City of San Luis
West WWTP 3 MGD MBR Phase 1 Upgrades

Request for Proposals
Complete Sludge Dewatering System

Date: November 4, 2024
Proposals Due: December 2, 2024

All interested equipment suppliers (referred to as manufacturers, vendors, or suppliers) shall provide a design and price proposal to be received no later than **4:00 PM (Mountain Standard Time) December 2, 2024** for a Complete Sludge Dewatering System for the City of San Luis, West Wastewater Treatment Plant MBR Phase 1 Upgrades project with a design capacity of 3.0 MGD MMADF in conformance with the following performance specification, emailed in **PDF format** to ntesch@pacewater.com or alternatively, a hard copy can be submitted to Pacific Advanced Civil Engineering, Inc. (PACE), Attention: Nathaniel Tesch, EIT, 8723 E. Via de Commercio, Ste. A-204, Scottsdale, AZ 85258. The submittals will be privately opened. No pre-proposal will be held.

Bidding Documents can be downloaded at www.questcdn.com under an individual login for a non-refundable charge of $22.00. Quest CDN Project number is 9395167. Registration with Quest CDN is required to be on plan holders list and receive project communications. Please contact QuestCDN.com at (952) 233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. Any questions about obtaining documents can be forwarded to Andrea Jaycox at ajaycox@pacewater.com or (602) 502-9683.

This request for proposal is for a new complete prepackaged, sludge dewatering system for the City of San Luis, West Wastewater Treatment Plant (WWTP) Phase 1 Membrane Bioreactor (MBR) Upgrades project with a design capacity of 3.0 million gallons per day (MGD) max-month average daily flow (MMADF). The system shall include mechanical sludge pumping; processing; and dewatering equipment, a processed/dewatered sludge conveyor, and a prepackaged electrical control system for the control of the supplied sludge feed pumps, polymer feed system, main sludge dewatering unit (SDU), and the processed/dewatered sludge conveyor.

One equipment vendor will be pre-selected and will form the basis of the full-scale design that will be incorporated into the WWTP's MBR Phase 1 Upgrade plans. The modification design plans are scheduled to be completed before the summer of 2025. Construction is anticipated to be initiated within 6 months of design completion and approval. Due to the CMAR approach of the project, equipment procurement will begin soon after equipment selection and prior to completion of the final design plans.

Equipment Manufacturers/Vendors have the option to provide multiple proposals for all equipment that can satisfy this performance specification RFP. Equipment vendors are encouraged to identify significant benefits their proposal provides which are above and beyond the minimum requirements of this specification RFP. Proposal offerings will be evaluated based on the following criteria. See PROPOSAL REVIEW & GRADING section below for the weighting and definition of criteria.

- Capital Cost
- 10-year Life Cycle Cost
- Performance
- Reference List

- Fabrication
- Delivery Schedule
- Service
- Completeness of Supply
- Completeness of Response
- Performance Bond

PROPOSAL REQUIREMENTS

Proposal submissions should include all the information requested within the RFP. Proposals must be complete, including, but not limited to the following items below. Submittals shall be formatted in a manner that allows quick referencing for pertinent information. All requested information is to be provided so that no inferences will be required by the engineer. PDF files shall be provided with digital tabs or bookmarks for quick navigation within the Submittal Package. Each item below shall have its own individual section in the proposal. The offering shall include, at a minimum, the following sections with the required information.

1. Fixed Price Proposal

   Fixed Price Proposal for the specified equipment system offering with a detailed Scope of Supply, including:

   a. Total capital equipment cost as required for complete and functional sludge dewatering system meeting the requirements of these performance-based specifications.
   b. The City is pursuing additional grant funding for this project. As certain grants require BABA compliance, the contract must provide an additional line item with the total cost associated with providing a BABA compliant system.
      i. The contractor will provide a list identifying equipment in which a BABA waiver/exemption can be granted.
   c. Packaging, freight, and taxes, F.O.B. to jobsite.
   d. Price list of standard spare parts and system consumables, including availability and lead time of spare parts.
   e. A letter on company letterhead stating the willingness to provide a Performance Bond *(See Exhibit B)* & performance guarantee in the amount of 100% of the contract equipment price for the duration of the warranty. Vendors shall provide a separate line item in the proposal for the costs associated with providing a Performance Bond (with additional line items including the cost associated with extending the Performance Bond to match the lifetime of the warranty).
      i. All bonding companies shall have a policy-holder rating of A+ and a financial rating of "Class XV" in the most recent edition of "Best Key Rating Guide". The bonding company shall be licensed to do business in the state of Arizona.
   f. Provide recommended requirements and cost for the following Services to be included within the proposal:
      i. Installation Inspection and Certification Services
      ii. Start-Up and Commissioning Services
      iii. Site Performance Testing
      iv. O&M Training Services
   g. Pricing shall be guaranteed based on Item 1 – Fixed Price Proposal shall be guaranteed for 6-months after offering has been received and a notice of selection has been issued by PACE and the City of San Luis, AZ. At the end of the 6-month holding period, the selected vendor agrees the inflation rate shall not exceed more than a 1% increase per quarter for 1-year, or the inflation rate stated by the Phoenix Tender Price Index determined by Rider Levett Bucknall – whichever of the two is lower. The City

reserves the right to cancel its dealing with the selected Vendor at any time prior to issuing a purchase order.

2. Power Requirements

   Power requirements (in kW, kW-hr) at point of connection for different flow rates (where applicable) and full-load amp (FLA) requirements for all equipment items. Provide load calculations.

3. Maintenance Requirements and Schedule

   Schedules shall include an itemized list of tasks that need to be done on a daily, weekly, monthly, or yearly basis to ensure proper operation of the proposed equipment. Maintenance requirements and schedule should parallel list of spare parts (and system consumables) that will need to be checked, and/or replaced as part of the normal maintenance for each equipment item.

