

## **Municipal Vulnerability Preparedness Program Action Grant Case Study**

**Municipality:** City of Woburn

**Project Title:** Shaker Glen Extension Restoration and Flood Mitigation

**Award Year (FY):** FY20/FY21

**Grant Award:** \$ 145,445 (scope will be reduced as previously discussed with EEA. Revised final grant amount to be updated with reimbursement request).

**Match:** \$ \$48,980 (to be updated with reimbursement request).

**Match Source:** \$ cash and in-kind (to be updated with reimbursement request).

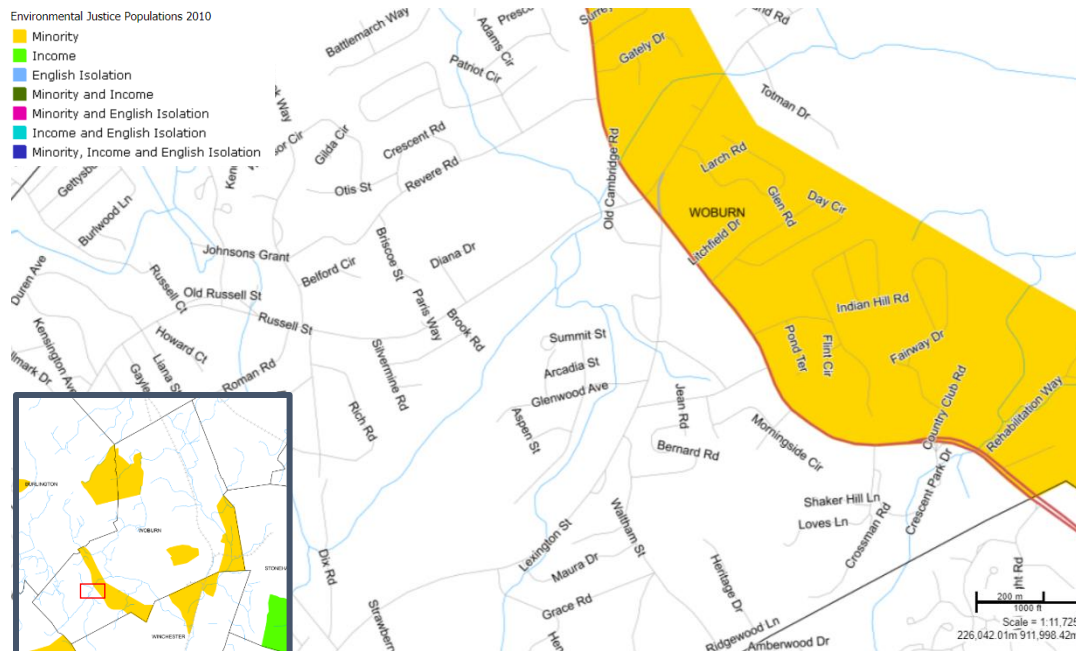
**One or Two Year Project:** 1-year, extended due to COVID-19

**Municipal Department Leading Project:** City Engineer

**Project Website URL:** <https://www.woburnma.gov/government/engineering/municipal-vulnerability-preparedness-grant-program/>

### **Community Overview:**

- What is the population size of your community and where is it located?
  - 40,304 people, Middlesex County, Greater Boston region
- Do you have any [Environmental Justice](#) or other Climate Vulnerable communities? (Think about both those who live and work in your town.)
  - Yes, the proposed project is upstream from one of Woburn's environmental justice communities and will benefit from the improved flood capacity in the Shaker Glen Extension. All of Woburn's vulnerable populations will be considered in the design of the area and their input will be solicited as described in section 7.5. The educational signage will be intentional to account for varying degrees of English literacy and ages by using imagery to tell a story, and if appropriate, additional languages will be used. Nearby schools, such as the Reeves Elementary School (adjacent to the project site), and the general public will be able to use the path and educational area to learn about the natural environment and climate change. The walking trails and educational area will be handicap accessible providing access to all people.



