

Request For Proposals
Design, Services During Bidding, Services During Construction, and
Resident Observation
East Hickman Pump Station
Pump Replacement / Force Main Odor Control / Open Channel Grinder Retrofit

Request For Proposal

The Lexington Fayette Urban County Government (LFUCG), through its Division of Water Quality (DWQ), is requesting a Statement of Qualification and Fee Proposals for professional services related to design, bidding services, construction management services, and Resident Observation necessary for desired improvements to the East Hickman Pump Station and Wet Weather Storage Tank complex (collectively the EHWWS Facilities).

This project is defined as Consent Decree project (EH 2.b) and is being funded by a Phase 2 Cleaner Water Kentucky grant. The conditions of this grant require construction completion by December 31, 2026.

Background and Project Description

This RFP will result in the selection of a firm to provide Design and Preparation of Contract Documents, Services During Bidding, Services During Construction, and Resident Project Representation (RPR) for these identified improvements.

Pump Replacement

The current pumping capacity of East Hickman PS is dictated by the hydraulic conditions within the existing 24-inch (EH) force main. By summer 2025, those hydraulic conditions will have changed as follows:

- The new 36-inch fiber reinforced EH force main following a new and longer alignment will be in service, and
- The new DeLong Road pumping station will be contributing greater peak wet weather flows to the new EH force main.

The goals of the pump replacement component scope are:

1. Replace the existing pumps within the current pumping configuration while meeting Ten States Standard design criteria at the following pumping capacity:
 - Firm capacity - 20.1 MGD
 - Wet-weather firm capacity – 12.4 MGD
2. To modify the pumping scheme to more efficiently pump both low flows (dry weather / night-time flow) and peak wet weather flows so that excessive pump stops and starts are avoided at night and the adjacent Wet Weather Storage tank is efficiently used to meet Lexington’s wet weather design storm criteria.

3. The existing pump control system performs erratically, indicating bearing, seal or thermal failures when those failures aren't occurring. The existing controller system limits an operator's ability to reset pumps when phantom failures led to a pump shutdown. Vortex cavitation has also been reported but not verified for pump number 1. The pump replacement component of this scope should focus on pump capacity, pump compatibility and pump control reliability and eliminate pump control systems that are both redundant and unnecessary for the operation of the pumps from the primary PLC cabinet.

Force Main Odor Control

Once constructed, the new 30,592 linear foot East Hickman force main will have fourteen (14) air release valve (ARV) locations, many that are located close to businesses and residences. Preliminary research has determined that force main oxygenation systems are an effective way to mitigate the formation of odor causing compounds in long force mains. The goal of the force main odor control scope is to evaluate the force main oxygenation systems utilized in the municipal wastewater market and design such a system for the new East Hickman force main. Multiple vendor options may exist, ECO Oxygen Technologies in Indianapolis Indiana is one vendor who has operating systems within the Commonwealth of Kentucky.

The expected performance criteria for this system is to have less than 10 ppm hydrogen sulfide gas at all ARVs and at the force main discharge manhole.

Open Channel Grinders (one per influent channel)

The existing mechanical screen and screenings compactor system is a RakeMix system manufactured by Huber Technology Inc. Lexington has found this system to be less than effective in reliably removing screening, largely due to the high level of maintenance needed.

Lexington wishes to have the Huber mechanical screen and compactor system removed and replaced with an open channel grinder with a single integrated rotating screen. The grinder system shall be designed to effectively reduce solids mass at a design peak flow rate of 32.5 MGD. The recommended grinder system should use a low speed and high torque drive with two counter-rotating shafts stacked with intermeshed individual cutters and spacers supported on both ends of each shaft with mechanical seal and bearing cartridges, driven by an electric motor and speed reducer.

DWQ has prior experience with Channel Monster, manufactured by JWC Environmental.

A hoist system for maintaining the grinders will be necessary. Removal of the screenings compactor system and related control components should allow sufficient space for:

1. A hoist system similar to the style shown in the photo below (Picadome pump station).
2. Expansion of the screen room door from a single door to a double door.

The hoist system should be functional so that equipment can be lifted and moved in the four primary directions (forward / backward / left / right). Given the corrosive environment of the screen room, the storage of the hoist must be considered.