4. Maintenance and Repair Contract

   Provide offering for Full Maintenance and Repair Contract that covers a period of 5-years with the option to extend for an additional 5-year period. The contract shall include site visits by Vendor's certified service technicians to perform all repairs, part replacements, and maintenance services, including but not limited to seal replacements, bearing services, electrical components, etc., as well as any repairs as a result of operating the dewatering system under site operating conditions defined within these specifications. The Contract shall include parts, labor, travel and any other expenses required to perform the work. Please also see Definition and Scoring section below for additional details and requirements.

   a. Each Vendor shall provide a detailed approach in their proposal to address technical support and service calls. The approach should include a step-by-step procedure on the actions the City should take during an alarm or system malfunction.
   b. Each Vendor shall provide a guaranteed onsite response time (the time required to have a technician onsite once it is determined that a technician is required). The service contract shall include language stating that if the technician is not onsite within the guaranteed onsite response time period, the Vendor will pay liquidated damages of $500 for each day of delay.
   c. Each Vendor shall provide a list of incidental/routing maintenance items that the city can perform to minimize the need for the Vendor's service technician to be onsite.
   d. The contract shall include, at a minimum, an annual site visit by the Vendor's certified service technician for inspection and servicing of the dewatering system.

5. Guarantee

   All vendors are required to submit a guarantee letter signed by an officer of the bidder's company indicating compliance with the specification. The guarantee shall state that all dewatering subsystems required for a fully operation system, as outlined in the following specifications, have been included in the firm equipment proposal. Further, it shall state that required subsystems or appurtenances omitted will be provided by the vendor at no additional cost to the owner.

6. Warranty

   Manufacturer's Standard Warranty Terms: A minimum 2-year warranty shall be provided. Manufacturers/Vendors shall provide the cost to extend the warranty for an additional 1-year and list the cost as an add alternate in a separate line item in the proposal. If additional Extended Warranty Options (durations) are available, the Manufacturers/Vendors shall include this information in the price proposal, along with the costs associated with the respective options (as a separate line item).

   The warranty shall include meeting the performance guarantee specified. Vendor shall bear 100% of any replacement costs or costs incurred due to upgrades required to meet the performance requirements during the lifetime of the warranty period and/or the duration of the Full Maintenance and Repair Contract.

   NOTE: Warrantee period to commence following start-up and acceptance of the equipment.

7. Installation References:
    a. Vendor to provide a minimum of 3 installed references with contact information.
    b. Statement willing to provide a 7-year Performance Bond for Vendors lacking the reference requirements.
8. Equipment Performance and Layout Information

    Proposal shall include all performance information for the proposed system. **Performance data provided shall be guaranteed for the duration of the warranty period and/or Full Maintenance and Repair Contract.**

    Proposal performance information shall include, at a minimum:
    a. Detailed design calculations for the proposed equipment, showing compliance with the proposed application.
    b. Detailed description of normal operation of equipment, as well as alarm conditions and control options.
    c. Maximum hydraulic loading rate.
    d. Maximum solids loading rate.
    e. Estimated polymer usage (neat and active, lb/dry-ton).
    f. Minimum solids capture rate.
    g. Estimated dry and full (in use) capacity weight for fully assembled equipment components (lb).
    h. Minimum requirements for all process connections (flow, pressure, etc.)
    i. Maximum equipment system power usage.
    j. Materials of construction schedule.
    k. All other performance parameters and information included in Exhibit C.

    Proposal Shop Drawings shall include, at a minimum:
    l. Overall system dimensions with clearance/service space requirements.
    m. Minimum of three layout views (one plan view, one side section, and one front section). Drawings shall show the new dewatering equipment and coupled conveyor(s). Drawings will be used to determine the design and layout of the new Sludge Processing Area. In additional to pdf format, the vendor shall submit all layout drawings in AutoCAD.
    n. Locations and sizes for all process connections.
    o. Locations for control panel and/or electrical power and instrumentation connections.
    p. All Instrumentation inputs and outputs (P&IDs).

    Technical Specifications in CSI (50 Division MasterFormat) shall include, at a minimum:
    q. Provide technical specifications for all major dewatering components.
        i. Dewatering Sludge Unit
        ii. Conveyance equipment
        iii. Sludge pumps
        iv. Polymer mixing and dosing equipment
    r. Specifications can be individual or combined
    s. Specifications shall include at a minimum:
        i. Part 1 – Description of general product, functionality, and warranty
        ii. Part 2 – Product Specifications and Performance
        iii. Part 3 – Execution for the installation of equipment
9. Equipment/System Automation

Provide a detailed description of the automation capability of the proposed equipment including a description of automation systems, instruments, and functions along with expected man-hours required to operate the complete sludge dewatering system at design conditions and performance requirements. It is the intent of the project to install a system that can operate; unattended, aside from start-up and shut-down, for extended periods of time under normal operating conditions with minimal need for operator attention.

10. Equipment/System Redundancy

    It is a requirement of the project that the sludge feed pumps are fully redundant and a minimum of two (2) sludge feed pumps are supplied. Each pump, while working independently, must be capable of handling the total flow requirements of these specifications. The equipment supplier has the ability to supply either a single dewatering unit with the capacity to meet the provided performance requirements or to supply multiple units with a combined capacity capable of meeting the provided performance requirements. Redundancy is not required for polymer mixing/dosing equipment, conveyance equipment, nor additional ancillary equipment.

