MUNICIPAL VULNERABILITY PREPAREDNESS 2.0

Mumford River Watershed Pilot Program

Presentation to the CMMPO Advisory Committee

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CMRPC
Central Massachusetts Regional Planning Commission

Overview

1. MVP 1.0 Program
2. MVP 2.0 Updates
3. Project Timeline
4. Engagement Activities
5. Resilience Priorities
6. Project Ideas
7. Next Steps
8. Questions

MVP 1.0

1. MA Grant Program, 2017
2. Planning and Action Grants
3. Support to Identify Climate Hazards, Assess Vulnerabilities, and Develop Action Plans to Improve Resilience to Climate Change
4. Infrastructure, Societal, and Environmental Focus
5. Invite-Only Planning Process

Mumford River Watershed

1. Designations
   - Douglas, 2019
   - Northbridge, 2017 (regional w/Grafton and Millbury)
   - Sutton, 2019
   - Uxbridge, 2018
2. Core Teams included staff/representatives from Fire, Police, Emergency Management, Conservation, Public Works, Water and Sewer, Engineering, Health, Select Board, and Planning Departments
3. Top Resilience Priorities included:
   - Replacement of culverts, dams, bridges
   - Roadway and drainage improvements
   - Tree and invasive species management
   - Improved/expanded communications
   - First responder training
   - Brush/forest fire management
   - Shelter plans and backup power generators
   - Drought management and municipal water expansion
   - Increased access to recreation opportunities
   - Better outreach and communication with underserved populations

