

AGENDA STAFF REPORT

DATE: December 20, 2017

TO: Mayor and City Council

APPROVED BY: David B. Dale, Interim City Manager *David B. Dale*

PREPARED BY: David B. Dale, Interim City Manager *David B. Dale*

SUBJECT: Authorize Interim City Manager to Sign Agreement for Professional Services between the City of Calexico and Lee & Ro, Inc. to prepare a Wastewater Treatment Facilities Master Plan

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Recommendation:

Authorize Interim City Manager to Sign Agreement for Professional Services between the City of Calexico and Lee & Ro, Inc. to prepare a Wastewater Treatment Facilities Master Plan.

Background:

The Wastewater Plant was built in 1967; it has been in service for 50 years. In 1991, the City added aerated lagoons, a new influent station with mechanical bar screen, another main lift station and a new control building with lab. In 1996 federal guidelines required disinfection, so the City added an ultra violet disinfection, another primary clarifier a digester and a 75-foot diameter secondary clarifier. All the upgrades that have occurred have been additions not replacement of existing equipment.

A Wastewater Treatment Facility Master Plan is necessary now because the City must plan for expansion and rehabilitation of the wastewater plant. The City had plans and specifications prepared in 2007 and revised in 2010 for a wastewater treatment plant expansion. At the time that the plans were made, the City anticipated more development than occurred. As part of the Master Plan, the consultant will review the capacity of the existing plant, the current anticipated development and projected population increases, and make recommendations for how much capacity is required within the next 10 years if any.

The Consultant will prioritize the various components of the WWTP for improvements, if the components are constructed separately. The Consultant will assess the existing condition of the Wastewater Treatment Plant components, and make recommendations for rehabilitation or replacement if necessary.

Discussion & Analysis:

For the above-mentioned work to be completed, Public Works staff is requesting that an engineering firm be hired for professional services for said project, and prepare all the necessary documentation. On November 2, 2017, Public Works staff posted the Request for Proposal on the City website. The City received (4) submitted proposals for the preparation of the Wastewater Facilities Master Plan:

1. Carollo
2. Pace
3. Dudek
4. Lee and Ro, Inc.

After carefully reviewing the three proposals, Public Works staff recommends that the City Council of the City of Calxico authorize the Interim City Manager to sign Agreement for Professional Services between the City of Calxico and Lee & Ro, Inc. for the preparation of the Wastewater Facilities Master Plan. The proposals were scored using a scoring criteria scoresheet with a (4) member scoring committee. The proposals were very close in the scoring; Lee & Ro had the highest cumulative score. Scoring criteria included qualifications, completeness of response, capacity to perform the Master Plan, conclude the work in a timely manner, and the fee proposal.

Fiscal Impact:

The Wastewater Facilities Master Plan is budgeted in the Capital Improvement Program (CIP) for FY 2017-2018 in the amount of \$125,000 in the Wastewater Capital Fund.

\$114,776.00 – Wastewater Capital Fund

Coordinated With:

Public Works Department.
Economic Development Department.

Attachment(s):

1. Request for Proposal – Wastewater Facilities Master Plan – November 2, 2017
2. Lee & Ro, Inc. Proposal
3. Agreement for Professional Services – Lee & Ro, Inc.





CITY OF CALEXICO

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Public Works Department

Request for Proposal – Wastewater Treatment Facilities and Collection System Master Plan November 2, 2017

INFORMATION FOR ENGINEERING FIRMS

1.0 PURPOSE

The City of Calexico is soliciting request for proposals from qualified firms to provide consulting services to prepare a Wastewater Treatment Facilities and Collection System Master Plan. Local Enterprise funds will be used to pay for this project.

2.0 CALENDAR OF EVENTS

Package will be emailed to consultants **November 2, 2017**.

Deadline for City to receive written questions **November 9, 2017, at 3:00 p.m.**

Written responses for questions (submit questions to ddale@calexico.ca.gov) received by November 9, 2017, will be available by **November 14, 2017 at 11:00 a.m.**

Proposals must be received by the Office of the City Clerk, on or before:

Wednesday November 22, 2017, at 5:00 p.m.

3.0 SCOPE OF SERVICES – See Detailed Scope of Work Exhibit “A”

The Consultant will perform these services under the supervision and direction of the Public Works Director/City Engineer.

The Consultant shall provide the City with an updated Existing Wastewater System Map showing the pump stations, manholes, pipes, sizes and material types.

Viva Calexico!

The Consultant shall provide the City with a complete Hydraulic Analysis of the existing wastewater collection system.

The Consultant shall provide the City with a Proposed Improvements Wastewater System Map using the Existing Sewer System Map as a "base map."

The Consultant shall prepare an Engineer's Opinion of Probable Cost for the identified Wastewater System Improvements.

The Consultant shall provide a Closed-Circuit Television Inspection (CCTV) for 20 miles of the existing sewer collection system (total City collection system comprises 78 miles) to determine the structural condition, location of structural defects, evidence of inflow and infiltration, size and material of construction, service lateral locations, and locate any obstructions such as roots, grease, debris and cross-bores.

The Wastewater Treatment Plant capacity is 4.3 million gallons per day (MGD). The current Plant average flow is 2.9MGD with peak flow of 3.5MGD. The Plant was built in 1967; it has been in service for 43 years. At that time, the plant consisted of one main lift station, influent channel with a manual bar screen, (1) aeration basin, (1) digester, (2) secondary clarifiers and a control building. Since then the Plant has been upgrade three times: In 1974, a grit chamber was added for removal of heavy particles, also added was a primary clarifier, aeration basin, and chlorine contact chamber and return activated sludge (RAS) lift station. In 1991, the City added aerated lagoons, a new influent station with mechanical bar screen, another main lift station and a new control building with lab. In 1996 federal guidelines required disinfection, so the City added an ultra violet disinfection, another primary clarifier a digester and a 75-foot diameter secondary clarifier. All the upgrades that have occurred over the past 30 years a have been additions not replacement of existing equipment.

The Consultant will assess the existing condition of the Wastewater Treatment Plant components, and make recommendations for rehabilitation or replacement if necessary. The City had plans and specifications prepared in 2007 and revised in 2010 for a wastewater treatment plant expansion. At the time that the plans were made, the City anticipated more development than occurred. The Consultant shall review the capacity of the existing plant, the current anticipated development and projected population increases, and make recommendations for how much capacity is required within the next 10 years if any. The Consultant shall prioritize the various components of the WWTP for improvements, if the components are constructed separately.

The Consultant shall prepare a Technical Report outlining existing system deficiencies, alternatives, recommendations for system improvements, Engineer's Opinion of Probable Cost for recommended improvements and funding sources for improvements.

See Exhibit A for the detailed Scope of Work.

PROPOSAL DELIVERABLES

Consultant must submit five (5) copies of their proposal with original Consultant signature. The proposal must be formatted in accordance with the instructions of this RFP. Promotional material may be attached, but is not necessary and will not be considered as meeting any of the requirements of this RFP. Proposals must be enclosed in a sealed envelope or package, clearly marked "SEALED PROPOSAL - DO NOT OPEN WITH REGULAR MAIL" and delivered on or before 5:00p.m. on **November 22, 2017** to:

Office of the City Clerk
City Hall
City of Calexico
608 Heber Avenue
Calexico, CA 92231

Emailed or faxed proposals will not be accepted. It is the proposer's responsibility to assure that its proposal is delivered and received at the location specified herein, on or before the date and hour set.

Questions regarding this Request for Proposal may be directed to:

David Dale, PE, Public Works Director/City Engineer
City of Calexico
608 Heber Avenue
Calexico, CA 92251
or via email at ddale@calexico.ca.gov

4.0 MANDATORY REQUIREMENTS FOR ALL PROPOSALS

All proposals must be accompanied with the name(s), title(s) and resume(s) of the individual(s) who will be performing the services should the contract be awarded.

5.0 PREPARATION OF PROPOSALS

It is the sole responsibility of respondent to ensure that the proposals are received by the City in proper time.

6.0 SIGNATURE

The statement of qualifications documents or any modification must be signed in the name of the consultant and must bear the signature of the person or persons authorized to sign the proposal.

7.0 MODIFICATIONS

Any modification of any proposals submitted must be in writing and received by CITY prior to the closing time for proposals. Modifications may be made via electronic mail or any other means. Any qualifications or modifications received after the scheduled closing time for receipt of statement of qualifications will be not be accepted.

8.0 WITHDRAWAL OF PROPOSALS

Respondents may withdraw their proposals either personally or by written request at any time prior to the scheduled closing time for receipt of proposals.

9.0 PROPOSAL ELEMENTS

Proposals must address each of the elements in this section.

Statement of Qualifications

- a. Description of your experience as it pertains to the Scope of Work above mentioned in Item 3.0 and Exhibit "A"
- b. A description of the specific tasks completed on projects implemented. Include the names, addresses and phone numbers of contact persons for several contracts for which you have performed services as solicited in this RFP.

Proposed Scope of Work and Fee

Provide a discussion of how your firm proposes to provide the services requested. Provide an itemized lump sum fee for the Tasks as identified in the detailed Scope of Work "Exhibit A". If there is any proposed scope of work that is not identified in this RFP, separate the fees for this work in the itemized lump sum fee. The City may or may not, at its discretion, add this work into the project.

Project Personnel and Their Availability

Provide resume(s) of the key personnel who would be assigned to perform the services as described. Indicate status of each person's relationship to your firm, whether an employee, partner, subcontractor, or other contractual agreement. The statement should also identify for each member of the project team, their area of expertise, role in the project, and experience with similar or related projects.

The CITY reserves the right to reject any and all qualifications submitted; to request clarification of services submitted; to request additional information; and to waive any irregularity in the qualifications and review process, as long as CITY procedures remain consistent with City procurement requirements.

EXHIBIT A – DETAILED SCOPE OF SERVICES

The Scope of Services for the preparation of the City Wastewater Master Plan is as follows:

Task 1 – STUDY AREA, LAND USE, POPULATION AND DEMANDS

- A. The land use shall be determined by the most current City Zoning Map, Service Area Plan, and/or General Plan. Show a Land Use Summary and total acreage, including vacant land.
- B. Work with City Staff in the Planning Department to determine the current known and/or potential developments, including the phasing of the projects.
- C. Determine the population and forecasts for the population growth for the next 10 years. Coordinate the population forecasts with the 2015 Urban Water Management plan.
- D. Determine the existing sewer flows by Zoning type.
- E. Determine the annual historical sewer flows.
- F. Estimate future sewer flows for each type of development and zoning.

Task 2 – EXISTING WASTEWATER COLLECTION AND TREATMENT SYSTEM

- A. Review record maps and improvement plans from previous subdivision projects within the City sphere of influence with the Public Works Department.
- B. Provide a CCTV inspection of 20 miles of the City's wastewater collection system in accordance with the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP). All CCTV operators and data analysts shall be PACP certified by a certified PACP trainer. The City has approximately 78 miles of sewer pipelines, so the CCTV inspection will cover approximately 25% of the City's sewer collection system. The exact locations of the CCTV inspection will be determined by the Wastewater

System Supervisor.

The City will provide staff to open the manholes for the CCTV operator. The City will also clean and jet the sewer pipelines just prior to the inspection.

All work completed in the field by the CCTV operator shall be done at the appropriate prevailing wages, as determined by the State of California Department of Industrial Relations, most recent determinations. The Director's General Prevailing Wage Determinations can be found online at:

<https://www.dir.ca.gov/OPRL/dprevwagedetermination.htm>

- C. Locate existing wastewater pipelines. Pipeline material type and diameter size shall be determined based on a CCTV study and information provided by the City. Pothole excavations will not be required.
- D. Locate and verify existing manholes. The City has existing maps showing the locations of most manholes. Consultant to verify the locations and add manholes not shown.
- E. Identify sewer pump/lift stations on the map and show the capacity of each station.
- F. Review the latest Wastewater Treatment Facilities Master Plan dated October 1991. This will be made available upon request.
- G. The City has an existing sewer collection system map in AutoCAD 2011 (prepared in 2015) to be used by the Consultant. The AutoCAD file will be provided to the Consultant. The map shows the right of way widths and the approximate locations of the manholes and sizes of the sewer pipes. The City also prepared a Service Area Plan in 2006 that may be of use to the Consultant. The 1994 record drawings of the Wastewater Treatment Plant will also be made available.
- H. Prepare an updated existing sewer collection system map in AutoCAD 2011 using the City's existing map. Illustrate all manholes on the map. Number each manhole. Illustrate the diameter size, pipe material and length along each pipe segment. All major sewer

facilities shall be shown on the map, including the treatment plant, and pump stations. The map shall include a north arrow, scale, legend, Title, City boundary line, right of way lines, easement lines (as shown on the existing map) within the City. The total length of each type of pipe, and the total length of all pipes shall be determined and shown on the map.

