Municipal Vulnerability Preparedness Program Action Grant Case Study
Municipality: Town of Harvard, MA
Project Title: Harvard Climate Action and Land Stewardship Plan
Award Year (FY): 2020
Grant Award: $ 70,860.00
Match: $ 31,536.58
Match Source: In Kind Professional Services and Volunteer Committee
One or Two Year Project: One
Municipal Department Leading Project: Community & Economic Development
Project Website URL: https://www.harvard.ma.us/community-resiliency-working-group-0

COMMUNITY OVERVIEW:

- What is the population size of your community and where is it located?

  As of the 2010 US Census, Harvard's population was 6,520 and was estimated to be 6,620 as per Census Quick Facts as of July 1, 2019. Harvard is located on the outer edge of Boston's northwest suburbs, bounded by the Towns of Shirley, Groton, Ayer, Littleton, Boxborough, Stow, Bolton, Devens, and Lancaster. Both I-495 and Route 2 pass through Harvard.

- Do you have any Environmental Justice or other Climate Vulnerable communities? (Think about both those who live and work in your town.)

  We have no formally identified Environmental Justice or Climate Vulnerable populations. However, there are a contingent of farm workers that are seasonal and whom live on the farms they work.

- Other unique traits of your municipality like who the top employers are, geography, history, etc.

  Set in Central Massachusetts is the Nashua River Valley where the present-day Harvard is located was the home territory of the Nashaway indigenous people. The first colonial building in the area now called Harvard was in 1667-72 when John Prescott built a grist mill on Nonacoicus, or Bowers Brook, at Old Mill Road. The town of Harvard was incorporated in 1732 from land formerly belonging to Lancaster, Groton, and Stow.

  Currently bordered by the towns of Littleton, Boxborough, Lancaster, Bolton, Stow, Shirley, Ayer and the Devens Economic Enterprise Zone, the Town of Harvard is a mosaic of orchards, rolling hills, and New England charm. Historically pastoral and agricultural. Harvard is still a largely agricultural town although it has slowly evolved into an exurban bedroom community with excellent public schools. The agricultural industry is Harvard's largest economic sector with several remaining large commercial orchards and a number of smaller farms that sell produce, honey, and a variety of other

specialty products. There are also several horse farms and farms practicing other forms of animal husbandry.

Harvard ranks in the upper third of Massachusetts municipalities for total land area. Its population density of 227 persons per square mile makes Harvard similar to a number of towns along and west of the Connecticut River Valley, yet in built character, it differs from them in significant ways. Just as Harvard's villages provide a record of the town's history, newer homes lining outlying roadways illustrate a late-20th century development phase that was ignited largely by regional transportation improvements and economic growth. Located on the outer edge of the I-495 corridor and crossed by Route 2, Harvard is in one of the most rapidly growing areas of the state. While closer to Worcester than to Boston, the town is oriented toward the economy of Eastern Massachusetts and its development has been influenced by trends in that part of the Commonwealth. Nearby towns such as Boxborough, Bolton and Groton have also absorbed a considerable amount of new growth in the past two decades. Harvard's vistas and hillsides are an important reason why most of the town is included in the Massachusetts Scenic Landscape Inventory. Furthermore, the town's entire western boundary is defined by the Nashua River, which is visible across the valley from Prospect Hill. In Harvard, a significant portion of the Nashua River watershed is protected by the Oxbow National Wildlife Refuge. Due to efforts by local and regional authorities, over ten thousand acres of the Central Nashua River watershed in Harvard, Bolton, Lancaster and Leominster have been designated as an Area of Critical Environmental Concern (ACEC). Such resources as Bare Hill Pond, the Town Center, Fruitlands, Prospect Hill and Still River, the Shaker Village and Oak Hill provide Harvard with identifiable landmarks forming the basis for many of the recommendations and strategies found in past master plans and policies.

Harvard's distinguishing feature is open space, particularly the orchards referred to above. Though the number of active farms declined in Harvard during the last half of the20th century, the town still has vital commercial orchards and a number of small, "home "farms. Today, nearly 1,400 acres of agricultural land are controlled by Chapter 61-A agreements. Harvard's farms and orchards, together with several large tracts of land in forest management, local conservation holdings and property owned by state and federal agencies, mean that open space constitutes over 40% of the town.

Is sum, Harvard's vast open spaces, agricultural lands, and historic and culturally rich landscape are both to be celebrated but also make a clear case for hands-on stewardship and protection.

