

City of Portsmouth, New Hampshire

**Request for Qualifications #43-19
Replacement of the Maplewood Avenue Bridge over North Mill Pond
NHDOT Bridge #231/103**

Sealed Qualifications Packages plainly marked "RFQ 43-19 Replacement of the Maplewood Avenue Bridge over North Mill Pond" 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., Monday April 15, 2019.

The City of Portsmouth requests that interested engineering firms submit qualifications statements for bridge design engineering and permitting services for the replacement of the Maplewood Avenue Bridge over North Mill Pond.

The Request for Qualifications document may be obtained by visiting the Finance/Purchasing Department section of the City of Portsmouth website at www.cityofportsmouth.com. Addenda to this RFQ, if any, including written answers to questions, will be posted on the City of Portsmouth website under the project heading.

If you have any questions, please contact the Finance/Purchasing Department at the following number: (603) 610-7227.

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NHDOT Bridge #231/103

Purpose and Background

In 2018, the City of Portsmouth began a citywide bridge evaluation and improvement master plan. This effort identified the Maplewood Avenue Bridge over North Mill Pond as nearing the end of its design life. The City has elected to move forward with selection of an engineering consultant for bridge design engineering and permitting services for the replacement of this bridge.

The existing bridge was constructed in 1940 and consists of a single masonry arch bounded by 200 feet of seawall to the north and 313 feet to the south. In 1976 the arch was lined with a corrugated metal plate arch. The liner was grouted into place and rests on concrete footings. The total span length of the arch is 25 feet. Maplewood Avenue carries two lanes of traffic over a 32' wide pavement section with granite curbing, 6 foot concrete sidewalks, and guard rail on either side. The bridge carries water, sewer, and gas mains in addition to overhead utilities. This stretch of road sees an approximate average annual daily traffic volume of 10,000 vehicles per day.

The pertinent section of the draft *2018 City-Wide Bridge Evaluation Report* is attached for additional reference (see Appendix A).

Submittal Requirements

Interested firms are requested to submit a qualifications package which should include the following:

Company Overview

Each consultant shall provide an overview of their company that shall include a minimum of the following:

- a. Brief history and description of firm.
- b. Location of corporate headquarters.
- c. Location where the work will be performed.
- d. Number of years in business for corporate and branch offices.
- e. Types of engineering services provided by the company.
- f. Description of budgeting, cost, and quality control procedures relative to each service type.

- g. Brief description of the firm's approach to planning, designing and implementing the project.

Project Team

Include a Project Team and Organization Chart listing all individuals who will be assigned to this project. The Consultant shall have a minimum of two licensed professional engineers on staff, one of which shall be a licensed structural engineer. Also, list any proposed subconsultants, their intended scope of services and qualifications. Indicate the current staff that has worked on NHDOT Municipal Bridge Aid projects completed by your firm. Resumes shall be included for each member of the project team.

Relevant Project Experience

List similar NHDOT Municipal Bridge Aid projects for which the Consultant has provided engineering services in the last five (5) years. The following information shall be included for each project:

- a. Project location, bridge type and year completed.
- b. Owner contact with address and phone number.
- c. Include brief scope of engineering services provided.
- d. Construction cost.

Three (3) copies of Qualifications Packages must be delivered to the City of Portsmouth Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, NH 03801 no later than 2:00 p.m., April 15, 2019.

Selection Process

The City of Portsmouth intends to proceed with a consultant selection utilizing a Qualifications Based Selection (QBS) process in accordance with the NHDOT Municipal Bridge Aid Program. A technical proposal including a project understanding and project approach is not required at this time and will not be reviewed if submitted. The City will rank interested firms based on qualifications and experience only.

Upon receipt and review of all qualifications, the City's review committee may then choose to interview firms or make a selection based solely on qualifications. The City will then enter into negotiations with the top rated firm for a fee for services. If the City cannot reach agreement on a scope and fee with that firm, the City will begin negotiations with the second rated firm, and so on, until an agreement is reached.

The City reserves the right to negotiate additional scope of services with the selected firm.

If you have any questions, please contact the Finance/Purchasing Department at the following number: (603) 610-7227.

APPENDIX A

2.9 Maplewood Avenue over North Mill Pond (NHDOT Bridge No. 231/103)

Priority: 3

Introduction



West Elevation

The existing bridge was constructed in 1940 and, and according to NHDOT records, rehabilitated in 1976. The structure consists of a single masonry arch with a grouted corrugated metal plate arch (CMPA) liner founded on concrete footings. The 1976 rehabilitation consisted of the installation of the CMPA liner and construction of the concrete footings. The bridge has a total span length of 25' and carries two lanes of traffic on a 32' wide paved roadway. A 5'-11" wide sidewalk is located on the west side of the bridge and a 6'-8" sidewalk is located on the east. The bridge has an 'E2' load restriction, and posting signs properly identifying this restriction are installed

in both approaches.

