City of Portsmouth
Portsmouth, New Hampshire
**Public Works Department**
RFP #37-15
REQUEST FOR PROPOSAL

# ENGINEERING CONSULTING SERVICES
# WATER SYSTEM ASSET MANAGEMENT PROGRAM

## INVITATION

Sealed Proposals, plainly marked "RFP #37-15, Engineering Consulting Services – Water System Asset Management Program – Proposal" 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 2:30 pm on December 18, 2014.

## FUNDING

This effort will be funded by water enterprise revenues and the State of New Hampshire Department of Environmental Services "Asset Management & Financial Planning Grant."

## PROJECT BACKGROUND/PURPOSE

### INTRODUCTION

The NHDES has awarded a Public Water System Asset Management Planning Grant program to the City of Portsmouth's Water Division to promote asset management and assist the Division with developing an asset management plan.

The City of Portsmouth's Water Division is a regional public water system serving the communities of Portsmouth, Newington, Greenland, New Castle and portions of Rye, Madbury and Durham. The system's infrastructure includes:

- Bellamy Reservoir
- Madbury Surface Water Treatment Facility (built in 2011)
- 8 Wells
- 2 Booster Stations
- 2 PRV Stations
- 4 Distribution Storage Tanks
- 189 miles of pipe
- 972 Public Fire Hydrants
- 2,840 Valves
- 8,203 Meters/Customers

## SCOPE OF WORK

The consultant will provide the following professional engineering services related to development of an asset operational management plan for the Water Division's water system assets. The City is currently using ArcGIS 10.3 for water system infrastructure mapping. The City has an enterprise ArcGIS Server license and maintains data in an SDE database which resides in SQL Server 2008 R2. The City utilizes VUEWorks, running v10.1, for daily work orders, document storage and other asset information.

### *Task 1 – Asset Inventory and Condition Assessment*

- Attend one (1) kick-off meeting with client staff to discuss the goals of the project and collect additional information to supplement what client has already provided to the consultant.
- Conduct a site visit to accessible facilities. The site visit will coordinated for the same day as the kick-off meeting.
- Develop an inventory of water assets. The inventory will be in spreadsheet form and based on information provided by the client.
- A "top down" approach will be used, which inventories assets in blocks or types, as opposed to a "bottom up" approach which considers each individual asset (valve, hydrant, service, etc.). The top down approach is more cost effective and will result in an asset inventory framework that covers the entire water system. The following asset assessments are anticipated:
    - Bellamy Reservoir
    - Madbury Surface Water Treatment Facility (built in 2011)
    - 8 Wells
    - 2 Booster Stations
    - 2 PRV Stations
    - 4 Distribution Storage Tanks
    - 189 miles of pipe
    - 972 Public Fire Hydrants
    - 2,840 Valves
    - 8,203 Meters/Customers
    - Unique components (interconnections, river crossings, etc.)
- Evaluate the condition of each block of assets based on a site visit to accessible assets and a desktop evaluation using available information such as hydrant flow tests, operator input, and service history (number of breaks, etc.).
- The inventory will include type of asset, age, condition, service history, and estimated remaining useful life.

### *Task 2 – Level of Service and Criticality*

Level of Service

- Assist with development of a Level of Service Statement. The Level of Service Statement defines the way in which the water system owners, managers, and operators want the system to perform over the long term. Typical Level of Service Statements include items relating to water quality, frequency of main breaks, interruptions in service, etc.

- Prepare a draft Level of Service Statement based on the consultant's experience and knowledge of the water system for review and comment by the client.
- The City currently uses VUEWorks for asset management and managing work orders related to utility and facility maintenance. Configure the VUEWorks Condition Module for pipes. Assist in developing custom condition ratings using both institutional knowledge, record drawings, and existing condition data collected. Create links to external condition data contained in CUES Granite.Net to summarize, analyze, rate and report from within VUEWorks.
- Develop Daily, Monthly and Annual reporting methods for tracking critical water system operating components shall be developed. Information and tracking for these reports shall include, at a minimum, water main breaks, leaks, valve operation, hydrant flushing, new system taps, emergency requests, freeze-ups, leak surveys (in miles), water main replaced, water main rehabilitated, water quality requests, water quality complaints, service meter installations/replacements (by size), backflow inspections, backflow tests, etc.
- Respond to client comments and finalize the Level of Service Statement in the final Asset Management Plan.

