

Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: City of Fall River

Project Title: Regional Interconnection Evaluation

Award Year (FY): 2021

Grant Award: \$ 100,650

Match: \$ 33,551

Match Source: Cash

One or Two Year Project: One Year Project

Municipal Department Leading Project: Fall River Water Division

Project Website URL: TBD (currently <https://watuppareserve.wixsite.com/my-site>, and <https://watuppareserve.wixsite.com/my-site-1>, but these will change once the domains are decided upon)

Community Overview:

The 33-square mile City of Fall River is one of Massachusetts' ten largest cities, with five miles of shoreline exposed to Hope Bay and the remainder fronting the Taunton River. The City is located in Bristol County, occupying portions of the Taunton River, Narragansett/Mount Hope Bay, and Buzzard's Bay watersheds, and is home to approximately 90,000 people. The Regional Emergency Water System Interconnectivity Analysis – Fall River, Somerset, Swansea, and Dighton focuses on Fall River; however, all partner communities recognize that a secure, reliable water supply is essential to support emergency response capability in hazard events.

Approximately 20% of Fall River residents fall below the poverty threshold, and 25% of the City is home to income, minority and income, and English isolation Environmental Justice populations. The western border of the City, primarily between I-195 and Route 24, along Mount Hope Bay, is mapped as home to these Environmental Justice populations.

Project Description and Goals:

Climate change has increased the risk of droughts and algal blooms to public water supplies, creating a need for more resilient water systems. These impacts are mitigated by evaluating alternative water supplies, such as interconnections with neighboring communities, that can be used when the utility's primary water supply is compromised. The emergency water interconnection evaluation included the communities of Fall River, Dighton, Somerset, and Swansea.

The goal of the interconnection evaluation was to create a more robust and resilient intermunicipal water supply system and to respond to citizen concerns expressed in its 2019 MVP Report by evaluating the ability of the combined water supplies to provide redundancy during periods of critical need. The interconnection evaluation met the goals of the project by achieving the following:

- The project employed nature-based decisions;
- The project improved equitable outcomes for and fostered strong partnerships with EJ and other Climate Vulnerable Populations;
- The project provided regional benefits;
- The project set forth the public involvement and community engagement plan set forth in the application, with continued engagement planning to run after the drought; and
- The project was finished on time.

Results and Deliverables:

There were numerous deliverables completed throughout the project that contributed to the overall results, including:

- Combining the existing hydraulic models of Fall River, Somerset, Swansea, and Dighton into one regional hydraulic model which was used to evaluate an area totaling 86 square miles, encompassing 480 miles of pipe, 15 water storage tanks, and 12 water sources.
- Mapping of the hydraulic and water quality evaluation.
- Assessment of three existing interconnections and identification of five potential new interconnection locations.
- Identification of potential to provide up to 3,400 gpm of flow across a single existing interconnection and up to 3,200 gpm of flow across a single potential interconnection in the event of a water emergency in one of the communities.
- Conceptual design of a permanent interconnection between Somerset and Swansea.
- Condition assessment and field testing of the interconnections between Fall River and Somerset.
- Development of a comprehensive online WebGIS application based on Dighton's existing hydraulic modeling and paper/electronic mapping.
- Public outreach including interactive tools in the [Regional Emergency Water System Interconnectivity Analysis](#) website, and information on [the Watuppa Reservation](#).

Lessons Learned:

The communities of Fall River, Dighton, Somerset, and Swansea have existing infrastructure in place that has the potential to create a more resilient regional water system and mitigate the impacts of water emergencies. Coordinating field work and hydrant testing proved to be difficult due to limited staffing resulting from COVID-19 and staff transitions. Obtaining different hydraulic models from different communities, created by different entities, required a significant amount of coordination and troubleshooting to get the model to get into a position to run scenarios.

