City of San Luis
West Wastewater Treatment Plant 3 MGD MBR Phase 1 Upgrades

Request for Proposals
Headworks and Grit Removal System

Date: October 15th, 2024
Proposals Due: TBD

All interested equipment manufacturers/vendors shall provide a design and price proposal to be received no later than **5:00 PM (Mountain Standard Time) TBD, 2024** for a Complete Headworks System in conformance with the following performance specification, emailed in **PDF format** (hard copy optional).

This request for proposal is for a complete packaged headworks 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. The new headworks system shall be designed to provide screening and grit removal upgradient of a new MBR activated sludge treatment process. The combined headworks system will include a 6 mm fine screen, a grit vortex grit removal system, and a 2 mm fine screen. The system will be fully redundant in regards to all major components (i.e., there must be 2 separate trains each capable of treating the Phase 1 PHF). The screens will be used for removal of non-biodegradable particulates and fibrous material from the pumped influent flow. The screening system will include washing, dewatering, compacting, and automatic bagging of collected and dried screening materials. Water from the washing/dewatering/compactors will discharge back into the fine screen channel. Following the 6 mm fine screen, a grit removal system will be used for removal of grit particles from the influent flow prior to flow entering the downstream 2 mm MBR fine screen. The grit system will be complete with all required vortex devices, grit collection sump and pumping systems, and a grit classifying and dewatering system with an automatic/endless bagging system for disposal with a refuse bin. The grit classifying system will allow for water to discharge back into the fine screen channel. Each identical train shall be supplied with a separate prepackaged electrical instrumentation and PLC-based control system for automated control of each headworks component. The control system will communicate via Ethernet to a new WWTP master control panel.

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.

Equipment Manufacturers/Vendors have the option to provide multiple proposals for all equipment that can satisfy this performance specification RFP. Equipment Manufacturers/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 for the weighting and definition of criteria.

- Capital Cost
- 20-year Life Cycle Cost
- Performance
- Reference List
- Fabrication

- Delivery Schedule
- Service
- 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 offered with a detailed Scope of Supply, including:

   a. Total capital equipment cost as required for a complete, functional, and automatic, combined influent 6mm fine screen, grit removal system, and 2mm fine screen combined headworks system meeting the requirements of these performance-based specifications. At a minimum, each of the following major components shall have a separate line item, separated by train:
      i. 6 mm Fine screen package (including screen hopper, dewatering compactor, conveyor, bagging unit, instrumentation, and controls)
      ii. Grit vortex grit removal package (including grit pump, grit classifier, conveyor, bagging unit, instrumentation, and controls)
      iii. 2 mm Fine screen package (including screen hopper, dewatering compactor, conveyor, and bagging unit, instrumentation, and controls)
      iv. Access platform for each of the above components (if applicable)
      v. Volume in cubic yards of structural concrete required (if applicable)
   b. Packaging, freight, and taxes, F.O.B. to jobsite.
   c. Price list of standard spare parts and system consumables; including availability and lead time of spare parts.
   d. 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.
   e. Provide recommended requirements and costs for the following Services to be included within the proposal:
      i. Installation Inspection Services
      ii. Start-Up Services
      iii. Site Performance Testing
      iv. O&M Training Services

f. 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) at point of connection 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 Repairs Contract that covers a period of 5-years with the option to extend for an additional 5-year period. The contract shall include all repairs, major maintenance, and support to be performed by the manufacturer's certified service technicians. This shall include inspections, 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 headworks 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 for additional details and requirements.

a. Each manufacturer 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 screen malfunction.

b. Each manufacturer 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 manufacturer will pay liquidated damages of $500 for each day of delay.

c. Each manufacturer shall provide a list of incidental/routine maintenance items that the City can perform to minimize the need for the manufacturer's service technician to be onsite.

d. The contract shall include, at a minimum, an annual site visit by the manufacturer's certified service technician for inspection and service of the headworks system.

