Municipal Vulnerability Preparedness Program Action Grant Case Study

Municipality: South Hadley
Project Title: Climate Resilient South Hadley
Award Year (FY): FY21
Grant Award: $105,000
Match: $34,600
Match Source: staff/in-kind labor match
One or Two Year Project: one year project
Municipal Department Leading Project: Planning and Conservation Department
Project Website URL: https://www.southhadley.org/1096/Climate-Resiliency

Community Overview:

- With a population of just under 18,000, the Town of South Hadley is unique in that it is located in a critical transition zone between developed urban centers to the south and west (Holyoke, Chicopee and Springfield), and the more agricultural and rural communities to the north and east (Hadley, Granby and Belchertown), know as part of the Pioneer Valley region. This dichotomy serves as the single most important influence on the Town's growth and development and hence, its open space and natural resources planning.
- South Hadley does not have any mapped Environmental Justice Communities. Overall, 9.5% of persons live below the poverty line however, of the four Census Tracts in South Hadley, the two tracts in the southern half of town (8210 and 8211), encompassing South Hadley Falls and adjacent to the cities of Holyoke and Chicopee contain the lowest median household incomes ($56,031) with 22.4% of people within those tracts with income below the poverty line in the past twelve months. Only 10.8% of residents speak a language other than English at home, and these residents are also within the census tracts in the southern half of town. The South Hadley Falls anchors the Town's recently Federally-designated Opportunity Zone, anchors a State designated Economic Target Area, and is the focus of a DHCD approved Urban Renewal and Redevelopment Plan.
- In addition, South Hadley has significant natural features that have further influenced community planning that include the Mount Holyoke Range to the north, the Connecticut River to the west and Elmer Brook, Bachelor Brook, Stony Brook and Buttery Brook that flow east to west across South Hadley.

Project Description and Goals:

- Town-wide
- Each of the project tasks helped South Hadley adapt to existing and projected impacts of climate change. The specific nature-based solutions of this project included planting 800 trees town-wide on 160 public and private properties. Additionally, the updates to the Stormwater Management Bylaw will support the use of nature-based solutions, support

the use of innovative systems, and require the most up-to-date climate science and data is used in sizing stormwater systems. The 48 road-stream crossing assessments completed through this project, and the eight conceptual designs and cost estimates for crossing replacements, will become a component of a climate resilient transportation asset management plan that will be developed by the Department of Public Works outside of this project. These assessments and preliminary designs will be a critical part of capital asset planning for implementation of improved stream crossings to prevent roadway flooding, but also improve habitat and natural flood storage capacity of our riverine and wetland systems. Last, the community outreach and engagement through the project website, our community webinar series, social media and print media postings, and our Arbor Day celebration provided the most contiguous educational programming on climate change impacts and solutions that South Hadley has undertaken to date.

- Our project exceeded the goals set forth in our application in terms of:
    - Employing nature-based solutions – 800 native trees were planted on 160 properties town-wide; our original goal was scaled back to 500 trees. Residents ordered from a selection of thirteen species in the Fall, and picked up their orders on May 1st, the day after the Town's Arbor Day celebration. Trees came in 2-gallon pots and were 3-6' tall. Each order also received a bag of organic compost. Most residents planted their own trees, but for a handful that were not physically able, volunteers planted for them.

      The 48 road-stream crossing assessments provided valuable information for right-sizing culverts: 50% of culverts are undersized to pass smaller storms as well as rarer, large storm events; 50% of culverts have structural deficiencies; and, 20% of culverts block access to upstream habitat. The estimated cost for replacement of the top 8 high priority crossings based on conceptual designs is $8,365,726.