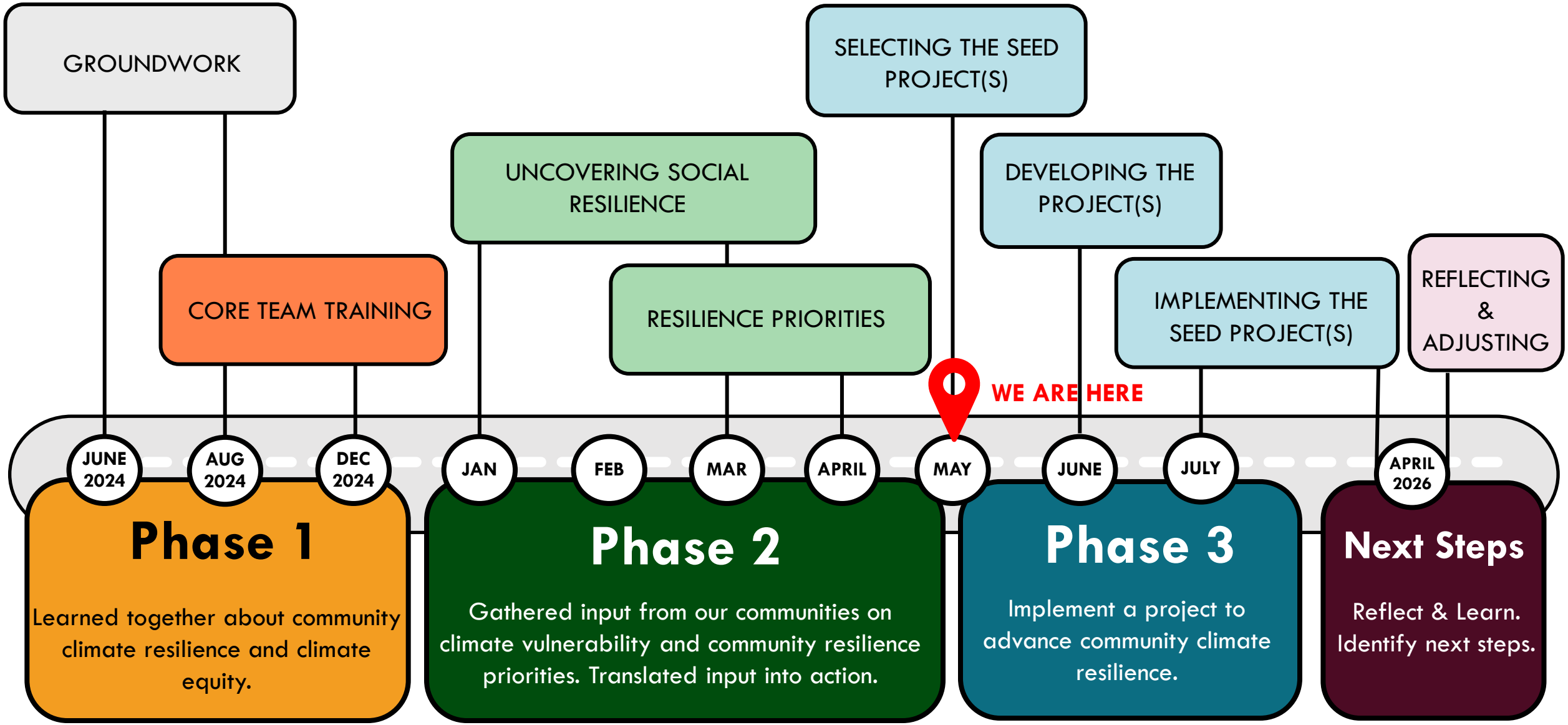
MVP 2.0

1. Pilot Grant Program, 2023
2. Train Community Teams
3. Center Equity
4. Robust Engagement Strategy
5. Revisit and Re-assess Each Communities' Resilience Priorities
6. Design and Implement a Project(s) that Builds Climate Resilience

Mumford River Watershed

1. Partnership with the Towns of Douglas, Northbridge, Sutton, and Uxbridge
2. CMRPC acted as grant recipient and received funding from EEA to conduct planning activities, pay community liaisons, and implement a seed project(s)
3. First MVP 2.0 regional group in the pilot program
4. Core Team included 4 municipal representatives (Planning, Health, Conservation) and 10 liaisons
5. Liaisons provide representation from and connections to low-income, native, aging, youth, Spanish speaking, and student populations

MVP 2.0 Project Timeline



Engagement Activities

Community liaisons/ core team collected secondary data to shape their thinking on climate change and its effects on low-income population in the region.

Community liaisons/ core team had conversations on the issue within their networks.

Core team workshopped a survey collectively. Also, a list of questions for meet & talks were also created. The survey was translated into multiple languages and shared by the core team members.

The core team created language for community conversations/ prompt questions, etc. to encourage participation and prevent alienation.

Engagement Activities

Meet people where they go/ are:

- Coffee and conversations at parks
- Have conversations/ post flyers at cafes, community centers, stores, library, and other nodal points.
- Attended existing community events and shared the survey.

Targeted conversations with vulnerable groups

- Core team arranged presentations and lunches at senior centers.
- Core team targeted young parents and spoke to them during library events.

Have an online strategy

- Posted FB ads to share the survey in multiple languages.
- Shared links on town websites / popular FB groups.
- Shared a library of materials through publicly available links via online posters.

Post-Engagement Analysis/ Strategizing

Key findings from individual conversations were documented and analyzed.

Survey findings were reviewed, both at regional level and at town level.

The core team workshopped existing MVP 1.0 strategies and worked on additional strategies. The language was workshopped within teams, share across towns and re-workshopped as ideas were exchanged and issues discussed.

Similarly each team came up with a set of 3-5 seed projects. Due to similar concerns highlighted across towns, the seed projects found traction and town created their own version of thematic seed projects. A final list of seed projects was created post multiple workshop sessions.

Reset Resilience Priorities: Douglas

- **Improve access to broadband internet,** especially amongst the most vulnerable groups
- **Improve flood resilience, especially among communities next to the river;** work on maintaining and improving infrastructure (e.g., replacing the culvert on Wallis St), and explore nature-based solutions to mitigate flooding.
- **Improving recreation opportunities** in the town, especially downtown and vulnerable neighborhoods
- Create community gardens for recreation opportunities and to improve food security
- **Increase the number of safe and affordable housing units**
- **Prevent power outages** due to severe weather events
- **Improve transportation access & mobility**
  - Assessing road conditions; replacing North Street Bridge;
- **Managing brush for fire safety**
- Continuing work on tree inventory and tree maintenance, and creating coordinated action to manage invasives in the town/ region.