- I. Complete a Hydraulic Analysis of the existing sewer collection system.
- J. Review computer output data and identify problem areas with inadequate sized pipelines and/or pump stations. Provide recommendations regarding upgrading the wastewater collection system to provide the required sewer flows. Provide recommendations for replacement/rehabilitation of existing manholes based on the CCTV inspection and City staff recommendations.
- K. Analyze existing pump/lift stations to determine if rehabilitation or additional capacity is required based on development/population projections. Meet with City staff, visit and assess each pump/lift station to determine the condition of the pump stations.
- L. Analyze the City's wastewater treatment capacity and determine if any expansion is required within the next 10 years. Analyze the data to determine if satellite plants are appropriate. Recommend satellite treatment station(s) if appropriate.
- M. Assess the existing condition of the Wastewater Treatment Plant components, and make recommendations for rehabilitation or replacement if necessary. In 2014, the City had a Facilities Assessment of the Wastewater Treatment Plant completed. This report will be made available upon request.
- N. The City had plans and specifications prepared in 2007 and revised in 2010 for a wastewater treatment plant expansion. At the time that the plans were made, the City anticipated more development than occurred. These plans will be made available upon request. Prioritize the various components of the WWTP for improvements, if the components are constructed separately. An Evaluation Report of the Wastewater Treatment Plant Expansion and Sewer Line Upgrade was completed in 2005 and will be made available upon request.

Task 3 – PROPOSED IMPROVEMENTS TO THE WASTEWATER COLLECTION AND TREATMENT SYSTEM

Technical Report

- A. Prepare a Technical Report outlining existing system deficiencies, alternatives, recommendations for the proposed wastewater treatment and collection system improvements.

Proposed Improvements Sewer System Map

- A. Prepare a proposed Wastewater Collection System Improvements Map using the existing Wastewater Collection System Map as a “Base Map”. Illustrate the recommended improvements on the City Proposed Improvements Wastewater Collection System Map as follows:
 - a) Pipeline line size upgrades due to hydraulic deficiencies.
 - b) Installation of new pipelines and manholes to serve future potential developments within the next 10 years.
 - c) Replacement of deteriorated sewer pipelines which are older than 50 years, or are identified in the CCTV inspection as requiring replacement or repairs.
 - d) Proposed pump/lift station facilities.
 - e) Proposed wastewater treatment system satellite facilities.

Engineer’s Opinion of Probable Cost

- A. Prepare an itemized Engineer's Opinion of Probable Cost for each of the identified proposed Wastewater System Improvements.



December 5, 2017

Office of the City Clerk
City Hall, City of Calexico
608 Heber Avenue
Calexico, CA 92231

Subject: Proposal for Professional Engineering Services for Wastewater Treatment Facilities Master Plan

Ladies and Gentlemen:

When we were working on previous City of Calexico engineering assignments, LEE & RO visited the wastewater treatment facility many times and we are very familiar with the existing process trains and current conditions of structures and equipment. LEE & RO clearly understands the goal of the master planning effort and we believe LEE & RO is best qualified to provide a clear answer to the following questions:

- Should the City retain the existing WWTP process trains and just rehabilitate & reuse the structures and equipment, or
- Should the City consider a new cost-effective treatment process? For this option, some of the existing facilities with remaining service life will still be incorporated into the new process.

Since 1997, LEE & RO successfully delivered numerous wastewater treatment plant planning and engineering projects for many public agencies in the Imperial and Riverside Counties under the jurisdiction of the Colorado River Basin (Region 7) Regional Water Quality Control Board, including the Coachella Valley Water District, Cities of Brawley, City of Coachella, Valley Sanitary District, City of Holtville, City of Calipatria, and City West Morland.

LEE & RO proposes Jay Jung, PE, as the Project Manager for the subject project. Jay has over 15 years of process analysis, engineering, and design experience in the wastewater treatment fields. M. Steve Ro, PE, the firm's founding partner, will work closely with the project team and provide technical as well as project management support.

We have included the signed Acceptances of Addendum's No. 1 & 2 in Appendix B. LEE & RO sincerely appreciates the opportunity to be of service to the City of Calexico. As the principal in charge, I will make sure that we commit the necessary resources to produce a high-quality master plan.

Sincerely,

LEE & RO, Inc.

A handwritten signature in black ink, appearing to read 'M. Steve Ro', is written over a faint, larger version of the signature.

M. Steve Ro, PE, CEO

Encl: Five (5) Original Copies of Proposal and One (1) Copy of Fee Proposal Sealed in a Separate Envelope



SECTION 1 PROJECT APPROACH AND SCOPE OF WORK

EXISTING WASTEWATER TREATMENT PLANT (WWTP)

The City of Calexico (City) owns and operates the wastewater treatment plant (WWTP) under NPDES Permit No. CA7000009 (Order No. R7-2014-0004) issued by the California Regional Water Quality Control Board (RWQCB), Colorado River Basin Region (Region 7). The permitted plant capacity is 4.3 MGD. The WWTF consists of two treatment plants - Conventional Activated Sludge (Plant 1) and Aerated Lagoons (Plant 2). The plant process units include mechanical bar racks, influent pumping, aerated grit removal, two circular primary clarifiers, three activated sludge basins, four aerated lagoons, three circular secondary clarifiers, a UV disinfection system, a dissolved air floatation (DAF) thickener, two anaerobic sludge digesters, and sludge drying beds. The WWTP includes an Operations Building.

Based on the design criteria included in the 1994 WWTP expansion, the liquid treatment capacities are 2.5 MGD for Plant 1 and 1.8 MGD for Plant 2. Plant 1 and 2 shares the headworks such as the bar racks, influent pump stations and aerated grit removal tank. The Aerated Lagoons (Plant 2) effluent is combined with the Plant 1 effluent and then discharged to the New River after UV disinfection. The sludge from the lagoons are processed at the sludge drying beds without mechanical thickening or anaerobic digestion. The secondary clarifiers, DAF sludge thickener and anaerobic digesters are the unit processes supporting Plant 2. The primary sludge and the Plant 1 thickened secondary sludge are stabilized at the digesters and then dewatered at the sludge drying beds.

CURRENT OPERATIONS AND NPDES PERMIT

The WWTF current average flow is 2.9 MGD and peak flow is 3.5 MGD. The raw sewage strengths are believed to be around 250 mg/l BOD₅ and 250 mg/l Total Suspended Solids (TSS). The current RWQCB Order R7-2014-0004 effluent limitations include:

BOD ₅	30 MG/L (MONTHLY AVERAGE) 45 MG/L (WEEKLY AVERAGE)
TSS	36 MG/L (MONTHLY AVERAGE) 53 MG/L (WEEKLY AVERAGE)
OIL & GREASE	25 MG/L (MAXIMUM DAILY)
CYANIDE	4.3 UG/L (MONTHLY AVERAGE) 8.5 UG/L (MAXIMUM DAILY)

The NPDES Permit specifies other effluent limits covering other parameters such toxicity, bacteria, etc. It is noteworthy that the effluent limits in the current NPDES Permit does not specify the ammonia concentration. The effluent limits for the wastewater treatment plants serving other Imperial County municipalities such as the Cities of Brawley and Holtville, includes a very low ammonia concentration limits. The Brawley and Holtville treatment plants include ammonia removal process such as nitrification and denitrification.



EXISTING WASTEWATER TREATMENT PLANT (WWTP)- WHAT ARE THE CHALLENGES THE CITY FACES?

The proposed LEE & RO team members have visited the existing WWTP and are very familiar with the existing WWTP. LEE & RO has identified two critical issues and project challenges below:

1. The existing WWTP processes are overly complex considering the plant capacity and availability of operations and maintenance (O&M) labor in the Imperial County. The City must operate and maintain an unusual amount of mechanical systems or equipment (e.g. DAF thickener and anaerobic digesters.)
2. The City has limited financial resources even though most of the WWTP components are at the end of their service life and require replacement, upgrading and alternative systems installed within a few years.

The 2014 WWTP Assessment Report identified that most the WWTP components that must be replaced or upgraded within a few years except the following units:

- Primary Clarifier No. 2
- Aeration Tank No. 3
- Secondary Clarifier No. 3
- Aerated Lagoons No. 1 through 4
- UV Disinfection System
- Anaerobic Digester No. 2

PROJECT GOAL

This project is to determine: (1) Future Treatment Capacity for the next 10 to 20 years based on the current population trend and development projection; (2) Assess the Condition and Capacity, and Life Expectancy of Existing Process Units; (3) Identify Most Cost-Effective (Lowest Life Cycle Cost) Unit Processes (either new, replacement or upgrade); and (4) Develop a WWTP Master Plan with Recommendation of Capital Improvement Project (CIP) List.

PROJECT APPROACH

We understand that the project construction and O&M costs are utmost importance to the City. Throughout the development of Master Plan, LEE & RO will pay attention to and analyze the life cycle costs when making recommendations in the Master Plan for the City.

The LEE & RO will:

"Maximize incorporation of existing process units or equipment in the upgraded WWTP; however, LEE & RO will recommend new process trains, if they can substantially reduce the life cycle cost of the upgraded WWTP."

The LEE & RO's master planning activities will include the following:

- a) Review of the current regulatory requirements and future regulatory trends.
- b) Assess and project wastewater quality and wastewater quantity to be treated.



- c) Identify candidate treatment processes that can partially replace existing outdated process trains. The secondary process options for plants with a capacity of less than 5 mgd normally include conventional activated sludge, single cell activated sludge (e.g. Biolac™), oxidation ditch, and membrane bioreactor (MBR). MBR would be too costly to construct and operate. LEE & RO will focus on the conventional activated sludge, oxidation ditch, and single cell activated sludge. Again, the goal is to reincorporate as much existing facilities as possible into the upgraded WWTP.

The sludge handling alternatives may include mechanical dewatering with solar drying. Anaerobic digestion is a complex process. Aerobic digestion should be also considered for the treatment plants with sufficient land areas such as the Calexico WWTP.

- d) Analyze the alternatives and rank them based on the life cycle cost, ability to meet the NPDES requirements, process reliability, and ease of operation and maintenance (O&M). The analysis will include an analysis of power consumption and O&M labor requirements.
- e) LEE & RO believes the existing aerated lagoons can easily be converted to the single cell activated sludge (Biolac™). This process conversion will be able to allow the City to abandon the existing primary clarifiers, three aeration basins and two anaerobic digesters.
- f) Prepare a comprehensive Master Plan report describing the results of the analyses above and identifying recommended project(s). The preliminary table of contents for the Master Plan is shown in **Exhibit 1-1**
- g) It is our understanding that the City of Calexico would not consider or pursue water recycling at this time.

Exhibit 1-1
Table of Contents
CITY OF CALEXICO WASTEWATER TREATMENT PLANT (WWTP)
MASTER PLAN

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- 2.2 Wastewater Influent Quality and Characteristics
- 2.3 Regulatory Requirements and Institutional Issues

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- II Meeting Minutes and Decision Logs
- III Detailed Cost Estimates for Improvements and Recommended New Facilities
- V Manufacturers' Data

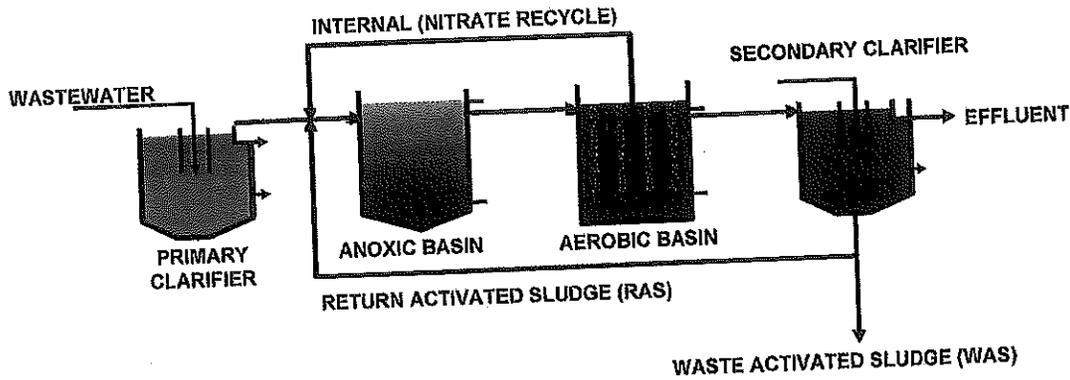
Preliminary Discussions on "LONG-TERM" secondary Process options

As previously discussed LEE & RO will review the following four processes to evaluate the potential for life cycle cost reduction:



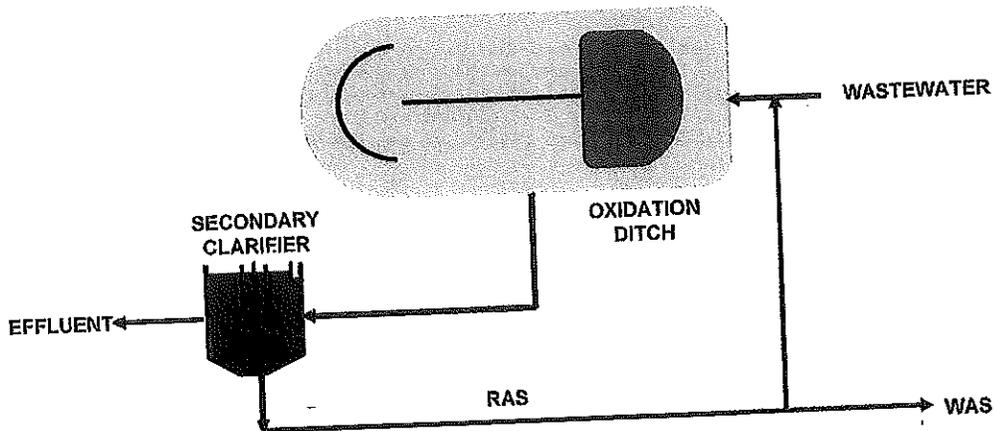
Conventional Activated Sludge (Existing WWTP) with or without Anoxic Basin. The conventional A/O activated sludge process is the most common biological treatment process for large treatment plants with flows over 10 mgd for reducing the concentration of organic pollutants (BOD₅) and nitrogen in wastewater. The A/O process is very adaptable to existing activated sludge facilities and, when properly designed, can easily meet a common effluent standard of <10 mg/L total nitrogen. Exhibit 1-2 presents a general schematic of the A/O system. The existing City of Calexico WWTP (Plant 1) is a conventional activated sludge system without anoxic basin for internal nitrate recycle system.

