF. Most recently, He served as Production Manager / Sr. CAD Designer for the Phase III expansion to 5.4 MGD featuring a process conversion to MBR and included new headworks consisting of two cast-in-place concrete flow channels to house 6 mm and 2 mm center flow band screens and grit vortex chambers installed in between the two screening systems. The grit removal system consists of a continuously operated vortex style chamber consisting of a larger diameter upper separation chamber and lower collections sump.

City of Lathrop Advanced Water Treatment and Recycling Facility Expansion – City of Lathrop, CA

Mr. Gutierrez prepared the design and construction documents for two phases of expansion of the Lathrop Consolidated Treatment Facility, an MBR wastewater treatment facility, for the City of Lathrop. Mr. Gutierrez led all CAD design and oversaw the team producing all design plans. The Phase 2 expansion took the capacity from 1.0 MGD to 2.5 MGD, and the Phase 3 capacity currently under design will bring the facility to 4.0 MGD, with an ultimate buildout capacity of 6.0 MGD. The facility expansion included headworks that were installed during the Phase 2 expansion, which consisted of a custom 316 stainless steel platform structure housing two parallel flow trains. Each train is equipped with a 6mm fine rotary drum screen and a 2 mm ultra-fine fine rotary drum screen separated by a vortex grit removal system followed by a grit classifier with cyclone separator. The vortex grit removal system between the fine and ultra-fine screens consists of a grit chamber with and upper diameter of 8 feet, and a sloping floor narrows the chamber down to 3 feet to the below grit collection sump.

Show Low Wastewater Treatment Plant Evaluation and Expansion – Show Low, AZ

Mr. Gutierrez served as the Sr. CAD Designer for the design of the Show Low aerated lagoon WWTP upgrades. PACE's design modified the existing aerated lagoon configuration to utilize a new headworks in combination with an extended aeration (Biolac) activated sludge treatment process. The new headworks system provides screening through a 6mm fine drum screen and grit removal through an aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen.

Burbank WRP Aeration and Headworks Rehabilitation Projects – Burbank, CA

Mr. Gutierrez served as Sr. CAD Designer for both the Burbank WRP Aeration and Headworks Rehabilitation Projects. Upgrades to the headworks system included replacing the aging and cumbersome single-rake and grinder system with new multi-rake bar screens and washer/compactors. Both projects also included integration and controls for the new systems, as well as development of a comprehensive sequencing/construction phasing plan to allow for the operating plant to remain online during construction improvements.

THOMAS (TOM) GUTIERREZ

SR. CAD DESIGNER

City of San Clemente Water Reclamation Facility Blower Replacement – San Clemente, CA

PACE provided the engineering design for several plant improvement projects on the City of San Clemente's 7.2 MGD facility in response to aging equipment and operational challenges. Mr. Gutierrez served as the Sr. CAD Designer, and developed a 3D model, which allowed the City Staff and design team to visualize the completed installation, and quickly identify potential construction and operational conflicts. The new blower system produced a 15% reduction in the plant's overall power use, reducing annual energy consumption by over 650,000 kW/hrs per year and reducing demand charges by 75 kW per month, netting $130K in annual energy savings.

City of Santa Paula Advanced Water Treatment and Recycling Facility – Santa Paula, CA

Mr. Gutierrez served as Sr. CAD Designer for the design of the Santa Paula Advanced Water Treatment and Reclamation Facility which features all-enclosed treatment with common-wall design and creative redundancy features. The design, permitting, and construction of this 4.2 MBR facility was completed in 18 months through a design-build-operate-finance (DBOF) delivery method where PACE served as the engineer-of-record. Mr. Gutierrez coordinated the CAD plan set of the civil, grading, mechanical, and utility plans for the duration of the project. The completed facility includes a 17 MGD influent lift station, twin progressive coarse-grit-fine screening headworks, two-stage surge attenuation basins, three activated sludge - biological nutrient removal trains totaling, six hollow-fiber membrane separation trains, and a National Water Research Institute (NWRI) compliant UV disinfection system. The facility also features three 200 HP, five 100 HP, and three 75 HP Aerzen air-bearing turbo blower units and ultra-fine bubble aeration, which reduced the overall energy consumption by 15-20%.

City of Adelanto Treatment Plant Evaluation, Improvements and Capacity Expansion – Adelanto, CA

Mr. Gutierrez served as Sr. CAD Design for the design of the City's WWTP upgrade. The WWTP was receiving an average flow of 1.8 MGD, of which only 0.5 MGD was able to be treated prior to the upgrades. PACE evaluated the existing facility and recommended new infrastructure and rehabilitation of the existing systems to not only regain the original plant capacity, but to increase the rated capacity to 4.0 MGD. New plant infrastructure includes screening and washing systems in the headworks, three 200 HP Aerzen air-bearing turbo blowers and new aeration equipment in the existing secondary basins, two new 70' diameter circular clarifiers, a RAS/WAS pump station, and new internal recycle pumping on the biological process

Las Virgenes Municipal Water District Tapia Water Reclamation Facility Blower and Aeration Equipment Improvements – Calabasas, CA

Mr. Gutierrez served as the Sr. CAD Designer for the Tapia WRF Process Air Improvements. The goal of the project was to improve the efficiency and reduce operational costs of the existing 12 MGD Tapia Water Reclamation Facility by implementing new blower and aeration equipment which improves energy and operational efficiency while reducing maintenance costs. Design elements included upgrades to the process air system including (3) new 400 HP, 480V Sulzer Magnetic Bearing Blowers; upgrades the aeration system included the installation of over 60 retrievable, OTT fine bubble aeration grids; and electrical gear conversion from 4160 medium voltage to 480 low voltage system.

Civita Water Recycling MBR Facility – San Diego, CA

The Civita Water Recycling Facility is a 250,000 GPD MBR facility designed to provide Title 22 recycled water for use in the Civita Development. Mr. Gutierrez served as the Sr. CAD Designer for this unique design that incorporates the treatment facility within two levels of the underground parking structure levels of a 5-story residential/mixed use building to meet both the treatment and effluent storage needs for the community. The facility is split into two levels with the aeration/MBR blowers, UV disinfection, chlorine storage tanks, pumping and electrical equipment on the upper level and MBR tanks, aeration system featuring two 60 HP Kaeser Rotery Lob blowers, and 500,000-gallon effluent storage tank on the lower level. The treated water is applied to community parks, common landscape areas and cooling towers. The treated water is applied to community parks, common landscape areas and cooling towers.

Chumash Water Reclamation Facility Expansion and Expansion – Santa Ynez, CA

Mr. Gutierrez led all CAD design and oversaw the team producing all design plans for the Chumash WFR MBR of 200,000 GPD. Mr. Gutierrez ensured QA/QC review for accuracy and ease of interpretation on all products.