Other

Finally, DWQ wishes to correct a design error related to the generator refueling access point. DWQ recommends that a new door be installed on the south wall of the generator enclosure to provide direct access to the generator fill port.

The Design Consultant shall utilize LFUCG's "Sanitary Sewer and Pump Station Manual 2009" issued January 2009 along with "Sanitary Sewer and Pump Station Manual Amendment No. 1" Issued October 2018 and "Sanitary Sewer and Pump Station Manual Amendment No. 2" Issued December 2020 in the preparation of all deliverables. Any discrepancies in the requirements noted in this Request for Proposal and other LFUCG Technical Memorandum or Documents shall be reported to LFUCG immediately for clarification.

Scope of Services

With respect to design of the identified improvements, the following services are required and will be used by the Design Consultant in pricing its services.

Task 1: Kentucky Infrastructure Authority Support Services

The primary funding source for this project is a Cleaner Water Kentucky Grant awarded via the Kentucky Infrastructure Authority (KIA). At this time, the Design Consultant's Scope of Work is limited to the following with respect to grant required tasks:

1. Design: Provide documentation that the engineering fee amount meets the fee limitation as determined by the most recent USDA Rural Development Utility Fee Program Fee Guide.
2. Obtain documentation of Kentucky eClearinghouse Endorsement and eClearinghouse Comments.
3. Obtain, in writing, Kentucky Division of Water (DOW) plan approval.
4. Bidding:
 - a. Engineer's approval of "as-bid" project budget, with Engineer's signature.
 - b. Affidavit of Publication with Tear Sheet of Advertisement.
 - c. Certified Bid Tabs with Engineer's seal, number and signature.
5. Upon project completion, submit a signed Certificate of Project Completion provided by the project manager.

In the event that additional tasks are required by KIA, time and materials using the quoted hourly rates will be used to determine a fee that results in a change order to this scope.

Requested documents are to be submitted directly to the LFUCG project manager. All communications about grant requirements should be directed to the LFUCG project manager.

Task 2: Preliminary Design

Preliminary Design shall include the following:

1. Field Surveying: Conduct topographic and field surveys as necessary to locate all relevant features and existing utilities.
2. Preliminary Design: The Design Consultant shall prepare a Preliminary Engineering report documenting the following information:
 - The basis of design for the pump selection and operating scheme recommended. The basis of design should include the pump performance curves, system curves and hydraulic profiles necessary to validate the recommended basis of design.

- The basis of design for the recommended Force Main Odor Control system. The report should include documentation from the vendor regarding their systems ability to meet the target performance criteria operating 1) a single treatment device located on the existing pump station site or 2) operating multiple devices, including remote, off-site devices.
- A detailed description of any electrical upgrades required to meet the project objectives.
- Written documentation issued by the Kentucky Division of Water stating that the proposed open channel grinder system meets Ten States Standards for Protection Against Clogging – Separate Sanitary Wastewater requirements.
- Any required geotechnical investigations or reports.
- List of all permits required.
- 30% Drawings for review by DWQ, its Program Manager Consultant, and its Capacity Assurance Consultant.
- Preliminary Design Opinion of Construction Costs (Detailed).

Final Design will not be authorized until the Preliminary Engineering report is final and accepted by DWQ. Design Consultant shall provide the Preliminary Engineering report to the DWQ Project Manager in Adobe Acrobat PDF format.

Task 3: Final Design:

The Design Consultant is advised that this project will be bid as a single construction contract. The project will be bid as a lump sum price format.

DWQ will provide Standard Form Contract Documents (CSI Format) for this project and the General Notes sheets for this project.

Design Consultant is advised that RMP standard Contract Documents, including technical Specifications and standard details supersede other LFUCG specifications and standard details.

Final Design shall include but not be limited to the following:

- Prepare Contract Drawings including but not limited to all process civil, site, structural, mechanical, electrical, instrumentation and architectural drawings.
- Prepare, submit, and revise as required, a Stormwater Pollution Prevention Plan (SWPPP) for any excavation work exterior to the pump station building.
- Prepare, submit, and revise as required the Erosion and Sediment Control (ESC) Plan.
- Prepare, submit application, and secure all required permits (e.g., DOW, COE, LFUCG, or other as identified and required).
- Correspond and meet with all utility companies and regulatory agencies as directed by the DWQ Project Manager.
- Review and make recommendations for changes to DWQ Standard Contract Documents as provided. Prepare Bid Proposal, Section 1025, and Equipment Manufacturers List, and other sections of the Contract Documents.