PROJECT DESCRIPTION AND GOALS:

- Where was the project located?

The Town of Harvard, MA (42.5001° N, 71.5828° W)

- What climate change impacts did the project address?

  Harvard—like the rest of Massachusetts—is already experiencing the effects of climate change. Temperatures across the state are projected to increase significantly throughout the century. The state's average temperature increased 3° F between 1900 and 2014. 2010-2014 was the period with the highest number of days with a maximum temperature above 90°F.

  As a result of rising temperatures, Harvard may expect to experience warmer winter months, more extreme heat in the summer, and exacerbated drought conditions. These changes bring an increased risk of stress to crops, increased pest issues, and increased use of energy and water resources. Noted in previous MVP workshops, Harvard is already seeing the impacts of climate change through increasingly intense storms and more hot days. Other community (including agricultural) hazards previously identified include: flooding, large storm events, wind, ice storms, pests, drought, extreme temperature swings, tornados, and wildfire.

  Climate projections indicate that changing temperatures and precipitation patterns have the potential for significant impacts to Harvard's agricultural economy, natural resources, and more. Harvard pursued funding for a climate action and resilience plan to identify opportunities to reduce vulnerabilities to these impacts.

- What were the specific goals and tasks of the project as stated in your application?

  The primary goal of this project was to develop Harvard's Agricultural Climate Action Plan. The plan will serve as a comprehensive strategy for enhancing the resilience of Harvard's farms and agricultural economy to climate change; it identifies targeted policies, programs, and projects that will both mitigate contributions to climate change and increase its resiliency to the future impacts of climate change. A complementary brand and marketing effort, Harvard Grown, was also developed as part of the process to help promote Harvard's farms and their products as economic concerns threaten these farms' viability which would impact the positive environmental and cultural benefits these farms provide.

  The project also aimed to simultaneously develop a broader planning effort – Harvard's Climate Initiative – for the Town as a means to drive a Town-wide climate action and resilience plan. The objective for this phase was to develop the tools and processes needed by the Town in order to complete its plan encompassing all areas identified during the planning process beyond the agricultural community while providing synergistic support for that community. Complementary brand and marketing materials were also developed for Harvard's Climate Initiative to help unify the message around this effort.

  The specific tasks of this revised program were as follows:

- *Task 1: Vision & Plan Framework*
- *Task 2: Development of Plan & Baseline Assessment*
- *Task 3: Development of Education, Outreach and Communications Program*
- *Task 4: Final Report Development*

❖ Did your project meet the goals set forth in your application in terms of:

- Employing nature-based solutions

  This was central to the AgCAP report beginning with the Resilience Framework and addressed in specific action items such as Nature-Based Resilient and Regenerative Practices (pp. 41-51). This material served as foundational material for the Apple Country Nature-Based Solutions project Harvard is currently participating in with Bolton and Devens. Additionally, KLA provided High Impact Actions for the comprehensive Climate Action Plan (CAP), several of which were explicitly nature-based solutions such as a developing a sustainable landscaping guide and an integrated pest management program.

- Improving equitable outcomes for and fostering strong partnerships with EJ and other Climate Vulnerable Populations

  This was deemed not applicable for this project.

- Providing regional benefits

  The specificity of the agricultural climate action plan and likely uniqueness and also its wider applicability could serve as a potential regional and state benefit since it could be a model in some respects.

- Implementing the public involvement and community engagement plan set forth in your application

  Due to the short time frame, delay in getting started, and COVID-19, the intended public involvement and community engagement plan was not possible to fully carry out. Because we pivoted to just focus on agriculture and since the agricultural sector participants were more available in the winter (spring planting season and other farm operations) the timing of the grant made it nearly impossible to complete the intended full outreach program. The consultant and Town sought to use innovative and intensive alternative approaches such as a survey, phone interviews, and farm visits. The project team also utilized a team of Interactive Qualifying Project (IQP) students to assist in these tasks.

- Finishing the project on time

The project was completed by the approved extended deadline as agreed to with EOEEA.

RESULTS AND DELIVERABLES:

The planning process was developed through a collaborative community-wide effort that included Town staff, residents, farmers and business owners, and members of the Community Resiliency Working Group and the Agricultural Advisory Commission.

Both the Community Resiliency Working Group and the Agricultural Advisory Commission served as primary advisors to the development of the plan. The group met several times over the course of the planning process to provide input on items such as actions and implementation strategies.

