

Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: Uxbridge

Project Title: Home Brew and Whitin Pond Dam Removal

Award Year (FY): 2023

Grant Award: \$ 185,450

Match: \$ 61,825

Match Source: Town of Uxbridge and in-kind match from Core Team, Uxbridge employees, and Town volunteers

One or Two Year Project: One

Municipal Department Leading Project: Board of Health

Project Website URL: [Municipal Vulnerability Preparedness \(MVP\) | Uxbridge, MA \(uxbridge-ma.gov\)](https://mvp3actiongrant.uxbridge-ma.gov) See MVP 3 Action Grant 3

Community Overview:

- Located in Southern Worcester County, Uxbridge has a population of 14,164 per 2020 US Census
- Uxbridge seems typical of many southern New England mill towns with sizeable populations who can be considered vulnerable to climate change. The factors listed below reflect a significant portion of Uxbridge residents who are considered “priority populations.”
 - 17% of the population is > 65 years of age
 - 26% of the population is < 18 years of age
 - 10% of the population present with a disability affecting at least one of the following areas: sensory, cognitive, ambulatory, self-care, or independent living. According to the Census estimates between 2017 and 2021, 7.3% of the disabled population is under 65 years of age.
 - 4% of households fall below the poverty line
 - 5% have no access to electronic forms of communication or broadband access (Source US Census Bureau)
- The convergence of three significant rivers in Uxbridge (Blackstone River and two major tributaries, the Mumford and West Rivers) and the history of industrialization accompanied by the building of multiple small and large dams make Uxbridge uniquely susceptible to flooding. Indeed, the hurricanes of 1955 resulted in devastating flooding of the West River and all communities downstream in the Blackstone River Valley including Providence RI. The West Hill Dam Reserve was created by the US Army Corps of Engineers. It includes the West Hill Dam and a significant upstream flood storage area. Flooding was identified as one of the three top priorities in the original MVP planning workshops in 2018. The MVP Action grant for FY 2021 included an assessment of Uxbridge dams, excluding the West Hill Dam, as part of its Integrated Water Infrastructure Vulnerability Assessment.

Project Description and Goals

- The project was located in two distinct areas:
 - The Home Brew Dam is located on Town of Uxbridge property on Blackstone Street and under the jurisdiction of the Water Division of the Department of Public Works
 - The Whitin Pond Dam is located just north of Hartford Avenue East. The Pond is surrounded by private residences and the ownership of the Dam itself is being explored by a task of the FY23 MVP Action Grant
- Both aspects of the Grant addressed the impact of increased flooding due to more frequent and intense rainfall events.
- The goals were to:
 - Conduct a full dam removal feasibility study for the Home Brew Dam. Removal would both protect nearby Town wells from contamination due to failure or overtopping of the dam, and restore ecological integrity to the upstream area, which has a high index of Ecological Integrity on the UMass CAPS dataset.
 - Explore the possibility of removal of the Whitin Pond Dam through community conversations, data collection and visioning activities. Through the creation of floodplain and wetland habitats, which would provide buffering against large storm events, removal has the potential to protect the Town from flooding and devastating impact on downstream property and human life.
- Did your project meet the goals set forth in your application in terms of:
 - Planning for or envisioning the restoration of flood buffers and restoration of ecological integrity represent **nature-based solutions**.
 - Both aspects of the project were highly successful in terms of exploring nature-based solutions. At Home Brew Dam, the removal and restoration design focuses on a low-tech approach, allowing the channel to reform naturally, with an accompanying adaptive management plan to provide for extra stabilization measures as needed. At Whitin Pond, the visioning process with the community was very successful in opening a conversation about how nature-based solutions could be employed to restore the existing impoundment and create a series of wetland and riparian habitats that would provide both ecosystem services and meet the community's needs and desires.
 - Partnerships with the **climate vulnerable citizens**, specifically the elderly population of the Town were formed through outreach and engagement activities. There was specific outreach to residents and staff of the housing complex (Crown and Eagle) just downstream from the Whitin Pond Dam
 - Implementing the **public involvement and community engagement** was achieved through:
 - A. A slide show explaining the project. It was shown on local cable TV and narrated by the Project Manager. It was presented to the elderly at the Uxbridge Senior Center (50 attendees) and at the Crown and Eagle (30

attendees). In addition it was presented and discussed at meetings of the Select Board, Historical District Commission and the Conservation Commission

