



# Department of Environmental Protection

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## MassDEP's Water Utility Resilience Program

The Water Utility Resilience Program (WURP) is a technical assistance program designed to support both Drinking Water (DW) and Wastewater (WW) utilities in developing or enhancing their resilience to severe and hazardous weather events, including those caused by climate change. This includes identifying helpful resources, finding partnership opportunities, offering adaptation planning assistance and coordinating training opportunities. WURP works closely with the MassDEP Emergency Preparedness Officer to ensure climate change resilience is part of an all hazards planning approach for water utilities, and serves as MassDEP's Drinking Water Program coordinator for Emergency Preparedness and Security.

### **PROJECT SUMMARY**

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

A Collaborative effort of MassDEP WURP and MassDEP Geographic Information Systems (GIS) program.

#### **Project Background- First round**

- 2016 – Statewide inventory of available water utility mapping information included review of historical mapping projects, available online information, and internal DEP files to develop initial community/system priority listing.
- 2017 - \$300,000 in grant funding available through Water Management Act (WMA) program.
- January 2017 - MassDEP issued a request for quotes (RFQs) to select a contractor to confirm information in MassDEP's inventory, and provide free GIS mapping services to priority municipal water utilities.
- March 2017 - MassDEP contracted with Tighe & Bond, Inc. to perform work.
- April through June 2017 – GIS Mapping done for **49 systems**:
  - Located in 32 communities throughout the state (8 communities in western region; 12 communities in central region; 5 communities in northeast region; 7 communities in southeast region)
  - 34 Public Water Systems (PWS) mapped
  - 15 Publicly Owned Treatment Works (POTWs) mapped
- Base maps used ranged from a single paper map, tie cards or digital image for some, to over 400+ record plans for others.
- 2017 project also updated information on PWS interconnections, (often used between systems during emergencies) DEP records identified 761 interconnections; updated project results identified 1,195 interconnections. New information will be used to improve emergency preparedness.

**Current Project Status – 2018 Second Round:** \$500,000 in grant funding available through WMA program.

- In November 2017– MassDEP solicited interest by water utilities in free technical assistance in developing GIS maps of drinking water distribution or sewer collection systems from a private consulting firm.
- February 2018 - MassDEP issued an RFQ to select a consultant to providing free GIS mapping services to municipal utilities, including those that expressed interest in November 2017.
- May 2018 – Finalized contract with Tighe & Bond to provide GIS technical assistance for **up to 40 water utilities** (11 in WERO, 13 in CERO, 7 in NERO, and 9 in SERO). Mapping work is projected to be substantially complete by end of October 2018, while the statewide service area mapping will be completed by the end of 2018.
  - Projected participating systems vary greatly in type of assistance needed; some have no GIS maps, others need significant updates to current GIS maps. Systems range from state-owned facilities to coastal and inland systems throughout the Commonwealth.
  - Work will include completing over 400 statewide PWS and POTW service area maps. Service area maps completed will be made publicly accessible (maintaining data security of detailed infrastructure).
  - Development of a “field use information report” that will provide water utilities information on opportunities to access and enhance their systems’ GIS data in real time.

**DATA SECURITY:** MassDEP has coordinated security of the critical infrastructure data developed from this project with the State Police Fusion Center.

**BENEFITS:** Data developed from this mapping project assists systems with:

- enhanced asset management (identifies and digitally records pipe sizes, material, age, valves, hydrants, and manholes when known),
- operational system improvements (ability to record directional flows for improved flushing programs); and,
- planning for and responding to emergencies (including asset locations as they relate to drought, 100-year and 500-year flood events, hurricane inundation zones and/or sea level rise).

**SYSTEM DELIVERABLES:**

- Each PWS or POTW receives a hard copy paper map of their system, along with a thumb drive that contains a pdf image of their map, the GIS data, and a GIS metadata description report.

**NEXT STEPS:**

- Request for Information and Expressions of Interest (RFI) released on 10/16/2018 for a third mapping round during fiscal year 2019.
  - For project updates, including additional FAQ, see WURP website.  
<https://www.mass.gov/guides/water-utility-resilience-program>