JUERGEN T. NICK, MS, PE

SR. ELECTRICAL ENGINEER

EDUCATION
M.S. Electrical Engineering
Zurich University / 1986

YEARS OF EXPERIENCE
30+ Years
Joined PACE in 2023
With others for over 30 years

REGISTRATIONS
Professional Engineer / CA
2010 / E19428
Professional Engineer / AZ
2010 / 51151
Electrical Contractor / AZ
Certification: 1997 / 272486

Registered Professional Engineer-Electrical/Power with over 30 Years of experience in Electrical Facility and Control System Design. Extensive International Commissioning-, Project- and Engineering Management Experience coordinating Civil, Mechanical, Structural and Electrical Design efforts. Experienced in Inverter Technologies, Switch Gear, Power Distribution and Control/SCADA System Design. Commissioning of Building Management Systems, Industrial and Ultrapure Water Treatment Facilities, Bulk Material Handling-, Power generating Systems within the Pharmaceutical, Semiconductor, Water & Wastewater and Mining & Metals Industry. Fluent in English and German, conversational in French and Spanish.

RELATED EXPERIENCE

Mountain House Phase II – Mountain House, CA

Onsite EPC Project Manager in charge of managing the Prime Subcontractor Contractor (mechanical, electrical civil), Earth Work Contractor and Building Trades. Conducted weekly Progress Meetings with the Prime Subcontractor and monitored the Project Progress against the Schedule. Liaised with the end Client and kept the client updated on the Project Progress. Together with the EPC determined plans of action to bring the Project back on schedule. Managed Design Changes, Scope of Work and issued Change Orders to contractors. Produced monthly reports summarizing the Project Progress. Negotiated Equipment Purchasing agreements for all mechanical and electrical equipment including Switch Gear and Emergency Backup Generators. Negotiated supply contracts for Earth Work Contractor and Building Trades. Assisted our company president in the negotiations of the Prime Subcontractor Contract. Reviewed submittals alongside Field Engineers. Managed Equipment Delivery Schedules and coordinated deliveries with the Subcontractors and Construction Progress. After completion of construction I managed the commissioning of the Mechanical, Electrical, Control and SCADA System followed by Performance testing of the Facility.

Tartesso I – Buckeye, AZ

Onsite EPC Project Manager in charge of managing the Mechanical, HVAC and Electrical Subcontractors. Juergen joined the project after civil construction had been completed and at the beginning of the Mechanical and electrical Installation. Liaised with the end Client and kept the client updated on the Project Progress. Together with the Field Engineers reviewed submittals. Managed Equipment Delivery Schedules and coordinated deliveries with the Subcontractors and Construction Progress. After completion of construction, Juergen managed the commissioning of the Mechanical, Electrical, Control and SCADA System followed by Performance testing of the Facility.

SPA 2 – Surprise, AZ

Design EPC Project Manager, managing the Mechanical, Electrical Design, Control and SCADA System Design of the Facility. Negotiated Equipment Purchasing agreements for all mechanical and electrical equipment including Control Systems, Switch Gear and Emergency Backup Generators. Together with the Field Engineers reviewed submittals. Managed Equipment Delivery Schedules and coordinated deliveries with the Subcontractors and Construction Progress. After completion of construction Juergen managed the commissioning of the Mechanical, Electrical, Control and SCADA System of the Facility.

SPA 3 / Surprise – Arizona (2007)

Design Project Manager, managing the Mechanical, Electrical Design, Control and SCADA System Design of the Facility. Negotiated Equipment Purchasing agreements for all mechanical and electrical equipment including Control Systems, Switch Gear and Emergency Backup Generators. Together with the Field Engineers reviewed submittals. Managed Equipment Delivery Schedules and coordinated deliveries with the Subcontractors and Construction Progress. After completion of construction Juergen managed the commissioning of the Mechanical, Electrical, Control and SCADA System of the Facility.

JUERGEN T. NICK, PE

SR. ELECTRICAL ENGINEER

SPA 4 – Surprise, AZ

Design Project Manager, managing the Mechanical, Electrical Design (including Backup Power Generation), and Civil Design of the Facility. Liaised wit Client, City and Governmental Agencies to obtain Permits and ensure compliance with Local and State Standards. Conducted progress meetings with End Client and City Engineers

SPA 5 – Surprise, AZ

Design Project Manager, managing the Mechanical, Electrical Design (including Backup Power Generation), and Civil Design of the Facility. Liaised wit Client, City and Governmental Agencies to obtain Permits and ensure compliance with Local and State Standards. Conducted progress meetings with End Client and City Engineers

Sundance II – Buckeye, AZ

Design Project Manager, managing the Mechanical, Electrical Design, Control and SCADA System Design of the Facility. Negotiated Equipment Purchasing agreements for all mechanical and electrical equipment including Control Systems, Switch Gear and Emergency Backup Generators. Reviewed submittals alongside Field Engineers. Managed Equipment Delivery Schedules and coordinated deliveries with the Subcontractors and Construction Progress. Managed the Electrical Contractor. Managed design changes, Scope of Work and issued Change Orders to contractors. After completion of construction Juergen managed the commissioning of the Mechanical, Electrical, Control and SCADA System of the Facility.

Santa Paula – Santa Paula, CA

Design Project Manager responsible for the conceptual Process-, Civil-, Mechanical- and Electrical Design of the Bid Proposal. Presentation of the bid Proposal to the cities Consulting Engineers. For the bid proposal Juergen conducted detailed Power consumption analysis for the Facility, selected and designed energy efficient equipment. A contract requirement was a guaranteed energy consumption of the Facility. The Project was a Design, Build, Operate, Finance Project which required the Operator to pay for the Energy Cost in excess of the guaranteed energy consumption for 20 years. Based on the initial concept, Juergen applied for a patent and was granted US Patent Nr. 8287733 for the inovative Design of the MBR System. After being awarded the Design/Build/Operate contract; he managed the Design Team consisting of Civil, Mechanical, Architectural, Structural and Electrical Design Engineers. Managed in-house the Electrical System, Control System and SCADA Design. The Electrical Design included Power Distribution and Emergency Power Generation. Liaised with the Utility Company and coordinated the Power tie in arrangements. Applied and received a $500,000 Grant for the "Energy Efficient Design" of the facility from the Utility Company. Negotiated Equipment Purchasing agreements for all mechanical and electrical equipment including Switch Gear and Emergency Backup Generators. Reviewed and approved the Electrical Contractors Submittals, managed the electrical contractor and answered RFI's. Juergen managed the commissioning of the Mechanical, Electrical, Control and SCADA System followed by Performance testing of the Facility.