- B. A Facebook page for the project. Currently 35 followers and 1800 “reaches”. This page is serving as a registration site for the Water Chestnut Pull (over 30 registrants).
- C. Press releases to local newspapers in September with updated press releases in April
- D. Links to MVP section of Board of Health webpage on Town website. The links were provided in press releases and all public engagement activity.
- E. Enquiries via Board of Health email answered with email, phone or in person responses.
- F. ~ 225 letters were mailed to abutters of Whitin Pond and of Mumford River downstream from Dam. Many responded through email.
- G. In person meeting with property manager of condo unit abutting Mumford River downstream from dam and with staff at Crown and Eagle
- H. Direct phone and/or in person follow up with attendees at Crown and Eagle and Senior Center events through senior community liaison.
- I. Whitin Pond visioning workshop, held over three days, with approximately 4 dozen residents in attendance at both the walkshop event and final presentation.
- J. Water Chestnut Pull on June 24th, over 30 registrants.

- In general, **all tasks were finished at or close to the projected date**. Some of the technical tasks were completed in various stages due to permitting demands and contingencies not anticipated. Minor revision of the contract was done in May 2023 as the needs for the project unfolded.

Results and Deliverables:

Key deliverables for the project include:

Home Brew Dam:

- Full feasibility study and field data collection: (sediment assessment, wetland delineation, hydrology and hydraulic report, topographic survey)
- Permitting level design plans
- All permits either submitted or in-hand.

Whitin Pond Dam:

- Preliminary sediment assessment report.

- Memo documenting title and ownership investigations.
- Conceptual visions and order of magnitude costs developed for two dam removal scenarios.
- Successful water chestnut removal volunteer day with approximately 25 participants.

Lessons Learned:

- The management of the Action Grant requires a commitment of time and energy. The volunteer efforts of Town officials were relied upon heavily. This is not a sustainable model for most communities. Nevertheless, learning of skills used to administer a grant for those without previous experience is invaluable.
- The management of volunteers and liaisons presented unanticipated hurdles. Better anticipation of timing, delegation, goal setting.
- The value of personal engagement with citizens who are skeptical was illustrated by the transformation of the conversation between the first and second public facing presentations of the Visioning Workshop. Skepticism and hostility softened with open dialogue.
- During other public presentations to the public, especially the elderly, those resisting change and recognizing the reality of climate change still listened and engaged in dialogue. There were many who didn't embrace climate change but accepted it and wanted to engage in resilient activities and proposals.
- Engaging a consultant with not only good technical skills, but skills to communicate with the public effectively, recognize the politics and history of a given community, and understand a variety of viewpoints is so important. We were lucky to have a consultant whose staff was experienced in all of the above.
- Experience with dealing with the bureaucracy on a local and state level is also critical for the consultant and the project administrators.
- Sharing data, case studies and attending events in other communities is a good way to share the lessons of the action grants. This kind of case study serves as a basis for that.

Partners and Other Support:

- Fuss and O'Neill: primary consultant for technical data, experience with dam removal and permitting, and community relations.
- Uxbridge Department of Public Works*
- Uxbridge Police Department*
- Uxbridge Conservation Commission*
- Uxbridge Board of Health*
- Uxbridge Council on Aging*
- Uxbridge Town Manager*
- Uxbridge Community TV: provided facilities and technical advice for presentations.
- Town Counsel and Marsh, Moriarty, et al: advice and legal work on title research

- A variety of other Town departments were involved to a lesser extent: Accounting, Assessors, and Clerk
- Local historians and Uxbridge Historical Commission: provided historical information and perspective.
- Residents of Uxbridge near the Mumford River who participated in the Visioning Workshop or otherwise gave valuable feedback
- State Representative Mike Soter: endorsement of the project
- Blackstone Watershed Collaborative: ongoing advice about dam removal and water chestnut pull.
- Rhode Island Department of Environmental Management and Friends of the Blackstone: canoes and in-kind support for water chestnut pull.
- Tom Berkowitz Trucking Inc: provided dumpster for Water Chestnut Pull
- Water Chestnut pull volunteers

*Provided at least one member of Core Team. Each member assisted with implementation of the grant.

Project Photos:

We have included representative images of several aspects of the project:

Photo of Whitin Pond Dam

Photo of Home Brew Dam

Photo of Whitin Pond Dam Removal Visioning Workshop attendance

Photo of Volunteer Water Chestnut Pull on Whitin Pond