11. O&M Manual

    Provide a copy of a standard/general O&M Manual for the proposed equipment system with the proposal. The manual does not have to be project specific, but shall provide enough information to determine the make-up of the Final O&M Documents as well as service requirements for the proposed equipment system. Once pre-selected, the Final O&M Documents must be submitted and approved prior to shipping equipment to the jobsite. Provide four (2) hard copies and one (1) electronic copy of the Final O&M Documents.

12. Schedule

    Provide a proposed schedule to include the following:

    a. Time required to generate an acceptable submittal for the Engineers review.
    b. Time required to manufacture the equipment once the submittal has been approved by the Engineer.
    c. Time of Delivery for O&M Manuals.
    d. Time of delivery of complete equipment systems.
    e. Statement indicating schedule delay (for both shop drawing submittals preparation and equipment fabrication and delivery with O&M Manual) will result in liquidated damage of $500 per calendar day with cap at 50% of the equipment cost.

13. Exclusions/Exceptions Form

    a. Provide an Exclusions/Exceptions Form (Exhibit D) identifying exclusions or exceptions to any of the RFP requirements. If none, please include with proposal package and indicate “None”.
    b. Include a list of equipment that is not included with the Vendor’s offering but is needed for the proper operation of the Sludge Dewatering System. If none, indicate none.

14. Completed Exhibits

    a. Completed Reference List (*See Exhibit A)*
    b. Completed Performance Bond (*See Exhibit B)*
    c. Completed Equipment Summary List (*See Exhibit C)*
    d. Completed Exclusions/Exceptions Form (*See Exhibit D)*

15. Site Visits

    The equipment vendor shall include a minimum three (3) trips. The first trip will include a minimum of one full work day (8 hrs) for the purpose of installation inspection. The second trip will be for a minimum of two full work days for the purpose of start-up and training. Start-up will include polymer jar testing and performance verification. Start-up will not initiate until the new WWTP treatment process is operating and sufficient WAS is available (The City and CMAR will give notice to the vendor as to the approximate time period when this will occur). The third trip is for a 10-month follow-up inspection/training visit for all supplied equipment/systems.

Site visits/trips shall be coordinated with the CMAR Contractor and City a minimum of 10 calendar days prior to trip.

PROPOSAL REVIEW & GRADING

In order to select the best complete sludge dewatering system for the application, the following methodology will be used. Each criterion will be assigned a weight; the higher the weight, the more important the aspect is to the project. Then, each equipment solution proposed will be rated on a scale, with the highest score indicating most competitive or best. For each criterion, the score and the weight will be multiplied together. The scores will then be added together for each solution to arrive at the total score. The equipment with the highest score will be the recommended selection. Omission of information for any of the listed criteria categories will result in a score of zero (0) for that criteria category. Equipment not meeting the minimum requirements as stated in the General Design Requirement section will not be considered.

Criteria	Weight	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5
		Scoring Scale				
Capital Cost	*10*					
10-Year Life Cycle Cost*	*8*					
Performance	*10*					
Reference List	*9*					
Fabrication	*9*					
Delivery Schedule	*3*					
Service	*4*					
Completeness of Supply	*y/n*					
Completeness of Response	*y/n*					
Performance Bond	*y/n*					
Total Score						

Criteria Definitions and Requirements

Capital Cost: The cost to purchase and deliver the complete equipment F.O.B. jobsite. Each Vendor with proposal costs within 5% of the lowest is scored the same. The evaluation of capital costs will also be associated with the evaluation of the installation requirements, as this criterion considers equipment footprint. Structural components (shade structure) which are not included in the vendor's scope but are necessary for the process and equipment will be added to the capital cost by the Owner (if not included in the vendor's scope of supply).

10-year Life Cycle Cost: Evaluation of capital cost, power; O&M over 10-year period in today's value based on an 5% interest rate. The O&M cost shall be derived from the *Full Maintenance & Repair Contract*, power cost, and estimated cost of consumables (polymer).

Full Maintenance & Repair Service Contract Ranking will be tied into the 10-Year Life Cycle Cost Ranking. The Contract shall cover a period of the first 5-years with the City's option to extend for an additional 5-year period. The contract shall include site visits by Vendor's certified service technicians to perform all repairs, replacements, and maintenance services,

including but not limited to seal replacements, bearing services, equipment replacement, electrical and controls components, etc., as well as any repairs that results from operating the dewatering system under site operation conditions defined within these specifications; any repairs that results from the installation environment at the WWTP, including temperature, moisture, etc.; and any repairs or upgrades needed to maintain system performance guarantee. The Contract shall include parts, labor, travel and any other expenses required to perform the work. The service shall include a minimum of one annual site visit by a certified service technician for inspection and service.

Each Vendor shall provide a detailed approach in their proposal to address technical support and service calls. The approach should include a step-by-step procedure on the actions the City should take during an alarm or equipment malfunction.

Each Vendor shall propose a guaranteed onsite response time once it is determined that a technician will be required to be onsite to address the problem. The service contract shall include language stating that if the technician is not onsite within the guaranteed onsite response time period, the Vendor will pay liquidated damages of $500 for each day of delay.

Each Vendor shall provide a list of incidental maintenance items that the city can perform to minimize the need for the Vendor's service technician to be onsite. An example of incidental maintenance is performing a greasing or lubrication. All equipment parts for incidental maintenance shall still be provided by the Vendor.

The cost of the 5-year and 5-year options will be based on present-day cost and shall be tied to an inflation rate of no more than 1% increase per quarter or to the inflation rate stated by the Phoenix Tender Price Index determined by Rider Levett Bucknall – whichever of the two is lower.

The City shall have the option to accept the Maintenance and Repair Service Contract.

Performance:

Meets the performance requirements identified in the General Design Requirements. Where applicable, the City, at their discretion, may request shop/factory, or field testing, or referenced party site visits to verify stated performance of equipment. The Vendor shall assist in coordinating requested site visits/testing for the City.

