



**Request for Qualifications
Wastewater Treatment Plant Assessment
CONTRACT 2022-H
City of Ravenna, County of Portage
Response Due Date: 12-20-2022**

[PROJECT DESCRIPTION](#)

Ravenna WWTP was built in 1907 and has undergone numerous modifications, expansions, and rehabilitations and presently operates an activated sludge process treatment plant that includes: equalization, screening and grit removal, primary clarification, aeration, clarification, disk filters and UV disinfection. The average daily design flow is 2.8 MGD with a maximum flow rate of 6.0 MGD and a peak hourly flow rate of 15.8 MGD. The table below shows the current loading date and the NPDES permit effluent limitations. The NPDES permit expires on December 31, 2022 in which a new permit will then be authorized.

Parameter	Loading	Weekly	Monthly
BOD5 (mg/L)	194.0	12.3	8.2
NH3-N (mg/L) - Summer	24.0	1.5	1.0
NH3-N (mg/L) - Winter	24.0	11.7	7.8
TSS (mg/L)	230	10	15
TP (mg/L)	5.70	1.23	0.82

The last major upgrade was performed in 2004 and in 2012 an energy audit was performed with some equipment changes. Some of the equipment is past its service life. The City of Ravenna is pursuing a consultant to perform a Plant Assessment and develop a Facility Plant Report. Listed below are the tasks that the Consultant should show proficiency in performing the work.

[TASK 1: Project Management](#)

The Consultant shall provide Project Management for its assigned tasks and prepare miscellaneous project management correspondence and documents.

Under this task, the Consultant assumes responsibility for the following:

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- task scheduling
- monthly progress reporting, update, and invoicing
- monthly review and documentation of schedule versus budget
- communication with the City
- project documentation and

record keeping

TASK 2: Analyze Available Data

The Consultant will analyze existing water quality data including seasonal and diurnal variations and review

information from available drawings, specifications, and reports from the City of Ravenna WWTP for each of the nine items listed below.

1. Treatment Requirements and Goals / Water Quality
2. Plant / Process Description and Capacities
3. Hydraulic Evaluations
4. Solids Management
5. Electrical Evaluations
6. I&C / SCADA Evaluations
7. Structural / Architectural Evaluations
8. Mechanical Evaluations
9. Security Evaluations

TASK 3: Assessment of WWTP

The Consultant will facilitate, attend, and publish meeting minutes for the tour of the WWTP. The Consultant will visit the WWTP site and from discussions with plant personnel and visual inspection as well as other inspections conducted with the City of Ravenna's employees or contractors, will evaluate the need for capital upgrades (these inspections are assumed to occur during the one-day trip to the WWTP). The assessment of the WWTP will be focused on the aforementioned items listed in Task 2.

Recommendations will focus on capital upgrades and process optimization. In preparing these recommendations, the Consultant will rely on information gathered during the course of this project. The Consultant's observations will be provided in an assessment form approved by The City of Ravenna along with the meeting minutes and the draft and final reports.

Process optimization will provide opportunities to save chemical and O&M costs while staying in compliance. The hydraulic evaluation will include analysis of whether or not the pumps, valves and piping as configured limits the ability of the plant to meet current capacities and future expansion. Additionally, it will highlight any deficiencies that may cause cavitation within major components. Updated hydraulic profiles will be provided by The City of Ravenna. In addition, the city will provide a baseline BioWin model which will be completed December 30, 2022. At locations where water is pumped more than once, potential operating costs reductions will be included. The electrical and I&C/SCADA assessments will include a review of network security. The structural / architectural assessments will include a review of site security.

Each item should include the following during the WWTP Assessment:

- Capacity Adequacy Rating – including projected future growth
- Age / Spare Parts Availability – equipment is new and spare parts readily available, condition assessments for structures and tanks
- Environment – environment is not an additional burden to the operation of equipment
- Access – equipment and processes are easily accessible for O&M
- Redundancy – equipment can be OOS without impacting the process
- Expansion – provisions included for future expansion
- Overall Assessment – including remaining life

[TASK 4: Facility Plan Report](#)

Recommendations resulting from the data and information evaluations, graphical presentations, and facility assessments will be documented in a facility plan report. Operational improvements will be described, including advantages and disadvantages in tabular form. A short-term (five year) and long-term (20+ year) capital upgrade

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evaluation will be completed, which will also include advantages and disadvantages in tabular form.

The short-term and long-term capital upgrades will include a Class V engineer's opinion of probable construction cost. The report will include the following sections:

- Section One – Establish current and future water quality requirements and the related goals
- Section Two – WWTP component capacities
- Section Three – Hydraulic Evaluation
- Section Four – Process Evaluation (equipment)
- Section Five – Electrical Evaluation
- Section Six – I&C / SCADA Evaluation
- Section Seven – Structural / Architectural
- Section Eight – Mechanical Evaluations (HVAC and plumbing)

[TASK 5: Summary Workshop](#)

The Consultant will facilitate, attend, and publish meeting minutes from an interactive workshop at. The Consultant will provide a summary of the findings and recommendations to each of the attendees prior to the workshop.

This document was assembled with the assistance of  fontusblue,
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