

Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: Auburn

Project Title: Leesville Pond Water Quality Protection and Community-Wide Resiliency Improvements

Award Year (FY): 2021

Grant Award: \$ 209,895.00

Match: \$ 71,322.70

Match Source: Municipal employee hours and town supplies

One or Two Year Project: One Year

Municipal Department Leading Project: Planning Division

Project Website URL: <https://www.auburnguide.com/682/MVP>

Community Overview

The Town of Auburn is a vibrant suburban community of 16,766¹, located at a pivotal junction in Southern Worcester County. The Town of Auburn, Massachusetts was incorporated in 1778, initially as Ward; the town was renamed Auburn in 1837. Subdivisions with looping street patterns exist throughout the town. These subdivisions appeal to families looking for safe roads with very little traffic. Auburn has developed in to an important retail, commercial, and industrial town in Central Massachusetts. Auburn's strong economic position emerged with the advent of the regional highway system, which provided it the opportunity to participate in the dynamic economy of central Massachusetts. Auburn is located on I-290, 5 miles south of the City of Worcester and is largely a suburban community. Much of Auburn lies within the Blackstone River Basin, except for the extreme western edge, which lies in the French River Basin. Auburn is bordered by Leicester on the west, Millbury on the east, Oxford on the south, and Worcester to the north. At \$74,174, median household annual income is about the same as the state (\$74,167) and higher than the Worcester County (\$69,313) median. Poverty is low at 4.3 percent, or less than half the state and county rates (both 11.6 percent). Housing costs are relatively low, with a median owner-occupied home valued at \$245,300, compared to \$352,600 for Massachusetts and \$260,800 for the county. Auburn does not have any identified Environmental Justice populations, however the median age of Auburn's population is 45.1,² which is an older median age than much of the region. Auburn abuts the City of Worcester which is identified as an Environmental Justice Area. The project area in Auburn, specifically the Leesville Pond area, borders identified minority and income Environmental Justice areas in Worcester. As part of the Leesville Pond water quality improvement tasks, stakeholders from Worcester were invited to participate at meetings and the community event. The City of Worcester was represented by Jacqueline Burmeister of the Lakes and Ponds Department and Stephanie Covino, Conservation Commission Agent. Worcester residents were apprised of the MVP project and the Leesville Pond community event with direct mailings.

¹ 2015-2019 American Community Survey, US Census

² 2015-2019 American Community Survey, US Census

Project Description and Goals

The project addressed a variety of MVP Program goals, incorporated project elements focused on further community resiliency planning, community outreach and education, promotion of best management practices and water pollution prevention strategies, and infrastructure improvements using nature-based solutions. The focus of the project is to increase awareness of public behavioral uses which impact water quality, provide education on ways to prevent water contamination, and plan for future infrastructure improvements to strengthen community resilience to natural disasters within the Auburn community. The project consisted of two project initiatives aimed at water quality and ecological improvements. The first initiative focused on water quality improvements to Leesville Pond through public education and outreach efforts and the second initiative builds upon outcomes of the Town's FY20 MVP Project which plans for ecological restoration and infrastructure improvements at the Sword Street crossing over Kettle Brook. Vulnerability of the existing Sword Street at Kettle Brook crossing will be exacerbated by the projected changes in precipitation expected under future climate conditions. The volume of total annual precipitation falling in the heaviest 1% (i.e., the most extreme) rainfall events, has increase in the Northeast over the past century and is anticipated to continue to do so under either a low (RCP4.5) or higher (RCP8.5) emissions scenario, with a 40% increase by the end of the century. The Blackstone Basin and Auburn are predicted to see 2.86 additional days per year with precipitation greater than 1 inch by the end of the century. Similarly, Massachusetts Department of Transportation projections of the 24-hour duration 100-year storm under a moderate (RCP6.0) emissions scenario shows an increase of 10% (2050) to 20% (2100). The Northeast Climate Science Center at the University of Massachusetts Amherst projects that, given a medium to high future emissions pathway, the Blackstone River Watershed and Auburn will see as approximately to 6 inches of additional rainfall per year by the end of the century.

The activities included in this project provide both regional benefits and broader statewide and multi-state benefits, as deliverables developed in conjunction with project activities may assist other municipalities and government agencies in their own efforts to improve resiliency within their communities. Kettle Brook is the main tributary of the Blackstone River Watershed and drains approximately 31 miles in the uppermost part of the Blackstone Basin into Narragansett Bay in Rhode Island. Kettle Brook, which feeds Leesville Pond, crosses under Sword Street just southwest of Leesville Pond. Located off of Southbridge Street (Route 12), Sword Street serves as the primary access route to a significant portion of the Auburn community and flooding associated with climate change threatens emergency response services, economic activities in the adjacent industrial area, and emergency evacuation routes.

Public engagement efforts included outreach efforts targeted at the population surrounding Leesville Pond was developed and made available in both English and Spanish to more meaningfully engage the community within the area given that 2018 U.S. Census Data indicates that 13.3% of the population within census tract 7331.01 speak Spanish at home. Deliverables developed as part of the project, such as the public education flyer, will serve to benefit the greater region and other municipalities may use the flyer to expand

public education and awareness efforts within their own community or use the flyer as a baseline to develop their own community specific flyer. Lessons learned from the completion of the project may also be shared with the region and other municipalities within the Commonwealth to better position other communities for completing their own successful projects aimed at increasing community resiliency.

