

PUBLIC ANNOUNCEMENT

WARREN COUNTY WATER & SEWER Request for Qualifications - Consultant Engineering Services

LOWER LITTLE MIAMI AND WAYNESVILLE REGIONAL WASTEWATER TREATMENT PLANT IMPROVEMENTS PROJECT

August 2023

Sealed statement of qualifications for professional engineering services for the design of wastewater treatment plant improvements will be received by the Warren County Water and Sewer Department, Warren County, Ohio, 406 Justice Drive, Lebanon, Ohio, 45036, until 4:30 p.m., Friday, October 27, 2023.

Details regarding the proposed project may be obtained by contacting Warren County Water and Sewer Department, 406 Justice Drive, Lebanon, Ohio 45036 at (513) 695-1377. Questions regarding the project should be directed to Chris Brausch, at (513) 695-1193 or email at chris.brausch@co.warren.oh.us.

Project information may also be obtained on the Warren County website at <http://www.co.warren.oh.us/commissioners/Resources/Bids/Default.aspx>. Please contact the Warren County Office of Management and Budget Financial Division at 513-695-1947 if you have trouble or need assistance accessing project information on our website.

By order of the Board of County Commissioners, Warren County, Ohio.

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LOWER LITTLE MIAMI AND WAYNESVILLE REGIONAL WASTEWATER TREATMENT PLANT IMPROVEMENTS PROJECT

August 2023

The Warren County Board of Commissioners will procure the services of a consulting engineering firm for the development of improvements to Warren County's Lower Little Miami and Waynesville Regional Wastewater Treatment Plants. Work performed by the consultant will culminate in a preliminary design report containing concept drawings, equipment information, budgetary opinion or probable construction costs, and implementation schedule. Upon conclusion of the design report Warren County retains the ability to amend the firm's agreement to include design, bidding, and construction services. The total anticipated construction improvements is budgeted at \$12 - \$15 million.

Consulting engineering firms are invited to submit their qualifications for consideration during our review and selection process. Project background, description of required services, and project schedule are as follows.

Lower Little Miami WWTP

The Lower Little Miami WWTP is an award winning, state of the art, 12.0 million gallons per day treatment facility located at 2086 State Route 22&3, Maineville, Ohio. The existing treatment plant operates under National Pollution Discharge Elimination System (NPDES) permit No PK00018 issued by the Ohio Environmental Protection agency. The facility discharges to the Little Miami River, a state and nationally recognized scenic river. This plant provides service to portions of southwestern Warren County which include parts of Hamilton Township, Deerfield Township, and the Village of Morrow.

The treatment plant has been in operation for over five decades. A small package plant was the first wastewater treatment facility at the current Lower Little Miami WWTP site. In 1976 the Ralph L. Woolpert Co. designed a new 1.5 MGD WWTP for the site. This facility had a mechanical bar screen, grit chambers, primary clarifiers, rotating biological contactors (RBC), secondary clarifiers, chlorine disinfection, anaerobic digesters, and sludge drying beds. The site was also comprised of an administration building and a septage holding tank.

In 1990 Warren County, under the Phase I design improvements, converted the wastewater treatment plant from an RBC type facility to an activated sludge process and increased the plant capacity to 3.5 MGD. A vertical loop reactor (VLR) aeration tank, pretreatment building, and a belt filter press building were constructed. The clarifier side walls were raised to increase side water depth, the biological contactors were demolished, and the anaerobic digesters were converted to aerobic digesters.

In 1995 the Phase II design improvements included another VLR aeration tank, two more clarifiers, a third aerobic digester, and a sludge dewatering building. This phase of improvements increased the plant capacity to 7.28 MGD with a peak daily flow of 15.64 MGD.

Phase III improvements were completed in 2011 and included the construction of new headworks, a third vertical loop reactor aeration tank, two final clarifiers, return activated pump station, and UV disinfection. This phase increased the treatment capacity to the current 12.0 MGD with a peak day flow of 58 MGD.

This project includes upgrades to the biosolids dewatering facility, aeration blowers, UV disinfection system, septage receiving facilities, and plant access/security. A description of the planned improvements is included below:

Solids Dewatering

Waste activated sludge generated at the treatment plant is temporarily stored in solids holding tanks, dewatered, and disposed at a nearby landfill. The biosolids disposal process is cost effective, however the dewatering process requires improvements. The treatment plant is equipped with two Ashbrook Klampress Type 85, Size 3, (2-meter) belt filter presses. The county operates both presses approximately 40 hours per week to meet the increased solids production from the growing community. These presses are approximately 30 years old and are near the end of their useful life. The presses have been rebuilt numerous times and operate effectively; however the lack of available spare parts and qualified service technicians is driving the need for upgrades. The work will include an evaluation of new dewatering equipment including belt filter presses, screw presses, and centrifuges.