Reference List:

List of similar equipment installations, including WWTP capacity, type of units, number of units, and reference contact information (WWTP name, location, person, phone number). Each vendor shall provide an installation list with contact information for a minimum of 3 systems in operation for a minimum of 3 years in the United States of America. Installations shall be of comparable model and design requirements. The term "installations" shall mean individual projects/contracts. Multiple equipment units for a project will be considered as one (1) installation toward meeting the experience requirements. Installations shall be only those in the United States (fifty states). Confirmation that the

installed equipment is in good standing with the customer and customer feedback will be used as part of the proposal scoring process. The City will require a minimum of three references' feedback and will make a good faith attempt to contact a maximum of five references in order to obtain the feedbacks.

Each successful reference shall be asked to rank their overall experiences from 1-10 (10 being the best). Scores will be based on average ranking from the responsive references. At a minimum, 3 references will be scored. If there are less than 3 responsive references, non-responses will be given a ranking of 1. For example, if only 2 references responded, then a score of 1 will be given to the missing third reference. The average of the three scores will be used in the evaluation. The City reserves the right to contact additional references. If additional references are contacted by the City, those references will be averaged into the score.

Reference installations within the State of Arizona are preferred in order to provide the City/WWTP Operators with ease in coordinating site visits and corresponding with other relatively local Cities and WWTP Operators regarding equipment performance, service, etc. See also Performance and Fabrication definitions.

Bids from Vendors lacking the U.S. installation requirements, but meeting all technical and performance requirements of these specifications, may be considered by the City if the Vendor provides a satisfactory seven (7) year performance bond in lieu of evidence of experience and operation. The performance bond shall be for 100 percent of the replacement value of the equipment. The bonding company shall have a policy-holder rating of A+ and a financial rating of "Class XV" in the most recent edition of "Best Key Rating Guide". The bonding company shall be licensed to do business in the State of Arizona. The cost of such bonding shall be included in the Base Bid price at the time of proposal.

Fabrication:

Proposals will be reviewed and graded by the City to determine the quality of materials used in the fabrication of the complete system as stated in the vendor's provided CSI specifications. The City, at their discretion, may request site visits of existing installations to view completed and operational systems, which are representative of the quality the Vendor is proposing. The Vendor shall assist in coordinating requested site visits for the City. Refer also to the Reference List Definition.

Delivery Schedule:

Proposed equipment will be at the job site when needed. Submittals shall include a schedule outlining the anticipated time to develop submittals, and construct equipment and deliver to the job site. The schedule shall be broken down into submittal preparation period, fabrication time, and delivery time. The total time required from notice of selection to arrival of equipment on site shall be clearly

indicated.

Service: Location of nearest service center, availability of spare parts; quality of service provided. Each vendor shall list the nearest service and support center to the project location. Distance from the project site shall be included along with the services provided by the location. Due to the geographic location of the project, equipment service may be an issue for the City in the past. Vendors with relatively "local", and/or expeditious Service Supply and Part Center's fully stocked with equipment consumables and spare part inventory will be scored higher under this Criterion.

Completeness of Response: The completeness of the proposal to include all the necessary equipment and ancillaries that will be required to meet the performance requirements as stated herein. Proposals, at the determination of the City, not conforming to the requirements of these specifications maybe be eliminated from further consideration. The City reserves the right to reject any and all proposals.

Completeness of Supply: The completeness of the proposal in terms of supplying all requested information within this RFP. Proposals, at the determination of the City, not providing all requested information within this RFP may be eliminated from further consideration. The City reserves the right to reject any and all proposals.

Performance Bond: Willingness to agree to terms of the Performance Bond (*Exhibit B)* and to provide a performance guarantee for a minimum of 2 years on the equipment, with the ability to extend the Bond to match the lifetime of the extended Warranty (if chosen). The costs associated with extending the Performance Bond will be provided as a separate line item. Proposals not accepting the terms of the bond will not be considered. The Performance bond shall be for 100 percent of the replacement value of the equipment. The bonding company shall have a policy-holder rating of A+ and a financial rating of "Class XV" in the most recent edition of "Best Key Rating Guide". The bonding company shall be licensed to do business in the State of Arizona.

PROJECT INFORMATION

The City of San Luis is upgrading its existing West WWTP to improve effluent quality and increase total treatment capacity. The current design flow of the WWTP is 1.5 MGD, max month average daily flow (MMADF). The upgrades and expansion to the West WWTP will take place in Phases:

- Phase 1 will increase treatment capacity to 3.0 MGD MMADF
- Phase 2 will increase treatment capacity to 4.5 MGD MMADF
- Phase 3 will increase treatment capacity to 6.0 MGD MMADF (buildout)

As part of the upgrades, a new dewatering system will be installed. The dewatering equipment will be installed downstream of a new membrane bioreactor (MBR) treatment system. The dewatering system will be installed outdoors but will be covered with a permanent shade structure. The dewatered sludge cake will be conveyed to a refuse bin at grade, which will allow for operators to haul off the dewatered sludge cake. The existing sludge drying beds will remain in operation until the proposed dewatering system is installed and operational; once the new dewatering system is operational, the existing drying beds will act only as emergency/temporary sludge storage units. The dewatered cake will be hauled to a local landfill for final disposal. The disposal cost is tie to the dryness of the dewatered sludge cake. Therefore, the performance of the sludge dewatering system must be guaranteed. The final design and layout of the dewatering area will be based upon the selected dewatering equipment (dewatering and conveying systems).

