

**RFQ #39-20  
REQUEST FOR QUALIFICATIONS**

**CITY OF PORTSMOUTH, NH DEPARTMENT  
OF PUBLIC WORKS**

**DESIGN ENGINEERING SERVICES FOR PEASE WASTEWATER TREATMENT FACILITY (WWTF) AERATION BLOWER  
UPGRADE**

**Sealed Statements of Qualifications, plainly marked "RFQ #39-20 Design Engineering Services for Pease WWTF Aeration Blower Upgrade" on the outside of the mailing envelope**, addressed to the Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, NH 03801 will be accepted until **2:00 p.m. on June 25, 2020.**

**SCOPE OF WORK:** The City of Portsmouth's Department of Public Works is requesting Statement of Qualifications from qualified firms for the following project:

The City of Portsmouth's Department of Public Works is requesting Statement of Qualifications (SOQs) from qualified firms to provide engineering design services for the preliminary and final design of an upgrade of the existing aeration blowers at the City's Pease Wastewater Treatment Facility. The preliminary design will include developing a phased approach to upgrading the existing 4 rotary lobe positive displacement aeration blowers to increase air supplied and improve operational efficiency. The final design will include preparation of construction contract documents for the replacement of 2 of the existing blowers, including the development of an opinion of cost for the blower replacement project. Future potential phases of work may include design of additional replacement blowers, an expansion of the aeration grids in the SBRs and/or bidding and construction phase engineering services.

There will be a **mandatory pre-submittal meeting on June 11, 2020 at 2:00 p.m.** via Zoom. Interested firms should e-mail [tldesmarais@cityofportsmouth.com](mailto:tldesmarais@cityofportsmouth.com) no later 1 hour prior to the meeting of interest in attending so that a zoom link can be provided. All proposers will have an opportunity to ask questions at this meeting. No Statement of Qualifications will be accepted from firms who do not attend the mandatory pre-submittal meeting. On-site visits will be scheduled through the Chief Plant Operator, David Lovely by calling 603-957-8035 after the pre-mandatory meeting has been conducted.

Copies of the Request for Qualifications may be obtained by visiting the Finance/Purchasing Department section of the City of Portsmouth website at <https://www.cityofportsmouth.com/finance/purchasing-bids-and-proposals>. Addenda to this Request for Qualifications, if any, including written answers to questions, will be posted on the City of Portsmouth website under the project heading.

The City of Portsmouth reserves the right to reject any or all Statement of Qualifications, to waive technical or legal deficiencies, to accept any Statement of Qualifications and to negotiate such terms and conditions of any Statement of Qualifications that may be in the best interest of the City.

If you have any questions please contact the Finance/Purchasing Department at (603) 610-7227 or by email to Lori MacGinnis, Purchasing Coordinator, at [lemacginnis@cityofportsmouth.com](mailto:lemacginnis@cityofportsmouth.com).

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DEPARTMENT OF PUBLIC WORKS**

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**FUNDING**

This project is contingent on funding. Funding is proposed through a loan under the New Hampshire Department of Environmental Services Clean Water State Revolving Loan Fund (CWSRF) or through existing municipal bonds through the Sewer Enterprise Fund.

**MANDATORY PRE-SUBMITTAL MEETING**

There will be a **mandatory pre-submittal meeting on June 11, 2020 at 2:00 p.m.** via Zoom. Interested firms should e-mail [tlidesmarais@cityofportsmouth.com](mailto:tlidesmarais@cityofportsmouth.com) no later 1 hour prior to the meeting of interest in attending so that a zoom link can be provided. All proposers will have an opportunity to ask questions at this meeting. No Statement of Qualifications will be accepted from firms who do not attend the mandatory pre-submittal meeting. On-site visits will be scheduled through the Chief Plant Operator, David Lovely by calling 603-957-8035 after the pre-mandatory meeting has been conducted.

**PROJECT BACKGROUND**

The City of Portsmouth is a regional provider of wastewater collection and treatment services to the City of Portsmouth, Town of New Castle and portions of the Towns of Greenland and Rye. The City has two wastewater treatment facilities (WWTF), the 6.1 MGD Peirce Island WWTF and the 1.2 MGD Pease International Tradeport WWTF. The Peirce Island WWTF services downtown Portsmouth and the client communities. The Pease International Tradeport WWTF serves the collection system for the Pease International Tradeport.