Exhibit 1-2: Conventional Activated Sludge w/ Anoxic Basin



Oxidation Ditch. The oxidation ditch consists of a ring or oval-shaped channel equipped with mechanical aerators and mixing devices. Screened wastewater enters the channel and is combined with the return activated sludge. The tank configuration promotes unidirectional channel flow so that the energy used for aeration is sufficient to provide mixing in the system. The aeration and mixing keep the activated sludge in suspension. As the wastewater leaves the aeration zone, the dissolved oxygen concentration decreases, and de-nitrification occurs. An oxidation ditch is capable of producing total nitrogen effluent concentrations below 5 mg/L. Exhibit 1-3 presents a general schematic of the oxidation ditch system.

Exhibit 1-3: Oxidation Ditch System

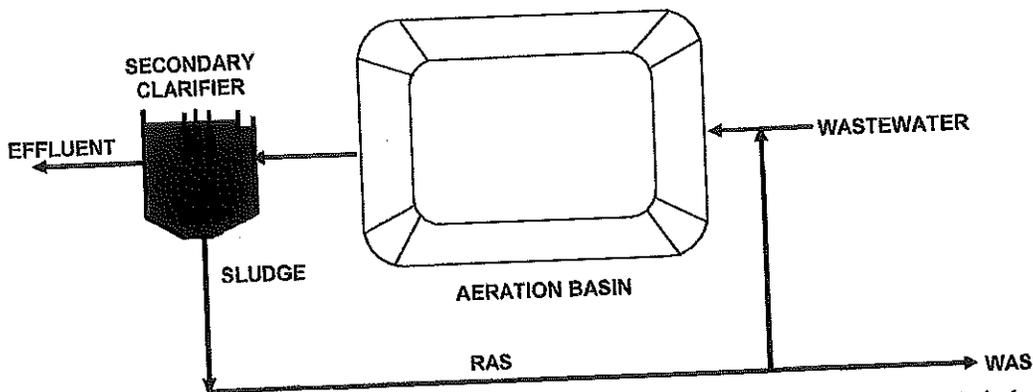


Biolac™. Biolac™ is an extended air activated sludge system utilizing moving flexible aeration chains with suspended submerged fine bubble diffusers. Air supply to the aeration chains or flexible air headers



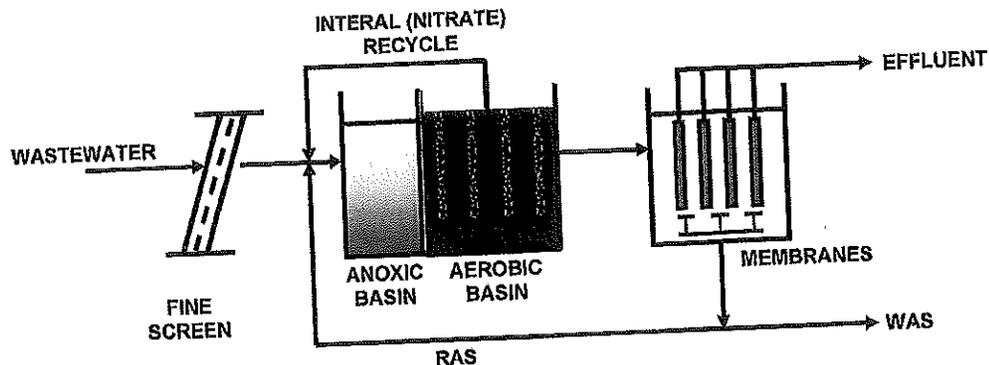
can be sequenced on and off. The air headers are allowed to move back and forth to extend floor coverage for aeration and/or mixing. This is a proprietary system supplied by the Parkson Corporation. Biolac™ does not require primary clarifiers. Design flows are typically less than 5 mgd. Biolac™ provides longer sludge age to promote nitrification and denitrification (by wave oxidation and air supply sequencing). Biolac™ produces stable less odorous sludge. Biolac™ is capable of producing total nitrogen effluent concentrations below 5 mg/L. Exhibit 1-4 presents a general schematic of the Biolac™.

Exhibit 1-4: General Schematic of Biolac™



Membrane Bioreactor (MBR). MBR technology is conceptually simple. The activated sludge process achieves the degradation of organic matter. The resulting mixed liquor is then filtered by membranes rather than relying on gravity settling in clarifiers. MBR operates at higher organic loading rates due to high mixed liquor suspended solids concentrations (8,000 to 15,000 mg/l) and produces high quality (low turbidity) effluents with BOD₅ and total nitrogen concentrations of less than 5 mg/L. However, the MBR cost is higher due to the process complexity and chemical use for membrane cleaning. Exhibit 1-5 presents a general schematic of the MBR.

Exhibit 1-5: MBR



The preliminary process comparison of the five secondary treatment process candidates for the Calexico WWTP is summarized in Exhibit 1-6. In developing the comparison, LEE & RO has considered the NPDES permit trend, plant flow, local environment, existing facilities, and availability of experienced plant operators in the Imperial County.



Exhibit 1-6: Candidate Secondary Processes for Calexico WWTP

EVALUATION FACTORS	ACTIVATED SLUDGE (EXISTING)	OXIDATION DITCH	SINGLE CELL ACTIVATED SLUDGE (BIOLACT™)	MEMBRANE BIOREACTOR (MBR)
ABILITY TO MEET NEW NPDES PERMIT AND PRODUCE HIGH QUALITY EFFLUENT	YES	YES	YES	YES (EFFLUENT CAN EASILY MEET TITLE 22 REQUIREMENTS)
REUSE EXISTING PROCESS UNITS AFTER UPGRADING OR REHABILITATION	YES	SOME	YES	NO
LIFE CYCLE COST	MODERATE TO HIGH	MODERATE TO HIGH	MODERATE	VERY HIGH
ABILITY TO PRODUCE STABLE SLUDGE W/O DIGESTION	NO	FAIR	GOOD	NO
LAND REQUIREMENTS	LOW	MEDIUM	HIGH	VERY LOW
OPERATOR-FRIENDLY	PROBABLY NO	PROBABLY YES	YES	PROBABLY NO
TYPICAL PLANT SIZE RANGE IN MGD	UNLIMITED	UP TO 25 MGD	UP TO 10 MGD	SOMEWHAT LIMITED
OVERALL RANK FOR CALEXICO WWTP	1	2	1	3

SCOPE OF WORK (TASK DESCRIPTIONS)

The scope of work (SOW) for production of the Master Plan includes the following tasks.

Please note the tasks descriptions are presented to allow the City to review the task effort. LEE & RO expects that the final scope of work may be subject to negotiation during the contract negotiation.

Task 1: Project Management, Field Visits, Coordination, Meetings, and Presentation. LEE & RO will manage, report, and coordinate the Master Plan production under this task. Under this task, LEE & RO will visit the plant, obtain operating and maintenance (O&M) records and pertinent project information. Up to three project coordination and review meetings and/or presentation to the City will be scheduled at the City offices. The first meeting will be the kick-off meeting. During the kick-off meeting, LEE & RO will brainstorm ideas, receive the City's directions, and identify project constraints. During the second and third meetings, LEE & RO will report and review the progress. Brief monthly status reports will be submitted to the City.

Task 2: Regulatory Agency Requirement Review. Under this task, LEE & RO will review regulatory requirements such as the RWQCB, Region 7 NPDES Permit and County of Imperial requirements related to the WWTP upgrading.

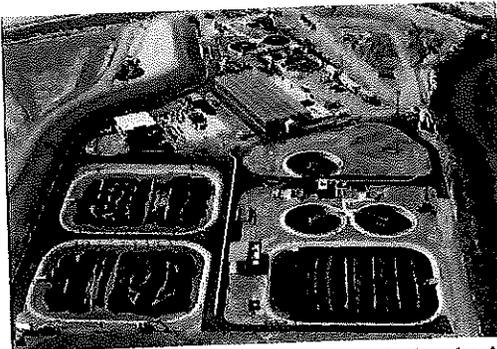
Task 3: Engineering Analysis and Cost Estimating for Process Alternatives. This task will address the long-term wastewater treatment and sludge handling process alternatives. LEE & RO will review up to three secondary processes and recommend a process for the City's concurrence. For the recommended alternative, preliminary plant process flow diagram, preliminary design criteria, and preliminary site plan will be developed along with order of magnitude life-cycle cost.



SECTION 2 REPRESENTATIVE PROJECT

Total Dissolved Solids (TDS) Study and NPDES Permitting Assistance City of Calexico.

LEE & RO assisted the City with renewal of its National Pollution Discharge Elimination System (NPDES) permit Order. LEE & RO analyzed wastewater and plant performance data and prepared the complete NPDES permit application. LEE & RO also prepared and submitted the Toxicity Reduction Evaluation Work Plan to the Region 7, RWQCB. In addition, LEE & RO prepared Total Dissolved Solids (TDS) Study Report mandated by the NPDES Permit Order No. R7-2009-0018. The TDS report must be completed prior to filing the application for renewal of the NPDES Permit in 2014. The City was required by its NPDES Permit to conduct a study of TDS concentrations of source water as compared to the discharge from the City's Water Pollution Control Plant (WPCP). This would allow the RWQCB to determine whether it is feasible to limit the increase of TDS to no more than 400 mg/L between that of the City's Water Treatment Plant (WTP) source water and WPCP discharge. One component of the plan is to place effluent TDS limitations into NPDES permits issued to industrial and municipal dischargers. The TDS report compiled and summarized the data collected from monitoring of TDS and evaluated the feasibility of complying with limiting the incremental increase of TDS to 400 mg/L. In addition, the TDS report fully characterized sources and contributions of salinity.



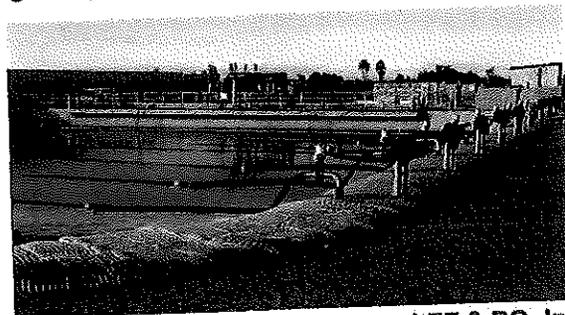
Wastewater Treatment Plant (WWTP) Project, City of Brawley

LEE & RO provided planning, final design, construction management and resident engineering services for the \$25 million WWTP Improvements project. The existing 5.9 mgd WWTP consisted of a headworks, three primary clarifiers, five facultative lagoons, and drying beds. LEE & RO prepared a detailed project report presenting a systematic approach for the requisite improvements. LEE

& RO assisted the City in successfully obtaining \$15 million from the Clean Water State Revolving Fund (CWSRF) and a \$10 million federal grant under the American Recovery and Reinvestment Act of 2009 (ARRA). Wastewater and sludge handling processes designed and constructed included three Biolac® WaveOx aeration basins and secondary clarifiers, gravity thickening, centrifuge sludge dewatering, solar greenhouses for Class A Biosolids, an operations building, and rehabilitation of headworks and other support facilities. The project was designed and constructed on a tight time schedule under a Cease and Desist Time Schedule Order issued by the Regional Water Quality Control Board. The upgraded plant has been producing an effluent quality that exceeds the NPDES permit requirements. This project received "Project of the Year" award from the San Diego / Imperial County Chapters of the American Public Works Association in 2012.