- Prepare Project Specific Notes.
- Prepare Final Opinion of Construction Costs.
- Prepare 90% - Final Design Packet. TM 90% Final Design Packet consists of bid ready plans and specifications along with copies of the approved permits necessary to release the project for bidding. Design Consultant shall provide four (4) printed sets of the 90% - Final Design Packet. Upon final review, the DWQ Project Manager will issue authorization for submittal to the Kentucky Division of Water or return the 90% Final Design Packet with comments or corrections.
- Submit bid ready plans and specification to the Kentucky Division of Water for approval. Once written approval has been received, prepare same for bidding services.

Notes:

Meetings: The Design Consultant will prepare for review by the DWQ Project Manager meeting agendas and meeting summaries. In pricing its services, the Design Consultant shall plan for and attend the following meetings:

- Kick-off Meeting /Site Walk through with DWQ
- Monthly Progress Meetings (one per month / six maximum)
- One meeting to review 30% - Preliminary Design
- One meeting to review 90% - Final Design

Drawings shall be prepared in AutoCAD format and according to LFUCG standards. Additional meetings beyond that specified may be required but will not be considered as additional services or for consideration of extra fees. The defined meeting schedule is to assist the Design Consultant in pricing its services.

The Design Consultant shall complete as much of the work as possible with in-house resources. Any subconsultants should be listed on the “Proposed Fee” form and Organizational Chart for any tasks which they will be completing.

Design Consultant shall provide one half size set of plans and the pdf files of plans and specifications as prepared for the bidding phase. This does not include sets required for DOW or other regulatory agency or working drawings used in progress meetings.

Task 4: Easement Acquisition – none expected for this project

Task 5: Services During Bidding

1. Design Consultant shall submit reproducible plans, specifications, and Contract Documents to the official bid document distributor, LYNN IMAGING, 328 Old Vine Street, Lexington, KY 40507, (859) 255-1021 (www.lynnbp.com).
2. Jointly conduct the Pre-bid Conference with the LFUCG Division of Procurement and DWQ.
3. Respond to bidder, vendor and subcontractor questions per LFUCG procurement policy.

4. Respond to and prepare necessary addenda for distribution by LFUCG Division of Procurement.
5. Attend the bid opening. Verify capacity (financial, workforce, experience per bid documents) of apparent low bidder to perform the specified work and provide a recommendation of award.
6. Prepare required documentation necessary to meet the grant obligations described in Task 1.
7. Create and complete the Conformed Documents for the winning Contractor. Conformed Documents to include but not limited to incorporation of all addenda items addressed and issued during the bidding period.
8. All Addenda shall be included in the Conformed Documents.
9. Hard copy sets of all Confirmed Contract Documents shall be provided to the Owner and Contractor.

Task 6: Services During Construction

1. Conduct the pre-construction conference.
2. Provide five (5) full-size sets of plans and two (2) half-size sets of plans, five (5) sets of Specifications, and one (1) CD with drawings (in both AutoCAD and Adobe Acrobat PDF format) and specifications (Adobe Acrobat PDF) of the Conformed Contract Documents after Contract Award.
3. Services During Construction shall include but not be limited to:
 - Review and processing of Shop Drawings
 - Review and respond to Requests for Information (RFI)
 - Evaluation and recommendations for Change Requests
 - Monthly site visits
 - Monthly Progress Meetings for which the Consultant shall be responsible for Meeting Agendas, handouts, and Meeting Summaries
 - Processing of Pay Requests
 - Final Inspection and preparation of punch list
 - Project Certification
 - Project Closeout Documentation Using the Checklist Provided
4. Prepare record drawings, in both hard copy (reproducible format) and standard electronic format, compatible with LFUCG standards. The record drawings shall include manufacturer's data and cutsheets, approved shop drawings and equipment start up records for all mechanical equipment installed as part of this project.