Parameter	Value
Project Location	San Luis West WWTP, San Luis, Arizona
Treatment Facility MMADF Current Flow	1.0 MGD
Treatment Facility MMADF Current Design Flow	1.5 MGD
Treatment Facility MMADF Ph1 Design Flow	3.0 MGD
Future Treatment Facility MMADF Ph2 Design Flow	4.5 MGD
Future Treatment Facility MMADF Ph3 Design Flow	6.0 MGD
Wastewater Type	Domestic
Treatment Process	Fine and ultrafine headworks screening and grit removal, anoxic and oxic secondary, and Membrane Bioreactor tertiary treatment process, chlorine disinfection, and mechanical dewatering.
Sludge Process	WAS from MBR will be stored and aerated in the sludge aeration basins. Detention time is approximately 7 days.
Site Elevation	Approximately 100-feet above MSL
Equipment Exposure	Outdoor w/ shade cover and odor control
Ambient Temperature Range	35°F – 120°F
Available Flush/Spray Water Source	Potable Water or Class A+ Effluent

GENERAL DESIGN REQUIREMENTS

The Sludge Dewatering System Vendor must be the Sludge Dewatering Unit (SDU) Vendor and will be the sole system supplier. The Vendor shall be responsible for providing a complete and operable sludge dewatering system consisting of pertinent equipment, associated instruments, electrical controls, valving, etc. The complete dewatering system shall

include the sludge dewatering unit (SDU), two sludge feed pumps (primary and redundant), polymer system, sludge cake system, and control equipment as described in the following Specifications. Necessary spare parts shall be included within the bid. Vendors with elevated equipment shall include structural supports, stairways, and access platforms within their scope. Only structural concrete components may be listed as outside of vendor's scope. Complete installation and start-up services with operation and maintenance manuals (in electronic PDF format) shall also be included in the bid.

The Sludge Dewatering unit shall be a Screw Press or Volute Press Technology.

Each proposer shall provide a capital equipment cost proposal for one or both of the following capacity options, based on their proposed sludge dewatering system(s):

Option 1: Single machine will full rated capacity
Option 2: Two or more machines with capacity equally split among the total number of units supplied

The Vendor shall be responsible for ensuring an operable package system consisting of sludge feed pumps, a polymer preparation and injection system, dewatering device(s), cake conveyor(s), control panel(s) and associated instruments, electrical controls, skid piping and valving, etc. Controls shall be PLC-based (Allen Bradley – Ethernet TCP/IP Communication Protocol). The device shall have the ability to operate unattended, with automated start-up and shut-down. Controls are discussed further in the Controls section of this specification.

The dewatering system shall be designed to meet the NFPA 820 electrical classification of the environment in which they are installed (Class 1, Div.1; Class 1, Div. 2; etc.), this includes all electrical components, such as motors, actuators, instruments, conduits & fittings, control panels, etc.

Parameter	Value
Type of Sludge	Secondary Waste Activated (with minimal digestion)
Estimated WAS (Phase 1 - 3 MGD)	7,945 lbs/day TS Maximum
Estimated Sludge Volume	95,256 gal/day @ 1% solids
Feed Concentration	1% (or greater)
Temperature	13 to 30°C
Ph	6-8
Days of Operation	5 days per week (Monday – Friday)
Maximum Hours of Operation	8 hours – daily production
SDU Minimum Solids Loading Capacity (8-hour operation)	994 lbs/hr
SDU Minimum Hydraulic Capacity (8-hour operation)	200 GPM @ 1% solids
SDU Minimum Cake Solids Conc.	15% @ 1% solids feed concentration
SDU Minimum Solids Capture	95% by weight
SDU Maximum Polymer Usage	20 lbs/dry ton
Screw Press Minimum Drum Diameter	1.2 m

1.1 MAJOR COMPONENTS

A. Sludge Feed Pumps

A minimum of two separate sludge feed pumps (primary and redundant) shall be provided for the sludge dewatering system. The sludge feed pumps shall be a positive-displacement solids feed pump. The pumps shall be capable of pumping liquids containing up to 30,000 mg/L (3%) sludge concentration. Each pump shall have the capacity to pump the required volume within the operating hours as specified herein, and each pump shall have a full-speed hydraulic capacity 20% higher than the dewatering unit's maximum hydraulic loading rate – whichever is higher. The minimum operating pressure, not including that required by the dewatering process shall be a total of 30 feet. The pump motors shall be controlled by supplied variable frequency drives (VFDs), which shall be integrated with the dewatering control system. The feed pumps shall be manufactured by Vogelsang, Borger, or approved equal.

B. Polymer Feed System

The polymer feed system shall be an emulsion type system with sufficient capacity to supply the required polymer dosage to the sludge dewatering equipment. The polymer system shall include automated on/off Allen-Bradley PLC based controls using a microprocessor to allow for a minimum of two operation modes (manual and proportional auto mode). The system shall allow for automatic control of variable speed polymer feed/mixing equipment to increase or decrease polymer concentrations and doses based on signals from the dewatering equipment control system. The NEMA 4X control panel shall be integral to the polymer system skid and be capable of communicating via Ethernet IP. The polymer pump shall be positive-displacement type. The polymer mixing mechanism shall allow for variable speed mixing and include a sight glass. Water required shall be provided by the City. Vendor shall state the water demand and pressure required for the polymer system.

C. Piping

The sludge dewatering equipment shall be delivered to the site ready to plumb to the new sludge feed piping, polymer feed system, wash/flush water, and pneumatic lines (where applicable) with a majority of the equipment factory plumbed. The contractor will be responsible for the installation and termination of main and auxiliary piping; however, the number of field modifications and equipment piping connections shall be kept to a minimum.