Wastewater Treatment Plant (WWTP) Project, City of Holtville

Preparation of a preliminary design report and final design, and provided construction support services for \$11.5 million upgrades to the existing 0.85 mgd secondary treatment plant consisting of headworks,



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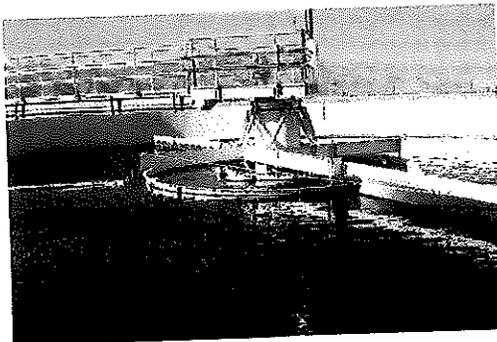
primary clarifiers, trickling filter, secondary clarifiers, continuous Upflow DynaSand filtration units, UV disinfection, aerobic sludge digesters, and sludge drying beds. The existing plant have been subject to the Region 7 Regional WQCB's cease and desist orders for many years due to non-compliance of effluent ammonia and toxicity limitations. LEE & RO performed treatment process analysis and prepared an engineering report. In accordance with the report approved by RWQCB, prepared final design of new headworks with a septage receiving facility, new grit removal, a new Biolac activated sludge basin with two integral secondary clarifiers and aeration blowers, a rotary drum sludge thickener and drying beds, a new operations building, and a new MCC building. The plant's 220V system was completely replaced with 480V with a new IID substation. LEE & RO assisted the City in obtaining funding from the Clean Water State Revolving Fund (CWSRF), NAD Bank, and Border Environmental Coordination Commission (BECC). The construction documents were prepared in strict accordance with these funding agency guidelines as well as the U. S. Department of Agriculture standards. LEE & RO also provided construction support services. The construction was completed in May 2017 and the newly constructed plant has been producing the effluent meeting all NPDES requirements including the ammonia nitrogen limit of 1.9 mg/l.

Wastewater Treatment Plant (WWTP) Phases I and II Upgrading Projects, Valley Sanitary District, Indio



LEE & RO has provided master planning, engineering and construction management/resident engineering and inspection services for plant capacity expansion from 7.5 to 13.5 mgd, upgrading treatment processes to comply with higher effluent quality specified in the NPDES permit, and rehabilitate aging facilities for process reliability & efficiency improvements. LEE & RO was responsible for process analysis, development of a plant master plan, preparation of technical memoranda, preparation of plans & specifications, bid phase services, and construction management/resident engineering services for a \$45 million expansion which was implemented in two phases.

The \$25 million Phase 1 project, which has been in operation since 2009, increased the activated sludge plant capacity from 5 to 10 mgd. The Phase 1 facilities included new aeration blowers, modification of aeration basins (anoxic and oxic cells), installation of fine bubble air diffusers, circular secondary clarifiers, chlorine contact tanks, a 54-inch outfall, and sludge thickening and belt press dewatering facilities. The construction of the \$20 million Phase 2 project which was completed in 2014 included upgrades to the headworks, addition of a new Wemco grit classifier to the existing Aerated Grit Facility, new rectangular primary clarifiers, anaerobic digester with a gas management facility, odor control, two new 800 kW and 500 KW emergency generators, modifications to the Administration Building and the addition of a new Operations/Laboratory Building.



Water Recycling Plant No. 4, (WRP4) Expansion and Upgrading, Coachella Valley Water District, Palm Desert

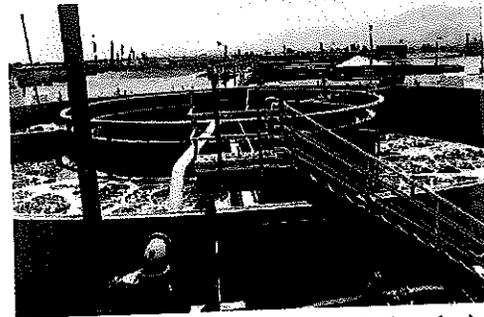
LEE & RO prepared the master plan, preliminary design report (PDR) and provided preliminary and final design, engineering services during construction, and construction management/resident engineering for a \$21 million plant expansion and modification project at WRP4. The existing WRP4 consisted of two pre-aeration ponds, a headworks structure with a mechanically cleaned bar screen (and odor

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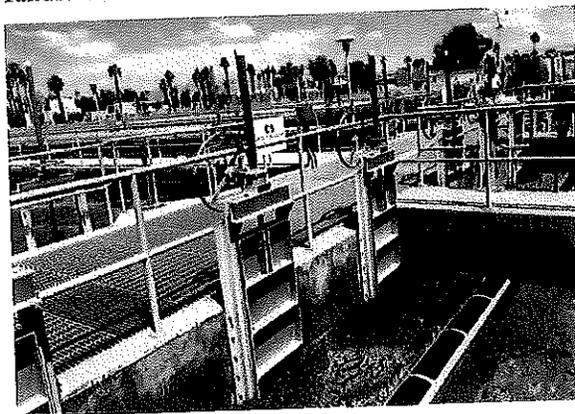


control system), four aeration lagoon modules (each consisted of four aerated ponds and two polishing ponds), and chlorination and dechlorination facilities. The total treatment capacity of the existing four aerated lagoon modules was 6.9 mgd. This \$21 million project increased the WRP 4 treatment capacity to 10 mgd and a new biosolids dewatering facility was provided. The project components included: a headworks flow distribution and flow metering structure and 24-inch influent sewer to new activated sludge basins; two new Biolac® activated sludge aeration basins and a blower building with two 7,500 cfm capacity Turblex blowers; two new circular secondary clarifiers and a RAS/WAS pumping station; new 10 mgd chlorination and dechlorination facility with contact basins and chlorine/sulfur dioxide storage buildings; gravity belt sludge thickening and belt press dewatering facility with a truck loading station; septage/debris disposal facility; a 1,250 kW emergency generator and associated electrical power distribution, lighting, and instrumentation & controls; and site work including paved service roads and fencing.

Avenue 54 Wastewater Treatment Plant (WWTP) Phase 2 Upgrade, City of Coachella



LEE & RO provided study, engineering, design, construction management, and resident engineering services for the \$5.5 million Phase 2 Expansion at the 4.5 mgd Avenue 54 WWTP. The Phase 2 Expansion consisted of rehabilitating and upgrading two contact stabilization process tanks (CSTs) having a total capacity of 1.5 mgd capacity, addition of sludge drying beds, replacement of aeration blowers, and associated site improvements and electrical & SCADA systems. The Phase 2 CST upgrades included installation of new fine-bubble diffusers in the contact and reaeration tanks, new waste activated sludge (WAS) pumps and piping, new return activated sludge (RAS) pumps and piping, new digested sludge wasting pumps complete with a buried force main to connect to the existing sludge force main, aeration blower replacement, integration of new CST equipment into the PCS SCADA system, additional sludge drying beds including extension of the WAS force main, mechanical piping and valves for each drying bed, underdrain and supernatant lines and water spray-down stations. This \$5.5 million project was funded by the U. S. Department of Agriculture (USDA). LEE & RO prepared the project report and other USDA required documentation in compliance with the USDA funding. As the construction manager, LEE & RO coordinated the ARRA's Buy American requirements as well as ARRA Labor Compliance during construction. LEE & RO attended all USDA coordination meetings and other project review meeting and successfully secured the USDA funds. Construction was complete in July 2012.



Plant Upgrades / Rehabilitation Projects, Water Recycling Plant No. 10 10 (WRP10), Coachella Valley Water District, Palm Desert.

For 18 MGD capacity WRP10, LEE & RO has completed four upgrading / rehabilitation projects. LEE & RO prepared preliminary design reports, final designs and construction support services for: \$5 million rehabilitation to activated sludge secondary process units; and \$11.5 million

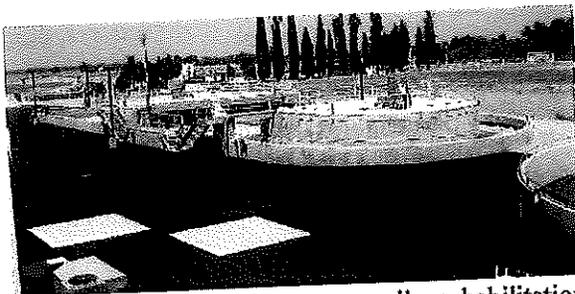
upgrading to the tertiary filtration, disinfection systems and recycled water storage and high/low pressure recycled water pumping stations; \$2 million upgrades to the plant headworks. The

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secondary plant elements included resizing and replacement of RAS and WAS pumps, VFDs and electrical and I&C systems; replacement of 54 slide gates in the aeration basins and mixed liquor channels; replacement of scum skimmers and scum pump stations; installation of channel agitation system for mixed liquor distribution channels; hydraulic modification of the RAS system from secondary clarifiers to RAS pump stations; replacement of tank drain valves; and associated electrical and control systems.

The tertiary upgrading project elements included addition of 5 MGD capacity tertiary filters, new 10 MGD capacity chlorine contact tanks, new chlorine storage/chlorinator building, and high- and low head recycled water pump stations. The high head pumping station consisted of five 3,000 gpm capacity pumps (TDH of 400 feet), each driven by 400 hp motor through variable frequency drives (VFDs). The low-head pumping station included four 3,750 gpm capacity pumps (TDH 230 feet), each driven by 300 hp motor through VFDs. The project included a new electrical substation with 12 kV power distribution loops and two new motor control centers; PLC controls; and one 5 MG capacity reservoir. LEE & RO also prepared a Title 22 Engineering Report in accordance with the State of California Water Recycling Criteria.

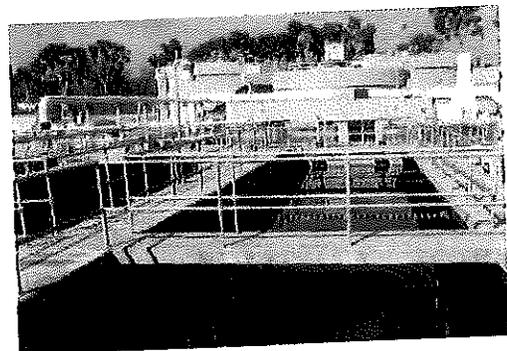


Phase I, II and III Water Quality Control Facility Expansions, City of Patterson

LEE & RO has served continuously as the City's of Patterson wastewater treatment plant engineering consultant since 1998. During this tenure, LEE & RO has provided planning, engineering and construction management & resident engineering for three expansion projects and many smaller rehabilitation and upgrading projects. The \$2.5 million Phase I Project involved rehabilitation of a 30-year old aeration basin, two secondary clarifiers and Improvements and conversion of the existing process to Simultaneous Nitrification deNitrification (SDnN) for compliance with the stringent nitrogen limits not previously achievable. The project also included rehabilitation of the secondary clarifiers. Repairs included cleaning all concrete surfaces, repairing cracks using epoxy injection, and replacement of the mechanical clarifier mechanism. The \$9.6 million Phase II expansion consisted of a 1.25 mgd activated sludge oxidatich ditch and Westech secondary circular clarifier. Appurtunant facilities included RAS/WAS sludge pumping, influent screening, primary solids grinding, aerobic digestion, emergency generation and a maintenance building. LEE & RO assisted the City with preperation of the CEQA documentation and enviromental permitting. A third oxidation ditch and secondary clarifier will be constructed in FY18/19 as part of the City's Phase III \$17.7 million expansion. This expansion will also include additional RAS/WAS pumping, aerobic digesters, septage receiving, biosolids storage and a new administration building. LEE & RO is assisting the City with funding through Clean Water State Revolving Fund (CWSRF) and Green Project Reserve grant funding.

Southside Plant Improvements & Upgrading, J. B. Latham Wastewater Treatment Plant, South Orange County Wastewater Authority, Dana Point

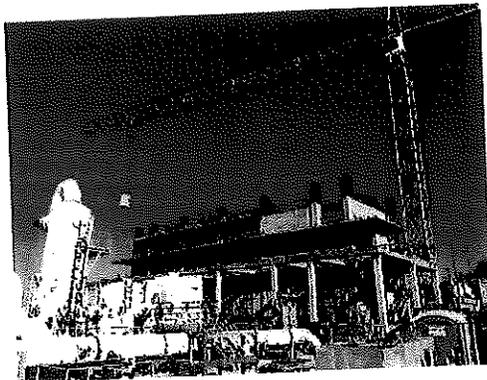
LEE & RO provided condition assessment, preliminary engineering, final design, and construction support services for \$7 million plant improvements at the 13 mgd capacity JBLWTP consisted of power supply upgrades, enhanced primary coagulation, rehabilitation of rectangular secondary



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clarifiers, and structural concrete rehabilitation. A new electrical building was constructed to house new switchgear and motor control centers (MCCs) which supplies power to 3 existing MCCs and 4 new MCCs. New duct banks, conduits, and electrical feeders were constructed throughout. The enhanced primary treatment project included a ferric chloride storage tank, metering pumps, and polymer system. New chain & flight sludge collector with 316 SST shaft and SST launders with FRP weirs were installed in 13 secondary clarifiers. Also 316 SST slotted skimmers and telescoping valves were installed. The mixed liquor isolation gates were replaced with 316 SST downward opening slide gates. Throughout the plant failing and spalled concrete were reconstructed to the original lines and grades with casted new imbeds and coated. The construction was completed in August 2017.



