# Charlton/Spencer MVP Action Grant

## *Integrated Water Infrastructure Vulnerability Assessment and Climate Resiliency Plan*

**July 2019**

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# Project Summary

The Town of Charlton and the Town of Spencer, MA are taking steps to proactively address flooding related vulnerabilities of its water infrastructure – drinking water and wastewater facilities, stormwater infrastructure (including green infrastructure), road-stream crossings, and dams – to help build resilience for changing climate conditions. Enhancing water infrastructure resilience through well-planned, cost-effective adaptation measures will make the communities more resilient to extreme precipitation events and flooding, both of which are predicted to increase in frequency and intensity as a result of climate change. The *Integrated Water Infrastructure Vulnerability Assessment and Climate Resiliency Plan* provides an assessment of the vulnerability of water infrastructure in both communities and recommends adaptation measures to strengthen water-related infrastructure and build community resilience.

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# Integrated Water Infrastructure Vulnerability Assessment and Climate Resiliency Plan – Charlton and Spencer, MA

- Community Resilience Building (CRB) process identified risks to water infrastructure from inland flooding and climate change
- Regional climate change vulnerability assessment and management plan
- Assessment of culverts and bridges, dams, stormwater, water, and wastewater infrastructure
- Building flood resiliency through infrastructure and natural systems solutions
- Conceptual designs to support future implementation projects

Above: Dams assessed in Charlton and Spencer

Above: Examples of water/wastewater infrastructure assessed in Charlton and Spencer

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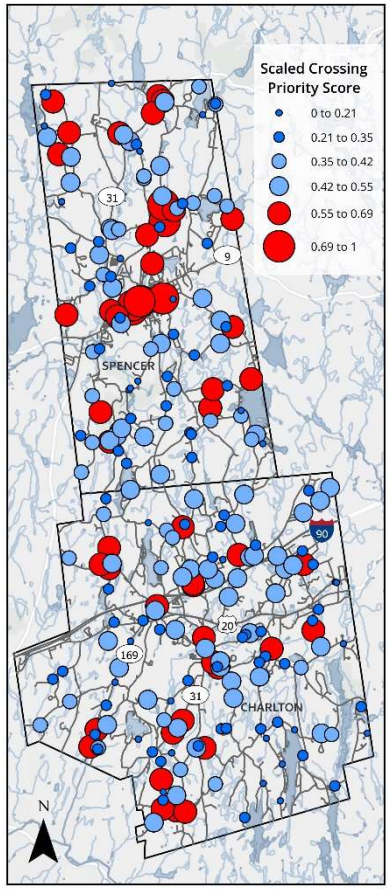
# Integrated Water Infrastructure Vulnerability Assessment and Climate Resiliency Plan – Charlton and Spencer, MA

- 241 road-stream crossings assessed
- 11 culvert replacement concepts developed
- Site specific management recommendations for 24 dams
- Site specific adaptation recommendations for 13 water/wastewater infrastructure sites
- 22 sites proposed for green infrastructure retrofits
- 10 green infrastructure concepts were developed




**Above: Sample culvert/bridge structures and map of scaled priority scores from road-stream crossing assessment**

**Right: Rendering of green roof retrofit proposed at Charlton Middle School**

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