

TECHNICAL REQUIREMENTS

Background

In the early 1800s the Pawtucket Dam in Lowell, MA was built across the Merrimack River and the water was diverted through a series of canals to power textile mills. Greater demand for power resulted in a flashboard system on top of the dam to increase the volume of water that was stored behind the dam and then diverted into Lowell's canals.

Today, the primary commercial use of the water stored behind the dam is the production of hydroelectric power (Lowell Hydroelectric Project, FERC No. 2790). In the past, when the spring flooding occurred, the pins holding the wooden flashboards, bent over resulting in the height of the dam being lowered and relieving the threat of flooding. The flashboards remained down, effectively lowering the level of the Merrimack River until the threat of flooding had passed.

The electricity producer, Enel, is currently proposing a new system that would replace the old flashboards with a bladder dam type system which, if approved, would maintain the higher level (five feet) all year round with brief exceptions during flood events.

With each increase in dam height, the adjacent neighborhood, Pawtucketville, has seen increases in flooding. It was recently determined that the direct cause of the initial flooding in this neighborhood was not as originally thought, the flooding of the Merrimack River, but rather the flooding of Clay Pit Brook which runs through the neighborhood and empties through a series of culverts into the Merrimack. Ultimately, during severe floods, the Merrimack overtops its banks and contributes to the flooding of the Pawtucketville neighborhood.

It is believed that when the Merrimack rises above the level of the Clay Pit Brook culverts, the water reverses it's flow (backwater effect) and with water coming into the brook from both directions the result is localized flooding.

Historical data shows a gradual increase in the frequency of flooding and not surprisingly an increase in the depth of flooding

This study will report on the height of the Merrimack River and the impact of rising backwater levels on the Clay Pit Brook, its floodplain and the neighborhood of Pawtucketville.

Scope of Services

The engineering services will review existing conditions, provide modeling and compare the existing flashboards to the bladder system, then provide recommendations to mitigate backwater flooding.

- Reviewing past conditions to establish data, flow rates and water elevations.
- Determining at what water height at the Pawtucket Dam impacts Clay Pit Brook
- Using industry accepted forecasting models, using the existing data as a benchmark, provide graphs and charts that show the impact of the existing proposed bladder system on Clay Pit Brook. The study should factor both the height of the water at the Pawtucket Dam and the effect of the height(s) duration on Clay Brook Pit
- Study must include 2-year, 10-year, 50-year and 100-year flood levels and the resulting floodplains.

Submittal of Qualifications Statement

Submittals must be concise, complete and accurate, without unnecessary elaboration. Supplying information not directly pertaining to the required qualifications response will be viewed unfavorably. The Qualifications Statement should include the following sections with the maximum number of pages as indicated.

- Executive Summary (two pages) – cover letter with summary of qualifications.
- Engineer's Project-Related Experience (ten pages) – experience within the past five years related to backwater studies.
- Project Team Qualifications (three pages, excluding resumes) – information describing the roles and qualifications of project team members, including the proposed project manager. Include any teaming arrangements or anticipated utilization of sub-consultants.
- Client References (two pages) – strong and credible client references with contact information, for work relevant to backwater studies.

The City of Lowell may disqualify any Engineer it determines to be non-responsive for reasons including, but not limited to:

- Non-responsive to any material requirement of this Request for Qualifications.
- Fails to meet the Minimum Requirements listed in this Request for Qualifications.
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Qualifications Statement Requirements

To be considered for the work, the prospective engineer must submit a Statement of Qualifications containing the following information:

- a) Engineer's demonstrated ability in preparing detailed backwater study documents.
- b) Engineer's demonstrated ability in providing engineering services to Massachusetts cities similar to Lowell, with a focus on rivers, dams and backwater.
- c) The Engineer shall have a minimum of five (5) years' experience writing backwater studies
- d) The Engineer shall have authored a minimum of three (3) previous backwater studies.

COMPARATIVE CRITERIA

	Highly Advantageous	Advantageous	Not Advantageous
I. General Qualifications A proven track record with similar-sized New England backwater studies	Has outstanding experience, with a proven track record, delivering engineering services to NE backwater studies of similar size	Has adequate experience, with a proven track record, delivering engineering services to NE backwater studies of similar size	Has limited experience, with a proven track record, delivering engineering services to NE backwater studies of similar size
II. Presentation, Communication & Vision A superior understanding of conducting backwater studies.	Has communicated, through the submittal process, a superior vision for providing engineering services valuable to the project	Has communicated, through the submittal process, an adequate vision for providing engineering services valuable to the project	Has communicated, through the submittal process, a limited vision for providing engineering services valuable to the project
III. Project Team An experienced and capable project team and project manager	Has a superior project team and an experienced project manager, both with significant expertise relevant to the project	Has a project team and an experienced project manager, one of which has limited expertise relevant to the project	Has a project team and an experienced project manager, both with limited expertise relevant to the project
IV. Backwater Studies The ability to successfully develop a detailed backwater study that includes all conditions	Has experience/resources that indicate a strong likelihood of successfully developing a comprehensive backwater study	Has experience/resources that indicate a moderate chance of successfully developing a comprehensive backwater study	Has experience/resources that indicate the potential of successfully developing a comprehensive backwater study
VI. References Strength and credibility of client references	The proposal indicates five or more strong and credible client references with contact information	The proposal indicates two to four strong and credible client references with contact information	The proposal indicates two or less strong and credible client references with contact information

Clarification of Qualifications

The Project Selection Committee will make its determination of qualifications solely upon clear and unambiguous qualifications submittals.

Return of Qualifications Statement

The City of Lowell shall retain for its records any and all materials submitted by prospective engineers in response to this RFP.

Interviews

The City of Lowell reserves the right to conduct or waive interviews, and to select finalists from the pool of applicants based upon the qualifications of each engineer. If interviews are required, evaluation of the prospective engineers will be based upon the content and quality of the engineer's presentation. The City may ask questions at the end of the engineer's presentation. The parties who make presentations must be the same as those named as assigned to the project in the proposal. Prospective engineers will be given ample notification to adequately prepare for a presentation and interview.

Selection Recommendation

The selection will be based on the qualifications outlined above. The Project Selection Committee shall determine the most advantageous proposal from a responsible and responsive engineer, taking into consideration only the qualifications and the evaluation criteria set forth in this RFP.

Schedule

September 3, 2014	RFP issued
September 24, 2014	Proposals Due
October 3	Project Selection Committee completes reviews of proposals
October 7 – October 9	Potential Interviews
October 15	City of Lowell selects an engineering firm