Point Loma Wastewater Treatment Plant Headworks / Grit Processing Facility Upgrading Project, City of San Diego

LEE & RO provided planning, engineering and design services for a \$21 million Headworks/Grit Processing Improvement project at the 240 mgd Point Loma Wastewater Treatment Plant (PLWTP). The headworks has six mechanically-cleaned bar screens, six aerated grit removal tanks, and ferric chloride and polymer systems. Project tasks include preliminary design reports, plans and specifications, and construction support services. The project components included: replacement of two existing south aerated grit tanks, and construction of a new grit pump gallery; new grit dewatering facility, storage and trucking facility; new agitation blowers; modification and improvement of foul air collection and odor control facility; and installation of dual-grit slurry piping from all six grit tanks; electrical and instrumentation system upgrading; improvement of influent hydraulics to better split flows to six bar screens/grit tanks; site improvements for easy truck access; and installation of a temporary grit dewatering system enclosed in a building to facilitate the construction of the permanent grit dewatering facility. The major project challenges were to develop a construction sequence to facilitate construction of the south grit tanks, permanent grit processing building, and electrical power routing due to the extremely congested site conditions. Specialty shoring will be used to facilitate deep excavation in an extremely tight site. Construction was completed in 2014.

On the following page, LEE & RO presents **Exhibit 2-1** showing the depth and breadth of our planning and engineering experience with Wastewater Treatments.



SECTION 3 CLIENT REFERENCES

LEE & RO has served numerous Southern California water & wastewater agencies including many Riverside and Imperial County area clients. We are pleased to list some of them as our "Client References" below. The engineering services we provided for these clients are very similar to the services required for the City of Calexico Wastewater Treatment Plant Master Plan. In **Section 2**, representative treatment plant projects are introduced.

Projects	Client	Contact
Wastewater Treatment Plant Upgrading Project	City of Brawley	Rosanna Moore, City Manager (760) 351-3048
Wastewater Treatment Plant Upgrading Project	City of Holtville	Nick Wells, City Manager Frank Cornejo, WWTP Supervisor (760) 356-2912
Wastewater Treatment Plant Upgrading Projects	Coachella Valley Water District, Palm Desert	Armando Rodriguez, Engineering Manager (760) 398-2661
Wastewater Treatment Plant Upgrading & Expansion Projects	Valley Sanitary District, Indio	Joe Glowitz, General Manager (760) 238-5410
Wastewater Treatment Plant Upgrading and Expansion Projects	City of Patterson	Mike Willett, Public Works Director (209) 895-8060
Wastewater Treatment and Pump Station Projects	Orange County Sanitation District, Fountain Valley	James Herberg, General Manager (714) 593-7300
Water Treatment Plants, Aqueducts, and Distribution Facilities	Metropolitan Water District of So. Ca.	Elic Freeman, Team Manager (213) 217-7142
Wastewater Treatments and Pump Station Projects	City of Los Angeles, Dept. of Public Works	Mike Sarullo, Division Engineer (310) 648-6120
Wastewater Treatment Plants and Pump Stations	City of San Diego, Public Works Dept.	Brian Vitelle, Project Manager (619) 533-7413
Wastewater Treatment Plant Upgrading Projects	South Orange County Wastewater Authority, Dana Point	Brian Peck, Director of Engineering, (949) 234-5411



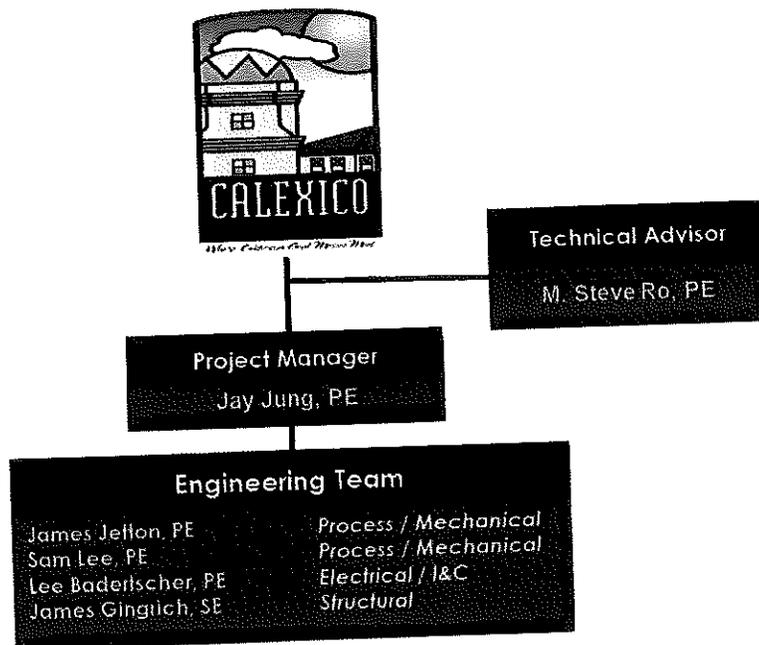
SECTION 4 PROPOSED PROJECT PERSONNEL

The LEE & RO key team members chosen for the City of Calexico's Wastewater Treatment Facilities Master Plan have extensive experience executing a wide variety of wastewater infrastructure systems engineering projects - treatment plants, pump stations and conveyance facilities. LEE & RO proposes Jay Jung, PE as the Project Manager. Jay has over 15 years of treatment process engineering and plant design experience. We have designated the firm founding principal, M. Steve Ro, PE, as the Technical Advisor, who will be directing the project team and serve as the City of Calexico's management contact.

The proposed project team organization is shown below in **Exhibit 4-1**.

Also, the team members are briefly introduced in this Section. The full resumes of the proposed team members are included in **Appendix A**.

Exhibit 4-1 Project Team



Jay Jung, PE. Project Manager

Jay Jung has over 15 years of process research & selection and design, as well as facility engineering & design and construction phase engineering experience in the municipal water and wastewater treatment fields. His areas of expertise include pilot or full-scale testing, sampling and data analysis, and selection, development and sizing of treatment process trains. He also has experience with feasibility studies, analysis of existing process trains, master planning & preliminary design reports, and preparation of construction documents for new process trains or rehabilitation of existing plant facilities. Jay has developed plant design criteria, P&IDs, hydraulic profiles, and detailed design drawings for a wide variety of wastewater treatment facilities. His area of expertise includes biological nutrient removal, chemical conditioning, disinfection, granular activate carbon adsorption, and membrane filtration.



Jay Jung has recently worked on the following wastewater treatment plant projects located in the Riverside and Imperial Counties:

- Assistant Project Manager, City of Brawley Wastewater Treatment Plant Upgrading (Construction Cost \$25 million)
- Project Manager, City of Coachella Avenue 54 Wastewater Treatment Plant Upgrading (Construction Cost \$5.5 million)
- Lead Process Engineer & Project Engineer, City of Holtville Wastewater Treatment Plant Upgrading (Construction Cost \$11 million)

James Jetton, PE. Process & Mechanical

James Jetton has over 25 years of experience in engineering, design and construction of water and wastewater treatment facilities. James is experienced in all stages of project execution from planning and design through construction and start-up. His engineering experience covers most of the wastewater unit processes including headworks, primary & secondary clarifiers, activated sludge, disinfection, sludge dewatering and odor control. His experience has been particularly focused on rehabilitation and replacement type projects where practical as well as innovative approaches are often required to reduce construction costs and maximize the value of existing facilities. James has valuable experience with restoration of treatment plant concrete and steel structures damaged by hydrogen sulfide corrosion. He has worked with plant operations and maintenance staff and executed upgrades and retrofits of the process units that must remain online and in compliance with the regulatory requirements during construction.

James Jetton has served as the Project manager for the Phase I \$25 million Plant Upgrading Project for the Valley Sanitary District's Wastewater Treatment Plant in Indio. This project was to expand the plant capacity from 7.5 to 13.5 MGD by retrofitting the existing activated sludge plant.

Sam Lee, PE. Process & Mechanical

Sam Lee has over 13 years of diversified civil, sanitary, mechanical and process engineering and design experience with water and wastewater infrastructure engineering projects. His experience includes facility investigation and evaluation, analysis and design, and construction phase engineering services for wastewater and water treatment plants, booster pump stations and lift stations, force mains and other water and wastewater conveyance and collection systems. Through a wide variety of water infrastructure engineering projects, Sam has acquired diverse design and discipline coordination skills. His recent experience includes detailed condition assessment of water and wastewater treatment plants.

Lee Badertscher, PE. Electrical and I&C System Condition Assessment

Lee Badertscher has over 30 years of engineering, design, and construction experience with water & wastewater treatment plants, pumping stations and pipelines. Lee is a California professional engineer registered in three separate engineering disciplines - "Civil", "Electrical" and "Control Systems." He has successfully completed multiple roles as project manager, QA/QC lead, civil/ mechanical/ electrical/ instrumentation and control systems (I&C) engineer, and construction manager. Lee has extensive engineering and construction experience with rehabilitation and replacement of treatment plant equipment, mechanical systems including piping and valves, deteriorated concrete, corroded piping, and outdated electrical systems and control systems. In addition, Lee has managed design and construction of new plant facilities involving pumps, blowers & compressors, clarifier equipment, emergency generators, sludge pumping and dewatering equipment, anaerobic digesters, digester gas management, and associated structural components and piping. As electrical and I&C engineer, typical assignments included development of power distribution and lighting, P&IDs, SCADA, process control strategies, loop/logic/control diagrams, PLC wiring, and instrument databases. Lee also has considerable treatment plant start-up and commissioning experience.



James Gingrich, SE. Structural Condition Assessment

James Gingrich is a California registered structural engineer with more than 30 years of structural analysis, engineering, design, constructability analysis, value engineering, project coordination and construction management experience. He has been the structural project manager, QA/QC reviewer, and lead structural engineer for planning, investigation and condition assessment, preparation of preliminary & final design, seismic analysis and upgrading, and construction phase engineering services for a wide variety of concrete and steel structures for water conveyance and pumping facilities, water storage, treatment and distribution facility projects for Metropolitan Water District (MWD) of Southern California. His experience and expertise include rehabilitation & retrofit engineering & designs for existing facilities. His representative experience includes lead designer for the Lake Matthew Outlet Facilities, Colorado River Aqueduct Pumping Plant Seismic Upgrades, and Oxidation Retrofit (Ozone Disinfection) Projects for MWD's Mills, Jensen, Weymouth, Skinner, and Diemer Water Treatment Plants.

M. Steve Ro, PE. Principal-In-Charge / Technical Advisor

M. Steve Ro, one of the firm's two founding partners, has over 35 years of municipal water and wastewater systems engineering experience, including conveyance, treatment, reclamation, and reuse systems. He has served as lead design engineer, project engineer, project manager, project director, construction manager, and QA/QC officer on many treatment plant capital improvement projects with construction costs ranging from \$1 million to \$60 million. He is an effective project manager with multidiscipline engineering skills (treatment process, hydraulics, mechanical, electrical, instrumentation & controls, and structural), and has extensive project management, planning, design, value engineering, and construction management experience for a wide variety of municipal clients.



LEE BADERTSCHER, PE, MANAGING ENGINEER

Electrical and I&C

Registrations

California Professional Civil Engineer #C43789; Utah #43789
Control Systems Engineer, California, #16482
Electrical Engineer, California #E19641

Education

B.S., Civil Engineering, Utah State University

Lee Badertscher has over 30 years of engineering, design, and construction experience with water & wastewater treatment plants, pumping stations and pipelines. Lee is a California professional engineer registered in three separate engineering disciplines - "Civil", "Electrical" and "Control Systems." He has successfully completed multiple roles as project manager, QA/QC lead, civil/ mechanical/ electrical/ instrumentation and control systems (I&C) engineer, and construction manager. Lee has extensive engineering and construction experience with rehabilitation and replacement of treatment plant equipment, mechanical systems including piping and valves, deteriorated concrete, corroded piping, and outdated electrical systems and control systems. In addition, Lee has managed design and construction of new plant facilities involving pumps, blowers & compressors, clarifier equipment, emergency generators, sludge pumping and dewatering equipment, anaerobic digesters, digester gas management, and associated structural components and piping. As electrical and I&C engineer, typical assignments included development of power distribution and lighting, P&IDs, SCADA, process control strategies, loop/logic/control diagrams, PLC wiring, and instrument databases. Lee also has considerable treatment plant start-up and commissioning experience.

RELEVANT PROJECT EXPERIENCE

Headworks and Grit System Improvement Project, Point Loma Wastewater Treatment Plant (PLWTP), City of San Diego (2002-2014). Project Manager for a \$21 million Headworks & Grit System Improvement project at the 240 mgd PLWTP. The project included field-testing of the existing headworks to optimize flow distribution, to develop a reliable hydraulic profile, and to determine the most-efficient grit tank cross-sectional dimension configuration. The project includes reconfiguration & reconstruction of the south aerated grit tanks, a new two-story grit dewatering building with grit storage bins, facility ventilation upgrades, and odor control scrubber modification. Due to heavy & deep concrete structure retrofit work in the extremely congested project site, an extensive constructability analyses were performed during design.