5. Warranties/Guarantees

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

6. Installation References
    a. Manufacturer to provide a minimum of 3 installed references with contact information. A minimum of 1 of the referenced projects shall include both a grit vortex and a 2 mm centerflow perforated band screen or 2 mm perforated in-channel drum screen ahead of an MBR treatment process with a similar design capacity (1-5 MGD).
    b. Statement willing to provide a 7-year Performance Bond for manufacturers lacking the reference requirements.
7. Equipment Performance, Layouts, and Specifications

    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 systems, showing compliance with the proposed application.
    b. Maximum (and minimum) hydraulic and solids loading rates for all equipment.
    c. Minimum solids capture percentage for all screening equipment.
    d. Each Screen's head loss curve vs. capacity based no blockage, 10% blockage and 35% blockage.
    e. Washer/Compactor maximum volumetric capacity and minimum percent dryness.
    f. Upstream and downstream water levels in channels and vortex based on capacity and minimum/maximum hydraulic capacity of grit chamber.
    g. Grit Equipment Performance Table: Summarized values of the grit capture efficiency versus the mesh (or grit particle) size removed/captured. Assumed grit specific gravity, inlet flowrates, and velocities shall also be provided for this table.
    h. Grit Washer/Compactor/Conveyor/Classifier maximum volumetric capacity and minimum percent dryness.
    i. Maximum equipment system power usage.
    j. Maximum wash water usage, and minimum wash water pressure required.
    k. Materials of construction schedule.
    l. Detailed description of normal operation of equipment, as well as alarm conditions and control options. This includes description of both the screen and the grit systems, and the washer/compactors, grit pumps and classifiers, and other pertinent equipment operations.
    m. All other information to be provided as part of Exhibit C.

    Proposal Shop Drawings shall include, at a minimum:

    a. Overall system dimensions with clearance/service space requirements.
    b. Minimum of three layout views (one plan view, one side section, and one front section). Drawings shall show the required dimensions and sizes, including locations of inlets and outlets. The new combined screens and grit system will be installed within a cast-in-place concrete structure (constructed by the selected contractor) or as an elevated packaged system with all associated stands or platforms: manufacturers are encouraged to provide recommended installation alternatives/methods as they see fit, a statement of benefits is encouraged with any proposed installation alternative.
    c. PACE shall provide PDF drawings for the available layout area for vendor use (See *Exhibit D* – AutoCAD documents can be provided upon request*)*. In addition to PDF format, the manufacturer/vendor shall submit all layout drawings in AutoCAD.

d. Locations, sizes, and materials for all process connections:
    a. Minimum requirements for all process connections (flow, pressure, etc.).
e. Locations for electrical power and instrumentation connections.
f. All instrumentation inputs and outputs (P&IDs).

Technical Specifications in CSI (50 Division MasterFormat) and shall include, at a minimum:

a. Provide technical specifications for all major headworks components.
    a. 6mm Fine Screen
    b. Grit Vortex and associated equipment, such as grit pump, grit classifier, etc.
    c. 2mm MBR Fine Screen
    d. Conveyance equipment
b. Specifications can be individual or combined
c. Specifications shall be in CSI (50 Division MasterFormat) and shall include:
    a. Part 1- Description of general product, functionality, and warranty
    b. Part 2 – Product Specifications and Performance
    c. Part 3 – Execution for the installation of the equipment

8. 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 headworks system at design conditions and performance requirements. It is the intent of the project to install a system that can operate, unattended, for extended periods of time under normal operating conditions with minimal need for operator attention.

9. Equipment/System Redundancy

   A minimum of two identical trains shall be supplied with the ability to meet the performance requirements with one unit out of service. The redundant unit shall be identical in all respects to the primary unit. The system's auxiliary components (local control panels, instruments, etc.) shall also be supplied to allow for redundancy, with the redundant unit identical in all respects to the primary unit.

10. O&M Manual

    Provide a copy of a standard/general O&M Manual for the proposed equipment system with the proposal. This 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 two (2) hard copies and one (1) electronic copy of the Final O&M Documents.

11. Schedule

    Provide a proposed schedule to include the following:
    a. Time required to generate an acceptable submittal for the Engineer's 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.

12. 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. Available Headworks Area (See *Exhibit D)*
13. Site Visits

    The equipment vendor shall include a minimum three (3) trips. The first trip will include a minimum of two full work day (8 hrs each) for the purpose of installation and structural inspection. The second trip will include a minimum of two full work days for the purpose of start-up, commissioning, and training. The final trip will include 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 headworks 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 Requirements 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	*8*					
Fabrication	*7*					
Delivery Schedule	*3*					
Service	*4*					
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 or process components, such as structural concrete flow channels, that are not included in the vendor's scope but is necessary for the process and access 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 a 5% interest rate. The O&M cost shall be derived from the *Full Maintenance & Repair Contract* and power cost.