The Pease International Tradeport area was at one time the Pease Air Force base. The Air Force base was repurposed for commercial and industrial use in the 1990's. Parts of the original air force base were maintained and are still used by the NH Air National Guard. Zoning on Pease includes airport, airport industrial, industrial, business/industrial, natural resource protection and NH Air National Guard. There are number of large commercial/industrial facilities that contribute significant flow to the WWTF including Lonza Biologics, Inc. and Craft Brew Alliance (Cisco Brewers). The overall make-up of wastewater flow is commercial/industrial in nature. The Pease WWTF was originally constructed in

the 1950's for the Pease Air Force Base. The WWTF was turned over to City ownership and for operation and maintenance through the authority of the Pease Development Authority in the 1990's. Since then the WWTF has been operated and maintained by the City.

The original WWTF process included preliminary treatment (headworks including screening and aerated grit removal), raw sewage lift pumps, primary clarification, intermediate lift pumps, secondary trickling filters, secondary clarification, disinfection and discharge via an open pipe outfall to the Piscataqua River. The outfall is shared with the Town of Newington WWTF. Sludge management included primary and secondary digestion and sludge drying beds. The WWTF underwent a major upgrade in 1997. Improvements consisted of preliminary treatment headworks modifications including replacement of the bar screen with channel grinder and addition of a headworks superstructure; primary clarifier drive replacement and effluent launder covers; decommissioning of the trickling filters and construction of new sequencing batch reactors for secondary treatment; conversion of the secondary clarifiers to equalization basins; and conversion of one anaerobic digestion tank to a sludge storage tank. This upgrade also included the addition of a new laboratory/administration building, standby generator, gravity belt press for sludge dewatering and other miscellaneous improvements. The outfall was upgraded in 2000 with the addition of multiport diffusers. A septage receiving station including receiving equipment, and storage tanks were added in 2005. The City is currently in the final stages of construction and startup of a new Headworks consisting of screening, grit removal and influent pumping at the WWTF.

The current WWTF process stream consists of preliminary treatment (new headworks including screening grit removal using stacked tray separation and raw wastewater pumps), primary clarification, intermediate lift pumps, secondary treatment and clarification with sequencing batch reactors (SBRs), equalization, disinfection with sodium hypochlorite, dechlorination with sodium bisulfite and discharge via the multi-port diffuser outfall to the Piscataqua River. Ammonium hydroxide is added to the secondary effluent prior to chlorination as a temporary measure to resolve disinfection interferences. Sludge management includes sludge storage, dewatering by belt filter press and disposal at the Turnkey landfill in Rochester, New Hampshire. The WWTF was designed to handle an average day flow of 1.2 MGD, maximum day flow of 3.345 MGD and peak flow of 4.0 MGD. Daily average flow for the Pease WWTF was 0.58 MGD for 2017 through 2019. The Pease WWTF NPDES permit does not currently contain an effluent limit for Total Nitrogen, but the recently issued EPA Draft NPDES Great Bay Total Nitrogen General Permit for Wastewater Treatment Facilities in New Hampshire will likely require that the Pease WWTF implement a nitrogen removal process.

In addition, recent updated projections of growth in the Pease Tradeport including Lonza Biologics, Inc. have indicated that the existing Pease WWTF needs to be expanded provided additional flow capacity is granted by the Environmental Protection Agency. This will necessitate a plant upgrade, but due to the age and condition of the existing aeration blowers, there is a need to implement this Blower Upgrade immediately. The 4 existing aeration blowers are 75 horsepower rotary lobe blowers, each rated for 993 ICFM at 10.7 psig. The WWTF electrical distribution systems have a limited capacity to accommodate changes in aeration blowers and other equipment electrical demands. This project is to provide the design of replacement of 2 of the existing blowers with the largest capacity blowers that the existing electrical system can accommodate with a goal of maximizing the energy efficiency of the 2 replacement blowers and aeration system operation. Future work may include the replacement of additional blowers and maximizing the aeration capacity in the existing SBRs, and design of an electrical upgrade depending on the finding of the first phase efforts.