Dewatered biosolids are scraped from the Klampress and deposited on a Serpitem belt conveyor where it is dropped in a covered shelter outside the dewatering building. Each day the biosolids are loaded into 24 ton semi-trucks (40-50 yards) and disposed at the local landfill.

Sludge Holding Aeration Blowers

Waste activated sludge is transferred to three solids holding tanks equipped with Tideflex coarse bubble aeration systems designed for complete mixing. The system is equipped with four Kaeser Compressors, Inc. rotary lobe positive displacement blowers (Compak EB421C 100HP). The project includes the replacement of one failed Kaeser Blower with a similar model from an alternate manufacturer.

Vertical Loop Reactor (VLR) Aeration System

Although the treatment plant is rated for a design flow of 12 MGD, typical average daily flow is approximately 5 to 6 MGD. The County has successfully run using only ½ of the secondary treatment plant tankage (VLRs and clarifiers) but is beginning to experience difficulty maintaining sufficient oxygen to meet biochemical and nitrification demands during the summer. In an effort to avoid operating additional equipment the County is seeking guidance and feedback on ways to retrofit the VLR tanks to improve oxygen transfer (blower replacement/upgrades, diffuser replacement, variable speed drives for blowers, surface aerator upgrades, etc.).

UV Disinfection Unit

The Trojan UV4000 disinfection system was installed during the 2011 upgrades. Trojan introduced the UV4000 units in the 1990s as an advanced system designed for large wastewater applications and installed hundreds of units. In 2013 Trojan discontinued the production of the units due to the evolution of UV technology and the commercialization of newer UV systems. In recent years Trojan

has scaled back the supply of replacement parts and in July 2022, they discontinued taking orders for many replacement parts and manufactured/custom items (Ballast Enclosures, wiring harness, filters, wiper collars, sleeve nuts, intensity sensors, communication boards, etc). The County is seeking to replace the obsolete Trojan UV4000 unit with new equipment that will be supported by the manufacturer for a reasonable product life.

Emergency Backup Power Improvements 400 KW Backup Generator, ATS and Beaker

The current load on the existing Caterpillar 3406C diesel powered generator and breaker exceeds the equipment ratings. The generator and breaker were installed in 1997 and are rated at 400 kw and 600-amp, respectively. When under full plant load the equipment runs at 436 kw at 647 amps with a 0.8 power factor. Although the equipment operates under these loads, the smooth power transfer from the generator back to incoming power does not occur as the generator is lugged down too much for a stable transition. The consulting engineer shall evaluate the backup power design and explore the possibility of transferring a portion of the load to the plant's larger backup generator. If transferring the load is not feasible then the consulting engineer shall design the replacement of the generator, breaker, and associated equipment.

Septage Receiving Facility

The Lower Little Miami WWTP is the only publicly owned treatment facility in Warren County that receives wastewater from domestic septic haulers. The county receives between 40 to 100 loads each month from 2,000 gallon septic hauling trucks. Each load is discharged into a receiving station the contains a concrete slab that slopes to a static bar rack. Flow from the receiving station combines with the treatment plant's influent upstream of preliminary treatment.

In 2020 and 2021 the treatment plant experienced biological upsets that resulted in significant permit noncompliance. During this period the treatment plant failed to consistently meet total suspended solids and ammonia permit limits. Microscopic evaluation of the mixed liquor identified high concentrations of septicity filaments (Type 0092, Nostacoida Limicola, and Spirochaetes). The plant upset occurred shortly after receiving 24,000 gallons of waste activated sludge from a trailer park package plant and 50,000 gallons of unknown septic sludge from a private treatment facility that processes fats, oils, and grease.

This project includes the installation of a new septage receiving facility to manage, track, sample, and process septic loads. The scope for this project includes the evaluation and design of septage receiving, processing, storage, and transfer alternatives capable of removing rocks, git, screenings, and fat-oil-grease constituents. The improvements shall be capable of customer tracking and load sampling. The septage receiving station shall be capable of conveying flow to the plant headworks, vertical loop reactors, or Waste Activated Sludge holding tanks. For security and safety purposes the septage station or plant site layout will be modified to limit or restrict septic hauler's access to the treatment facility.

Security Upgrades

Security upgrades are included as part of the project with the goal of limiting access to the treatment facility, improving surveillance, and securing buildings. The project includes the following security related items:

- Redesign of the entrance to the plant moving the County's fueling station used by other County agencies to an area outside of the plant fencing.
- Security camera upgrades
- Installation of new card readers for door access.
- Replacement of deteriorated doors and windows
- Replacement or repair of deteriorated roof at the Laboratory and Office buildings.