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 manufacturer'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 headworks under site operating conditions defined within these specifications; any repairs that can result 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 manufacturer 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 manufacturer 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 manufacturer will pay liquidated damages of $500 for each day of delay.

Each manufacturer shall provide a list of incidental maintenance items that the City can perform to minimize the need for the manufacturer's service technician to be onsite. An example of incidental maintenance is performing a greasing or lubrication or a similar activities that does not require more than 30 minutes of labor. All equipment parts for incidental maintenance shall still be provided by the manufacturer.

The cost of the future 5-yr and 10-yr 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 manufacturer 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; 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 with a configuration that consists of grit system and 2mm perforated fine screen in the United States of America (no more than 5 references). A minimum of one (1) of the three referenced projects shall include the headworks system in front of an MBR WWTP process. Installations shall be of comparable model and design requirements (i.e., facilities with treatment capacity from 1-5 MGD capacity). 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 (of which a minimum of 1 will be for installations at an MBR WWTP). The City 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 highest). Scores will be based on average ranking from the responsive references. At 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 manufacturers lacking the U.S. installation requirements, but meeting all technical and performance requirements of these specifications, may be considered by the City if the manufacturer 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 manufacturer is proposing. The manufacturer 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 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 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 flow to the West WWTP is 1.0 MGD of max month average daily flow (MMADF), the current design flow of the WWTP is 1.5 MGD of 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 raise treatment capacity to 4.5 MGD MMADF, and Phase 3 – the final Phase – will increase WWTP capacity to a buildout of 6.0 MGD MMADF. As part of the upgrades, a new packaged headworks system will be installed. The equipment will be installed outdoors and will be covered with a permanent shade structure to provide partial protection against the sun. The headworks structure will receive all influent flow to the WWTP from two offsite lift stations via a combined influent force main. The inlet of the headworks system will be the point of the highest hydraulic grade line and the process will flow down-gradient to the secondary process. Four (4) of the existing static screens will be removed and demolished to install the new headworks system, the other four (4) static screens will remain in operation until the proposed headworks system is installed and operating as intended. Once the new headworks system is operational, the remaining static screens will be removed.

Screenings from the new headworks system will be conveyed via washer/compactor/conveyors to the discharge points, where the screenings and grit are to be collected in screening and grit refuse bins located adjacent to the respective headworks equipment (at grade). Where required, the new screening and grit conveyors will extend above grade and above the height of the refuse bins for proper discharge and use of the automatic/endless bagging system attached to each of the conveyor discharge chutes.

The Headworks system shall be designed to meet the rating 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.

NOTE: Each independent headworks train must be capable of handling the Ph1 PHF capacity of 7.5 MGD

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 Ph 1 Design Flow	3.0 MGD
Treatment Facility MMADF Ph 2 Design Flow	4.5 MGD
Treatment Facility MMADF Ph 3 Design Flow	6.0 MGD
Peak-hr Factor	2.5
Treatment Facility PHF Phase 1 Flow	7.5 MGD
Treatment Facility PHF Buildout Flow	15.0 MGD
Wastewater Type	Domestic
Upgraded Treatment Process	6mm Fine and 2mm Fine Headworks Screening and Grit removal, anoxic, oxic, and biological nutrient removal activated sludge with MBR secondary treatment process, chlorine disinfection, mechanical dewatering.
Site Elevation	Approximately 100 ft above MSL
Equipment Exposure	Outdoor w/ shade canopy

Ambient Temperature Range	35 deg F – 120 deg F
Available Flush/Spray Water Source	Potable Water or Class A+ Effluent

GENERAL DESIGN REQUIREMENTS

An established headworks vendor/manufacturer shall supply a fully redundant headworks system with two (2) process trains consisting of 6mm fine screens, 2mm fine screens, and grit vortex removal systems as described in the following Specifications. **6mm Fine Screen can be any industry-standard screening technology. Grit removal system shall be vortex type. Secondary 2mm screening shall be a perforated Center Flow Band Screen or Perforated In-Channel Drum Screen.** The manufacturer shall be responsible for providing a complete and operable headworks system consisting of all pertinent equipment, associated instruments, electrical controls, valving, etc. Necessary spare parts shall be included in the bid. Only structural components maybe listed as outside of vendors' scope, such as structural concrete channels, concrete slabs, etc. Vendors with elevated equipment shall include structural supports, stairways, and access platform within their scope. Complete installation and start-up services with operation and maintenance manuals (in electronic PDF format) shall also be included in the bid.