Reset Resilience Priorities: Northbridge

- **Improve Flood Resilience, especially around areas/neighborhoods around Mumford** by: a) Analyze/document causes of flooding in these areas (drainage infrastructure obstructions and/or insufficient flood storage. (Upton Stream and Spring Street stream); b) Enhance/ Purchase unused properties along major waterways that have the potential to provide increased flood storage (MVP grants, CPC funds, Land Grants). Develop access and trails so these lands could be used for passive recreation. (Rockdale Village Dam, Riverdale Dam, Arcade Pond, School St that connects with the conservation area). C) Design, permit, and construct flood storage compensation on these properties (MVP grants). E) Review and proceed with opportunities for dam removal. F) Obtain funding (DER Culvert Replacement grants, DPW budget increase) to remove and replace undersized drainage infrastructure with pipes, culverts and catch basins that can pass higher intensity rainfall events. For example, culvert under the Providence Rd, next to the Rockdale Mill. Similar opportunities can be identified across the watershed of the Mumford River.
- **Incorporate low-impact development (LID) measures to reduce heat island impacts** in town and deal with stormwater mitigation issues. For example, adapt the parking lot at the Middle School, next to the Mumford River.
- **Investigate the best way to mitigate flooding and protect pump stations and other sewer infrastructure.** Consider physical infrastructure upgrades, such as flood walls and other barriers.
- **Manage and eradicate invasive species on waterways, lakes, ponds, and open space**: Develop and distribute outreach materials for residents (include listing/pictures of invasive plants, do not plant list and eradication techniques): a) Develop/implement invasive plant species eradication/control procedures on Conservation Lands; b) Develop/implement annual aquatic plant removal program for the Mumford River. (Linwood Pond – work with Golf Course and schools to establish a maintenance plan) ; c) Assess and implement aquatic plant/algal control measures in nutrient-sensitive ponds (Riley Pond and Arcade Pond); d) Work with the Golf Course – better maintenance practices.; e) Improve the water access for recreation purposes – canoeing.
- **Expand and increase programs that could provide healthy food for low-income residents**

Reset Resilience Priorities: Northbridge

- Revamp protocols at existing community garden (in Elsa Whitin Mason Conservation Land) including increasing awareness, dedicating plots for free use by low-income residents, and dedicating plots to organizations that will make vegetables/fruits to worthy causes (low-income/elderly housing, community food banks and senior center).
- If needed, develop an additional community garden on town-owned land.
- **Improve emergency preparedness by developing an emergency evacuation plan and increase public awareness of available resources and plans**
- Work with the local Safety Committee to develop an Emergency Evacuation Plan
- Create education/ awareness strategy to build awareness and connect the community (especially the vulnerable populations) about the plan, networks/ systems, available resources.
- Create strategies to make the public aware about air quality and build community capacity to mitigate effects.
- Develop / work with managers at Senior centers to develop evacuation drills.
- Create (inter grade) school and neighborhood (blocks) garden projects at both school sites and in community gardens for students to take home fresh produce, and to teach home gardening to their families. Restart residential garden program (for example as run by Comm Sky) as Horticultural Therapy for Special Needs/PWD's et el.

Reset Resilience Priorities: Sutton

- **Improve Flood Resilience, especially around areas/neighborhoods around Mumford;** lessening impacts of flood events along major waterways (Blackstone and Mumford) and within watersheds of smaller unnamed streams that flood during high-intensity rainfall events (Putnam Hill Road, Mumford Mills, Lower Main St) and leverage flood prone areas for the development of any new parks, called "stormwater parks".

  Ensure new park designs incorporate hazard mitigation and resiliency, such as net gains in tree coverage, permeable surfaces, or bioengineered stabilization for slopes.

  A) Clear out the river of debris/invasives; clean out the waterways.

  B) Culverts – get people certified and create a database to identify what needs changing. Connect with community volunteer networks and build programming to bring community support and action towards this.

  C) Continue working on monitoring dams and identifying opportunities to work with dam owners and the state towards greater resilience.

- **Create stormwater resilience parks and forests**: Work with partners on park design and community input - (already working on a project in Manchaug Village to act as a “storm water park.” This project offers an opportunity to combine the need for open space, add flood resiliency components (including addition water storage), invasives management, and public access to history. Work further on the design, permitting, and implementation of this project.
  - Work on identifying similar opportunities across the watershed.