CV for Stephen Saunders

Stephen Saunders
69 Harbourview Lane
Chamcook, NB E5B 3G8
Phone: 352 505 9788
Fax: 352 505 9788
Cell: 506 467 4617
E-mail: ibisgroup@bellsouth.net

Principal Consultant: 2004-present
IbisGroup Inc. Chamcook, NB

Ibis Group Inc. is a technical support company providing numerical fluid modeling and analysis services. The bulk of the projects undertaken by Ibis Group are in the waste and potable water treatment industry. In this field, an expertise with process elements that have fluid flow characteristics critical to system efficacy has been established. Work with these elements includes reservoir hydraulic efficiency, lift station evaluation, headworks flow distribution, optimization and through-flow analysis of clarifier, anoxic zone, aeration basin and outfall contact tanks.

In addition to water treatment, Ibis Group has expertise in free surface modeling projects including open channel flow and interaction of ocean waves with stationary and moving structures.

Emphasis at Ibis Group is to provide anaysis and evaluation of designs that will aid clients in attaining predictable and economical life cycle costs for their installations.

Consulting Engineer: 2002-2004
ASE Technologies Inc. Phoenix, AZ

Combustor modeling: Optimized combustor designs for ultra low NOx and soot emissions. Design and modeling of atomized water injection system for test cell exhaust gas cooling.
Scramjet modeling: Evaluated designs for optimal shock stability and center body placement.
Stationary gas turbine generator: Airside and gas side flow modeling for heat exchanger in exhaust waste heat recuperator.
Transonic Gap seal development: Optimized transonic gap seals for gas turbine engines.

Engineering and sales: Provided hydraulic expertise for project proposals and bid submittals in the form of CFD models, with accompanying analyses and reports.

Training: Conducted technical training seminars throughout the U.S. for regional engineering and sales personnel.

Project management: Performed as project managing engineer to ensure successful completion of large or non-standard projects.

Visiting R&D Engineer/CFD Specialist: 1996-1999
ITT Flygt Headquarters: Solna, Sweden

CFD pilot program: Explored developmental and commercial potentials for Flygt's newly acquired Fluent license. Validation of the CFD code against hard data was critical. Consequently, responsibilities included building and testing physical models in the Flygt lab plus collecting data from full scale applications in the field.

Systems and Applications Engineer/Project Manager: 1993-1996
ITT Flygt: Systems Engineering Department Trumbull, CT

Product support: Interfaced with regional engineers, marketing/sales personnel and customers to provide the necessary technical and engineering support for mixers and slurry pumps.

R&D Engineer: 1988-1993
Textron Lycoming: Aero/Performance Dept. Stratford, CT

Physical and numerical modeling: Designed and supervised the operation of test rigs for inlet particle separation systems and IR suppressing exhaust gas mixers for gas turbine engines deployed in helicopter, fixed wing aircraft and battle tank applications.

Development engineering: Implemented pilot program to cut development and testing time of new engine parts.

EDUCATION

BS ENG: University of New Brunswick, 1985, Mechanical Engineering

GRADUATE EXCHANGE: Eidgenösische Technische Hochshule Zürich, 1985-1986

MSME: Purdue University, 1988, Mechanical Engineering

PUBLICATIONS

CFD Modelling for Wastewater Treatment Processes - IWA Working Group on Computational Fluid Dynamics
Scientific and Technical Report Series No. 30 2022, IWA publishing, ISBN: 9781780409023

CFD for Wastewater Treatment: An Overview
Water Science and Technology May 2016, wst2016249; DOI: 10.2166/wst.2016.249
Good Modelling Practice in Applying Computational Fluid Dynamics for WWTP Modelling
Water Science and Technology Mar 2016, 73 (5) 969-982; DOI: 10.2166/wst.2015.565

A Protocol for the Use of CFD as a Supportive Tool for Wastewater Treatment Plant Modeling
Water Science and Technology 2014 Nov, 70 (10) 1575-1584; DOI: 10.2166/wst.2014.425

Pumps Assist Migrating Salmon on the Columbia River, Fluent News, Newsletter Volume 10, Issue 2, Winter 2001

CFD as a Mixing Applications Tool, Scientific Impeller, 1998

CFD as a Mixing Applications Tool, Fluent User Group Meeting Gothenburg, Sweden 1998

Fish Attraction System for Wanapum Dam, Scientific Impeller, 1996

Introduction to Computer Graphics for Engineers, University of New Brunswick 1985

PROFESSIONAL AFFILIATIONS

American Society of Mechanical Engineers

Water Environment Federation

International Water Association

New England Water Environment Association

SUPPORT REQUIRED **FROM CITY STAFF**

Similar to past projects, PACE will present potential improvement options for the City's review and consideration. PACE is requesting support from the City's staff to provide feedback on PACE's recommended improvement options to implement for this project. Additionally support from the City-paid interns to assist with obtaining records drawings and field dimensions can be utilized if available

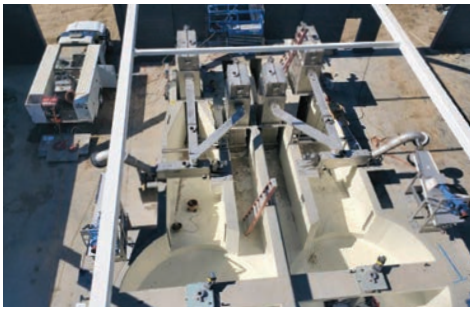
RELATED EXPERIENCE

RELATED EXPERIENCE

Mountain House Water Reclamation Facility Expansion *Tracy, CA*

Relevant Features

- Upgrade of existing facility
- Headworks consisting of two cast-in-place concrete flow channels to house 6 mm and 2 mm center flow band screens and grit vortex chambers installed in between the two screening systems
- Continuously operated grit vortex style chamber consisting of a larger diameter upper separation chamber and lower collections sump
- Operational during construction – developed sequence of construction
- Instrumentation and controls programming
- Provided services during bid and construction



The Mountain House Community Services District Wastewater Reclamation Facility Phase III Expansion expanded the capacity of the existing facility to 5.4 MGD of average flow, with a peak hour wet weather flow of 16.7 MGD. The facility utilizes a combination of multi-stage screening and grit removal, with a membrane bioreactor to produce tertiary Title 22 compliance recycled water.

The expansion includes a new headworks consisting of two cast-in-place concrete flow channels to house 6 mm and 2 mm center flow band screens and grit vortex chambers installed in between the two screening systems. The new headworks was sized to service the peak hour wet weather flow rate of the expanded service area (16.7 MGD) which was determined based on the existing historical sewer and wet weather flow data of the collection area.

The grit removal system consists of a continuously operated vortex style chamber consisting of a larger diameter upper separation chamber and lower collections sump. The dimensions and operating water depths of the chambers were determined based on the design flow rate and CFD modeling conducted by the manufacturer. Consistent performance of the grit chamber throughout the wide flow ranges of the plans will be maintained by the motor driven impeller that continuously rotates within the upper separation chamber. The collected grit is pumped out of the lower collections sump through an airlift pump to the grit screw classifier system consisting of an above ground screw conveyor, washer, and hydrocyclone.