D. Conveying System

The cake conveyor shall be supplied as a closed tube, shaftless screw-type conveying system and shall be capable of meeting the maximum discharge capacity of the sludge dewatering equipment. The conveyor system shall be capable of horizontal, inclined, and vertical configurations based on both the proposed dewatering equipment's configuration, as well as the projected sludge cake disposal bin height of 5-feet. The conveying system shall be supplied with proper supports for its configuration and shall include all necessary equipment for a complete and functioning system. The conveyor system shall allow for both automatic and manual control and provide control feedback to the dewatering system's PLC. The conveying system shall include limit and/or safety switches, shock relays, motion sensors, or other protective devices to provide emergency shutdown of the conveying equipment. The conveying system shall also include strategically placed flushing ports and drains as needed to maintain the equipment.

E. Dewatering Screw Press

The primary sludge dewatering system shall be of the screw press or volute press technology. The dewatering system will be capable of handling the total daily sludge production within the operating hours specified. At a minimum, the following operating properties shall be supplied by the Vendor:

- Model Number
- Maintenance Space Requirements
- Screw/Screen Housing Diameter (in.)
- Drum Diameter (in.)
- Overall Length (in.) – Including Screw/Shaft Removal Length
- Overall Width (in.)
- Overall Height (in.)
- Dry Weight (lbs)
- Operating Weight (lbs)
- Individual Electric Load for each component (FLA, kW-hr, and horsepower)
- Guaranteed maximum hydraulic and solids loading rates for the system
- Wash water consumption (GPM & required pressure)

ELECTRICAL REQUIREMENTS

1. Electrical Power Connection Volt/Phase/Hz: 480/3/60
2. Motor and solenoid valve classification: Meets NFPA 820 Classification
3. Interior electrical/control panel enclosure type: Meets NFPA 820 Classification
4. Remote E-Stops/Local Control Stations: Meets NFPA 820 Classification
5. Electrical connections shall be flexible and of sufficient length to allow servicing of all components.

CONTROL SYSTEM REQUIREMENTS

A. General: All controls necessary for a fully automatic operation of the complete sludge dewatering system shall be provided within a single enclosure. The dewatering equipment vendor/manufacturer shall be responsible for proper sizing and function of the instrumentation and controls. The Vendor shall supply UL listed control panels and all local control stations for automatic control of the equipment proposed.

1. Main control panel shall be operated within the project's ambient temperature range.

2. Controls shall be designed to accept incoming 480V, 3 phase power supply and shall include a step-down transformer as needed to achieve 120V for all control instrumentation and communication relays, etc.

3. HMI graphics shall be provided to be installed on the WWTP Main SCADA System/Network.

4. Provide complete documented PLC ladder program listing.

5. Provide defined address range with all equipment related alarms, warning, analog values and equipment status for interfacing with the WWTP Main SCADA and Dewatering PLC via Ethernet.

B. Components:

1. Main Control Panel

a. Enclosure(s) shall meet NFPA 820 Classifications and shall be constructed from 304 SSTL (minimum) for outdoor installations, suitable for free-standing, stanchion-mounting, or wall-mounting.

b. The control panel will include climate control if required to maintain temperature inside each enclosure below the maximum operating temperature rating of the components inside the enclosure. In hazardous or corrosive environment, the control panel will include automatically controlled closed-loop ventilation fans or closed-loop air conditioners with filtered air louvers. Housing shall be constructed of corrosion resistant materials.

i. Provide calculations for cooling and heating load requirements.

ii. Provide thermostats to automatically control heating and cooling requirements without need of manual operation of a heating/cooling transfer switch.

iii. In hazardous or corrosive environment, the heating and coiling elements including external shall be Heresite coated or equal.

c. Main Control Panel shall be designed with a SCCR rating of 18KA at 480VAC minimum and labeled as such, unless otherwise specified.

d. All terminals utilized in the main panel shall be 600V rated terminals and 20% spare terminal space shall be provided for any potential future revisions.

e. Control panel shall be equipped with the necessary IEC starters and drives for each equipment item, as needed

f. The Main Control Panel shall include at a minimum the following:

- Main fusible disconnect with lockable operator.
- Physical Hand/Off/Auto (HOA) Selector and Push/pull E-Stop button for each major piece of equipment.
- Backup power UPS
- Network switch
- Programmable control relay with minimum of 5 cycle timers
- Fuses and breakers
- Motor overload sensor
- Panel power light
- Reset pushbutton
- Emergency stop pushbutton
- Pilot light indicators
- Elapsed run-time meter for each equipment
- Indication for "Power On", and necessary faults for each equipment.
- Name plates
- Control panel wiring
- Two spare digital inputs

- Two spare analog inputs
- Two spare dry contact outputs
- Variable Frequency Drive(s) (VFDs) as required
- PLC Controls shall include the following:
    a. Programmable Logic Controller (PLC)
    b. Variable Frequency Drive(s) (VFDs)
    c. HMI and HMI programmable functions as required
    d. PLC shall be capable of communicating via Allen Bradley Ethernet IP Communication Protocol

2. Local Control Push Button Station
    a. Include local control push button station for each major piece of equipment (screw press, conveyors, pumps, polymer system). Enclosure shall meet NFPA 820 Classification for the installation area. Local push button station must be local to the equipment to maintain requirements of local safety codes as determined by the Engineer.
    b. Local station shall be mounted within 10 feet or as close to the equipment as safely possible and be field wired by the electrical subcontractor to the corresponding terminal inputs in the main control panel.
    c. The remote pushbutton station shall include hand/off/auto switch for each motor and an emergency stop.

OTHER REQUIREMENTS

Proprietary Designs

If a proprietary or otherwise US Patented component is proposed by the Vendor, the Vendor shall indicate such in their proposal and shall include all costs for licensing and/or usage fees required by the patented holder within the proposal. The Vendor shall further indemnify and warrant to the Contractor and Owner that no patent violations exist. If a patent violation claim is made due to the scope of supply for this project, the Vendor shall be fully responsible for all costs associated with the amicable settlement of such dispute.