Reset Resilience Priorities: Sutton

- **Addressing Food Insecurity and enhancing fresh food access through community gardens.**

  A) Re-grade and build a community gardening space behind senior center and gazebo area; add water access.

  B) Establish a water source at Shaw Farm (reviving well already on the property or digging a new well).

  C) Create the necessary programming that brings together community members (especially children, young adults, and seniors to create intergenerational opportunities to connect.

  D) Consult local farming experts to look for synergistic collaborations.

- **Design a parallel communication system called "Sutton in the know", in addition to the CODE RED system in place, to inform and educate the community**. Also, create a program to educate and build capacity within the community. This system will include a combination of texts, weekly email updates, social media, and quarterly newsletters.

- **Improve Trees and Invasive Species Management** by a) developing procedures to identify and remove invasives; b) developing communication materials (tie in with "Sutton in the know") to educate and build awareness on invasives and their control; c) Continuing work on managing invasives in the local water ways/ ponds (along the Mumford and Blackstone, Manchaug pond, Ramshorn, Lake Singletary, Stevens Pond); d) Establish a Tree inventory program and integrate a local tree complaint system into the program; e) creating a system to manage invasives. Consider adding a goat program to the management strategy.

Reset Resilience Priorities: Uxbridge

- Check dams on the Mumford River and remove appropriate dams to create flood resiliency. Build on existing work on existing reports/ data analysis on dam hazard potential and condition.
- Use nature-based solutions/ LID / restoration on river edge and flood plains for flood resiliency. Leverage flood prone areas for the development of any new parks, called "stormwater parks". Ensure new park designs incorporate hazard mitigation and resiliency, such as net-gains in tree coverage, permeable surfaces, or bioengineered stabilization for slopes.
- Perform upgrades on select bridges and roadways to reduce flooding
- Create a coalition / taskforce for waterways management
- Enhance the overall accessibility of the internet amongst the vulnerable populations, especially amongst the older populations, the youth and those who cannot afford personal computers and internet bills.
- Spaces or networks where individuals can access computers and have support (especially for those who are semi-skilled and have limited capacity) : a) Create a network of individuals who have internet access and skills to connect with those who don't.
- Update regulations to consider climate change impacts: Review LID recommendations, establish overlay district, Encourage nature-based solutions to resolve critical issues like flooding and heat.
- Develop new town wells to mitigate drought impacts

Reset Resilience Priorities: Uxbridge

- Create a plan for multimedia, regional communication system/network for warning about extreme weather events and response measures
- Improve invasive species management: Create a taskforce and public outreach/ community activation program to do develop these plans. This taskforce would be a coalition of town officials, nonprofits and community leaders.
- Enhance community ability to withstand extreme heat and drought events. Reduce the impact on vulnerable groups. A) Provide backup power for heating and cooling in extreme conditions, including at shelters and/or mobile units. B) Identify critical power infrastructure and the populations most at risk. C) Create transportation options for the elderly/affected groups during extreme weather events D) Create a plan and implement the creation of a network of cooling shelters/transportation options.
- Incorporate low-impact development (LID) measures to reduce heat island impacts in town, for example, install rain gardens or plantings as natural mitigation measures to reduce Heat Island Effect. Create a nature-based plan to create cooling areas to mitigate heat island effects.
- A campaign to educate all segments of the community about hazard mitigation using all media. A) Promote available educational materials regarding disasters and measures people can take to limit risks. B) Develop and distribute educational materials for residents about wetlands, flooding, and stormwater. C) Raise public awareness about best management practices for drainage areas around waterways and wetlands such as LID, rain gardens/barrels and buffers to runoff.
- Develop an emergency preparedness plan with communication strategies and evacuation routes; Develop and implement a shelter plan in case of an emergency. Create a campaign to educate citizens about the emergency management plan. town resources such as planning efforts, agreements, shelters and to ensure that residents know how to access these resources when they are needed. Bring together local and regional schools. senior centers, community centers and create education programming, workshops, evacuation drills as a part of increasing resilience and awareness amongst the community.
- Acquire land to convert pavement to greenspace to enhance riverfront buffers