Vendors are recommended to provide proposal(s) that includes the following:

1.1 MAJOR COMPONENTS

A. Provide 2 fully redundant Headworks trains. Each train shall consist of the following major components
   1. 6 mm fine screen equipment complete with all supports and covers
   2. Grit vortex inducing/chamber processing equipment: Grit Vortex inducing paddle mixers/motor drives, compressor, grit pump and conveyance piping, grit classifier with hydro-cyclone separator, washing conveyance, and autobagging devices
   3. 2mm perforated fine screen equipment complete with all supports and covers (Perforated Center-Flow Band Screen or Perforated In-Channel Drum Screen only)
   4. Common screenings sluice/ conveyance channel with all isolation valves/ gates, supports and covers
   5. Screenings washer compactors/dewatering equipment with autobagging device
   6. All spray wash valves, manifolds, and nozzles
   7. Structural supports, elevated platforms, and stairways
   8. Electrical connection panels
   9. Control panels
   10. All instrumentation and electrical control equipment
   11. All necessary safety equipment

1.2 SYSTEM DESCRIPTION

A. The 6mm fine screen shall have a screening openings of 6mm (¼"), a screenings hopper, a screenings conveyor/washer/compactor auger with drive unit and discharge chute with an automatic/endless bagger unit.
B. Grit Vortex Inducing/Chamber Processing Equipment: the grit vortex chamber will be installed integral to the headworks and grit removal structure. The grit vortex device shall include all necessary devices (baffles, impeller paddles, etc.) to promote collection of grit particles within the center of the grit chamber.
C. The 2mm fine screen shall be a center-flow band screen or in-channel drum screen with a perforated screening basket with openings of 2mm (0.08"), a screenings hopper, a screenings conveyor/washer/compactor auger

with drive unit and discharge chute with an automatic/endless bagger unit. The screen shall be designed with no bypass or overflow of the peak-hr design flow.

D. The screening equipment shall produce dewatered screenings capable of passing the EPA Paint Filter Test as described in method 9095 of EPA Publication SW-486.

E. Operation of the screens and its screenings wash and auger system shall be automatically initiated at a preset high liquid level (or differential pressure) and shall include a timer-mode operation as a backup. Screens which operate continuously or via timer only will not be acceptable.

F. Unless otherwise specified in these specifications, the entire equipment shall be manufactured from 304 austenitic stainless steel shapes (rods, angles, and channels), pipes, and sheets. All anchoring systems shall be 316 SS. All mechanical parts shall be designed to handle the forces that may be exerted on the unit during fabrication, shipping, erection, and during normal operation.

G. To minimize odors and nuisance, the complete headworks system shall be sealed and gasket-covered with flanged connections for odor control. Areas of the headworks that required access for inspection/ maintenance shall have hinged and gasketed access covers. All covers that also serve as access way and all access platform and stairway shall be pedestrian-rated. All elevated access shall be installed with a handrail system meeting OSHA requirements and the severe corrosive environment.

H. The headworks system shall also include spray wash system(s) for both the screening and grit removal, as needed, and flanged inlet and outlet connections.

I. All electrical components, enclosures, and instruments shall be rated for the environment in which they are installed (Meeting NFPA 820 Classifications for the installation area : Class 1, Div. 1; Class 1, Div 2; etc.).

1.2 OPERATING CONDITIONS

A. Minimum Design Criteria:

Headworks & Grit Removal System	
Minimum Number of Identical Headworks Equipment Systems or Trains	2
Average Design Flow per Train	3 MGD
Peak-hour Flow per Train	7.5 MGD
Maximum fine Screen Clear Opening	6 mm (0.25”)
Maximum MBR fine Screen Clear Opening	2 mm (0.08”) (Perforated)
Influent Feed Total Suspended Solids	360 mg/L
Minimum Grit Removal	90% of 2.65 specific gravity grit greater than 60 Mesh (0.25 mm)
Maximum Flow-Through Velocity (either screen)	3.0 f/s

1.4ELECTRICAL REQUIREMENTS

1. Electrical Power Connection Volt/Phase/Hz: 480/3/60
2. Motor and solenoid valve classification: Meets NFPA 820 Classification
3. Control panel enclosure type: Meets NFPA 820 Classification (SS where applicable)
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 and pivoting the screen out of the tank for maintenance.

