

THE COMMONWEALTH OF MASSACHUSETTS

**EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL
AFFAIRS**

DEPARTMENT OF ENVIRONMENTAL PROTECTION

ONE WINTER STREET, BOSTON, MA



Request for Information and Expressions of Interest (RFI)

**Enhancing Resilience and Emergency Preparedness
of Water Utilities through Improved Mapping**

October 7, 2019

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1. INTRODUCTION AND PURPOSE

1.1 Description

The Commonwealth of Massachusetts Department of Environmental Protection (MassDEP) is soliciting information and expressions of interest from Public Water Suppliers (PWSs) and Publicly Owned Treatment Works (POTWs), including sewer systems used for collecting and conveying wastes to a site or works for treatment or disposal, to receive free technical assistance in developing and enhancing Geographic Information System (GIS) maps of their drinking water distribution or sewer collection systems. The assistance will be provided by a private consulting firm that, subject to appropriation, will be under contract with MassDEP to perform the work. No funds will be provided directly to water utilities for these services. The goal of this effort is to ensure that all public water suppliers and publicly owned treatment works have accurate maps of their respective systems in order to enhance asset management, improve system operations and resiliency, and plan for and respond to emergencies. Specifically, Geographic Information Systems (GIS) mapping provides the tools to better organize assets and events, including the ability to perform data analysis that can assist with routine maintenance, level of service information, replacement costs, and risk analysis. MassDEP's Water Utility Resilience Program (WURP) is committed to assisting water utilities with achieving this goal through a technical assistance program that provides a uniform approach to GIS data developed for the water sector.

The purpose of this Request for Information and Expressions of Interest (RFI) is to identify and collect system information from water utilities interested and ready to receive GIS mapping services, which may range from scanning and then digitizing information, to data layer development and accuracy improvements. Based on the responses to this RFI, a list of PWSs and POTWs interested and ready for the GIS mapping assistance will be created. The list is expected to be used by the consultant to focus mapping work in communities that have expressed interest in proceeding with GIS mapping, and are ready to provide the necessary system information and staff review time to accomplish the program goals and create final GIS products. Responding to this RFI is entirely voluntary and will not guarantee that a water utility will be selected to receive technical mapping assistance. This RFI is not a contract and is not an award of funding or technical assistance.

MassDEP currently anticipates that the consultant to provide the mapping assistance will be available and prepared to begin work by July 1, 2020. A final list of PWSs and POTWs ready and interested in receiving GIS mapping services will not be available until after the consulting firm is secured by MassDEP (time, funding, complexity and size of systems may constrain the number of systems that can be mapped).

1.2 Background

In 2016, the MassDEP WURP teamed with the MassDEP GIS program to initiate a project that inventoried and tracked PWS and POTW critical infrastructure map availability and format. The inventory included a comprehensive review of internal MassDEP files, online information, and historical mapping projects, including work performed by the Massachusetts Department of Public Health's (MDPH) Bureau of Environmental Health (BEH). The inventory allowed MassDEP to improve internal accessibility to statewide map information, and better evaluate, prioritize and assist water utilities with critical infrastructure resilience planning by identifying systems in need of GIS mapping assistance.

In the spring of 2017, \$300,000 was then used by MassDEP, through its contractor Tighe & Bond, Inc., to provide direct technical assistance to thirty two (32) communities across the state that resulted in developing consistently mapped datalayers for thirty four (34) PWSs and fifteen (15) POTWs. MassDEP's contractor was obtained through a Request for Quotes (RFQ) issued in CommBuys on January 31, 2017. The 49 water utilities chosen for this technical assistance during fiscal year 2017 (FY17) were prioritized based upon factors that included system size, need(s) and interest in participation, and MassDEP regional program staff input.

Due to considerable utility interest, an additional \$500,000 was made available to further the project in fiscal year 2018 (FY18). MassDEP issued an RFI on November 7, 2017 to solicit specific information and interest from additional PWSs and POTWs to receive free technical assistance in developing GIS maps of their respective distribution and/or collection systems from a private consulting firm. The RFI was posted to the MassDEP website with additional direct email messages sent out through MassDEP's drinking water and wastewater/Department of Public Works (DPW) listserv. On February 20, 2018 MassDEP again issued an RFQ through CommBuys to hire a consultant that would provide the mapping services and finalized a contract in May 2018.

Funding from the first two rounds has resulted in detailed infrastructure maps and consistently formatted GIS data for 91 water utilities in 59 communities, improved community (COM) PWS interconnection information, and led to the development of a field use information report that offers opportunities for water utilities to access and enhance their systems' GIS data in real time. Additionally, in the interest of transparency and due to the collaborative effort between MassDEP and MDPH, available data has been used to further create service area maps that provide a general view of existing COM PWS and municipal wastewater service availability statewide. The service areas provide a basic geographic representation of the service extent in any given municipality while ensuring the security of detailed critical infrastructure information is maintained. The project has confirmed service areas for 47% of COM PWS and 23% of municipal wastewater systems.