According to the latest NHDOT Bridge Inspection Report, the condition rating of the culvert is a 3, or 'serious', and has an AASHTO sufficiency rating of 43%. The bridge rail, rail transition, bridge rail approach, and approach rail ends are substandard. The bridge is listed on the NHDOT Municipal Bridge Redlist.

For the purpose of this report, upstream is considered south for this bridge.



Northeast Seawall

Observations

The pavement is in poor condition with cracking, settlement, and potholes throughout the approaches and on the bridge; pavement repairs have been completed in several locations. There is poor stormwater drainage at the bridge as evidenced by ponding on the west side and vegetation growth on and around the curbs. The sidewalks are rotating towards the road with significant settlement along both the west and east curb lines at the north and south ends. This settlement/rotation creates uneven walking surfaces on the sidewalk (i.e. tripping hazards). A

section of the vertical granite curb is missing on the east side. The rail system, though substandard, is in good condition with minor plow damage.

On the east side of the bridge there is an exposed out-of-service sewer main that is severely deteriorated with extensive cracking and complete section loss along the invert. An active

sewer main is located within the hydraulic opening and there is evidence that roadway backfill material is migrating through the culvert walls at the sewer main penetration. Bricks used to infill voids in the granite block headwall and seawall are missing in areas of the northwest seawall. The MPA liner exhibits heavy corrosion and several scattered holes, with 100% section loss at the bottom 6". The bolt heads along the seams in the bottom two-thirds of the MPA liner exhibit section loss. The concrete pedestals have exposed rebar, heavy deterioration, and marine growth.

The field observations made for this report are in general agreement with the latest NHDOT Bridge Inspection Report.



Typical Pavement Condition



East Intrados of Arch

Recommendations

Short-term Recommendations:

The bridge is in serious condition and should be replaced or repaired as soon as possible. Due to the complexity and cost of the project, it may not be feasible to design, permit and construct the replacement structure within the next 2 years; however, the process of replacing the bridge should begin as soon as possible.

Intermediate-term Recommendations:

Due to the complexity and cost of the project, it is likely the bridge will be replaced in the intermediate-term.

The City applied to have a repair or replacement project for this bridge added to the NHDOT Municipal SAB program in November 2000. NHDOT processed this application and provided the City with a total project cost estimate of \$1,100,000. To continue with the SAB application process, the City must next notify the NHDOT's Municipal Highways Engineer in the Bureau of Planning and Community Assistance of its intent to conduct the project. However, the estimate prepared by NHDOT in 2000 is outdated, and may not reflect the scope or anticipated complexity of this project. It is recommended that the City contact NHDOT to express interest

in moving forward with SAB funding, and to request an updated estimate for a complete replacement project.

As previously discussed, new projects are not currently being added to the SAB program; the Department has not identified when new projects will be added, or which Fiscal Year they will be added to for construction funding. If the City decides to utilize SAB funding to replace the Maplewood Avenue bridge, it is recommended that an interim repair project be completed to avoid deterioration of the structure to the point where closure is required. The design of the repair project should be started in the short-term with the repair being completed in the intermediate-term.

NHDOT will continue to inspect the Maplewood Ave bridge every 12 months because of its deteriorated condition (bridges in satisfactory or better condition are inspected on a 2-year cycle, but that frequency is increased when a bridge is added to the Red List). Should the current condition rating of 3 (serious) be reduced to 2 (severe), NHDOT will recommend to the City that the bridge be closed to vehicular traffic.

Two scenarios for the Recommended 10-Year Bridge Capital Improvement Program are presented in Appendix A; the first assumes the Maplewood Avenue bridge is replaced in the intermediate-term with City-only funds and the second assumes replacement with NHDOT Municipal SAB funding (80% reimbursable from the NHDOT) and a repair project is completed with City-only funds in the intermediate-term to prolong the life of the structure until SAB funding is available for the replacement project. The City may choose to upgrade the underground sewer main and water main within the limits of the Maplewood Avenue bridge replacement project; however, costs for upgrading the public utilities outside of work necessary to replace the bridge may not be eligible for NHDOT Municipal SAB funding.

Long-term Recommendations:

None.