The project team used the following approach to complete the project as it relates to the two deliverables pursued under this project:

<table>
<tr><th>Phase</th><th>Harvard's Agricultural Climate Action Plan</th><th>Harvard's Climate Initiative</th></tr>
<tr><td rowspan="3">1. Vision and Plan Framework</td><td colspan="2">Developed a draft plan outline, including identifying modules/plan elements, for each plan</td></tr>
<tr><td colspan="2">Worked with the Community Resiliency Working Group and the Agricultural Advisory Commission to develop a Sustainability & Resilience vision, for use in each plan</td></tr>
<tr><td colspan="2">Developed a Climate Resilience and Nature-Based framework through which to prioritize actions, for use in each plan</td></tr>
<tr><td rowspan="5">2. Development of Plan and Baseline Assessment</td><td colspan="2">Gathered background information on the community's climate action to date, included existing policies, ordinances, plans, and studies</td></tr>
<tr><td colspan="2">Conducted best practice research on high impact actions</td></tr>
<tr><td colspan="2">Conducted a baseline assessment of contribution to climate change from municipal, community, and agricultural sources, including sequestration potential of open space, forests, and agricultural lands.</td></tr>
<tr><td>Assessed incentive measures for addressing climate change on agricultural properties and for supporting local farms in general</td><td>Not applicable</td></tr>
<tr><td>Developed implementation blueprint criteria to be used for detailing out steps for agricultural actions</td><td>Developed implementation blueprint criteria that can be used for actions pursued under the Town plan</td></tr>
<tr><td></td><td>Develop brand, website, and one designed communication piece for</td><td>Develop brand and one designed communication piece for Harvard's climate resilience</td></tr>
</table>

3. Development of Education, Outreach, and Communications Program	Harvard's agricultural community. This is *Harvard Grown.*	work. This is *Harvard's Climate Initiative.*
	Developed and launched a survey to agricultural stakeholders on goals and actions	Developed and launched a community survey to identify priorities and concerns
	Developed a brochure of area farms and their offerings for use as marketing and communications material	Developed a Harvard Climate Initiative one-pager that provides an overview of the goal and process for the plan that can be used as communications material
4. Final Plan Development	Developed implementation blueprints for carrying out identified action items	Town to complete these planning processes at a future date.
	Compiled the results of all previous phases into a final plan	
	Integrated feedback from advisory groups	
	Presented final plan to boards and committees for approval	

- 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.

  Highlights from the community engagement process:

  - *354 responses to the town-wide survey on priorities and concerns*
  - *9 responses to the agricultural community survey on goals and actions*
  - *2 stakeholder workshops*

  As a key part of the planning process, outreach was intended to reach a wide range of stakeholders. One measurable success was the response to the townwide online survey. Given the COVID environment and the novelty of remote platforms as well as the heart of the spring planting season, the agricultural survey and workshops were not as prolific as desired. Adjustments were employed as the original application pledged and this included having a team of WPI IQP students assist in conducting more intensive outreach. This was moderately successful as the team was able to collect additional information from specific farm operations.

- Provide a brief summary of project deliverables with web links, if available.

  Deliverables will be summarized by task:

Task 1: Vision and Framework *– Here, the evaluation framework was developed and the Climate Action Plan outline was drafted. This included a shared vision, elevator pitch, and a branding package.*

Task 2: Development of Plan and Baseline *– The implementation blueprints were crafted, the Greenhouse Gas (GhG) inventory was developed, incentive measures and high impact actions were created.*

Task 3: Development of Education, Outreach, and Communications Program *– This was the collection of branding, marketing and outreach materials for both the Agricultural Climate Action Plan (AgCAP) and the general climate action plan. It included logos and style guides for both initiatives; brochures, maps, and a website for the AgCAP, survey results, and KLA's "Meeting in a Box" materials.*

Task 4: Final Report Development *– The final AgCAP was developed by KLA and provided to the Commission and Work Group.*

The website developed by KLA for the agricultural plan is at https://harvardgrown.org/ and the site developed by the Community Resilience Working Group as part of the Town CAP is located at https://www.harvardsclimateinitiative.org/ and many of the branding and outreach tools provided by KLA have been incorporated into this site.

Harvard feels that the final Agricultural Climate Action Plan, along with comments and suggestions made by the state, is a very useful resource for any municipality in the state that is seeking to increase resilience in their agricultural sector.

LESSONS LEARNED:

- What lessons were learned as a result of the project? Focus on both the technical matter of the project and process-oriented lessons learned.