Client Info

IHP Capital Partners
Nader Shareghi
230 S Sterling Dr, Ste 100, Mountain House, CA 95391
(209) 831-5607 | nshareghi@sjgov.org

Project Dates

2018-2023

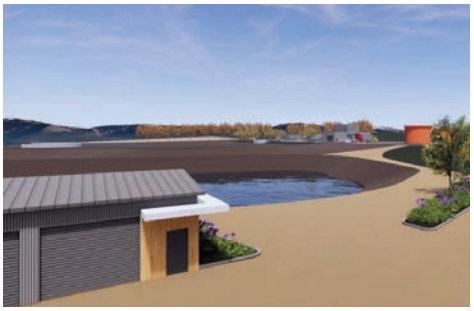
Team Members

James Matthews, PE QA/QC and Instrumentation Controls Programming Principal
Robert Murphy, PE Project Manager
Thomas Mihara, PE Design Engineer
Thomas Gutierrez Sr. CAD Designer
Kyle Smith, EIT Design Engineer

Tuolumne Utilities District Sonora Regional Wastewater Treatment Plant Upgrades *Sonora, CA*

Relevant Features

- Upgrade of existing facility
- New headworks consisting of two cast-in-place concrete flow channels to house 6 mm multi-rake bar screens and grit vortex chambers
- Continuously operated grit vortex style chamber, consisting of a larger diameter upper separation chamber and lower collections sump
- CFD modeling to determine chamber sizing
- Operational during construction – developed sequence of construction
- Instrumentation and controls programming
- Provided services during bid and construction



PACE performed a facility assessment and upgrade design for the 2.6 MGD Average Daily Flows (ADF) Sonora Regional Wastewater Treatment Plant (SRWWTP) to address the facility's declining effluent performance. The existing SRWWTP features a conventional trickling filter secondary process that utilizes two trickling filters, followed by two secondary clarifiers, three aerated polishing ponds, and a chlorine disinfection system. To improve the facility's functionally and performance, PACE performed design upgrades to increase the capacity to 5.0 MGD of Max Day Flows (MDF) and 10.0 MGD Peak Hour Flows (PHF) treated by a new headworks, primary screening and grit removal, new dual-train extended aeration activated sludge (EAAS) basins, new secondary clarifiers, new chlorine disinfection system, new effluent disk cloth filters and a new sludge dewatering facility.

The new headworks consists of two cast-in-place concrete flow channels to house 6 mm multi-rake bar screens and grit vortex chambers. The new headworks was sized to service the peak hour flow rate of 10 MGD and was selected through a pre-selected performance-based specification process.

The grit removal system consists of a continuously operated vortex style chamber, consisting of a larger diameter upper separation chamber and lower collections sump. The dimensions and operating water depths of the chambers were determined based on the design flow rate and CFD modeling conducted by the manufacturer. Consistent performance of the grit chamber throughout the wide flow ranges of the plans will be maintained by the motor driven impeller that continuously rotates within the upper separation chamber. The collected grit is pumped out of the lower collections sump through an airlift pump to the grit screw classifier system consisting of an above-ground screw conveyor, washer, and hydrocyclone.

Client Info

Tuolumne Utilities District
Erik Johnson - District Engineer
18885 Nugget Blvd., Sonora, CA 95391
(209) 532-5536 | ejohnson@tudwater.com

Project Dates

2019-Ongoing

Team Members

James Matthews, PE Principal
Robert Murphy, PE Project Manager

City of Lathrop Advanced Water Treatment and Recycling Facility Expansion *Lathrop, CA*

Relevant Features

- Upgrade of existing facility
- New headworks consisting of 6mm fine drum screen and grit removal through an aerated grit chamber and conveyor
- Aerated grit chamber installed directly after the drum screen
- Operational during construction – developed sequence of construction
- Instrumentation and controls programming
- Provided services during bid and construction

PACE provided project development, studies, design, and bid and construction administration services for two phases of expansion of the City of Lathrop Consolidated Treatment Facility (CTF), an MBR wastewater treatment facility that treats residential and commercial/industrial sewage flows. Prior to the first expansion, the facility's capacity was 1.0 MGD. The Phase 2 expansion took the capacity to 2.5 MGD, and the Phase 3 capacity currently under design will bring the facility to 4.0 MGD, with several major provisions designed as part of Phase 3 to support the ultimate buildout capacity of 6.0 MGD.

The headworks that was installed during the Phase 2 expansion consists of a custom 316 stainless steel platform structure housing two parallel flow trains. Each train is equipped with a 6mm fine rotary drum screen and a 2 mm ultra-fine rotary drum screen separated by a vortex grit removal system followed by a grit classifier with cyclone separator. Each headworks train was sized for an average day flow of 2.5 MGD (4.0 MGD peak hour).

The vortex grit removal system between the fine and ultra-fine screens consists of a grit chamber with and upper diameter of 8 feet. A sloping floor narrows the chamber down to 3 feet to the below grit collection sump. A slow rotating X impeller aids in the separation of the higher density grit particles from the lower density organics and the main wastewater stream. The collected grit is pumped from the lower sump by a self-priming centrifugal pump to the grit classifier and cyclone separator. The grit collector systems are also equipped with common odor control unit.

Client Info

City of Lathrop
Ken Reed - City Project Manager
390 Towne Centre Drive, Lathrop, CA 95330
(209) 992-7363 | kreed@ci.lathrop.ca.us

Project Dates

2015-Present

Team Members

James Matthews, PE Principal – QA/QC and Instrumentation Controls
Robert Murphy, PE Sr. Project Engineer
Thomas Mihara, EIT Project Engineer (services during construction)
Thomas Gutierrez Sr. CAD Designer

Winslow Wastewater Treatment Plant Evaluation and Upgrade *Winslow, AZ*

Relevant Features

- Upgrade of existing facility
- New headworks consisting of 6.8 MGD rated, 6mm drum screen with an attached aerated grit chamber and conveyor
- Aerated grit chamber installed directly after the drum screen
- Develop construction sequencing
- Provided services during bid and construction
- Operational during construction – developed sequence of construction

PACE was hired by the City of Winslow to perform an evaluation of the deficiencies of the City's WWTP, which was struggling to meet water quality permit requirements. The plant was plagued by operational issues, making the effective treatment capacity roughly half of its design capacity of 2.2 MGD. Through the preparation of a Process, Efficiency, and Alternative Analysis Evaluation, several major process deficiencies were identified, as well as proposed improvements for each that preserved as much of the existing facility that was practical.

The improvements installed a new combined headworks system consisting of a 6.8 MGD rated, 6mm drum screen with an attached aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen. To promote settling of grit, coarse bubble diffusers installed on one side of the tank promote a spiral mixing pattern where a horizontal screw conveyor moves the collected grit into a centralized hopper. From here an inclined screw conveyor conveys the grit out of the tank for disposal.