    - Improving equitable outcomes for and fostering strong partnerships with Climate Vulnerable Populations – Over half of the trees were planted in the two Census Tracts in the southern half of town with the lowest median household incomes, the highest amounts of impervious coverage by watershed (Buttery Brook) and, the densest development patterns town-wide.
    - Providing regional benefits – Our improved understanding of the needs for right-sizing culverts on the five perennial tributaries to the Connecticut River has the potential to improve conditions throughout the watershed as culvert replacement projects are implemented.
    - Implementing the public involvement and community engagement plan set forth in your application – Our "climate change resiliency and preparedness webinar series" were recorded with a live audience over Zoom, and posted to the project website as well as local cable access Channel 15, reaching an even larger audience than anticipated. Through the tree planting campaign, information about the benefits of trees was distributed to all of the participating residents

directly. Our Arbor Day celebration included the M.E.S. Middle School's fifth grade class and the selected Arbor Day essays from two students are posted to our project website. Last, we held a tree planting photo contest and received photos from residents planting their trees all over town. The two winners received *The Nature of Oaks* by Doug Tallamy and a gift certificate to The Odyssey Book Store.

- Finishing the project on time – Project timelines were met and all work was completed by June 30, 2021.

Results and Deliverables:

- 800 native trees (of 13 species) were planted on 160 properties
- Half of these trees were planted in the two census tracts with the lowest household median income, which also corresponds to the most urbanized and impaired watershed in South Hadley, Buttery Brook.
- The following project deliverables are available on the project website: https://www.southhadley.org/1096/Climate-Resiliency
    - Road-Stream Crossing Assessment Technical Memorandum; Culvert Replacement Concepts; Culvert Replacement Cost Estimates
    - Climate Resilience 101 South Hadley Factsheet
    - Community Webinar Series Powerpoint Presentations and Videos:
        - Right-Sizing Stream Crossings for Fish, Wildlife & Resiliency
        - Trees for Climate Resiliency
        - The Case for Green Infrastructure

    - Tree Planting Program deliverables are available on the project website: https://www.southhadley.org/1063/Tree-Planting-Program
        - Tree Program promotional materials including flier and PSA video
        - Tree Program catalog
        - Tree Planting Locations Map
        - Benefits of Trees Series by the Arbor Day Foundation
        - M.E.S. Middle School Arbor Day Essays
    - An annotated update to the Stormwater Bylaw is posted here: https://www.southhadley.org/DocumentCenter/View/8164/Proposed-Annotated-Stormwater-Management-Bylaw-2021-03-10

Lessons Learned:

- Community members were simply thrilled to plant trees on their properties. The enthusiasm for our tree planting program was amazing. In part I believe this was due to the desire to do something good for our planet, our community, our neighbors and ourselves after suffering through the COVID-19 global pandemic. Also, South Hadley residents demonstrated a deep concern about climate change, which often times is an issue that is hard to feel like you are making any difference toward. Planting trees

seemed to resonate with people in terms of the long-term benefits they will have on the health of the planet and people's lives. This program was hugely successful, and we look forward to monitoring the growth of these trees in the future.
- Right-sizing culverts is going to be a very expensive investment. Estimated at $8,365,726 for the replacement of the top 8 priority culverts, funding this work will require additional grants to be matched against capital planning earmarks in the annual municipal budget.

Partners and Other Support:

- South Hadley Tree Committee – Conducted public outreach about the tree planting program; hosted Arbor Day celebration; provided volunteer help at tree pick up day on May 1st.
- South Hadley Department of Public Works and Co-Tree Wardens – Conducted public outreach about tree planting program; provided site for tree pick up day; identified town-owned properties for new tree installations.
- Maria Drobiak, M.E.S. Middle School 5th grade teacher – Incorporated benefits of trees into curriculum and had students write essays for Arbor Day celebration.
- Fuss & O'Neill – Project engineer that performed road-stream crossing assessments and conceptual designs for replacement; conducted community webinar "Right-sizing Stream Crossings for Fish, Wildlife and Resiliency"; conducted presentation to the regional Connecticut River Stormwater Committee.
- Environmental Partners – Conducted review of local bylaws and regulations and drafted recommended updates; conducted community webinar "The Case for Green Infrastructure"
- BSC Group – Conducted community webinar "The Benefits of Trees: Climate Resilient Communities".

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.