Wastewater Treatment Plant Expansion and Improvements, Valley Sanitary District, Indio. Design Manager responsible for preparation of plans and specifications for a \$44 million plant expansion and improvements projects that is being implemented in two phases. Phase 1 increased the activated sludge plant capacity from 5 to 10 mgd (including the 3.5 mgd capacity of the constructed wetlands and aeration ponds, the total plant capacity will be 13.5 mgd). Phase 1 included three new 200 hp aeration blowers, secondary clarifiers, chlorine contact tanks, and sludge dewatering belt presses. Phase 2 facilities include primary treatment, anaerobic digestion, and sludge dewatering.

Hyperion Secondary Effluent Pumping Station (HSEPS) Expansion Project, Hyperion Treatment Plant (HTP), West Basin Municipal Water District (WBMWD), Carson. Project Manager for \$14.7 million capacity expansion project (from 70 to 90 mgd) including a connection of 60" secondary effluent supply pipe to the pressurized HTP's secondary effluent channel (wet tapping) and addition of two new 20 MGD pumps (190 feet of TDH), each driven by 800 HP, 4,160V motor and VFD. Work includes CFD modeling of pump intake system to satisfy the Hydraulic Institute's requirements; construction of a 40 feet deep vertical structure in a tight site for installation of the additional vertical turbine pumps; mitigation of construction impact at the El Segundo Water Recycling Plant and HTP (minimum shutdown

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JAMES GINGRICH, SE, PRINCIPAL ENGINEER

Structural

Registrations

Civil Engineer, California #C34701
Structural Engineer, California #S3023

Education

Graduate Courses, Structural Dynamics, Calstate University, Los Angeles
B. S., Civil Engineering, California State Polytechnic University, Pomona

James Gingrich is a California registered structural engineer with more than 30 years of structural analysis, engineering, design, constructability analysis, value engineering, project coordination and construction management experience. He has been the structural project manager, QA/QC reviewer, and lead structural engineer for planning, investigation and condition assessment, preparation of preliminary & final design, seismic analysis and upgrading, and construction phase engineering services for a wide variety of concrete and steel structures for water conveyance and pumping facilities, water storage, treatment and distribution facility projects for Metropolitan Water District (MWD) of Southern California. His experience and expertise include rehabilitation & retrofit engineering & designs for existing facilities. His representative experience includes lead designer for the Lake Mathew Outlet Facilities, Colorado River Aqueduct Pumping Plant Seismic Upgrades, and Oxidation Retrofit (Ozone Disinfection) Projects for MWD's Mills, Jensen, Weymouth, Skinner, and Diemer Water Treatment Plants.

RELEVANT PROJECT EXPERIENCE

Oxidation Retrofit Projects (ORPs) at Five Water Treatment Plants, Metropolitan Water District of Southern California (MWD). Lead structural engineer responsible for structural analysis and preparation of structural drawings & specifications and construction phase engineering for the \$850 million ORP projects at 520 mgd Weymouth, 750 mgd Jensen, 220 mgd Mills, 630 mgd Skinner, and 300 mgd capacity Diemer Water Treatment Plant. Also, served as lead QA/QC structural engineer for structural designs produced by outside consultants. during preliminary design and provided Structural QA/QC reviews for final design.

Filter Building and Filter Complex Seismic Upgrades, Weymouth Water Treatment Plant, MWD. Lead structural engineer for preliminary and final design of a large seismic upgrade project for the filter buildings and filter complex at the 520 mgd capacity Weymouth Water Treatment Plant in the City of La Verne. In 2016 received the American Concrete Institute Excellence in Concrete Construction Awards (First Place Award in Repair and Restoration Category at Southern California Chapter and Second Place at the National Convention)

Phase 4 Plant Expansion, Skinner Water Treatment Plant, MWD. Served as lead structural engineer responsible for the preparation of Module 7 structural construction drawings, calculations and specifications. The phase 4 plant expansion project included addition of 110 mgd Module No. 7 (clarifiers and filters), a 34 mgd capacity Washwater Reclamation Plant No. 3, new and consolidated chemical tank farms and feed systems, sludge handling facilities expansion, new water pumping stations; and related work.

Lake Mathews Outlet Facilities, MWD. Lead structural engineer responsible for the preparation of structural construction drawings, calculations and specifications. Performed the finite element dynamic structural analysis of the new outlet tower structure.

Development of Structural Design Manual Structural Engineering Guidelines, MWD. Lead efforts for the development, preparation and maintenance of Metropolitan's Structural Design Manual,



JAMES JETTON, PE, SUPERVISING ENGINEER

Treatment Process & Mechanical Engineering

Registration
Civil Engineer, California #C54237

Education
M. S., Civil Engineering with Environmental Emphasis, Oregon State University
B. S., Civil Engineering & Water Resources, Oregon State University

James Jetton has over 25 years of experience in engineering, design and construction of water and wastewater treatment facilities. James is experienced in all stages of project execution from planning and design through construction and start-up. His engineering experience covers most of the wastewater unit processes including headworks, primary & secondary clarifiers, activated sludge, disinfection, sludge dewatering and odor control. His experience has been particularly focused on rehabilitation and replacement type projects where practical as well as innovative approaches are often required to reduce construction costs and maximize the value of existing facilities. James has valuable experience with restoration of treatment plant concrete and steel structures damaged by hydrogen sulfide corrosion. He has worked with plant operations and maintenance staff and executed upgrades and retrofits of the process units that must remain online and in compliance with the regulatory requirements during construction.

RELEVANT PROJECT EXPERIENCE

Wastewater Treatment Plant Expansion, Valley Sanitary District, Indio. Assistant Project Manager and Lead Design Engineer responsible for process analysis and process unit sizing, and final design for a \$25 million plant expansion (from 7.5 to 13.5 MGD) project which consists of activated sludge plant expansion, hypochlorite chlorination & bisulfite dechlorination, and sludge dewatering facilities. Facilities designed and constructed included new aeration blowers, modification of aeration basins (anoxic and oxic cells), installation of fine bubble air diffusers, new circular secondary clarifiers, chlorine contact tanks, a 54-inch outfall, sludge thickening and belt press dewatering facilities, and complete rehab of electrical systems. The expansion of the aeration process system requires extensive rehabilitation of corroded concrete and metal items in and around the aeration basins, distribution channels, and clarifiers.

Wastewater Treatment Plant Expansion, City of Patterson. Project Manager for the 1.25 MGD, \$15 million, activated sludge treatment facility that included an extended air oxidation ditch, circular clarifier, three aerobic digesters, three plastic media sludge drying beds, polymer feed systems, an influent climber screen & grinder structure, effluent pump station, 4,000 feet of 16-inch effluent piping, and 30 acres of new percolation ponds. The project was to meet strict nitrogen removal requirements while minimizing power consumption and sludge production. New influent climber screens were retrofit into the existing pump station to protect the downstream equipment.

Wastewater Treatment Plant Rehabilitation and Replacement Project, City of Davis. Project Manager and Engineer for design and construction of a complete rehabilitation of the existing 7.5 MGD WWTP from the influent gate through the primary clarifiers. Dual front-raked bar screens with screenings washer/compactors were added to the existing channels as the configuration, depth, and width of the themselves channels were revised to minimize grit deposition and concrete corrosion. This \$5 million project included significant upgrades to the existing dry pit influent pumps, which were oversized for current flows and had significant O&M challenges. The improvements included revised suction piping, new pumps, and a revised discharge piping arrangement. The improved facility operates at a higher efficiency, with flow turndown, and reduced incidence of clogging. Primary clarifier improvements include new chain and flight scrapers equipment.

LEE & RO, Inc.



JAY JUNG, PE, PRINCIPAL ENGINEER

Project Manager / Treatment Process Engineering

Registration
Professional Civil Engineer, CA #C75672

Education
Ph. D. Candidate, University of Southern California (Completed 4 years in Ph.D. Program)
M.S. Environmental Engineering, University of Southern California
M.S. Environmental Engineering, Yonsei, Korea

Jay Jung has over 15 years of process research & selection and design, as well as facility engineering & design and construction management experience in the municipal water and wastewater treatment fields. His areas of expertise include pilot or full-scale testing, sampling and data analysis, and selection, development and sizing of treatment process trains. He also has experience with feasibility studies, analysis of existing process trains, preparation of design reports, and preparation of construction documents for new process trains or rehabilitation of existing plant systems, equipment and facilities. Jay has been a project engineer and project manager responsible for development of plant design criteria, P&IDs, hydraulic profiles, and detailed design drawings for a wide variety of water and wastewater treatment facilities. His area of expertise includes biological nutrient removal, chemical conditioning and chemical handling facilities including tank farms and metering pumps, disinfection, granular activate carbon adsorption, and membrane filtration and biofiltration.

RELEVANT PROJECT EXPERIENCE

Wastewater Treatment Plant (WWTP) Upgrading and Improvements, City of Brawley. Assistant Project Manager for a \$25 million, 5.9 mgd wastewater treatment plant upgrading project - conversion from aeration ponds to a full secondary treatment with nitrification & denitrification. Responsible for process analysis and development of design criteria and preliminary design report, final design, and construction phase engineering, and plant start-up and commissioning. Also, prepared industrial waste pretreatment program. The upgraded plant included grit removal, activated sludge, UV disinfection, sludge thickening, centrifuge sludge dewatering, and solar greenhouses designed to produce Class A biosolids.

Avenue 54 Wastewater Treatment Plant Phase 2 Expansion, City of Coachella. Project Manager for preliminary design, detailed design, bid support services, engineering services during construction, and construction management and inspection services for Phase 2 Expansion at the City's 4.5 MGD Avenue 54 Wastewater Treatment Plant. The Phase 2 Expansion consists of rehabilitating and upgrading of the two contact stabilization tanks (1.5 MGD capacity) in addition to providing additional sludge dewatering capacity (drying beds) and new aeration blowers and aeration process control systems.

Water Reclamation Plant No. 7 Expansion and Upgrading, Coachella Valley Water District, CA. Project Engineer for preparation of a preliminary design report and final design services for a California Title 22 water recycling plant expansion from 2.5 to 5.0 mgd. The design for this \$9 million project added a rapid mix tank, two flocculation basins, three dual media filter cells (anthracite and high-grade sands supported by a layer of gravel resting on underdrain system), 5 mgd capacity chlorine contact tank, chlorination system, chlorine storage and feeding system, filter influent pumps, recycled water pumps with surge control system, alum and polymer storage and feeding system, motor control centers, and SCADA system.

Flow Equalization and Effluent Monitoring Project, Regional Water Recycling Plant No. 5 (RP-5), Inland Empire Utilities Agency, Chino. Project Manager for design and construction of upgrades to various RP-5 plant processes, including replacement of sodium bisulfite and sodium hypochlorite chemical metering pumps and instrumentation improvements at the tertiary chemical facility, flow

LEE & RO, Inc.



SAM LEE, PE, ENGINEER

Treatment Plant Engineering

Registration
Professional Civil Engineer, CA #C78939

Education
MS Environmental Engineering, University of Southern California
BS Environmental Engineering, Yonsei University, Korea

Sam Lee has over 13 years of diversified civil, sanitary, mechanical and process engineering and design experience with water and wastewater infrastructure engineering projects. His experience includes facility investigation and evaluation, analysis and design, and construction phase engineering services for wastewater and water treatment plants, booster pump stations and lift stations, force mains and other water and wastewater conveyance and collection systems. Through a wide variety of water infrastructure engineering projects, Sam has acquired diverse design and discipline coordination skills. His recent experience includes detailed condition assessment of water and wastewater treatment plants.

RELEVANT PROJECT EXPERIENCE

North and South Headworks Upgrades, Hill Canyon Wastewater Treatment Plant, City of Thousand Oaks. Project Engineer for engineering, preliminary design report, final design and engineering services during construction for rehabilitation and upgrading of the North and South Headworks at the 14.5 mgd Hill Canyon Wastewater Treatment Plant. The rehabilitation included replacement of the augers with mechanically-cleaned bar screens and screenings compactors, rehabilitation of grit removal systems including installation of new air and grit pumping systems, addition of walkways and grit tank covers, and upgrading of electrical and control systems. The rehabilitation of the south headworks included replacement of the existing Infilco Degremont climber screens with Huber step screens and piping modification, improvements to the screenings conveyors and compactors, and upgrading of the electrical and control systems.

Holtville Wastewater Treatment Plant Improvements Project, City of Holtville. Project Engineer for an \$11 million project to upgrade the existing 0.85 mgd secondary treatment plant consisting of headworks, two primary clarifiers, a trickling filter, three secondary clarifiers, three continuous upflow DynaSand filtration units, UV disinfection, aerobic sludge digesters, and sludge drying beds. The upgraded plant includes a new headworks with a septage receiving facility, new grit removal, a new Biolac activated sludge basin with two integral secondary clarifiers and aeration blowers, mechanical sludge dewatering and drying beds, a new operations/laboratory building, and a new MCC building. The existing plant's electrical system is a 220V system, which will be upgraded to 480V with a new substation fed by Imperial irrigation District.