1.5CONTROL SYSTEM

A. General: All controls necessary for fully automatic operation of the headworks system shall be provided within a minimum of two identical enclosures (one for each train). The vendor/manufacturer shall be responsible for proper sizing and function of the instrumentation and controls. The manufacturer 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. The electrical control system shall provide for automatic control of the screens and spray system(s) via a high liquid level set-point using an ultrasonic level sensor system (or differential pressure sensor) in conjunction with an adjustable timer as a backup.

4. The screen shall be provided with a home position sensor.

5. The grit removal screws shall be operated by timer.

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

7. Provide complete documented PLC ladder program listing.

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

B. Components:

1. Main Control Panel

a. Enclosure(s) shall meet 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 automatically controlled closed-loop ventilation fans or closed-loop air conditioners with filtered air louvers if required to maintain temperature inside each enclosure below the maximum operating temperature rating of the components inside the enclosure. 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. 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 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) switch for each screen, compactor, grit paddle drive, pump, and classifier
- Backup power UPS
- Network switch
- Programmable control relay with minimum of 5 cycle timers
- Fuses and breakers
- Motor overload sensor
- Panel power light
- Manual operator and reversing contactors for wash module operation
- Reset pushbutton
- Emergency stop pushbutton
- Pilot light indicators
- Elapsed run-time meter for each equipment
- Indication for "Power On", "Forward" and necessary faults for each equipment
- Name plates
- Control panel wiring
- Programmable Logic Controller (PLC) Allen Bradley CompactLogix
- Two spare digital inputs
- Two spare analog inputs
- Two spare dry contact outputs
- Variable Frequency Drive(s) (VFDs) as required
- HMI and HMI programmable functions
- SCADA communication via Allen Bradley with Ethernet TCP/IP Communication Protocol

2. Local Control Push Button Station

a. Include local control push button station for each screen and grit 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.

3. Instrumentation: The screen shall include a primary level sensing instrument; in addition, a timer shall be installed as backup for the screen cleaning and rotation controls. The grit system shall be operated on a timer.

    a. Differential Level Control: Programing shall include multiple differential setpoints used for automatic and optimum control of the screen rotation and spray mechanisms as the differential level increases/decreases. Level/Pressure sensing instrumentation shall be installed upstream and downstream (as needed) from the screen and shall be of one of the following types:

        - Ultrasonic Level Transducers intrinsically safe for Class I Div I hazardous environments. Transducers shall be installed at least 1 foot above the anticipated water elevation and the beam angle shall not have obstructions between the transducer face and the water surface.

        - Differential Pressure Sensor intrinsically safe for Class I Division I hazardous environments. Sensor shall be installed, such that entry into equipment tank/housing is not required.

    b. High level float alarm.

OTHER REQUIREMENTS

Proprietary Designs

If a proprietary or otherwise US Patented component is proposed by the manufacturer, the manufacturer 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 manufacturer 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 manufacturer 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:

- Type 300 Series Stainless Steel

All fasteners, anchor bolts and assembly hardware shall be **Type 316 Series Stainless Steel**.

All non-submerged ferrous components, such as gears and motors, shall be shop prepared per SSPC-SP6 and shall be coated to protect against sever hydrogen sulfide corrosion using two (2) coats of Tnemec N69 Hi-Build Epoxoline II, 3-5 mils each and (1) Finish Coat Tnemec 1075 Endura Shield II, 2.5-3.5 mil for a total of 9.5 – 14.5 mil DFT or Engineer-approved equal coating. The Manufacturer shall also supply field touch-up paint to be applied by the Contractor prior to and/or following the installation of equipment within the tanks.