WAYNESVILLE REGIONAL WWTP

Waynesville Regional is located at 444 North State Route 42, Waynesville, Ohio and has an Ohio EPA approved design rated flow of 0.7 million gallons per day (mgd). The initial treatment facility was constructed in 1961 with upgrades and modifications occurring in 1969, 1981, 1998, and 2020. The plant operates under National Pollution Discharge Elimination System (NPDES) permit No 1PB00032 issued by the Ohio Environmental Protection Agency. The average daily flow at the facility is approximately 0.5 million gallons per day (mgd) but experiences peak hourly flows as high as 3.7 mgd. The treatment process consists of influent pumping, screening, grit & grease removal, activated sludge aeration, clarification, chlorine disinfection, and post aeration. The work will include construction of additional clarification, biosolids processing, nonpotable water system, and security improvements.

Secondary Clarification

The treatment plant is equipped with two 40-foot diameter clarifiers with 14.5-foot sidewater depth. The Schreiber rim-driven traveling bridges were replaced in 2020 with fixed bridge mechanisms by Ovivo. The clarifiers include sloped floors, spiral sludge scraper blades, Stanford style baffles, and full radius scum beach. Sludge withdraw is through a 10-inch return activated sludge (RAS) line from the center well hopper to the RAS pump station.

The treatment process would benefit from additional clarification during high flow events. To avoid pushing solids into the chlorine contact tank during wet weather storm events when flows significantly increase the aeration blowers are shut off and solids are allowed to settle in the activated sludge tanks. This project includes additional clarification tanks to provide redundancy and reduce the frequency of storm mode operations. The improvement also includes replacing inoperable 10-inch plug valves at the return activated sludge pump station and installing motor operators on valves enabling automatic wasting from the Return Activated Sludge.

Biosolids Process & Disposal

Under this project the County will expand solid processing to include dewatering and landfill disposal. The County intends to retain the ability to continue land applying Class B biosolids but seeks to include dewatering to allow for landfill disposal when weather conditions do not accommodate land application. The County has initiated discussions with several equipment vendors and is interested in Belt Press and Screw Press options. The proposed improvement would include the construction of a small dewatering building, equipment, polymer feed, and a loading station for the hauling of biosolids.

Biosolids from the Waynesville plant are currently disposed through Class B land application. The County works with a local farmer to land apply approximately 240,000 to 360,000 gallons of liquid sludge (4% - 6% solids) per year. The solids process equipment includes two aerobic digesters, a lime stabilization tank, and lime silo and slaker.

The two primary settling tanks constructed in 1981 were retrofitted in 1998 with fine bubble diffusers and converted into aerobic digesters with a total storage capacity of 172,000 gallons. The fine bubble diffusers in both tanks were replaced in 2021/2022. Waste sludge is thickened using decant tilt-tubes that allow supernatant to be returned to the influent pump station. Once the biosolids are thickened they are pumped to the Lime Stabilization tank for final storage and processing. This project includes the installation of a second sludge transfer pump, basement sump pump, handrail replacement, basement water proofing, and new electrical wiring and lighting upgrades at the aerobic digesters.

The Lime Stabilization tank was originally constructed in 1961 as a Spiragester tank that provided primary treatment and disinfection. The tank was converted to lime stabilization in 1981 with the addition of a 2000 cubic foot hydrated lime storage bin, lime slaker and slurry metering pump. To improve mixing the 120,000 gallon tank was retrofitted in 2018 with a Tideflex coarse bubble diffused aeration system and tilt tube decant equipment was added. The original lime feed equipment (vibrator, slurry pumps, slurry tank and mixer, piping, valves) has deteriorated and needs replacement. The work will also include the installation of a new sludge loading station to allow tanker truck loading of stabilized liquid sludge for land application.

NonPotable Water System

The County currently uses treated water purchased from the Village of Waynesville for all potable and processed water needs. The installation of dewatering facilities may significantly increase the need for processed water. The County seeks to drill and install a well at the treatment plant along with non-potable water piping, and hose bibs to meet the treatment plant needs. If necessary, the non-potable system shall include chemical addition to prevent mineral deposition in control valves and solenoids.

Security Upgrades

Security upgrades are included as part of the project with the goal of limiting access to the treatment facility, improving surveillance, and securing buildings. The project includes the following security related items:

- Security camera installation
- Card readers for door access.
- Security fencing and access gate upgrades.