Earl Schmidt Filtration Plant (ESFP) Washwater (WW) and Sludge System Improvements, Castaic Lake Water Agency. Project Engineer for \$7.5 million upgrading and improvements at the 56 mgd ESFP which treats State Project Water. WW from clarifiers and filters are stored in WW basins and pumped to the WW treatment facilities. The California DPH Cryptosporidium Action Plan requires a 2 NTU recycled water turbidity limit and also regulates the total recycle water flow to be less than 10% of the plant flow. This project is to satisfy the DPH rule and Jay evaluated the WW system and identified the necessary system improvements. The project design included two new 620,000-gallon capacity WW basins with automatic sludge scrapper system and floating decanters, a WW wet well, upsizing of conveyance piping, a new sludge thickener & drying bed, electrical, and various site improvements.

Sedimentation Basins 1 through 12 Rehabilitation, Point Loma Wastewater Treatment Plant, San Diego. Project Engineer for Primary Sedimentation Basins 1 thru 12 Rehabilitation Design-Build Project at the 240 mgd wastewater plant. The 12 sedimentation basins were constructed under five



M. STEVE RO, PE, MANAGING ENGINEER

Principal-In-Charge / Technical Advisor

Registrations

Civil Engineer, CA #C25010
Diplomate, American Academy of Environmental Engineers
General Engineering Contractor, CA, #681020 (Hazardous Class)

Education

M.S. Sanitary Engineering, U.C. Berkeley
B.S. Civil Engineering, Seoul National University

M. Steve Ro, one of the firm's two founding partners, has over 35 years of municipal water and wastewater systems engineering experience, including conveyance, treatment, reclamation, and reuse systems. He has served as lead design engineer, project engineer, project manager, project director, construction manager, and QA/QC officer on many treatment plant capital improvement projects with construction costs ranging from \$1 million to \$60 million. He is an effective project manager with multidiscipline engineering skills (treatment process, hydraulics, mechanical, electrical, instrumentation & controls, and structural), and has extensive project management, planning, design, value engineering, and construction management experience for a wide variety of municipal clients.

RELEVANT PROJECT EXPERIENCE

Wastewater Treatment Plant (WWTP) Upgrading, City of Brawley. Principal in Charge for \$24 million in upgrades from aeration ponds to full secondary treatment with nitrification/denitrification capability for the 5.9 mgd Brawley WWTP. Responsibilities included process analysis and production of a Facilities Plan for SRF loan funding in addition to development of a preliminary design report and construction plans and specifications. LEE & RO obtained a \$10 million grant from the ARRA Fund. The upgraded plant facilities include grit removal, activated sludge, UV disinfection, sludge thickening, centrifuge sludge dewatering, and a Parkson Solar Greenhouse designed to produce Class A Biosolids.

Wastewater Treatment Plant Capital Improvements and Rehabilitation Projects, Orange County Sanitation District, Fountain Valley. Project Manager and/or Project Director for numerous plant expansion and upgrading projects (aggregated construction value of over \$150 million) for the 175 mgd Treatment Plant 1 and 200 mgd Treatment Plant 2. Representative projects include \$42 million, 60 mgd primary plant expansion at Plant 1; \$12 million primary clarifier addition and rehabilitation project at both Plants; \$10 million anaerobic digester rehabilitation project at Plant 2; \$2.5 million odor scrubber modification project at both Plants; \$7 million secondary process upgrading at Plant 2; \$5 million pipeline rehabilitation project; \$35 million wastewater pumping station project; and \$4.5 million headworks/grit removal facility rehabilitation at Plant 1.

Wastewater and Water Systems Capital Improvement Projects, Department of Public Works, City of Los Angeles. Since 1981, Steve served as Project Manager or Principal-in-Charge for numerous capital improvement projects: On Call Engineering Services (Fee Ceiling \$2 million) for the Wastewater Collection System Engineering Division; \$35 million Seven Air Treatment/Odor Control Facilities for Interceptor Sewers; \$5 million Los Angeles "Greenbelt" Project which consisted of a recycled water pump station at the LA-Glendale Water Reclamation Plant; \$7.5 million headworks and primary sedimentation improvement project including ferric chloride for primary and ferrous chloride system for digesters; \$6 million LA Zoo wastewater and storm water handling facility; onsite staff-augmentation services for the Hyperion Energy Recovery/Solids Treatment and Resource Recovery programs for the Environmental Engineering Division; Advanced Planning Report project, which was a comprehensive wastewater facilities planning document for Year 2070; Preliminary Design Report for the Glendale Burbank Relief Sewer; and alignment study for the East Central Interceptor Sewer.

5. Question: To what level should the existing WWTP components be analyzed?
Answer: The components of the WWTP will be analyzed on a visual basis only. The consultant shall review the existing plans and meet with the operators to discuss the operational problems and incorporate any comments into the report.
6. Question: What is the required timeframe for completing the Master Plan?
Answer: It is anticipated that the Wastewater Treatment Facilities Master Plan will be complete within three months of an executed contract.
7. Question: Should the fee proposal be in a separate envelope?
Answer: Yes, please provide the fee proposal in a separate sealed envelope, marked "FEE PROPOSAL".
8. Question: What is the City's position on Water Recycling?
Answer: The City is not considering water recycling now. There is a project being considered by the Regional Board and the City to underground the New River and "pump back" the treated water to the location where the New River enters the U.S. at the border to keep the river bed full. More information can be found at:
<https://calepa.ca.gov/wp-content/uploads/sites/34/2016/10/Border-CMBRC-2016vr-NRProject.pdf>
9. Question: Does the existing plant still produce an effluent meeting the NPDES order requirements? Is your goal to develop a phased CIP projects?
Answer: The WWTP is currently meeting the NPDES requirements. The consultant is expected to recommend the priority phasing of the WWTP Capital Improvement Projects (CIP) if it becomes necessary to complete the improvements in a phased manner.

Please acknowledge receipt of this Addendum by signing and returning a copy with the proposal package.

Sincerely,



David Dale, PE, PLS
 Public Works Director/City Engineer

ACCEPTANCE OF ADDENDUM

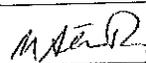
Receipt of the above-mentioned ADDENDUM No. 1, is hereby acknowledged by:

LEE & RO, Inc.

 Company Name

This the 5th day of December, 2017

By: M. Steve Ro

Signature:  Title: CEO

ACCEPTANCE OF ADDENDUM

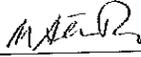
Receipt of the above-mentioned ADDENDUM No. 2, is hereby acknowledged by:

LEE & RO, Inc.

Company Name

This the 5th day of December, 2017

By: M. Steve Ro

Signature:  Title: CEO

AGREEMENT FOR PROFESSIONAL SERVICES

This Agreement is made and entered into as of the 21st day of December 2017, by and between the City of Calexico ("City") and Lee & Ro, Inc. ("Consultant").

RECITALS

A. Consultant is specially trained, experienced and competent to perform the special services which will be required by this Agreement; and

B. Consultant possesses the skill, experience, ability, background, certification and knowledge to provide the services described in this Agreement on the terms and conditions described herein.

AGREEMENT

1. Scope of Services. The Consultant shall furnish the following services in a professional manner. Consultant shall perform the services described on Exhibit A which is attached hereto and incorporated herein by reference. Consultant shall provide said services at the time, place, and in the manner specified in Exhibit A, subject to the direction of the City through its staff that it may provide from time to time.
2. Time of Performance. The services of Consultant are to commence upon execution of this Agreement and shall continue until all authorized work is approved by the City. All such work shall be completed no later than December 31, 2018. Time is of the essence for every provision of this agreement that states a time for performance and for every deadline imposed by the City.
3. Compensation. Compensation to be paid to Consultant shall be as set forth in Exhibit B, which is attached hereto and incorporated herein by reference. Payment by City under this Agreement shall not be deemed a waiver of defects, even if such defects were known to the City at the time of payment.
4. Method of Payment. Consultant shall submit monthly billings to City describing the work performed during the preceding month. Consultant's bills shall include a brief description of the services performed, the date the services were performed, the number of hours spent and by whom, and a description of any reimbursable expenditures. City shall pay Consultant no later than 30 days after approval of the monthly invoice by City staff.
5. Ownership of Documents. All plans, studies, documents and other writings prepared by and for Consultant, its officers, employees and agents and subcontractors in the course of implementing this Agreement, except working notes and internal documents, shall become the property of the City upon payment to Consultant for such work, and the City shall have the sole

right to use such materials in its discretion without further compensation to Consultant or to any other party. Consultant shall, at Consultant's expense, provide such reports, plans, studies, documents and other writings to City upon written request.

6. Independent Contractor. It is understood that Consultant, in the performance of the work and services agreed to be performed, shall act as and be an independent contractor and shall not act as an agent or employee of the City. Consultant shall obtain no rights to retirement benefits or other benefits which accrue to City's employees, and Consultant hereby expressly waives any claim it may have to any such rights.

7. Interest of Consultant. Consultant (including principals, associates and professional employees) covenants and represents that it does not now have any investment or interest in real property and shall not acquire any interest, direct or indirect, in the area covered by and during this Agreement or any other source of income, interest in real property or investment which would be affected in any manner or degree by the performance of Consultant's services hereunder. Consultant further covenants and represents that in the performance of its duties hereunder no person having any such interest shall perform any services under this Agreement.

Consultant is not a designated employee within the meaning of the Political Reform Act because Consultant:

- a. will conduct research and arrive at conclusions with respect to his/her rendition of information, advice, recommendation or counsel independent of the control and direction of the City or of any City official, other than normal agreement monitoring; and
- b. possesses no authority with respect to any City decision beyond rendition of information, advice, recommendation or counsel. (FPPC Reg. 18700(a)(2).)

8. Professional Ability of Consultant. City has relied upon the professional training and ability of Consultant to perform the services hereunder as a material inducement to enter into this Agreement. Consultant shall therefore provide properly skilled professional and technical personnel to perform all services under this Agreement. All work performed by Consultant under this Agreement shall be in accordance with applicable legal requirements and shall meet the standard of quality ordinarily to be expected of competent professionals in Consultant's field of expertise.

9. Indemnity. Consultant agrees to indemnify, including the cost to defend, the City, and its officers, agents and employees from any and all claims, demands, costs or liability that arise out of, or pertain to, or relate to the negligence, recklessness, or willful misconduct of Consultant and its agents in the performance of services under this contract. This indemnity does not apply to liability for damages for death or bodily injury to persons, injury to property, or other loss, damage or expense arising from the sole negligence, willful misconduct or defects in design by the City or its agents, servants, or independent contractors who are directly responsible to the City, or the active negligence of the City.

To the fullest extent permitted by law, the Consultant shall (1) immediately defend and (2) indemnify the City, and its councilmembers, officers, agents, and employees from and against all liabilities regardless of nature or type that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the Consultant, or its employees, agents, or subcontractors. Liabilities subject to the duties to defend and indemnify include, without limitation, all claims, losses, damages, penalties, fines, and judgments; associated investigation and administrative expenses; defense costs, including but not limited to reasonable attorneys' fees; court costs; and costs of alternative dispute resolution. The Consultant's obligation to indemnify applies unless it is finally adjudicated that the liability was caused by the sole active negligence or sole willful misconduct of an indemnified party. If it is finally adjudicated that liability is caused by the comparative active negligence or willful misconduct of an indemnified party, then Consultant's indemnification obligation shall be reduced in proportion to the established comparative liability.

(b) The duty to defend is a separate and distinct obligation from Consultant's duty to indemnify. Consultant shall be obligated to defend, in all legal, equitable, administrative, or special proceedings, with counsel approved by the City, the City and its councilmembers, officers, agents, and employees, immediately upon tender to Consultant of the claim in any form or at any stage of an action or proceeding, whether or not liability is established. An allegation or determination that persons other than Consultant are responsible for the claim does not relieve Consultant from its separate and distinct obligation to defend under this section. The obligation to defend extends through final judgment, including exhaustion of any appeals. The defense obligation includes an obligation to provide independent defense counsel if Consultant asserts that liability is caused in whole or in part by the negligence or willful misconduct of the indemnified party. If it is finally adjudicated that liability was caused by the comparative active negligence or willful misconduct of an indemnified party, Consultant may submit a claim to the City for reimbursement of reasonable attorneys' fees and defense costs in proportion to the established comparative liability of the indemnified party.

(c) The review, acceptance or approval of the City's work or work product by any indemnified party shall not affect, relieve or reduce the City's indemnification or defense obligations. This Section survives completion of the services or the termination of this contract. The provisions of this Section are not limited by and do not affect the provisions of this contract relating to insurance.