Assess Criticality

- Configure the VUEWorks Risk Module for pipes. Develop the methods for determining the consequences, failure modes and priorities for each asset class and type using custom weight factors and algorithms. For each asset or asset block, estimate its probability of failure. Develop a scoring system (matrix) to rank assets based on their probability of failure. Consider material, age, condition, and other factors as appropriate.
- For each asset or asset block, estimate its consequence of failure. Develop a scoring system (matrix) to rank assets based on the impact their failure would have on the system's ability to meet the desired level of service. Consider remaining useful life, protection of public health and welfare, importance of the asset to operation of the system, and redundancy or lack thereof.
- Rank assets in order of importance (priority) based on a combination of probability and consequence of failure.

***Task 3 – Financial Planning***

Life Cycle Costing

- Prepare an opinion of probable cost to repair or replace each asset type or block. The opinions of cost will be planning level. Using the "top down" approach, opinions of cost will be developed for each asset block and will include all work assumed for full replacement of the asset. (For example, water main costs will include hydrants, services, and restoration.)

Long-Term Funding Strategy

- Determine the estimated cost per year to adequately fund repair and replacement of existing assets and compare that cost to the water system's current operating budget.

***Task 4 – Plan Presentation, Implementation, Communication and Training***

Asset Management Plan

- Prepare a written Asset Management Plan presenting the results of the above tasks. Submit a draft for review.
- Attend one (1) meeting to review the draft Plan with the client and receive comments.
- Revise the Plan in response to comments and submit up to five (5) copies of the final Plan.

Implementation / Communication Plan and Training

- Provide information to be utilized by the water system's staff (Portsmouth City Council) to present an update as part of the City's annual budget process.

***Deliverables***

1. Operating report and Standard Operating Procedure templates. Develop Standard Operating Procedures that incorporate the existing business methods in the operation of VUEWorks as well as new business practices recommended by this project.
2. Asset Inventory spreadsheet (Tasks 1 and 2), including:
    a. Asset inventory
    b. Condition assessment
    c. Probability of failure
    d. Consequence of failure
3. Asset Management Plan (Task 4), including:
    a. Level of service statement
    b. Life-cycle costing
    c. Long-term funding strategy
    d. Implementation/Communications plan
4. Communication Plan information

***Meetings***

1. Kick-off and site visits (Task 1)
2. Level of service workshop and review draft report (Tasks 2 and 4)

***Limitations / Assumptions***

- The asset inventory will be based on information, records, and reports to be supplied by the Portsmouth Water Division.

***Work Not Included***

- Developing a GIS.
- Condition assessment or inspection except as specifically noted above.
- Water rate study. Cost of service.

***Anticipated Project Schedule***

| | |
|---|---|
| Award of Grant | January 2015 |
| Authorization to Proceed* | January 2015 |
| Kick-off and Site Visits | January 201 |
| Develop Plan | February-April 2015 |
| Level of Service Workshop and Review Draft Plan | February-April 2015 |
| Present Final Plan | May 2015 |
| Public Outreach | TBD |

***AVAILABLE INFORMATION***

The following information is currently available on the City's website:

- 2013 Water System Master Plan: http://www.cityofportsmouth.com/publicworks/index.htm (click on "Water" tab and then click on "2013 Water System Master Plan.")

***ENGAGEMENT OF THE ENGINEER***

**A. Required Contents of the Proposal**

A sealed proposal, plainly marked "RFP #37-15, Design Engineering Services – Water System Asset Management Program" on the outside of the envelope, addressed to the Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, NH 03801 will be accepted until 2:30 pm December 18, 2014. Four (4) copies of the proposal shall be submitted and include the following information:

1. Firm (team) Experience (for each firm in the team):
Describe relevant experience in each of the following primary areas of focus:

a. Familiarity with the City of Portsmouth Water Division's operations
b. Asset Management experience utilizing VueWorks databases
c. Overall project team experience

The firm's experience shall be summarized in a matrix format. In addition, detailed project descriptions of no more than five reference projects containing the majority of the focus areas listed above shall be included. The project descriptions shall be current and limited to a maximum of one full page per project, along with client references and up-to-date contact information (name, title, organization, phone, cell and email).