Harvard's Agricultural Climate Action Plan

There is interest within the agricultural community of Harvard to increase its resilience to the impacts of climate change and promote long-term economic vitality. By focusing on economic vitality, resource efficiency and GHG reduction, nature-based resilient and regenerative practices, and social cohesion and agricultural character, the resulting agricultural climate action plan was able to utilize a well-rounded general approach to ensure efforts towards resilience are comprehensive.

One key lesson learned throughout the planning process included taking into account farmers' growing seasons and availability for engagement and participation in plan development. As a majority of this plan took place during the spring and summer season, it was difficult to make contact with a large number of agricultural stakeholders. Future

planning processes with these stakeholders should target off-season months. Lastly, it was initially a challenge to obtain buy-in from the agricultural community for the development of the plan. However, the resulting process, while challenging as noted above, did ensure that the final plan represented the expressed needs of the agricultural community in Harvard.

Upon reflection, the agricultural community felt that the plan, while comprehensive and in some cases bold, would be difficult to implement without additional resources. So, with this in mind, future plans developed in any area of climate action planning need to reflect the capacity of the community and also that funding should be available for this type of local capacity, particularly for communities that will not currently allocate tax dollars for this subject area. Conversely, the Working Group and Agricultural stakeholders have acknowledged that they need to take a more active role in steering the work of the consultants toward the scale and capacity of the community. Making sure that actions related to smaller farms and a limited municipal capacity were understood and acted upon would have led to more community appropriate outcomes.

Harvard's Climate Initiative

Like the agricultural plan, there is increasing interest within the community, led by the Community Resilience Working Group, to strategize, plan, and take action to increase community resilience to the impacts of climate change. One key lesson learned is to involve local participants in the scoping process earlier so that there is clarity of roles, purpose, and task delineation prior to kickoff. As noted below, the unique confluence of COVID, funding reduction and modifications to the scope, and delay produced some frictions and misunderstandings that persisted throughout the project. It is harder to elicit a lesson from this other than to reiterate that project management and local capacity are challenges that are important to the success of any such project. Patience, understanding, and clear and constant communication are significant elements that should always be emphasized.

Both

After having received a reduced award and then COVID-19 hit, the Town was seriously considering not accepting the grant in this cycle and trying again at another, more opportune and less challenging time. However, the majority opinion was that it would be even more risky to reject the specific award because this may reflect negatively on Harvard for future funding rounds. Looking back, one lesson might be to reconsider this decision and take our chances on appearing ultimately more responsible as a positive factor in future funding rounds. As the planning process took place within COVID-19 pandemic, another key lesson learned was the value of adaptability in community engagement strategies. Online stakeholder meetings via Zoom were conducted and features such as polling were utilized to make the experience interactive. This was an

iterative and learning process and should this situation arise again, being able to pivot more quickly and competently from the beginning would have been valuable.

- What is the best way for other communities to learn from your project/process?

  The first suggestion is to be comfortable with the scope, tasks, and timing of the project. Once Harvard learned that it received less than a full grant award, the challenge was to make sure that all constituents felt comfortable with their revised tasks, the timing of the tasks, and the deliverables that would accrue. Further, as noted earlier, the primary beneficiary (Ag Comm) of the key product of this project, the AgCAP, was never fully enthusiastic about the project although they were willing participants on the basis on the non-climate action criteria being included. Once concluded, the final product was difficult for the Agricultural Advisory Commission to fully endorse. This was because that while the plan included many important and valuable recommendations. there was no viable means to implement due to a lack of local resources.

PARTNERS AND OTHER SUPPORT:

- Include a list of all project partners and describe their role in supporting/assisting in the project.

  <u>Staff</u>

  - Christopher Ryan, Director of Community and Economic Development

  <u>Community Resiliency Working Group</u>

  - Stacia Donahue
  - Peter Kelly-Joseph*
  - Ellen Sachs Leicher
  - Sharon McCarthy
  - Patricia Natoli
  - C. Ron Ostberg
  - Janet Waldron
  - Lucy Wallace
  - Christiane Turnheim

  <u>Agricultural Advisory Commission</u>

  - Franklyn Carlson
  - Robert Duzan
  - Kerri C. Green*
  - Laura S. McGovern
  - Robert Traver

- Christiane Turnheim
- Matthew Varrell

*Chairperson

PROJECT PHOTOS:

See photographs attached to submittal correspondence.