Client Info

City of Winslow
Tim Westover - Public Works Director
21 Williamson Avenue, Winslow, AZ 86047
(928) 289-4011 | twestover@winslowaz.gov

Project Dates

2012-2018

Team Members

James Matthews, PE Principal – QA/QC and Instrumentation Controls
Robert Murphy, PE Sr. Project Engineer

Show Low Wastewater Treatment Plant Evaluation and Expansion *Show Low, AZ*

Relevant Features

- Upgrade of existing facility
- New headworks consisting of custom 316 stainless steel platform structure housing two parallel flow trains
- 6mm fine rotary drum screen and a 2 mm ultra-fine rotary drum screen separated by a vortex grit removal system followed by a grit classifier with cyclone separator in each train
- Operational during construction - developed sequence of construction
- Provided services during bid and construction

The City of Show Low commissioned PACE to develop an improvement plan and perform design services to upgrade the existing aerated lagoon WWTP. The existing WWTP process did not have the capabilities to meet stringent effluent requirements, especially for ammonia. PACE's design modified the existing aerated lagoon configuration to utilize a new headworks in combination with an extended aeration (Biolac®) activated sludge treatment process.

The new headworks system provides screening through a 6mm fine drum screen and grit removal through an aerated grit chamber and conveyor. The grit removal system consists of an aerated grit chamber installed directly after the drum screen. To promote settling of grit, coarse bubble diffusers installed on one side of the tank promote a spiral mixing pattern where a horizontal screw conveyor moves the collected grit into a centralized hopper. From here, an inclined screw conveyor conveys the grit out of the tank for disposal. Odor and vector issues associated with the screenings and grit is reduced through the installation of an auto bagging unit on the discharge chute.

Client Info

City of Show Low
Bill Kopp - Public Works Director
180 N 9th Street, Show Low, AZ 85901
(928) 532-4081 | bkopp@showlowaz.gov

Project Dates

2014-2016

Team Members

James Matthews, PE Principal – QA/QC and Instrumentation Controls Lead Engineer
Robert Murphy, PE Sr. Project Engineer
Thomas Gutierrez Sr. CAD Designer

ADDITIONAL HEADWORKS EXPERIENCE

PACE has been the lead engineer on more than 15 wastewater facilities over the last 5 years with specific requirements for new or upgraded headworks system designs which incorporated grit vortex style chambers or aerated grit channels, as well as grit washers/classifiers. Below is a partial list of projects completed by PACE involving wastewater headworks equipment, grit removal systems and controls.

REPRESENTATIVE PROJECTS	TREATMENT CAPACITY (MGD-AVERAGE)	TYPE OF TREATMENT PROCESS	TYPE OF PRIMARY SCREENING (6-10MM)	TYPE OF GRIT REMOVAL	TYPE OF GRIT WASHER / CLASSIFICATION
City of Adelanto WWTP Upgrades, Adelanto, CA	3.0	Biolac®	Mech Bar	Vortex	Grit Classifier
Barona WRF (Original and Upgrades), Lakeside, CA	0.8	SBR	Int Drum	Vortex	Grit Classifier
City of El Mirage WRF, El Mirage, AZ	3.6	SBR	Helix Sieve	Vortex	Grit Classifier
City of Lathrop WRF Expansion, Lathrop, CA	2.5	MBR	Helix Sieve	Channel	Grit Cyclone-Classifier
Mountain House CSD WRF, Tracy, CA	3.0	SBR	Helix Sieve	Vortex	Grit Classifier
Litchfield Park CSD Palm Valley WRF, Goodyear, AZ	4.1	SBR	Helix Sieve	Vortex	Grit Classifier
Pinetop Lakeside WWTP Improvements, Pinetop, AZ	2.0	OD	Mech Bar	Channel	Grit Classifier
Town of Quartzsite WWTP Expansion, Quartzsite, AZ	0.8	SBR	Helix Sieve	Channel	Grit Classifier
City of Bisbee San Jose WWTP, Bisbee, AZ	1.2	SBR	Helix Sieve	Channel	Grit Classifier
City of Santa Paula WRF, Santa Paula, CA	4.2	MBR	Helix Sieve	Vortex	Grit Classifier
City of Show Low WWTP, Show Low, AZ	2.5	Biolac®	Helix Sieve	Channel	Grit Cyclone-Classifier
City of Sierra Vista EOP WWTP, Sierra Vista, AZ	4.0	MLE	Helix Sieve	Channel	Grit Cyclone-Classifier
City of Sierra Vista Tribute WWTP, Sierra Vista, AZ	0.25	MBR	Mech Bar	Channel	Grit Classifier
City of Somerton WWTP, Somerton, AZ	1.8	Barden Pho	Mech Bar	Vortex	Horizontal Grit Classifier
City of Surprise SPA 2 WRF, Surprise, AZ	1.2	SBR	Helix Sieve	Channel	Horizontal Grit Classifier
City of Surprise SPA 3 WRF, Surprise, AZ	1.8	SBR	Helix Sieve	Channel	Horizontal Grit Classifier
City of Surprise SPA 4 WRF, Surprise, AZ	1.2	SBR	Helix Sieve	Channel	Grit Classifier
City of Winslow WWTP, Winslow, AZ	2.2	OD	Helix Sieve	Channel	Grit Cyclone-Classifier
Mountain House CSD WRF, Tracy, CA	5.4	MBR	Band Screen	Vortex	Grit Cyclone-Classifier
Sonora Regional WWTP, Sonora, CA	2.6	Biolac®	Multi-rake	Vortex	Vortex

FIRM REFERENCES

City of Vista

Ken Knatz
Sewer Engineering Division Manager
City of Vista (formerly with City of San Clemente)