2. Project Team:
List each member of the proposed Project Team along with their:

a. Firm affiliation
b. Area of specialty

c. Office location
d. Total years of experience
e. Years with current firm
f. Specific involvement/role in projects used as references

One member of the Project Team must be assigned as the Project Manager that will act as the primary client contact and who shall be involved in day to day management of the Project. All resumes shall be included and limited to a maximum of two pages per team member.

3. Project Understanding and Approach:
The Consultant(s) shall state in succinct terms their understanding of what is required by this Request for Proposal. Describe in narrative or outline form the consultant's approach and technical plan for accomplishing the work of this RFP including the following:

- Describe the sequential tasks to be used to accomplish this project
- Indicate all key deliverables
- Describe the responsibilities of each person on the project team
- List the portion of the work to be subcontracted
- Include a list of information required or tasks to be completed by City staff.

Project Schedule: Provide a schedule for completing each task in the Scope of Work, including deadlines for preparing project deliverables.

4. Man-Hour Level of Effort:
Provide a proposed man-hour level of effort in table format coordinated with the anticipated list of tasks to complete the work. The man-hour level of effort shall be comprehensive and inclusive of the total man-hours to complete the project. Do not include any fee associated with the level of effort in the proposal.

Total budget for this project is $30,000 with $15,000 of the funding coming from NHDES and $15,000 from the Water System Enterprise Fund.

**B. Ranking of Proposal**

Each proposal will be reviewed and ranked according to the following criteria:

| | |
|---|---|
| a. Firm's experience successfully completing similar projects and individual Project Team member experience | Maximum of 30 points |
| b. References indicating successful projects of this type and utilizing VueWorks | Maximum of 40 points |
| c. Understanding and approach to project | Maximum of 20 points |
| d. Quality of proposal package | Maximum of 10 points |

## SCHEDULE

The project is anticipated to start in January 2015 and completed by the May 2015. Final schedule will vary based on the negotiated scope and work tasks.

## CITY ROLE

City staff will be responsible for administering the project. Representatives of the City's Public Works Department will provide input and assistance with any necessary field work and review all deliverables from the effort. The primary contact at the City will be Brian Goetz, Deputy Director of Public Works.

## SELECTION AND CONTRACT DOCUMENT

Upon review of all responsive proposals using the criteria outlined above, the City may select up to three (3) firms to interview. Following interviews, the highest ranking firm will be invited to negotiate a final Scope of Services and fee with the City. 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. If the City is unable to reach agreement with the highest ranking firm, the City will enter into negotiations with the next highest ranking firm. The City reserves the right to negotiate directly with the firm(s) selected for additional project work.

## RESERVATION OF RIGHTS

The City reserves the right to undertake such investigation as it deems necessary to evaluate the proposals of the firm and to evaluate the proposal submitted. Firms may be requested to execute releases for information. Failure to provide a release upon request will result in disqualification.

The City of Portsmouth reserves the right to negotiate additional work.

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

## ADDITIONAL INFORMATION

General requests for additional information should be directed to Jim Siegel, Water Meter Billing Foreman at 603-766-1431 or by email to jdsiegel@cityofportsmouth.com. Requests related to system infrastructure and VUEWorks data should be directed to Jamie McCarty, GIS Coordinator at 603-766-1430 or by email to: jtmccarty@cityofportsmouth.com. Addenda to this request for proposal, if any, including written answers to questions, will be posted on the City of Portsmouth website at the City's web site at http://www.cityofportsmouth.com/finance/purchasing.htm under

the project heading. Addenda and updates will NOT be sent directly to firms. Firms submitting proposals should check the web site daily for addenda and updates after the release date. Firms should print out, sign and return addenda with the proposal. Failure to do so may result in disqualification.

**INDEMNIFICATION AND INSURANCE REQUIREMENTS**

The Contract will require the Consultant to agree to pay on behalf of and hold harmless the City of Portsmouth for all claims arising in whole or in part from its work on behalf of the City. Consultant will be required to maintain insurance in such form as will protect the Consultant from claims and liabilities for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this contract. Consultant shall also be required to maintain professional liability insurance in the minimum amount of $1 million.