Materials of Construction

Acceptable materials of construction for this project include:

- Wetted Parts – Type 300 Series SS
- Base structural – Coated Structural Carbon Steel
- Anchors and fasteners – 316 SS

All non-submerged ferrous components, such as equipment base, gears and motors, shall be shop prepared per SSPC-SP6 and shall be coated to protect against corrosion using two (2) coats of Tnemec N69 Hi-Build Epoxoline II, 3-5 mils each for a total of 7 – 11 mil DFT or Engineer-approved equal coating. The Vendor shall also supply field touch-up paint to be applied by the Contractor prior to and/or following the installation of equipment.

Along with the required submittals, Exhibit C is to be completed and included in each proposal. If information requested is not applicable, an explanation must be provided as to why. Proposals may be submitted via email in PDF format or hardcopy (email is preferred).

The Vendor of the dewatering system shall be completely responsible for the proper design of their system. All equipment shall perform and operate as specified.

PAYMENT TERMS AND CONDITIONS

A. The City shall make progress payments on account of the Contract Price on the basis of Vendor's Applications for Payment as follows:

1. 10% on Approved Submittal(s)

    a. Equipment submittal is required prior to the execution of this contract for the Engineer to review and approve, however, billing and payments will not commence until the assigning of this contract to the Construction Contractor where in the Construction Contractor will issue the Notice to Proceed to Order Equipment to the Vendor.

2. 70% on Delivery

3. 15% on Start Up & Training

4. 5% on Delivery of Final O&M Manual(s). Operation & Maintenance Manuals must be submitted and approved prior to shipping equipment to the jobsite.

B. No payment application will be accepted nor will any payments be distributed until this contract has been assigned. After assignment payments will be made by the Construction Contractor.

This request for proposals was prepared by Pacific Advanced Civil Engineering, Inc. (PACE) at the direction of the City of San Luis. The City of San Luis and PACE will review the proposals and select the preferred equipment Vendor to form the basis of design for the project. The City of San Luis and PACE reserve the right to reject any and all proposals. Proposers should contact PACE with all questions regarding this proposal. All questions shall be submitted via email a minimum of 2 weeks prior to the final bid date and should be directed to Mr. Nathaniel Tesch, Pacific Advanced Civil Engineering, Inc. at ntesch@pacewater.com. All questions and responses will be posted on the City's website via an addendum. It is the proposer's responsibility to check the website at www.sanluisaz.gov. The proposal shall include an acknowledgement of all addendums posted on the website. The last addendum will be posted 1 week prior to the due date.

Final Proposals shall be submitted via email in PDF format to:
ntesch@pacewater.com

Optional hardcopies can be sent to:
Pacific Advanced Civil Engineering, Inc.
Attention: Nathaniel Tesch, EIT
8723 E. Via de Commercio – Ste. A-204
Scottsdale, AZ 85258
Phone: (602) 695-4679
Fax: (480) 751-1810

REFERENCE LIST (EXHIBIT A)

#	Job/Operating Facility Name	Process Used For? (Municipal WWTP Sludge Dewatering)	Year Installed	Installation Location (Indoor/Outdoor)	Number of and Size of Units	Operation Period (24/7, etc.)	Design Capacity (Hydraulic-gpm & Solids-lbs/hr)	Dewatering Performance (% Solids Cake)	Design Active Polymer Demand (lb/dry ton DS)	Job/Facility Contact Name	Contact Phone Number	Contact Email
1												
2												
3												
4												
5												
6												

PERFORMANCE BOND
FOR PROCUREMENT CONTRACTS

Any singular reference to Seller, Surety, Buyer or other party shall be considered plural where applicable.

SELLER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

BUYER (Name and Address):

CONTRACT
Date:
Amount:
Description (Name and Location):

BOND
Date (Not earlier than Contract Date):
Bond Number:
Amount:
Modifications to this Bond Form:

Surety and Seller, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

Seller as Principal		**Surety**	
Company:	(Corp. Seal)	Company:	(Corp. Seal)
Signature:		Signature:	
Name and Title:		Name and Title:	
		(Attach Power of Attorney)	
		Address:	
		Telephone Number:	

(Space is provided below for signatures of additional parties, if required.)

Seller as Principal		**Surety**	
Company:	(Corp. Seal)	Company:	(Corp. Seal)
Signature:		Signature:	
Name and Title:		Name and Title:	
		Address:	
		Telephone Number:	

1. Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to Buyer for the performance of the Contract, which is incorporated herein by reference. For purposes of this bond, Buyer means Buyer's assigns, if and when Buyer has assigned the Contract.

2. If Seller performs the Contract, Surety and Seller have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no Buyer Default, Surety's obligation under this Bond shall arise after:

3.1. Buyer has notified Seller and Surety pursuant to paragraph 10 that Buyer is considering declaring a Seller Default and has requested and attempted to arrange a conference with Seller and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. (If Buyer, Seller and Surety agree, Seller shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Buyer's right, if any, subsequently to declare a Seller Default); and

3.2. Buyer has declared a Seller Default and formally terminated Seller's right to complete the Contract. Such Seller Default shall not be declared earlier than 20 days after Seller and Surety have received notice as provided in paragraph 3.1; and

3.3. Buyer has agreed to pay the Balance of the Contract Price to:

1. Surety in accordance with the terms of the Contract;

2. Another seller selected pursuant to paragraph 4.3 to perform the Contract.

4. When Buyer has satisfied the conditions of paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:

4.1. Arrange for Seller, with consent of Buyer, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified sellers acceptable to Buyer for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Buyer and Seller selected with Buyer's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to Buyer the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by Buyer resulting from Seller Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new seller, and with reasonable promptness under the circumstances, either:

1. determine the amount for which it may be liable to Buyer and, as soon as practicable after the amount is determined, tender payment therefor to Buyer; or

2. deny liability in whole or in part and notify Buyer citing reasons therefor.