200 Civic Center Drive, Vista, CA 92084
(760) 643-5416

City of Lathrop

Ken Reed
Construction Manager

390 Towne Centre Dr., Lathrop, CA 95330
(209) 992-7363

City of Show Low

Bill Kopp
Public Works Director

180 N 9th Street, Show Low, AZ 85901
(928) 532-4081

Mountain House Community Services District

Nader Shareghi
Interim General Manager

230 S Sterling Dr Ste 100, Mountain House, CA 95391
(209) 831-5607

City of Winslow

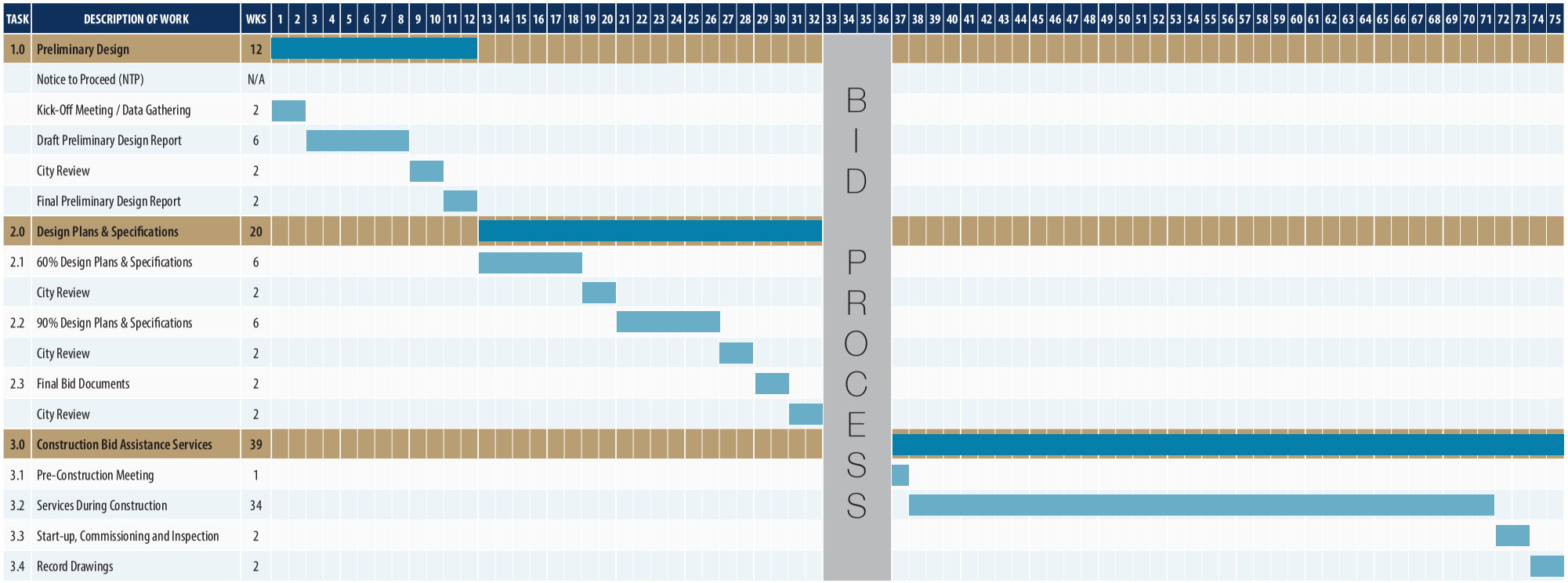
Tim Westover
Public Works Director

21 Williamson Avenue, Winslow, CA 86047
(928) 289-4011

PROJECT SCHEDULE

PROJECT SCHEDULE

TASK	DESCRIPTION OF WORK	WKS
1.0	**Preliminary Design**	12
	Notice to Proceed (NTP)	N/A
	Kick-Off Meeting / Data Gathering	2
	Draft Preliminary Design Report	6
	City Review	2
	Final Preliminary Design Report	2
2.0	**Design Plans & Specifications**	20
2.1	60% Design Plans & Specifications	6
	City Review	2
2.2	90% Design Plans & Specifications	6
	City Review	2
2.3	Final Bid Documents	2
	City Review	2
3.0	**Construction Bid Assistance Services**	39
3.1	Pre-Construction Meeting	1
3.2	Services During Construction	34
3.3	Start-up, Commissioning and Inspection	2
3.4	Record Drawings	2



COST DATA

COST DATA

TASK	DESCRIPTION OF WORK	PRINCIPAL	SR. PROJECT MANAGER	SR. CONSULTING ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL ENGINEER	SR. PROJECT ENGINEER	PROJECT ENGINEER	SR. CAD DESIGNER	PROJECT COORDINATOR	MAN-POWER SUBTOTAL	TOTAL TASK COST
		$285	$245	$245	$245	$245	$210	$180	$165	$100		
0.0	**Project Management & Meetings**											**$8,910**
0.1	Reimbursable Expenses (Included in Task Fees Below)										N/A	
0.2	Project Management, Billing, and Invoicing		16							6	$4,520	
0.3	Meetings and Data Gathering	1	7				7	4		2	$4,390	
1.0	**Preliminary Design**											**$37,680**
1.1	Process Assessment and Preliminary Design Report	2	20	36		2	36	50	36	4	$37,680	
2.0	**Design Plans and Specifications**											**$67,145**
2.1	60% Design Plans and Specifications	4	8			8	24	50	60	2	$29,200	
2.2	90% Bid Documents	1	12			32	12	26	50	1	$26,615	
2.3	Final Bid Documents		8			6	8	12	24	1	$11,330	
3.0	**Construction Support Services**											**$37,930**
3.1	Pre-Bid Support		8			0.5	8	12		2	$6,123	
3.2	Construction Meetings and Start-Up Commissioning Support		20				20	20			$12,700	
3.3	Construction Submittal Review and RFIs		11.5			5	11.5	34			$12,578	
3.4	Record Drawings		1			1	2	16	16	1	$6,530	
4.0	**Project Deliverables**											
	Total All Task 1-4										**$151,665**	**$151,665**

STATEMENT OF COMPLIANCE

This proposal is in strict compliance with the Request for Proposal and Draft Agreement and no exceptions to either are proposed.

OTHER INFORMATION

PACE agrees that in carrying out its responsibilities under this agreement, and in particular, with regard to the employment of persons working on the project, it will not discriminate based on race, color, creed, national origin, religion, sex, age, or handicap. In the event any of the work performed by consultant hereunder is sub-contracted to another person or firm (with approval of the City as required herein), sub-contract shall contain a similar provision.

17520 Newhope Street, Suite 200
Fountain Valley, CA 92708
714.481.7300 | www.pacewater.com

EXHIBIT "B"

SCHEDULE OF SERVICES

Consultant shall perform the Services according to the following schedule:

PROJECT SCHEDULE

TASK	DESCRIPTION OF WORK	WKS
1.0	**Preliminary Design**	12
	Notice to Proceed (NTP)	N/A
	Kick-Off Meeting / Data Gathering	2
	Draft Preliminary Design Report	6
	City Review	2
	Final Preliminary Design Report	2
2.0	**Design Plans & Specifications**	20
2.1	60% Design Plans & Specifications	6
	City Review	2
2.2	90% Design Plans & Specifications	6
	City Review	2
2.3	Final Bid Documents	2
	City Review	2
3.0	**Construction Bid Assistance Services**	39
3.1	Pre-Construction Meeting	1
3.2	Services During Construction	34
3.3	Start-up, Commissioning and Inspection	2
3.4	Record Drawings	2