Finished drinking water compatibility between communities plays an important role in how water supplies can be shared, and communities with multiple water sources can have more complex and variable water quality characteristics. Other communities can learn from this

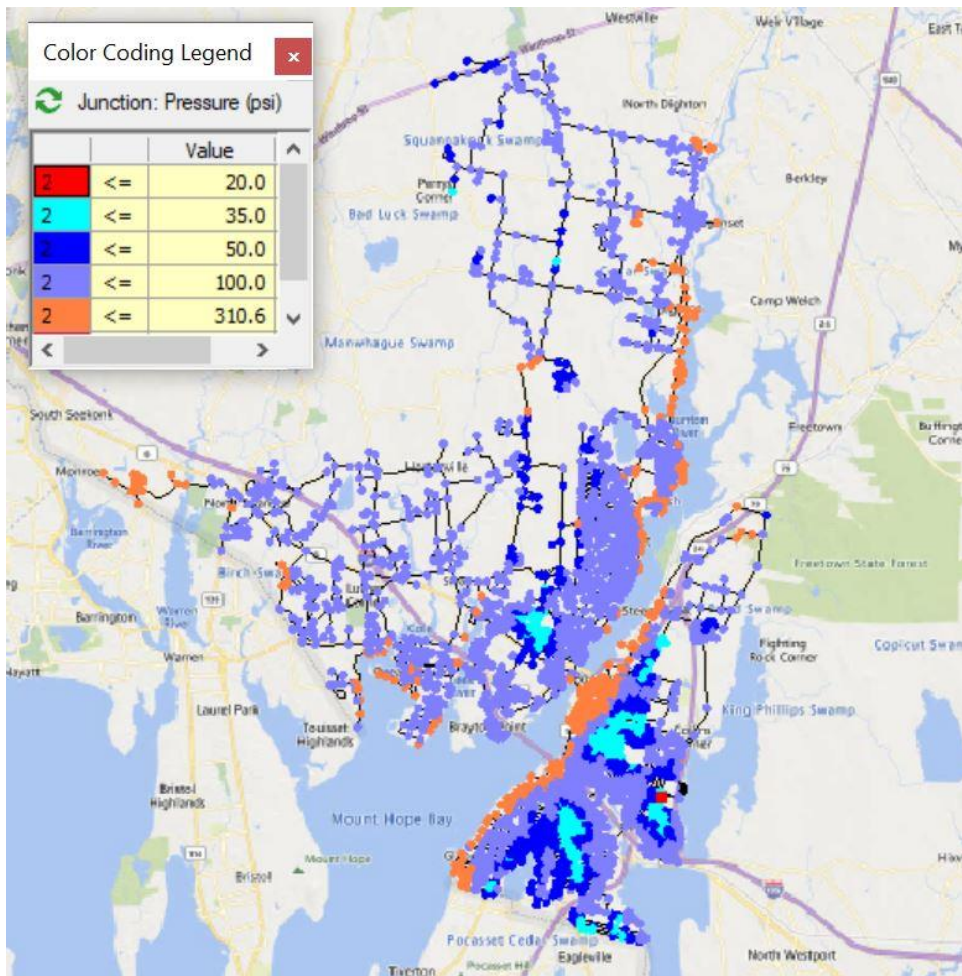
project by being active participants in the emergency planning process, forming positive relationships with surrounding communities, visiting the project websites, and staying up-to-date on MVP projects.

Partners and Other Support:

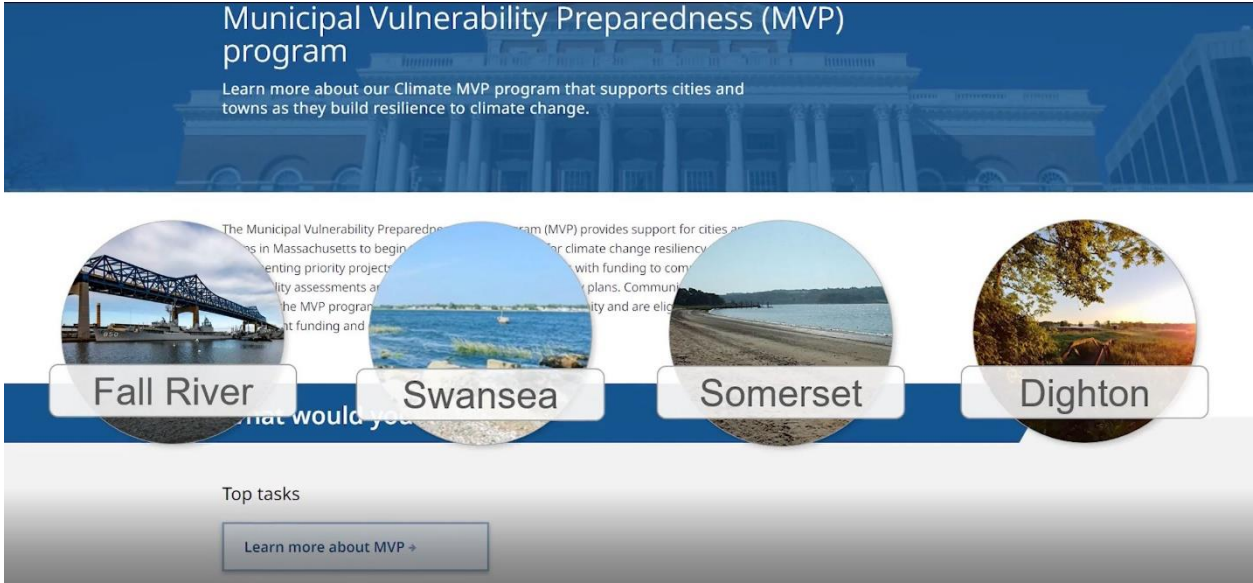
Following is a list of project partners and supporters, as well as their role in supporting/assisting in the Regional Interconnection Evaluation project.

- Project Partners
 - Community Leads: provided all coordination for the community during the study.
 - Paul Ferland, Clerk, Watuppa Water Board
 - Jeffrey Sutherland, Superintendent, Swansea Water District
 - Jeffrey Clooney, Superintendent, Dighton Water District
 - Chris Wickman, Somerset
 - Project Supporters: provided support for the project to move forward.
 - Paul Coogan, Mayor, Fall River
 - Richard Brown, Town Administrator, Somerset
 - Scott O'Brien, Chairman, Board of Water & Sewer Commissioners, Somerset
 - Jamison Barros, Fire Chief & Emergency Management Director, Somerset
 - Eric Hajder, Chief of Department, Swansea Fire Department
 - Michael J. Rodrigues, State Senator, Chair, Senate Committee on Ways and Means
 - Patricia A. Haddad, Speaker Pro Tempore, State House of Representatives
 - Carole Fiola, State Representative, Sixth Bristol District
 - Paul A. Schmid III, State Representative, Eighth Bristol District
- Supporting Communities:
 - City of Somerset, MA: Provided cash match to help support project. Provided existing information, coordination, and conducted field testing needed for interconnection analysis and evaluation of existing interconnections.
 - Swansea Water District, Swansea, MA: Provided cash match to help support project. Provided existing information, coordination, and conducted field testing needed for interconnection analysis and evaluation of existing interconnections.
 - Dighton Water District, Dighton, MA: Provided cash match to help support project. Provided existing information and coordination needed for interconnection analysis and evaluation of existing interconnections. Provided records and staff support for development of geographic information system (GIS).