10. Insurance Requirements.

a. Consultant, at Consultant's own cost and expense, shall procure and maintain, for the duration of the contract, the following insurance policies.

i. Workers' Compensation Coverage. Consultant shall maintain Workers' Compensation Insurance and Employer's Liability Insurance for his/her employees in accordance with the laws of the State of California. In addition, Consultant shall require each subcontractor to similarly maintain Workers'

Compensation Insurance and Employer's Liability Insurance in accordance with the laws of the State of California for all of the subcontractor's employees. Any notice of cancellation or non-renewal of all Workers' Compensation policies must be received by the City at least thirty (30) days prior to such change. The insurer shall agree to waive all rights of subrogation against City, its officers, agents, employees and volunteers for losses arising from work performed by Consultant for City. This provision shall not apply if Consultant has no employees performing work under this Agreement. If the Consultant has no employees for the purposes of this Agreement, Consultant shall sign the "Certificate of Exemption from Workers' Compensation Insurance" which is attached hereto as Exhibit C.

ii. General Liability Coverage. Consultant shall maintain commercial general liability insurance in an amount not less than one million dollars (\$1,000,000) per occurrence for bodily injury, personal injury and property damage. If a commercial general liability insurance form or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the work to be performed under this Agreement or the general aggregate limit shall be at least twice the required occurrence limit.

iii. Automobile Liability Coverage. Consultant shall maintain automobile liability insurance covering bodily injury and property damage for all activities of the Consultant arising out of or in connection with the work to be performed under this Agreement, including coverage for owned, hired and non-owned vehicles, in an amount of not less than one million dollars (\$1,000,000) combined single limit for each occurrence.

iv. Errors and Omissions Liability. Consultant shall maintain errors and omissions liability insurance for all work performed under this Agreement in an amount of not less than one million dollars (\$1,000,000).

b. Policy Endorsements. Each general liability and automobile liability insurance policy shall be with insurers possessing a Best's rating of no less than A:VII and shall be endorsed with the following specific language:

i. The City of Calexico, its elected or appointed officers, officials, employees, agents and volunteers are to be covered as additional insureds with respect to liability arising out of work performed by or on behalf of the Consultant, including materials, parts or equipment furnished in connection with such work or operations.

ii. This policy shall be considered primary insurance as respects the City, its elected or appointed officers, officials, employees, agents and volunteers. Any insurance maintained by the City, including any self-insured retention the City

may have, shall be considered excess insurance only and shall not contribute with it.

iii. This insurance shall act for each insured and additional insured as though a separate policy had been written for each, except with respect to the limits of liability of the insuring company.

iv. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its elected or appointed officers, officials, employees, agents or volunteers.

v. The insurance provided by this policy shall not be suspended, voided, canceled, or reduced in coverage or in limits except after thirty (30) days written notice has been received by the City.

c. Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by the City. At the City's option, Consultant shall demonstrate financial capability for payment of such deductibles or self-insured retentions.

d. Certificates of Insurance and Endorsements. Consultant shall provide certificates of insurance with original endorsements to City as evidence of the insurance coverage required herein. Certificates of such insurance shall be filed with the City on or before commencement of performance of this Agreement. Current certification of insurance shall be kept on file with the City at all times during the term of this Agreement.

11. Compliance with Laws. Consultant shall use the standard of care in its profession to comply with all applicable federal, state and local laws, codes, ordinances and regulations.

12. Licenses. Consultant represents and warrants to City that it has all licenses, permits, qualifications, insurance and approvals of whatsoever nature which are legally required of Consultant to practice its profession. Consultant represents and warrants to City that Consultant shall, at its sole cost and expense, keep in effect or obtain at all times during the term of this Agreement, any licenses, permits, insurance and approvals which are legally required of Consultant to practice its profession. Consultant shall obtain a City of Calexico Business License.

13. Controlling Law Venue. This Agreement and all matters relating to it shall be governed by the laws of the State of California and any action brought relating to this Agreement shall be held exclusively in a state court in the County of Imperial, California.

14. Written Notification. Any notice, demand, request, consent, approval or communication that either party desires or is required to give to the other party shall be in writing and either served personally or sent prepaid, first class mail. Any such notice, demand, etc. shall be

addressed to the other party at the address set forth herein below. Either party may change its address by notifying the other party of the change of address. Notice shall be deemed communicated within 48 hours from the time of mailing if mailed as provided in this section.

If to City: City of Calexico, City Manager
608 Heber Ave.
Calexico, CA 92231

If to Consultant: Lee & Ro, Inc.
1199 South Fullerton Road
City of Industry, CA 91748

15. Consultant's Books and Records.

a. Consultant shall maintain any and all ledgers, books of account, invoices, vouchers, canceled checks, and other records or documents evidencing or relating to charges for services, or expenditures and disbursements charged to City for a minimum period of three (3) years, or for any longer period required by law, from the date of final payment to Consultant to this Agreement.

b. Consultant shall maintain all documents and records which demonstrate performance under this Agreement for a minimum period of three (3) years, or for any longer period required by law, from the date of termination or completion of this Agreement.

c. Any records or documents required to be maintained pursuant to this Agreement shall be made available for inspection or audit, at any time during regular business hours, upon written request by the City Manager, City Attorney, City Auditor or a designated representative of these officers. Copies of such documents shall be provided to the City for inspection at City Hall when it is practical to do so. Otherwise, unless an alternative is mutually agreed upon, the records shall be available at Consultant's address indicated for receipt of notices in this Agreement.

d. Where City has reason to believe that such records or documents may be lost or discarded due to dissolution, disbandment or termination of Consultant's business, City may, by written request by any of the above named officers, require that custody of the records be given to the City and that the records and documents be maintained in City Hall. Access to such records and documents shall be granted to any party authorized by Consultant, Consultant's representatives, or Consultant's successor-in-interest.

16. Entire Agreement. This Agreement constitutes the complete and exclusive statement of Agreement between the City and Consultant. All prior written and oral communications, including correspondence, drafts, memoranda, and representations, are superseded in total by this Agreement.

17. Amendments. This Agreement may be modified or amended only by a written document executed by both Consultant and City and approved as to form by the City Attorney.

18. Waiver. No failure on the part of either party to exercise any right or remedy hereunder shall operate as a waiver of any other right or remedy that party may have hereunder.

19. Execution. This Agreement may be executed in several counterparts, each of which shall constitute one and the same instrument and shall become binding upon the parties when at least one copy hereof shall have been signed by both parties hereto. In approving this Agreement, it shall not be necessary to produce or account for more than one such counterpart.

20. Assignment and Subcontracting. The parties recognize that a substantial inducement to City for entering into this Agreement is the professional reputation, experience and competence of Consultant. Assignments of any or all rights, duties or obligations of the Consultant under this Agreement will be permitted only with the express consent of the City. Consultant shall not subcontract any portion of the work to be performed under this Agreement without the written authorization of the City. If City consents to such subcontract, Consultant shall be fully responsible to City for all acts or omissions of the subcontractor. Nothing in this Agreement shall create any contractual relationship between City and subcontractor nor shall it create any obligation on the part of the City to pay or to see to the payment of any monies due to any such subcontractor other than as otherwise is required by law.

21. Termination. This Agreement may be terminated by the City immediately for cause or by either party without cause upon fifteen days' written notice of termination. Upon termination, Consultant shall be entitled to compensation for services performed up to the effective date of termination.

*****SIGNATURES ON FOLLOWING PAGE*****

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed on the date first written above.

CITY OF CALEXICO:

CONSULTANT:

David B. Dale
Interim City Manager

APPROVED AS TO FORM:

ATTEST:

Carlos Campos
Interim City Attorney

Gabriela Garcia
Deputy City Clerk

EXHIBIT A

SCOPE OF SERVICES

(Proposal dated September 6, 2017)

EXHIBIT B
SCHEDULE OF CHARGES



1199 South Fullerton Road, City of Industry, CA 91748
Tel: (626) 912-3391
Fax: (626) 912-2015
www.LEE-RO.com

December 5, 2017

Office of the City Clerk
City Hall
608 Heber Avenue
City of Calexico, CA 92251

Subject: Fee Proposal for Wastewater Treatment Plant Master Planning Service

Ladies and Gentlemen:

In accordance with the instructions in your RFP, LEE & RO submits our fee proposal for the subject project in a sealed envelope. The total fee proposed is **\$114,776** as shown in the attached spreadsheet included as **Exhibit A**.

The LEE & RO labor billing rate schedule is included as **Exhibit B** and other direct costs (ODC) billing schedule is included as **Exhibit C**.

If you have any questions or comments regarding this proposal, please do not hesitate to contact Jay Jung or me.

Sincerely,

LEE & RO, Inc.

A handwritten signature in black ink, appearing to read 'M. Steve Ro', is written over the typed name.

M. Steve Ro, PE
CEO

Encl.: Exhibit A – Fee Proposal
Exhibit B – Billing Rate Schedule
Exhibit C – Other Direct Costs (ODCs)

Exhibit A - Fee Proposal for the City of Calexico Wastewater Treatment Plant Master Plan

Date: 12/5/17

TASK No.	Labor Category Used for Fee Estimate: E8 Managing Engr, E7 Supervising Engr, E6 Principal Engr, E5 Sr. Engr, E4 Engr, E3 Associate Engr, E2 Assistant Engr, E1 Jr. Engr, T6 Principal Designer, T5 Sr. Designer, T4 Designer, T3 Associate Designer, T2 Assistant Designer, T1 Jr. Designer, A2 Word Processor	Labor Category												Total Hours	Labor	Other Direct Costs (ODCs)	Sub-Consultant	TOTAL			
		Billing Rate, \$/Hour																			
		E8	E7	E6	E5	E4	E3	T6	T5	T4	T3	A2									
		\$235	\$212	\$191	\$173	\$157	\$140	\$157	\$140	\$140	\$157	\$140	\$124	\$108	\$93						
1	Project Management, Data Gathering, Plant Visits, Coordination and Meetings	4		20		20	16						8			8	76	\$11,876	\$600	\$0	\$12,476
2	Regulatory Agency Requirements Review			4		8											12	\$2,020	\$100	\$0	\$2,120
3	Engineering Analysis and Cost Estimating for Process Alternatives	4		24		40	40						8			8	124	\$19,140	\$200	\$0	\$19,340
4	Develop Capital Improvements Program (CIP) Projects	4		40	20	40	48						8			8	160	\$25,784		\$0	\$25,784
5	50% Master Plan	4		16	16	24	52						24			12	148	\$21,904	\$50	\$0	\$21,954
6	Prefinal (95%) Master Plan	4		12	16	20	40						20			16	128	\$18,708	\$100	\$0	\$18,808
7	Final Master Plan	2		4	8	12	16						4			8	54	\$7,982	\$100	\$0	\$8,082
8	Independent QA/QC	12	16													28	28	\$6,212		\$0	\$6,212
	TOTAL REQUESTED	34	16	120	60	164	212	0	0	0	0	0	64	0	60	730	\$113,626	\$1,150	\$0	\$0	\$114,776

EXHIBIT B
LEE & RO, Inc.
FY 2017-2018 HOURLY BILLING RATE SCHEDULE
(Effective From November 1, 2017 to October 31, 2018)

PERSONNEL CLASSIFICATION			BILLING RATES (\$/HOUR)
ENGINEERS			
Engineer 8	E8	Managing Engineer	\$235
Engineer 7	E7	Supervising Engineer	\$212
Engineer 6	E6	Principal Engineer	\$191
Engineer 5	E5	Senior Engineer	\$173
Engineer 4	E4	Engineer	\$157
Engineer 3	E3	Associate Engineer	\$140
Engineer 2	E2	Assistant Engineer	\$124
Engineer 1	E1	Junior Engineer	\$108
CAD / DESIGNERS			
Designer 6	T6	Principal Designer	\$157
Designer 5	T5	Senior Designer	\$140
Designer 4	T4	Designer	\$124
Designer 3	T3	Associate Designer	\$108
Designer 2	T2	Assistant Designer	\$93
Designer 1	T1	Junior Designer	\$80
FIELD PROFESSIONALS			
Field Professional 6	F6	Construction Manager	\$191
Field Professional 5	F5	Senior Resident Engineer	\$173
Field Professional 4	F4	Resident Engineer	\$157
Field Professional 3	F3	Senior Inspector	\$140
Field Professional 2	F2	Inspector	\$124
Field Professional 1	F1	Assistant Inspector	\$108
ADMINISTRATIVE			
Administrative 4	A4	Administrative Supervisor	\$124
Administrative 3	A3	Senior Word Processor	\$108
Administrative 2	A2	Word Processor	\$93
Administrative 1	A1	Administrative Assistant	\$80

Note: Billing rates are subject to change at the beginning of the fiscal year (November 1st).

EXHIBIT C
LEE & RO, Inc.
Other Direct Costs (ODC) Billing Rate Schedule
FY 2018 (from November 1, 2017 to October 31, 2018)

Automobile Mileage	IRS Published Rate
In-house Reproduction	\$0.08 / sheet (8.5 x 11 Bond B & W) \$0.20 / sheet (8.5 x 11 Bond Color) \$0.15 / sheet (11 x 17 Bond B & W) \$0.50 / sheet (11 x 17 Color) \$1.20 / sheet (24 x 36 Bond)
Mylar Original Drawing	\$7.50 / sheet (24 x 36 or 22 x 34)
Computers & Work Stations	No Charge
Subconsultant Mark-up	Subconsultant Invoice Amount Plus 5%, Unless Client Specifies Otherwise
Bulk Reproduction by Outside Printing Firm	Invoice amount plus 10% Handling Charge
Overnight Mailing, Air Fare, Project-Specific Software, or Equipment Rental, etc.	At Cost

Note: ODC rates are subject to change at the beginning of fiscal year (November 1st).

EXHIBIT C

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I hereby certify that in the performance of the work for which this Agreement is entered into, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of the State of California.

Executed on this ____ day of _____, 2017, at _____,
California.

Consultant