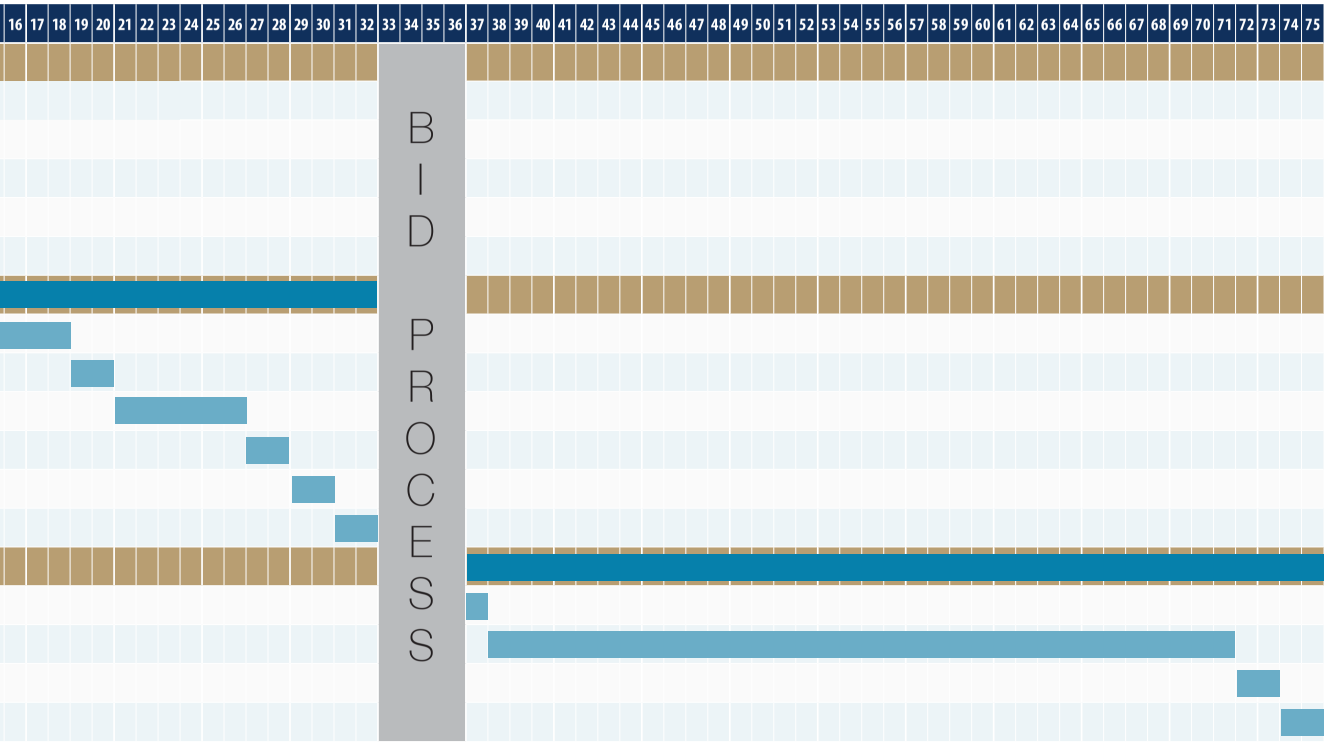


EXHIBIT "C"

INSURANCE REQUIREMENTS

3.2.12 Insurance.

3.2.12.1 Time for Compliance. Consultant shall not commence work under this Agreement until it has provided evidence satisfactory to the City that it has secured all insurance required under this section. In addition, Consultant shall not allow any subconsultant to commence work on any subcontract until it has provided evidence satisfactory to the City that the subconsultant has secured all insurance required under this section.

3.2.12.2 Types of Insurance Required. As a condition precedent to the effectiveness of this Agreement for work to be performed hereunder, and without limiting the indemnity provisions of the Agreement, the Consultant, in partial performance of its obligations under such Agreement, shall procure and maintain in full force and effect during the term of the Agreement the following policies of insurance. If the existing policies do not meet the insurance requirements set forth herein, Consultant agrees to amend, supplement or endorse the policies to do so.

(A) Commercial General Liability: Commercial General Liability Insurance which affords coverage at least as broad as Insurance Services Office "occurrence" form CG 0001, or the exact equivalent, with limits of not less than $1,000,000 per occurrence and no less than $2,000,000 in the general aggregate. Defense costs shall be paid in addition to the limits. The policy shall contain no endorsements or provisions (1) limiting coverage for contractual liability; (2) excluding coverage for claims or suits by one insured against another (cross-liability); or (3) containing any other exclusion(s) contrary to the terms or purposes of this Agreement.

(B) Automobile Liability Insurance: Automobile Liability Insurance with coverage at least as broad as Insurance Services Office Form CA 0001 covering "Any Auto" (Symbol 1), or the exact equivalent, covering bodily injury and property damage for all activities with limits of not less than $1,000,000 combined limit for each occurrence.

(C) Workers' Compensation: Workers' Compensation Insurance, as required by the State of California and Employer's Liability Insurance with a limit of not less than $1,000,000 per accident for bodily injury and disease.

(D) Professional Liability (Errors & Omissions): Professional Liability insurance or Errors & Omissions insurance appropriate to Consultant's profession with limits of not less than $1,000,000 per claim. Covered professional services shall specifically include all work to be performed under the Agreement and delete any exclusions that may potentially affect the work to be performed (for example, any exclusions relating to lead, asbestos, pollution, testing, underground storage tanks, laboratory analysis, soil work, etc.). If coverage is written on a claims-made basis, the retroactive date shall precede the effective date of the initial Agreement and continuous coverage will be maintained or an extended reporting period will be exercised for a period of at least three (3) years from termination or expiration of this Agreement.

3.2.12.3 Insurance Endorsements. Required insurance policies shall contain the following provisions, or Consultant shall provide endorsements on forms approved by the City to add the following provisions to the insurance policies:

(A) Commercial General Liability:

(1) Additional Insured: The City, its officials, officers, employees, agents, and volunteers shall be additional insureds with regard to liability and defense of suits or claims arising out of the performance of the Agreement.

Additional Insured Endorsements shall not (1) be restricted to "ongoing operations"; (2) exclude "contractual liability"; (3) restrict coverage to "sole" liability of Consultant; or (4) contain any other exclusions contrary to the terms or purposes of this Agreement. For all policies of Commercial General Liability insurance, Consultant shall provide endorsements in the form of ISO CG 20 10 10 01 (or endorsements providing the exact same coverage) to effectuate this requirement.

(2) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

(B) Automobile Liability:

(1) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

3.2.12.4 Professional Liability (Errors & Omissions):

(A) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

(B) Contractual Liability Exclusion Deleted: This insurance shall include contractual liability applicable to this Agreement. The policy must “pay on behalf of” the insured and include a provision establishing the insurer’s duty to defend.

3.2.12.5 Workers' Compensation:

(A) Cancellation: Required insurance policies shall not be canceled or the coverage reduced until a thirty (30) day written notice of cancellation has been served upon the City except ten (10) days shall be allowed for non-payment of premium.

3.2.12.6 Primary and Non-Contributing Insurance. All policies of Commercial General Liability and Automobile Liability insurance shall be primary and any other insurance, deductible, or self-insurance maintained by the City, its officials, officers, employees, agents, or volunteers shall not contribute with this primary insurance. Policies shall contain or be endorsed to contain such provisions.