Miscellaneous Improvements

The project will include general small improvements across various areas of the treatment plant. These may include:

- Protective coatings at the receiving manhole of the Harveysburg area force main
- Coiling door replacement at the Chemical/Garage Building
- Influent Pump Station piping and guiderail replacement
- Electrical building HVAC & lighting improvements

REQUIRED SERVICES

The scope of work shall be limited to the preparation of a preliminary design report that includes concept drawings, equipment manufacturer cut sheets, and budgetary cost estimates for both treatment plants. Upon successful completion of the preliminary design report, the County may choose to amend the contract with the consultant to include the preparation of final design drawings, specifications, bidding services, and construction services.

REQUIRED QUALIFICATIONS

Professional engineering firms interested submitting qualification must exhibit relevant experience or qualifications in the following water/wastewater treatment plant/facility construction:

- Renovation, modifications, and expansion of existing wastewater treatment plants that required the improvements to be completed while maintaining the operation of the existing facilities.

- Wastewater treatment plant/facility construction with total improvement contract values of at least \$10 Million.

Submittals should emphasize both the experience and capabilities of personnel who will manage and perform the Work. Submittals should indicate any subconsultants proposed to be utilized on the Project.

Professional engineering firms entering into contracts with Warren County must be fully licensed for the type of work to be performed in the State of Ohio at the time of qualification submittal. Firms that are not fully licensed and certified shall not be found qualified.

Prior to the commencement of any work, Consultant shall obtain and maintain in force at its sole cost and expense, Comprehensive General or professional liability and Automobile Liability Insurance (covering use of owned, non-owned, or hired vehicles) providing single limit coverage of One Million Dollars (\$1,000,000) per occurrence Two Million Dollars (\$2,000,000) aggregate, with no interruption of coverage during the entire term of the Agreement.

Consultant shall carry statutory worker's compensation insurance and statutory employer's liability insurance as required by law and shall provide County with certificates of insurance evidencing such coverage simultaneous with the execution of the Agreement.

SUBMITTAL INSTRUCTIONS

1. **Receipt of Submittals:** Sealed submittals shall be received by the Warren County Water and Sewer Department, Warren County, Ohio, 406 Justice Drive, Lebanon, Ohio, 45036, until 4:30 p.m., Friday, October 27, 2023. Envelopes containing the submittals must be sealed, addressed to Warren County Water and Sewer Department at 406 Justice Drive, Lebanon, Ohio 45036, and shall be clearly marked:

LOWER LITTLE MIAMI & WAYNESVILLE REGIONAL WWTP IMPROVEMENTS PROJECT

October 27, 2023 @ 4:30 PM.

Any submittal may be withdrawn prior to the above scheduled submittal time or authorized postponement thereof. Any submittal received after the time and date specified shall not be considered.

2. **Addenda and Interpretations:** Questions regarding the information contained in this Request for Qualifications shall be submitted in writing and emailed to:

Warren County Water & Sewer Department
ATTN: Chris Brausch, P.E.
(513) 695-1193
chris.brausch@co.warren.oh.us

and to be given consideration must be received at least five days prior to the qualification submittal date. All such interpretations and any supplemental instructions will be in the form of written addenda to the Request for Qualifications, which if issued, will be posted on the Warren County Commissioner's website, no later than three days prior to the submittal date.

3. **Requests for Additional Information:** The County may make such investigations as they deem necessary to determine the ability of the submitting firm to perform the work, and all submitting firms shall furnish to the County all necessary information and data for the purpose as the County may request.
4. **Requests for Site Visit/Pre-Submittal Site Visit:** Warren County will hold one optional site visit for all interested consultants on Thursday, October 5, 2023 at 9:00 AM at Lower Little Miami Wastewater Treatment Plant.
5. **Discussions for Clarification Purposes:** Warren County may conduct discussions with firms who submit for the purpose of clarifications or corrections regarding a submittal to ensure full understanding of, and responsiveness to, the requirements specified in the request for qualifications.
6. **Project Schedule:** The following is the anticipated schedule for the evaluation of qualifications and contract execution. The schedule is based on best available data and failure to meet any of the dates contained herein shall not affect the selection process.