5. If Surety does not proceed as provided in paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Buyer to Surety demanding that Surety perform its obligations under this Bond, and Buyer shall be entitled to enforce any remedy available to Buyer. If Surety proceeds as provided in paragraph 4.4, and Buyer refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Buyer shall be entitled to enforce any remedy available to Buyer.

6. After Buyer has terminated Seller's right to complete the Contract, and if Surety elects to act under paragraph 4.1, 4.2, or 4.3, then the responsibilities of Surety to Buyer shall not be greater than those of Seller under the Contract, and the responsibilities of Buyer to Surety shall not be greater than those of Buyer under the Contract. To a limit of the amount of this Bond, but subject to commitment by Buyer of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

6.1. The responsibilities of Seller for correction or replacement of defective Goods and Special Services and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from Seller's Default, and resulting from the actions or failure to act of Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Seller.

7. Surety shall not be liable to Buyer or others for obligations of Seller that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Buyer or its heirs, executors, administrators, successors, or assigns.

8. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Goods and Services are located and shall be instituted within two years after Seller Default or within two years after Seller ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Buyer or Seller shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Goods were to be delivered and the Special Services were to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1. Balance of the Contract Price: The total amount payable by Buyer to Seller under the Contract after all proper adjustments have been made, including allowance to Seller of any amounts received or to be received by Buyer in settlement of insurance or other Claims for damages to which Seller is entitled, reduced by all valid and proper payments made to or on behalf of Seller under the Contract.

12.2. Contract: The agreement between Buyer and Seller identified on the signature page, including all Contract Documents and changes thereto.

12.3. Seller Default: Failure of Seller, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. Buyer Default: Failure of Buyer, which has neither been

remedied nor waived, to pay Seller as required by the Contract or to perform and complete or comply with the other terms thereof.

Exhibit C - Proposed Equipment Summary

Sludge Dewatering System

Manufacturer/Equipment System General Information	
Name of Manufacturer	
Model Info.	
Total # of Units for System (Including Redundancy)	
Main Drive - Horsepower per Unit (Hp)	
Flocculation Tank Drive - Horsepower per Unit (Hp)	
Other Motorized Devices - Horsepower per Unit (Hp)	
Total Unit Max Connected Electrical Load (kW)	
Equipment Size - per Unit (LxWxH) (in)	
Equipment Skid Mounted (y/n)	
Drum Diameter (in)	
Max Screw Speed (RPM)	
Emergency Shutdown Included (y/n)	
Construction/Fabrication Materials	
Equipment Component Construction/Fab Materials info provided in proposal (y/N)	
Frame / Base Fabrication Materials and Surface Prep Type and Finish	
Fastening Hardware Materials	
Seal and Support/Wear Materials of Construction	
Local/Main Control Panel Materials of Construction (NEMA Rating)	
Performance Information	
Maximum Hydraulic Capacity (gpm)	
Maximum Soilds Loading Capacity (lbs/hr)	
Hydraulic Capacity @ 1% DS (gpm)	
Solids Loading Capacity @ 1% DS (lbs/hr)	
Dry Solids (cake - assume 1% DS feed) (%)	
Minimum Solids Capture Rate (assume 1% DS feed) (%)	
Wash Water Requirements (gpm, psi)	
Lbs. of Polymer used at design dry solids of 1% feed (lbs active polymer per ton DS)	
Capital Cost	
Total Primary Dewatering Unit Equipment Cost ($)	
Total Conveyance System Equipment Cost ($)	
Total Sludge Pumping Equipment Cost ($)	
Total Polymer System Equipment Cost ($)	
Price of spare parts ($)	
Start-up/ Training Cost ($)	
Total Freight (FOB to Jobsite) ($)	
Total Equipment System Capital Cost ($)	
Total Cost Addition to Reach BABA Compliance ($)	
Maintenance and Repair Contract	
Guaranteed Response Period (hrs)	
Cost of 5-Year Service Contract ($/yr)	
Cost of 5-Year Extention Option ($/yr)	
Electrical and Controls	
Equipment Design Input Power (kW)	
Total Power at Point of Connection (kW)	
VFDs Supplied, Brand, Model, Remote Mount?	
PLC Type/Model	
Communication Protocol going to Other PLCs or SCADA	
Warranty & Guarantee	
Guarantee Statement Provided (y/n)	
Equipment System Warranty Period (months)	
Extended Warranty Period (months)	
Cost of Extended Warranty ($)	
Performance Bond	
Performance Bond Cost - 24 months ($)	
Performance Bond Cost - 36 months ($)	
Service & Support	
Start-up Period (days)	
Is Spare Parts List Provided? (y/n)	
Are Maintenance Requirements and Schedule Provided? (y/n)	
Location of Parts Distribution Center (city, distance in miles to project)	
Location of Design Support Center (city, distance in miles to project)	
Design Support (y/n)	
Delivery Schedule	
Submittal Preparation Period (months)	
Fabrication Period (months)	
Delivery Period (months)	

EXHIBIT D – EXCLUSIONS/EXCEPTIONS FORM

Please identify exceptions to any of the specifications provided in the RFP Package. Please submit this form with your proposal. If no exceptions are taken, enter "None" for the first item. Make additional copies as necessary. Please note that these exceptions do not mitigate the responsibility of the vendor, in any way, whatsoever, on performance, equipment quality, maintainability, and operability.

Exception #	Proposal Page #	Section #	Paragraph #	Exception Taken