MassDEP provided an additional \$500,000 in funding during fiscal year 2019 (FY19) and issued an RFI in October 2018 to again solicit interest and information from PWSs and POTWs to receive free GIS technical assistance from a private consulting firm. On April 8, 2019, MassDEP issued an RFQ through CommBuys to hire a consultant to provide mapping services, as well as provide information regarding associated costs for future work that builds upon previous services. A contract was finalized on June 25, 2019 to provide:

- GIS mapping technical assistance for up to 40 water utilities;
- Development and completion of statewide PWS and POTW service area mapping;
- Water sector system GIS capacity assessment and training for up to 25 water utilities; and
- Water utility flood risk mapping for 120 water utilities.

The ongoing 2019 work will result in a total of 120 water utilities in 73 municipalities across the state having received assistance; these numbers do not include the water utilities that have participated during more than one year.

All participating systems receive direct GIS mapping technical assistance, a hard copy paper map of their system, along with a thumb drive that contains the pdf image of their map, the GIS datalayers, and a GIS metadata description report that identifies the source(s) used for developing the GIS map, the features included in the dataset, and the QA/QC process.

MassDEP will use the developed data to improve internal access to water sector infrastructure information, which aids in identifying system vulnerabilities in relation to climate change adaptation planning and improving emergency preparedness and response capabilities. All detailed data developed for this critical infrastructure sector is protected by state and federal laws, including an exclusion from public disclosure pursuant to M.G.L. c. 4 §7, Clause 26(n), the Critical Infrastructure Information Act of 2002 (see 6 C.F.R. Part 29), Chemical Vulnerability Terrorism Information (see 6 C.F. R. 27.400 ff), and/or America’s Water Infrastructure Act of 2018 (AWIA) (see S. 3021; Public Law 115-270). However, data development also allows for the production of generalized service area mapping, which provides simple polygons within a community to illustrate areas that have water or sewer service. This generalized service area mapping is being developed for all communities within the Commonwealth as part of the FY18 project, and allows for the sharing of basic service area information with the public and other state agencies without releasing detailed, critical infrastructure information. In addition, all service area mapping is made available to the systems or applicable communities as they are developed.

1.3 Expressions of Interest from Water Utilities

Entities that may express interest in participation include small, medium and large sized Community (COM) PWSs, and POTWs, including municipal sewer systems and collection systems. Non-transient non-community (NTNC) and transient non-community (TNC) PWSs are also eligible under this project, particularly those that serve other critical infrastructure sectors, or as shelters during emergency situations. Systems that have participated in previous mapping rounds and clearly identify additional needs to enhance their GIS dataset may also express interest in continued participation in this project.

2 ESTIMATED CALENDAR

EVENT	DATE
RFI Release Date	October 3, 2019
RFI Close Date	January 10, 2020

MassDEP is currently in a contract with a qualified consultant who will be providing the mapping services identified in this RFI through June 30, 2020. MassDEP also has two (2) options to renew this contract with the consultant for a (1) year period for each option (these options will be referred to as the “2020 round” and the “2021 round”). Should MassDEP receive the funding required to exercise both contract renewal options, MassDEP will continue to provide mapping services, through its consultant, to interested utilities until June 30, 2022.

3 DATA NEEDS

Future 2020 round: In order to receive mapping assistance during the future 2020 round, interested water utilities must be prepared to work directly with MassDEP's contractor by July 1, 2020. Selected water utilities must be available to meet with the contractor to provide existing data for their respective system, which may include, but is not limited to the following:

- Record plans and/or system maps in paper or digital (PDF, TIFF, JPEG, CAD etc...) format(s) that depict:
 - Pipes
 - Valves
 - Manholes
 - Interconnections
 - Hydrants
 - Booster stations
 - Pump houses
 - Storage tanks
 - Treatment facilities
- Information on pipe material, size and installation dates if known,
- Any previously developed digital and/or GIS data in need of revision or update, and
- Other operational or asset information the system prefers be included in mapping.

Water utilities must be available to review a draft version of the GIS map developed by the contractor, and provide any necessary corrections to the contractor within one to three weeks after receipt of the draft materials. The estimated time for a water utility to spend gathering applicable information and meeting with the contractor is heavily dependent upon the system size, and organization and availability of map material. System staff should anticipate spending up to 90 hours on this project.