3.2.12.7 Waiver of Subrogation. All policies of Commercial General Liability and Automobile Liability insurance shall specifically allow Consultant or others providing insurance evidence in compliance with these specifications to waive their right of recovery prior to a loss. Consultant hereby waives its own right of recovery against the City, its officials, officers, employees, agents, and volunteers, and shall require similar written express waivers and insurance clauses from each of its subconsultants.

3.2.12.8 Deductibles and Self-Insured Retentions. Any deductible or self-insured retention greater than $5,000 must be approved in writing by the City and shall protect the City, its officials, officers, employees, agents, and volunteers in the same manner and to the same extent as they would have been protected had the policy or policies not contained a deductible or self-insured retention.

3.2.12.9 Evidence of Insurance. The Consultant, concurrently with the execution of the Agreement, and as a condition precedent to the effectiveness thereof, shall deliver either certified copies of the required policies, or original certificates on forms approved by the City, together with all endorsements affecting each policy. Required insurance policies shall not be in compliance if they include any limiting provision or endorsement that has not been submitted to the City for approval. The certificates and endorsements for each insurance policy shall be signed by a person authorized by that insurer to bind coverage on its behalf. At least fifteen (15 days) prior to the expiration of any such policy, evidence of insurance showing that such insurance coverage has been renewed or extended shall be filed with the City. If such coverage is cancelled or reduced and not replaced immediately so as to avoid a lapse in the required coverage, Consultant shall, within ten (10) days after receipt of written notice of such cancellation or reduction of coverage, file with the City evidence of insurance showing that the required insurance has been reinstated or has been provided through another insurance company or companies.

3.2.12.10 Failure to Maintain Coverage. In the event any policy of insurance required under this Agreement does not comply with these specifications or is canceled and not replaced immediately so as to avoid a lapse in the required coverage, City has the right but not the duty to obtain the insurance it deems necessary and any premium paid by City will be promptly reimbursed by Consultant or City will withhold amounts sufficient to pay premium from Consultant payments. In the alternative, City may cancel this Agreement effective upon notice.

3.2.12.11 Acceptability of Insurers. Each such policy shall be from a company or companies with a current A.M. Best's rating of no less than A- VII and authorized to transact business of insurance in the State of California, or otherwise allowed to place insurance through surplus line brokers under applicable provisions of the California Insurance Code or any federal law.

3.2.12.12 Enforcement of Agreement Provisions (non estoppel). Consultant acknowledges and agrees that actual or alleged failure on the part of the City to inform Consultant of non-compliance with any requirement imposes no additional obligation on the City nor does it waive any rights hereunder.

3.2.12.13 Requirements Not Limiting. Requirement of specific coverage or minimum limits contained in this Appendix are not intended as a limitation on coverage, limits, or other requirement, or a waiver of any coverage normally provided by any insurance.

3.2.12.14 Insurance for Subconsultants. Consultant shall include all subconsultants engaged in any work for Consultant relating to this Agreement as additional insureds under the Consultant's policies, or the Consultant shall be responsible for causing subconsultants to purchase the appropriate insurance in compliance with the terms of these Insurance Requirements, including adding the City, its officials, officers, employees, agents, and volunteers as additional insureds to the subconsultant's policies. All policies of Commercial General Liability insurance provided by Consultant’s subconsultants performing work relating to this Agreement shall be endorsed to name the City, its officials, officers, employees, agents and

volunteers as additional insureds using endorsement form ISO CG 20 38 04 13 or an endorsement providing equivalent coverage. Consultant shall not allow any subconsultant to commence work on any subcontract relating to this Agreement until it has received satisfactory evidence of subconsultant's compliance with all insurance requirements under this Agreement, to the extent applicable. The Consultant shall provide satisfactory evidence of compliance with this section upon request of the City.

EXHIBIT "D"

COMPENSATION

In complete compensation for Consultant's Services under this Agreement, City shall pay Consultant the following hourly rates for services actually performed:

Total compensation under this Agreement shall not exceed one hundred and fifty-one thousand six hundred sixty-five ($151,665) as the guaranteed maximum price for the Consultant to complete the Services to the City's satisfaction.

There are no reimbursable expenses under this Agreement.

COST DATA

TASK	DESCRIPTION OF WORK	PRINCIPAL	SR. PROJECT MANAGER	SR. CONSULTING ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL ENGINEER	SR. PROJECT ENGINEER	PROJECT ENGINEER	SR. CAD DESIGNER	PROJECT COORDINATOR	MAN-POWER SUBTOTAL	TOTAL TASK COST
		$285	$245	$245	$245	$245	$210	$180	$165	$100		
0.0	**Project Management & Meetings**											**$8,910**
0.1	Reimbursable Expenses (Included in Task Fees Below)										N/A	
0.2	Project Management, Billing, and Invoicing		16							6	$4,520	
0.3	Meetings and Data Gathering	1	7				7	4		2	$4,390	
1.0	**Preliminary Design**											**$37,680**
1.1	Process Assessment and Preliminary Design Report	2	20	36		2	36	50	36	4	$37,680	
2.0	**Design Plans and Specifications**											**$67,145**
2.1	60% Design Plans and Specifications	4	8			8	24	50	60	2	$29,200	
2.2	90% Bid Documents	1	12			32	12	26	50	1	$26,615	
2.3	Final Bid Documents		8			6	8	12	24	1	$11,330	
3.0	**Construction Support Services**											**$37,930**
3.1	Pre-Bid Support		8			0.5	8	12		2	$6,123	
3.2	Construction Meetings and Start-Up Commissioning Support		20				20	20			$12,700	
3.3	Construction Submittal Review and RFIs		11.5			5	11.5	34			$12,578	
3.4	Record Drawings		1			1	2	16	16	1	$6,530	
4.0	**Project Deliverables**											
	Total All Task 1-4										**$151,665**	**$151,665**

WORKER'S COMPENSATION INSURANCE CERTIFICATION

WORKERS' COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:

(ONE OF THE BOXES BELOW MUST BE CHECKED)

☐ I have and will maintain a certificate of consent from the California Labor Commission to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work to be performed under this contract.

☐ I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work to be performed under this contract. My workers' compensation insurance carrier and policy number are:

Carrier_____

Policy Number_____

☐ I certify that, in the performance of the work under this Agreement, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and I hereby agree to indemnify, defend, and hold harmless the City of San Clemente and all of its officials, employees, and agents from and against any and all claims, liabilities, and losses relating to personal injury or death, economic losses, and property damage arising out of my failure to provide such worker's compensation insurance. I further agree that, if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS ($100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

Dated: _____, 2023

Pacific Advanced Civil Engineering, Inc.
("CONSULTANT")

By: Cory M. Severson

It's Chief Executive Officer

Address:

17520 Newhope Street
Fountain Valley, CA 92708