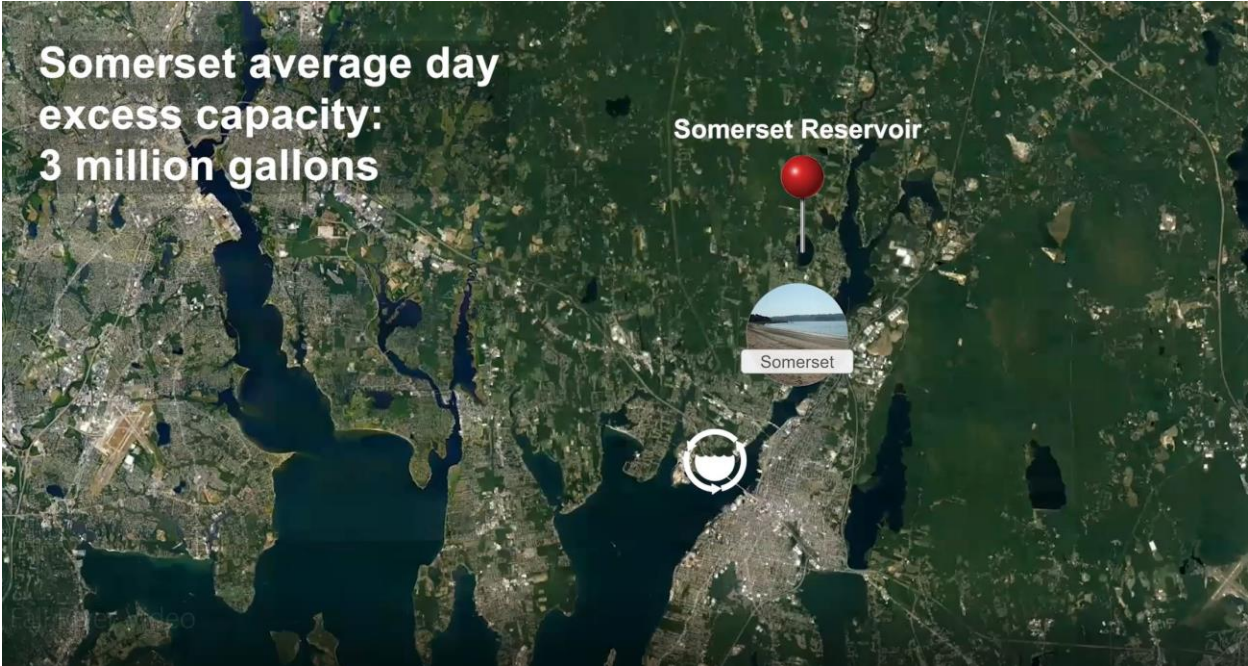
Project Photos:



Screenshot of GIS Modeling



Screenshot of Public Education Video



Screenshot of Public Education Video

Southeastern Massachusetts Bioreserve

Southeastern Massachusetts is one of the fastest growing regions in the state. Statewide we lose 44 acres of open space to development every day, and in this region sprawl is consuming land at three times the rate of population growth. In establishing the Bioreserve, we seized a rare opportunity to protect a large, contiguous forest with diverse habitats and natural communities.

What is A Bioreserve?

A bioreserve is a large land area permanently protected from development and managed to ensure the long-term health of its natural resources.

The Southeastern Massachusetts Bioreserve is the first of several strategically located bioreserves in the Commonwealth dedicated to preserving biodiversity in several of the state's major ecoregions.

[History of the Southeastern MA Bioreserve](#)



What does the Southeastern Massachusetts Bioreserve include?

The new Bioreserve encompasses and protects natural communities representative of the region. It also contains several important communities and species considered at risk by the state's Natural Heritage and Endangered Species Program.

These include Atlantic white cedar swamps, which host several rare species and have been decreasing over the years due to logging, draining, and extensive conversions to cranberry bogs; and the pitch pine-scrub oak barrens, which host species that are adapted to dry conditions and recurring fires. The Bioreserve is also home to such endangered, threatened, or at risk species as the Plymouth gentian, a flowering plant found only along broad, sloping lakeshores; marbled and four-toed salamanders, spotted and Eastern box turtles, and the barrens buck moth.

[About the Southeastern MA Bioreserve](#)

Find us:
2929 Blossom Road, Fall River MA 02720

Call us:
508.324.2749



The Watuppa Reservation

HOME SOUTHEASTERN MA BIORESERVE WATUPPA RESERVATION COME VISIT US PARTNERS & ALLIES CONTACT US



Come Visit Us

The former Barnabas Blossom Farm is the operations center for water department activities in the southern portion of the Bioserve

WATUPPA RESERVATION HEADQUARTERS
2929 Blossom Road, Fall River
508.324.2749

[General Rules and Information](#)

[Maps & Trails](#)

[Info on Permitted Uses](#)

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Screenshot of Watuppa Reservation Public Education Website