5. Startup: The Design Consultant shall be responsible for start-up of the facilities including verification that all components are performing to the intended function. Startup, with key DWQ pump station operations staff in attendances, is required as follows:
 - Pumps – duty pumps, wet weather pumps, motor controls, SCADA programing for pump routines, rotations and data acquisition.
 - Odor Control – full system start-up and testing with manufacturer’s representative. Coordinating the collection of downstream samples to evaluate relevant downstream performance standards (liquid and or vapor phase hydrogen sulfide) over a 30 day start up period.
 - Open Channels Grinders - motor controls, SCADA programming and data acquisition.
6. For purposes of this proposal, assume 12 months for Services During Construction.

Task 7: Resident Observation

1. Provide full-time Resident Observation. Resident Project Representative (RPR) shall be approved by DWQ. For purposes of this proposal assume 12 months. **These services will be paid in a weekly rate, not as a lump sum task item.**
2. RPR shall utilize Construction Supervisor software. All hardware/software necessary to use Construction Supervisor shall be supplied by the Design Consultant.
3. Design Consultant shall provide for the RPR all equipment necessary to fulfill project needs.

Project Schedule

The proposed schedule for this project is:

Pre-Proposal Meeting (Tate Building)	June 12, 2024, 8:30am
Notice of Award	July 2024
Task Order Issued	August 2024
Preliminary Design Complete	October 2024
90% Design Complete	March 2025
QA/QC Review	January/February 2017
Contract Documents to DOW	April 2025
Advertise for Bids	May 2025
Award Contract	September 2025
Construction Complete	November 2026
KIA documentation closeout	December 2026

Design Consultant Rating Criteria

DWQ plans to select the most responsive and qualified firm based on the following rating criteria and weighting scale:

1. Proposed Fee (10 Points), 3 pages
 - a. Representative of the services required for each Task.
 - b. Demonstrates Design Consultant's familiarity with the Scope of Services.
2. Past performance on similar projects for LFUCG/DWQ (20 Points), 5 pages
 - a. Knowledge and experience with DWQ's Standards and Manuals.
 - b. Record of compliance with LFUCG and other regulatory agencies.
 - c. For the past five (5) year period, the ability to design projects within specific project budgets and schedules for DWQ.
 - d. Provide a list of minimum three (3) projects over the past ten (10) years including Project Name, Description, Total Construction Cost, Date the Project was Substantially Completed, and LFUCG/DWQ Program Manager Name.
3. Past performance on projects similar in scope or complexity (LFUCG or other clients – 20 Points), 5 pages
 - a. For the past five (5) year period, the ability to design projects within specific project budgets and schedules.
 - b. Provide a list of minimum three (3) projects over the past ten (10) years including Project Name, Description, Total Construction Cost, Client Contact Information, and the Date the Project was Substantially Completed.
4. Project Manager experience and capability (25 Points), 2 pages
 - a. Ability to manage design activities on projects similar in scope and magnitude.
 - b. Knowledge and understanding of applicable Codes, Standards, and other design requirements.
 - c. Past performance with LFUCG/DWQ.
 - d. Familiarity with the Project's funding requirements.
 - e. Ability to effectively communicate, respond, and relay critical project information to the Project Team.
5. Project Team experience and capability (25 Points), 5 pages (not including resumes)

- a. Provide org chart with names, disciplines, firm association, and office locations.
- b. Knowledge and experience of the Process Mechanical technical lead(s).
- c. Knowledge and experience of instrumentation and controls (I&C) technical lead(s).
- d. List quality assurance and quality control methods and procedures.
- e. Number of years the firm(s) have been in business.
- f. Location of project team offices relative to the Project Site.
- g. Equal employment opportunity regulations, policies, and procedures.
- h. One-page resumes of key project team.

Fee Proposal

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Task 1: KIA Support Services _____

Task 2: Preliminary Design _____

Task 3: Final Design _____

Task 4: Easement Acquisition _____ NA _____

Task 5: Services During Bidding _____

Task 6: Services During Construction
(assume 52-week duration) _____

Task 7: Resident Observation
(assume 52-week duration) _____

Total _____

Hourly Rates / Unit Costs

Project Manager _____

Project Design Consultant _____

Design Consultant Technician / CAD _____

Survey Crew _____

Clerical _____

Resident Project Representative
(Weekly Rate inclusive of all expenses: travel and subsistence) _____