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 manufacturer of the combined headworks and grit equipment/systems 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 manufacturer 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 Processing, etc)	Year Installed	Installation Location (Indoor/Outdoor)	Number of and Size of Units (Headworks)	Number of and Size of Units (Grit)	Operation Period (24/7, etc.)	Peak Design Capacity (MGD)	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

Headworks Screening and Grit Removal System

Manufacturer/Equipment System General Information

6 mm Fine Screens	
Name of Manufacturer	
Type of Screening System	
Model Info. 6mm Fine Screen	
Total # of Units for System (Including Redundancy)	
6mm Fine Screen Drive Assembly - Horsepower per Unit (Hp)	
Other Motorized Devices - Horsepower per Unit (Hp)	
Total Unit Max Connected Electrical Load/Train (kW)	
6 mm Fine Screen Channel Width Requirements (inches - if in channel installation)	
6mm Fine Screen Channel Depth Requirements (inches - if in channel installation)	
6mm Fine Screen: Total Height of Equipment Above Channel (inches)	
Inlet Connection Size (inches)	
Outlet Connection Size (inches)	
Max Operational Weight per 6mm Fine Screen (lbs - if packaged unit)	
Overall Footprint (ft x ft)	
2mm Fine Screens	
Name of Manufacturer	
Type of Screening System	
Model Info. 2mm Fine Screen	
Total # of Units for System (Including Redundancy)	
2mm Fine Screen Drive Assembly - Horsepower per Unit (Hp)	
Other Motorized Devices - Horsepower per Unit (Hp)	
Total Unit Max Connected Electrical Load/Train (kW)	
2mm Fine Screen Channel Width Requirements (inches - if in channel installation)	
2mm Fine Screen Channel Depth Requirements (inches - if in channel installation)	
2mm Fine Screen: Total Height of Equipment Above Channel (inches)	
Inlet Connection Size (inches)	
Outlet Connection Size (inches)	
Max Operational Weight per 2mm Fine Screen (lbs - if packaged unit)	
Overall Footprint (ft x ft)	
Washer Compactor	
Name of Manufacturer	
Model Info.	
Total # of Units for System (Including Redundancy)	
Conveyor Horsepower (Hp)	
Total Unit Max Connected Electrical Load (kW)	
Min Clearance Required Around Unit (ft)	
Max Operational Weight per Unit (lbs)	
Overall Footprint (ft x ft)	
Power Requirements, and Controlled By?	
Grit Vortex Unit and Classifier	
Name of Manufacturer	
Vortex Model Info	
Classifier Model Info	
Total # of Units for System (Including Redundancy)	
Total Unit Max Connected Electrical Load/ Grit Train (kW)	
Chamber Dimensions (ft)	
Overall Footprint (ft x ft)	
Power Requirements, and Controlled By?	