The Leesville Pond Water Quality Walkshop was held May 18th. The event was advertised by direct mailings to Auburn and Worcester residents and property owners in the vicinity of Leesville Pond. The Walkshop was held on the same day as the municipal elections as a way to attract residents voting at the election who might otherwise not have been aware of the MVP project. This tactic seemed successful as a steady flow of people inquired about the event and talked to staff working the event. Auburn Cable Television filmed a segment for broadcast. Spectrum news also filmed a segment for their local news station. The mailers that were sent to Leesville Pond residents was successful, several attendees to the Walkshop indicated they received the flyers. The educational posters are displayed at the Auburn Public Library as continued means of educating the public on actions they may take to help improve water quality.

Results and Deliverables

Task 1

- Meeting minutes. Copy of informational poster and list of locations where poster was displayed. Project page URL and links to social media posts in electronic format. Photographs of project information area at Auburn Public Library in JPEG or PDF format.
- Copy of draft and final public education flyer sent to property owners, list of addresses flyer is mailed to in, electronic link to posting of flyer on the Town's website, electronic links to social media posts.
- Copy of invitation sent to property owners, photographs of community event, electronic link to posting of flyer on the Town's website, electronic links to social media posts.

Task 2

- Updated wetland delineation report
- Boundary and topographic survey
- Boring logs from geotechnical investigation
- Laboratory analysis of stream substrate
- Hydrologic and hydraulic report
- Structural analysis report
- Opinion of construction cost
- Photo of project sign

Lessons Learned:

As with any project, unforeseen challenges arise. Be nimble may be the best advice when unforeseen events occur. The Covid 19 pandemic affected much of the town's normal method of conducting business. Auburn was hardly alone in the challenges presented by a lockdowns and the inability to conduct business in person. Fortunately by May 2021 many of the restrictions were being eased as the vaccine for the virus became widely available. Holding the Leesville Pond Water Quality Walkshop at the same time as the municipal election worked well. The Walkshop may not have been so successful if it was a stand-alone event as was the original intention. The Walkshop had been postponed initially and was to be a stand-alone event. The Walkshop was to be held in April around Earth Day, however, there was a storm predicted and we ended up with about six inches of snow. Other challenges included municipal staff members and a member of the consulting team leaving for new positions.

Partners and Other Support:

- Central Mass. Regional Planning Commission participate at the Community Event
- Auburn Public Library displayed posters and handouts from the Community Event
- Blackstone River Watershed Association participated in the stakeholder meetings
- Leesville Pond Watershed Association participated in the stakeholder meetings
- Worcester Lakes and Ponds Department participated in the stakeholder meetings
- Fuss and O'Neil, project consultant
- Auburn Department of Public Works provided technical support in all aspects of the project

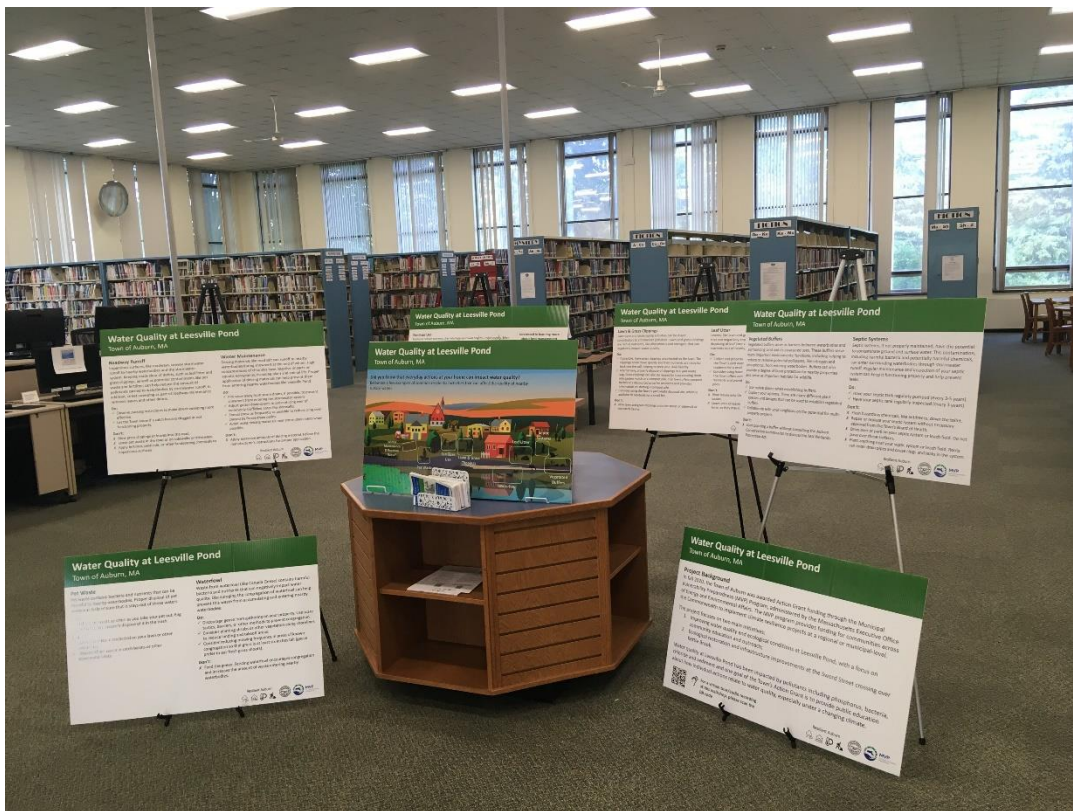
Project Photos:



Project Sign at Kettle Brook



Leesville Pond Water Quality Walkshop



Auburn Public Library Water Quality Display