Future 2021 round: In the event that interested utilities would like to receive mapping assistance during the future 2021 round, these utilities must be prepared to work directly with MassDEP's contractor by July 1, 2021, and must be prepared to meet with the contractor and provide the data for their respective system that is specified for the future 2020 round.

Note: Interested water utilities must also specify in their response to this RFI as to whether they would like to be considered for the 2020 round, the 2021 round, or have no preference. As noted previously, the availability of these future mapping services is subject to the availability of future funding.

4 REVIEW OF RESPONSES FOR INTEREST AND READINESS

Interested water utilities that would like to participate in this project should submit a response to this RFI, and address the RFI items set forth in section 3 above. The RFI responses will be used by MassDEP to identify interested water utilities that are ready to proceed with a mapping project, and will assist in determining the specific GIS needs of interested systems that may receive GIS technical assistance from the consulting firm hired by MassDEP.

4.1 RFI Responses and Readiness Assessment

MassDEP WURP staff will review all RFI responses from interested PWSs and POTWs with input from MassDEP regional program staff. Responses to this RFI will be reviewed for the following components (at a minimum) which indicate system readiness to proceed:

- Status of mapping information currently available to the water utility.
- Ability of the water utility staff to provide the necessary information to develop GIS datalayers for their system.
- Water utility's need to address related MassDEP regulatory requirements, corrective actions or recommendations.
- Commitment made by the water utility to actively participate in meeting requests by the selected contractor.
- Commitment made by the water utility to review and provide comment on draft GIS maps developed within established timeframes.

4.2 Response Format

Responses shall be limited to 2 pages (8-1/2" by 11" sheet with 0.5" margins, 11 size font minimum) and shall include the following:

1. A short statement explaining how the system will benefit from participating in the GIS infrastructure mapping project, and how the provided map and data will be used to enhance the system.
 - a. If the water utility has participated in past round(s), please include a statement of how participation has benefited your system, including how continued participation will support your water utility.
2. A description of the utility's distribution and/or collection system, including, but not limited to the number(s) of treatment plants, pumping stations, manholes, hydrants, valves, service connections, and miles of pipe as applicable and to the best of your knowledge.
 - a. If the water utility has participated in past round(s), a system description is not necessary. Please provide a statement about water utility dedication to utilize data developed from this project, including details of how data is or will be utilized.
3. A description or listing of the system's current map and data availability, format(s), status, and revisions needed to improve current map(s).
4. A detailed description of any operational events (e.g., history of breaks, water quality complaints etc.) and additional asset locations (e.g., back-up power/generators, portable generator plugs etc.) the system prefers to add as additional GIS datalayers.
 - a. If desired, utilities may include requests for additional datalayers or various base maps to be depicted with the system infrastructure data.
5. A detailed description of any record scanning needs that may be used in conjunction with the GIS mapping (e.g., number of tie-cards on file intended for linking to GIS point data).
6. Identification of any in-house mapping capabilities, and description of any online GIS data viewers in use by the municipality in which the system is located.
7. A statement confirming that the system is willing to make a commitment to provide up to 90 hours of staff time to gather information and work with a consulting firm to complete a map for the system.

8. A statement confirming that the system is willing to make a commitment to work with a consulting firm to complete the GIS mapping by June 30, 2021 or June 30, 2022 depending upon funding availability and project round participation.
9. A contact list including contacts' email, telephone numbers, and mailing address (i.e., mailing address that maps would be delivered to).

5 HOW TO SUBMIT A PAPER OR ELECTRONIC RESPONSE

Responding utilities may submit their response either on paper or electronically.

PAPER SUBMITTAL INSTRUCTIONS:

Submit your PAPER response in a sealed envelope that is clearly marked with the words "WURP-GIS Infrastructure – 2020", by THE RESPONSE DEADLINE OF JANUARY 10, 2020 to the following address:

Massachusetts Department of Environmental Protection
8 New Bond Street, Worcester, MA 01606
ATTN: Kristin Divris

Paper responses must be submitted in a sealed envelope and include **one (1)** original signed copy, and **one (1)** duplicate copy.

ELECTRONIC SUBMITTAL INSTRUCTIONS:

Submit your ELECTRONIC response with the words "WURP-GIS Infrastructure – 2020-SystemName" in the subject line, by THE RESPONSE DEADLINE OF JANUARY 10, 2020 to the following Email:

E-Mail: Kristin.Divris@mass.gov

Questions may be directed to Kristin Divris at Kristin.Divris@mass.gov or by telephone at 508-849-4028.

RESPONSE DEADLINE –

Responses are due no later than **January 10, 2020 at 5 pm.**

LATE RESPONSES WILL NOT BE CONSIDERED.