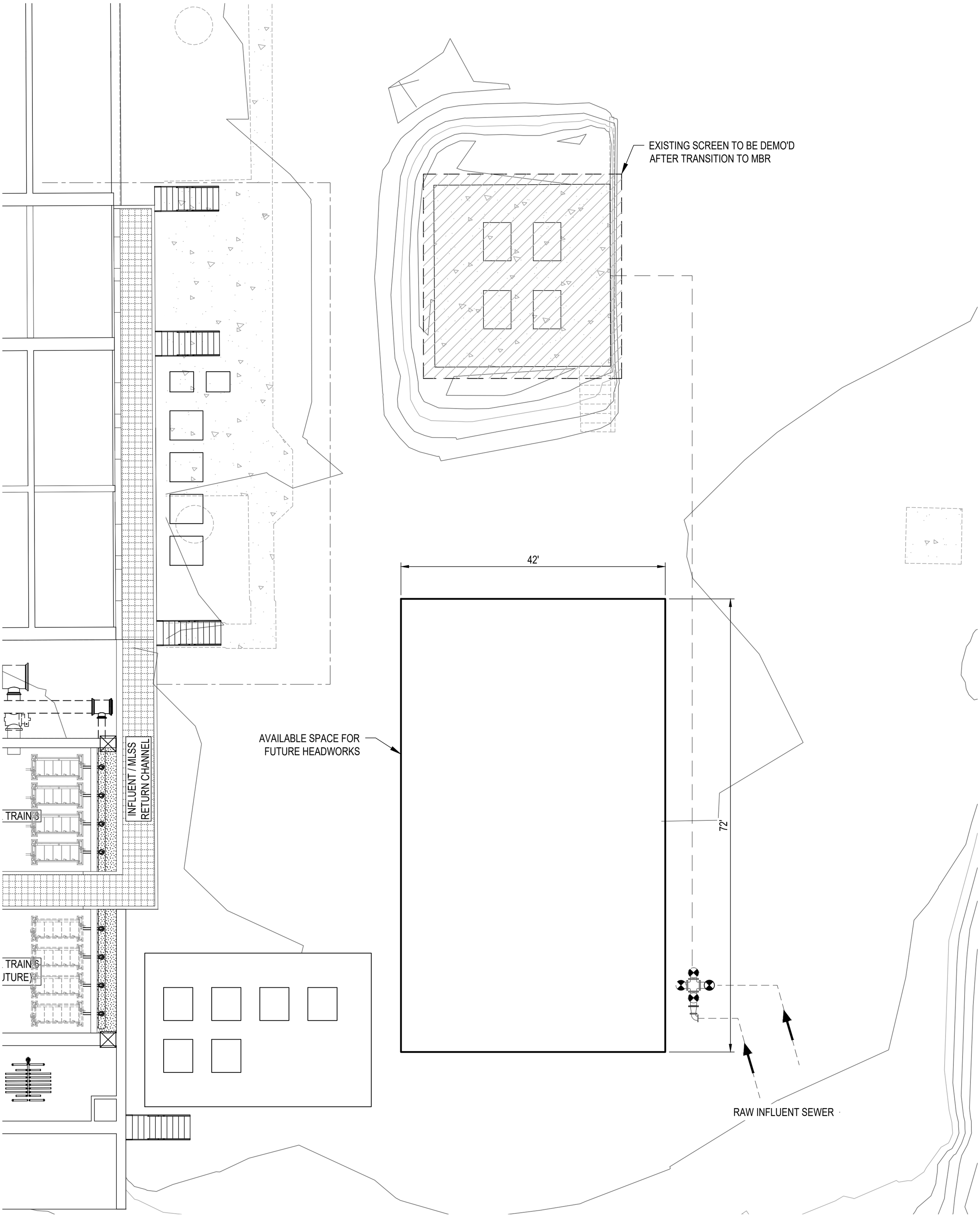
Construction/Fabrication Materials

Fine Screen, Washer Compactor, Grit Unit and Grit Classifier	
Structural Material	
Frame / Base Fabrication Materials and Surface Prep Type and Finish	
Fastening Hardware Materials	
Fine Screen Size (mm)	
Fine Screen Angle from Vertical (degrees)	
Screen Type (perforated plate, etc.)	
Seal and Support/Wear Bar Materials of Construction	
Screenings Collection/Pan Materials, Drainage Pipe Materials	
Discharge Hopper Materials of Construction	
Compactor Auger Type (Hollow Spiral, etc)	
Grit Pump Impeller Hardness Rating	
Bearing Type, Material, Life Rating	
Motor Types, Service Factor, Insulation Class Ratings	
Gear Drive and Reducer Manufacturer, Type/Model/Rating, Grease, or Oil	
Wash System and Nozzles Materials of Construction	
Electrical Equipment Ratings:	
Safety Devices:	
If Required: Wash Water Booster Pump Type/Design	
Local/Motor Control Panel Materials of Construction	
VFD Type	
Washer Compactor	
Frame / Base Fabrication Materials and Surface Prep Type and Finish	
Fastening Hardware Materials	
Trough Opening Type and Size (mm)	
Seal and Support/Wear Bar Materials of Construction	
Auger Materials of Construction	
Discharge Tube Materials of Construction	
Auto-Bagger Type	
Bearing Type, Material, Life Rating	
Motor Types, Service Factor, Insulation Class Ratings	
Gear Drive and Reducer Manufacturer, Type/Model/Rating, Grease, or Oil	
Wash System and Nozzles Materials of Construction	
Electrical Equipment Ratings:	
Safety Devices:	