## **SCOPE OF WORK**

The City anticipates the scope of work will be comprehensive and include all tasks necessary to develop preliminary and final design documents for bidding and construction of the replacement of 2 of the 4 existing aeration blowers.

The scope of work is anticipated to include, but not be limited to, the following:

1. Project kickoff meeting with the City of Portsmouth for proper identification of project scope and alignment of expectations.
2. Conduct assessment of the existing electrical distribution system capacity to identify allowable horsepower for 2 replacement blowers.
3. Identify proposed blower sizing and capacity, considering compatibility with the 2 existing blowers to remain and the planned future replacement of the 2 remaining blowers based on future aeration demands identified by the City. Identify and size the aeration configuration and diffuser design to maximize aeration capacity in the existing SBRs.
4. Prepare preliminary design report (PDR) with selected design alternative and preliminary drawings. Consultant shall present up to three alternative blower types/layouts/configurations of the for the City's consideration. The new blowers would be provided with sound attenuating enclosures and be driven by variable frequency drives that can be controlled based on measured oxygen levels in the SBRs. The PDR should address the phased approach to replacing the 4 blowers and expansion of the aeration diffusers, showing how the first two replacement blowers would be installed, and how the remaining two blowers would be installed at a future date. The PDR should address construction sequencing and maintenance of plant operations during construction.
5. Prepare plans and specifications, including design review meetings at 60 percent and 90 percent plans completion.
6. Prepare and update project cost estimates at preliminary design report, 60, 90 and 100 percent milestones.
7. Obtain plans and specification approval from the Department of Environmental Services and any other necessary entities.
8. Prepare and submit an application for funding assistance for the project costs under the State Revolving Loan Fund and State Aid Grant to the New Hampshire Department of Environmental Services.
9. Investigate available energy rebates or incentives from Eversource for implementation of the Blower Upgrade.

Future work may include design of the additional blower replacement and aeration system improvements. Bidding and construction administration and oversight services may be requested by the City but are not part of this SOQ.

The final scope of work will be negotiated with the selected consultant prior to execution of a contract.

#### **AVAILABLE INFORMATION**

The following information will be made available to the consultant(s) for the purpose of developing the SOQ:

1. Report entitled "Pease Wastewater Treatment Facility Evaluation", Underwood Engineers, Inc., January 2014.
2. Drawings entitled "Pease Development Authority, Pease International Tradeport, Portsmouth, NH, Record Drawings, Wastewater Treatment Plant Improvement Program", Underwood Engineers, Inc., Portsmouth, NH, November 20, 1997.
3. Selected drawings from plan set entitled "City of Portsmouth, New Hampshire, Record Drawings, Portsmouth Wastewater Facilities Upgrade", Underwood Engineers, Inc., Portsmouth, NH, November 25, 2005.
4. Drawings entitled "Pease Wastewater Treatment Facility Headworks Project" Stantec Inc., Burlington MA, December 2017.

5. A number of technical memorandums summarizing the most recent evaluations on the need for aeration capacity improvements.

## **PROJECT SCHEDULE**

The selected consultant shall be expected to begin work within two weeks of contract signing and complete work within the schedule outlined in the consultant's SOQ. It is intended that this work be expedited as best possible.

## **CITY ROLE**

Public Works staff will be responsible for administering the project and overseeing the consultant's work on this project. Representatives of the City's Public Works and Planning Departments will review plans and other documents prepared by the consultant.

## **SUBMITTAL REQUIREMENTS**

Statements of Qualifications shall include the following and shall be organized using each of the above required elements as section headings:

- A. **Firm Description-** provide a brief description of the firm including firm size and area of specialization, location of corporate headquarters, and the location of the office proposed to handle this project.
- B. **Project Team-** Provide names and resumes of key professionals who would be assigned to the project. Each team member's education and experience shall be listed. The project manager shall be clearly identified, and a description of his/her relevant previous projects listed. A list of past relevant projects, which proposed project staff have played a central role in developing, shall also be provided. The teams experience working together on the same projects shall be highlighted. Proposed subcontractors, their roles, personnel, and qualifications shall be provided.
- C. **Statement of Project Understanding and Approach-** The consultant shall state in succinct terms their understanding of what is required to complete this project, identify the major issues that need to be addressed, and outline the firm's approach in conducting the project to address the identified issues.
- D. **Scope of Services-** Describe in narrative form the consultant's technical scope of services and tasks for accomplishing the work listed herein. The consultant is encouraged to elaborate and improve on the tasks listed in the RFQ; however, the consultant shall not delete any requested scope tasks unless explicitly noted. The consultant shall submit a schedule for completing the scope of work for design including review of deliverables by the City.
- E. **Relevant Experience and References –** The consultant shall provide description of similar projects conducted by the firm in the last 15 years, with an emphasis on blower upgrades for existing WWTFs. A minimum of five (5) references, including current contact name, phone number, and email address for similar projects shall be provided. If possible, include references to previous projects where the proposed team executed the work.
- F. **Man-Hour Level of Effort:** Provide a proposed man-hour level of effort for the Blower Upgrade Design in

table format coordinated with the anticipated list of tasks from the Scope of Services to complete the work. The man-hour level of effort shall be comprehensive and inclusive of all the total man-hours to complete the project. The man-hour summary shall include all in-house man-hours for the primary firm (and any teamed firms). The man-hour level of effort does not need to include the man-hours for sub-consultants or sub-contractors. Do not include any fee associated with the level of effort in the proposal.

In a separate envelop labeled "Price Proposal RFQ #39-20" provide a total project cost stated as a total not to exceed fee. Include assumed hours per task, hourly rates for project staff and labor multiplier.

Five paper (5) copies of the SOQ must be submitted and one copy of the Price Proposal. Proposers are encouraged to avoid the use of synthetic report covers and partitions. Proposer shall include a single electronic PDF copy of their proposal SOQ.

### **EVALUATION CRITERIA**

Proposals will be evaluated initially according to the following:

1. Responsiveness to submission requirements. 15 points
2. Qualifications of firm and project team members. Particular attention will be given to the experience and demonstrated ability of the project manager in WWTF upgrades, especially aeration system upgrades and the project teams' past experience working together. 25 points
3. Previous related work with particular preference toward similar types of projects. 30 points
4. Understanding of required project work, approach and schedule. 30 points

Upon review of all responsive SOQs using the criteria outlined above, the City may select up to three (3) firms to interview. Following interviews, the Cost Proposal of the highest-ranking firm will be opened, and the firm will be invited to negotiate a final Scope of Services and fee with the City. Alternatively, the City may elect to bypass the interview phase of this project and select the top ranked firm based on the proposal evaluations.

The City of Portsmouth reserves the right to reject any or all proposals, to waive technical or legal deficiencies, to accept any proposal, and to negotiate such terms and conditions of the final contract as it may be in the best interest of the City.

The City reserves the right to negotiate directly with the firm(s) selected for additional project work including construction administration services, and/or additional project engineering and design services at the hourly rates shown in the proposal submitted in response to this RFQ.

The City reserves the right to undertake such investigation as it deems necessary to evaluate the qualifications of the Consultant and to evaluate its submittal. Firms may be asked to submit releases as part of the investigation and review of qualifications. Failure to provide a release if requested will result in disqualification. All concepts, designs, information and cost-savings ideas that may be generated during the selection process shall become the property of the City of Portsmouth.

## **CONTRACT FOR SERVICES**

The highest-ranking firm will be invited to enter into contract negotiations with the City and the fee proposal will be opened at that time. The contract format will be a labor multiplier (including fixed fee) with a not to exceed maximum price. When the contract is executed by both parties, the Consultant will be instructed to commence providing the work outlined in the contract. All information, data, documents, photos, computer records, and other materials of any kind acquired or developed by the consultant pursuant to this project shall be the property of the City of Portsmouth. The Consultant will be required to maintain commercial, automobile and professional liability insurance in commercially reasonable amounts. The Consultant will be required to indemnify the City for Consultant's negligent acts in performance of the Contract. If the City is unable to reach agreement with the highest-ranking firm, the City may enter into negotiations with the next highest-ranking firm and open its price proposal. The Contract format will be the NHDES Standard Contract for design services.

## **ADDITIONAL INFORMATION**

Requests for additional information should be directed to Terry Desmarais, P.E., City Engineer, Public Works Department at (603) 766-1421 or [tldesmarais@cityofportsmouth.com](mailto:tldesmarais@cityofportsmouth.com).