County Issues Request for Qualifications	August 8, 2023
Qualifications Due to County	October 27, 2023
Select & Award Engineering Consultant	December 2023
Notice to Proceed	February 2024
Preliminary Design Report Completion	August 2024

7. Selection Process:

- a) The submittals will be evaluated by a Committee appointed by the County Commissioners which will:
 - 1) determine whether each submittal is responsive to the requirements of this request for qualifications and the criteria described below.
 - 2) evaluate and select no fewer than the top three submittals based on criteria which shall include the firm and individual qualifications, proximity to Warren County, capacity to perform work, project approach, past performance with Warren County, and familiarity with project. The evaluation form used by the Committee during the review process "Review Sheet" is included at the end of this request. In the event three qualified firms or less deliver a submittal, then the Committee shall still evaluate such firms based on the selection criteria stated herein.
- b) The Committee may hold interviews or discussions with any or all of the selected firms to further explore the firms' statement of qualifications, the scope and nature of the services the firms would provide, and the various technical approaches the firms may

take toward the project. Within a reasonable period of time after any and all discussions are complete, the Committee shall rank the firms by one collective Review Sheet in the order they determine to be the most qualified to perform the professional design services for the Project. The Committee shall present a resolution to the County Commissioners requesting authorization for the Water & Sewer Department to enter into negotiations with the most qualified firm as determined by the Committee and confirmed by the Commissioners.

c) The Water and Sewer Department shall thereafter begin negotiations of a professional design services contract with the top ranked firm to perform the services at a compensation determined to be fair and reasonable to the County Commissioners. If a satisfactory contract cannot be entered into in a reasonable time, the County Commissioners, in its sole discretion, may terminate negotiations with the highest ranked firm and direct the Water and Sewer Department to begin contract negotiations with the next highest ranked firm.

c) Warren County reserves the right to reject any and all submittals.

8. Public Records Request of Qualifications: In order to ensure fair and impartial evaluation, qualification submittals and any related documents of other records that would otherwise be available for public inspection and copying under section 149.43 of the Revised Code shall not be available until after the award of contract.

9. Withdrawal of Submittal: Any company may withdraw their submittal at any time prior to the selection of an engineering firm. The County may terminate negotiations with a firm at any time during the negotiation process if the company fails to provide the necessary information for negotiations in a timely manner or fails to negotiate in good faith. If the County terminates negotiations with a firm, the County shall negotiate with the company whose submittal is ranked the next most qualified to the County according to the selection criteria and direction from County Commissioners.

Please demonstrate your qualifications to perform the work and your experience with similar projects. Provide a list of five (5) similar projects in last ten (10) years. Submittals shall be limited to twenty five (35) pages in length, excluding appendices, resumes, company brochures, and the like.

To be considered, three sets of Qualifications along with an electronic copy on a thumb drive in .pdf format to:

Warren County Water and Sewer Department
P.O. Box 530
406 Justice Drive
Lebanon, Ohio 45036
513-695-1377

SUBMISSION

The firm's submission shall be in sufficient detail to provide Warren County with the following information:

1. Firm and Individual Qualifications.
 - A. Firms Background – Provide description of firm and years of operation.
 - B. Project Team – Provide a description of the project team organization including an organization chart.
 - C. Project Team Qualifications - Provide qualifications and experience of key project team personnel.
 - D. Firm Qualifications - provide descriptions of a minimum of five similar projects completed within the last ten years. Projects should involve wastewater treatment plants with average design flows greater than 1.0 mgd. Indicate status of the projects (completed or ongoing), client references, and involvement of proposed project team staff.
 - E. Warren County Experience – provide description of past and current projects performed for the County.
2. Geographic Information.
 - A. Number and location of offices in or near Ohio.
 - B. Location of office where this project will be performed.
3. Capacity to perform the work.
 - A. Size and availability of staff.
 - B. Projects in progress.
4. Project Approach
 - A. Familiarity and Understanding of Project
 - B. Project Approach
 - C. Proposed Scope
 - D. Proposed Schedule
5. Insurance
 - A. Documentation of firm's Professional Liability Insurance Policy.

**LOWER LITTLE MIAMI & WAYNESVILLE REGIONAL WWTP IMPROVEMENTS
 SUBMITTAL REVIEW**

Name of Design Firm _____

Name of Reviewer _____

CRITERIA	RATING*		WEIGHT	RATING	
1. Firm & Individual Qualifications					
Firm's background & experience on similar projects		X	4	=	0.0
2. Proximity to Project Site		X	1	=	0.0
3. Capacity to Perform Work					
Firm's equipment & facilities		X	2	=	0.0
4. Approach to Project					
Organization of approach		X	4	=	0.0
Schedules & deadlines		X	2	=	0.0
5. Past Performance with Warren County		X	2	=	0.0
6. Familiarity with Project		X	4	=	0.0
7. Errors & Omissions Insurance Experience		X	1	=	0.0
TOTAL RATING=					0.0

* Rating for all but #5 are as follows:
 1 = Poor 2 = Fair 3 = Average 4 = Good 5 = Excellent
 Rating for #5:
 1 = Poor 4 = None/Improving 5 = Good