Exhibit C - Proposed Equipment Summary

Headworks Screening and Grit Removal System

Grit System and Grit Classifier	
Vortex Frame / Base Fabrication Materials and Surface Prep Type and Finish	
Vortex Frame Fastening Hardware Materials	
Classifier Frame / Base Fabrication Materials and Surface Prep Type and Finish	
Classifier Frame Fastening Hardware Materials	
Seal and Support/Wear Bar Materials of Construction	
Vortex Paddle Materials	
Classifier Equipped with Hydrocyclone (y/n?)	
Hydrocyclone Lining Materials	
Classifier Collection/Pan Materials, Drainage Pipe Materials	
Classifier Discharge Hopper Materials of Construction	
Classifier Auger Type (Hollow Spiral, material, etc)	
Grit Pump Impeller Hardness Rating	
Vortex and Classifier Bearing Type, Material, Life Rating	
Motor Types, Service Factor, Insulation Class Ratings	
Gear Drive and Reducer Manufacturer, Types/Models/Ratings, Grease, or Oil	
Wash System and Nozzles Materials of Construction	
Electrical Equipment Ratings:	
Safety Devices:	
If Required: Wash Water Booster Pump Type/Design	
Local/Main Control Panel Materials of Construction	
VFD Type	
Performance Information	
6 mm Fine Screen and Washer Compactor	
Peak Flow Capacity per 6mm Screen (MGD)	
Peak Solids Loading (mg/L)	
Velocity Through 6mm Fine Screen (fps)	**Include Graph or Separate Table with Values (FLOW VARYING)**
6mm Fine Screen Head loss at Peak Flow (in) and Blinding (0,30,65%)	**Include Graph or Separate Table with Values (FLOW VARYING)**
Design 6mm Fine Screen Head Differential (ft)	
Washer Compactor Screenings Handling (cu ft/Hr)	
Conveyor Lifting Capacity (lbs)	
Screen Washwater Consumption and Pressure (GPM and PSI)	
Screenings Volume Reduction (%)	
Screenings Volume Reduction (% Dryness)	
2mm Fine Screen and Washer Compactor	
Peak Flow Capacity per 2mm Screen (MGD)	
Peak Solids Loading (mg/L)	
Velocity Through 2mm Fine Screen (fps)	**Include Graph or Separate Table with Values (FLOW VARYING)**
2mm Fine Screen Head loss at Peak Flow (in) and Blinding (0,30,65%)	**Include Graph or Separate Table with Values (FLOW VARYING)**
Design 2mm Fine Screen Head Differential (ft)	
Washer Compactor Screenings Handling (cu ft/Hr)	
Conveyor Lifting Capacity (lbs)	
Screen Washwater Consumption and Pressure (GPM and PSI)	
Screenings Volume Reduction (%)	
Screenings Volume Reduction (% Dryness)	
Grit Unit and Classifier	
Solids Capture (%) at ___ particle size	
Particle Size	
Design Particle's Specific Gravity	
Grit System Detention Time	
Grit Pump Capacity	
Grit Pump Operating Pressure	
Grit Classifier and Integral Hydro-Cyclone Capacity	
Grit Classifier Grit Handling (cu ft/Hr)	
Capital Cost	
Single Train 6mm Fine Screen Equipment Cost ($)	
Total 6mm Fine Screens Equipment Cost ($)	
Single Train 2mm Fine Screen Equipment Cost ($)	
Total 2mm Fine Screens Equipment Cost ($)	
Single Train Washer/Compactor Equipment System Cost ($)	
Total Washer/Compactor Equipment System Cost ($)	
Single Train Grit System and Classifier Equipment Cost ($)	
Total Grit System and Classifier Equipment Cost ($)	
If Required: Total Misc. Equipment Costs (Booster Pumps, etc) ($)	
Start-up/ Training Cost ($)	
Total Freight (FOB to Jobsite) ($)	
Total Equipment System Capital Cost ($)	
Maintenance and Repair Contract	
Guaranteed Response Period (hrs)	
Cost of 5-year Service Contract ($)	
Cost of 5-yr Extension Option ($)	
Electrical and Controls	
Equipment Design Input Power (kW)	
Total Power at Point of Connection (kW)	
Two Separate Control Panels included (y/n)	
PLC Type/Model and Communication Protocol going to Other PLCs or SCADA	
Operator Interface Type	
Manual Override & Automatic Controls, Speed Adjustment Controls, Indication Lights or Graphics	
Warranty	
Equipment System Warranty Period (months)	
Extended Warranty (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)	
Service Maintenance Contract Included (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 Period (months)	
O&M Fabrication and Delivery Period (months)	
Equipment Fabrication and Delivery Period (months)	



PROPOSED
HEADWORKS AREA

SCALE: 1" = 10'

NORTH