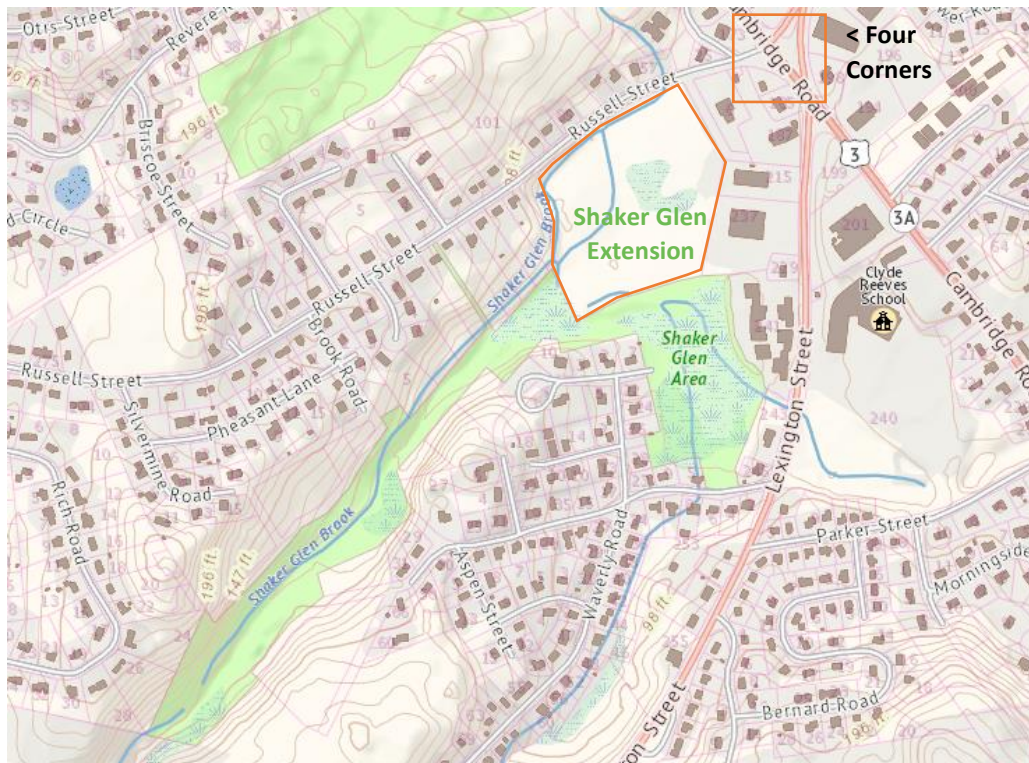
Environmental Justice Communities (MassGIS, Environmental Viewer)

- Income: The median household income in Woburn is modest at \$83,304, which is somewhat higher than the median statewide income of \$74,167 (2013-2017 American Community Survey 5-Year Estimates). Six percent of the Town's residents live below the poverty level, and 35.16% are low- to moderate-income.
- Race and Ethnicity: Seven percent of the total Woburn population is Black, and 7% is Hispanic, the City's two largest minority groups. Nineteen percent of the community identify as black or African American, Asian, two or more races, or a different race.
- Other unique traits of your municipality like who the top employers are, geography, history, etc.
  - From the City's Master Plan: "Woburn can best be described as a suburban industrial city. It has a large commercial base and densely developed downtown surrounded by suburban residential development. Woburn is a regional jobs center with far more jobs in the City than there are residents in the workforce. This results in heavy commuting into the City every day. The greatest number of Woburn residents are employed in education, health and social services. The unemployment rate for Woburn residents has consistently been below that of the state as a whole. The level of education of Woburn residents has been steadily increasing over the years."

## Project Description and Goals:

- Where was the project located?

- Four Corners is a major retail node in Woburn at the intersection of Lexington



Project Area (MassGIS, Oliver with edits by Weston & Sampson)

Street, Cambridge Road (Route 3), and Russell Street. Lexington Street is a major east-west access route and Cambridge Road (Route 3) is a major north-south access route. Both are maintained by Mass Highway. The Cambridge Road and Russell Street are vulnerable to flooding, as identified in the City of Woburn Hazard Mitigation Plan (MAPC, 2015) and the MVP Summary of Findings Report (Weston & Sampson, 2019). The intersection of the roadways, including Lexington Street, sits at a low point of elevation and may be vulnerable to more flooding in the future under climate change. Flooding of these important roads is a major concern regarding mobility during emergencies. In addition, local businesses experience flood impacts, including property damage and temporary closures.

- What climate change impacts did the project address?
  - Increasing frequency and intensity of rainfall events causing flooding
- What were the specific goals and tasks of the project as stated in your application?
  - After future phases of the project are complete, the success of the project will be measured in the reduction of flooding at Four Corners
  - Amount of flood waters storage at Shaker Glen
  - Number of people engaged
  - The preliminary design will consider design criteria such as low maintenance, ease of construction and long lifespan

- Did your project meet the goals set forth in your application in terms of:
  - Employing nature-based solutions: The project entailed a conceptual design for a flood mitigation area that will utilize an undeveloped piece of land to generate flood plain and bordering vegetated wetland.
  - Improving equitable outcomes for and fostering strong partnerships with EJ and other Climate Vulnerable Populations: The project will look to reduce flooding to a climate vulnerable population.
  - Providing regional benefits: The project, once constructed, will reduce flooding to a vital location in the City, the intersection of “Four Corners,” which is along Route 3A, a major transportation corridor through this part of the city.
  - Implementing the public involvement and community engagement plan set forth in your application: This was successfully accomplished.
  - Finishing the project on time: Although delayed by a year due to COVID a majority of the project was completed. Due to ownership restrictions, which could not be settled due to COVID, some on the ground exploration work was not completed.

### **Results and Deliverables:**

- Describe, and quantify (where possible) project results (e.g. square footage of habitat restored or created, increase in tree canopy coverage, etc.). Report out on the metrics outlined in your application.
  - Although this is only the conceptual design, the project, once constructed, will result in the following:
    - Generation of 80,000 SF of potential wetland creation
    - Removal of 35,000 CY of material from the Flood Plain
    - Restoration of 40,000 SF of disturbed area (broken pavement, concrete, building debris)
    - Installation of stormwater BMP to treat SW running off of Russel Street.
- Provide a brief summary of project deliverables with web links, if available.
  - Wetlands Delineation Memo
  - Site Survey Plan
  - H+H modeling results
  - Preliminary Design Drawings
  - Permitting Feasibility Analysis
  - Public Outreach Materials

### **Lessons Learned:**

- What lessons were learned as a result of the project?
  - This project was delayed due to owner restrictions on access. Due to COVID negotiations between the City and the owner were put on hold which caused a significant delay in the project.

- At this stage, although not critical, some assumptions were made based on the limited amount of sub-surface information we were able to obtain. Again this is due to ownership of the site.
- What is the best way for other communities to learn from your project/process?
  - Utilizing undeveloped or previously disturbed areas as restoration/flood plain control can solve some of these urban flooding conditions. In this instance we are utilizing a disturbed property to introduce green solutions to an area of the City in desperate need of flood control.

#### **Partners and Other Support:**

- Include a list of all project partners and describe their role in supporting/assisting in the project.
  - The project did not have any partners beyond our consultant team.

#### **Project Photos:**

- In your electronic submission of this report, please attach (as .jpg or .png) a few high-resolution (at least 300 pixels per inch) representative photos of the project. Photos should not show persons who can be easily identified, and avoid inclusion of any copyrighted, trademarked, or branded logos in the images. MVP may use these images on its website or other promotional purposes, so please also let us know if there is someone who should receive credit for taking the photo.