Seed Project Ideas

- **Pocket "resilience" parks/forests:** All four towns have identified one or two potential projects that would serve as an open space for recreation, have flood resiliency and /or heat resiliency components, and have opportunities for invasive management through greater access to river bodies. More details can be found here:
  - ***Douglas suggestion***: Town-owned parking lot on Gilboa St (adjacent to Gilboa Pond, north of N Street Bridge, across Classic Envelope Company– good plot to adapt (or identify a similar site on the Mumford) could be a great resilience park, with picnic tables, shaded spots, and posters/ information boards. This site (or a similar site) could lead to nature-based edge management/invasive management (by adding a deck/canoe spot). Site choice would be subject to a feasibility analysis by the town and the funds available.
  - ***Northbridge suggestion:*** The team has identified two potential sites, one that the town would have to acquire, and another that is town-owned. These sites sit on a lake. Therefore, the park can have water access by adding a canoe launch and ramp and have opportunities to manage invasives in the local bodies. A water storage body can be added, and the site can be graded for better flood management.
  - ***Sutton suggestion:*** Work on the Manchaug Mill 2 & 3 Park as a local project – this project has been scoped, and a preliminary study has been completed. The seed project would take the next steps towards community engagement and design development. This resiliency park would add in nature-based solutions and contribute towards floodplain management, historical awareness building, and invasive species management
  - ***Uxbridge:*** Creation of a pocket forest in or near an area of priority population and an area with a significant heat island effect. This would provide a cooling shelter, an area of reduced runoff, and carbon sequestration. It would be created, monitored, and maintained by a community group. It would create a place which is welcoming and relaxing, as well as adding green infrastructure locally. The process of creating an asset in the local community would create a new relationship between local citizens and local government.

Seed Project Ideas

- **Invasives and tree management plan + community action:** Each community would create a local plan (with opportunities for regional collaboration) to manage invasives; they also mention the possibility of additional community activation strategies – like information sharing, community education, and invasive removal programming.
    - Education component – create materials/workshop sessions for community members, building awareness and a better community response to the issue
    - Create a town-wide plan to create tree inventories/ invasive species inventory, as well as create an action plan to manage the issue. Collaborate with neighboring towns as needed.
    - Community volunteering/ action plan- Maybe purchase tools to help with this and share through a Library of Things + organize amongst themselves.
- ***Communications & Emergency Management:***
    - ***Douglas:*** Produce better information/ communication to vulnerable groups; training about this, emergency kit. Creating an emergency preparedness program + resiliency hub (internet + cooling)
    - ***Northbridge:*** Bring together local evacuation planning and education, along with regional public health and other educational/ training materials. Mostly target vulnerable populations like seniors, schools, and communities most likely to be affected by an extreme weather event.
    - **Sutton: proposed a parallel Communications/ Awareness System;** reach out to companies and communications dept, and town management to understand costs, and create a process for sign-up and recruitment (how to sign up) to "***Sutton in know***" - including newsletters, texts, phone calls and other outreach (create a communications committee.
    - **Uxbridge:** Create a resilience hub with internet access; provide information on resilience-related issues, as well as create a network of volunteers that assist those struggling with digital literacy and new technologies.

Seed Project Ideas

- **Build Flood Resiliency through town-specific actions:**
  - **Nature-based Solutions for Flood Management and Resilience (*Douglas):*** Nature-based solutions and volunteer-based work for flood management – train homeowners to develop rain gardens and facilitate better flood management/ run-off management*
  - **Create a Culvert Training and River/ Culvert Clearing Program (Sutton)** to educate and activate community members and assist with flood management.
  - **Waterways Taskforce (Uxbridge):** Assessment of the dams in the Watershed to prioritize them based on their potential, through removal and ecological restoration, to increase flood holding capacity. (Wetlands have an enormous capacity to store floodwater and release it slowly. One acre of wetlands can hold 1 to 1.5 million gallons of water. A strong network of wetlands is capable of lessening or preventing flooding downstream. https://valuewetlands.tamu.edu/land-use-goals-and-resources/%E2%80%A2water-quality-and-quantity-flood-mitigation-and-climate-moderation/).
- **Community Gardens**
  - **Develop a community garden at the Senior Center (Sutton):** To address food insecurity and provide an opportunity for inter-generational activities. Food systems approach by creating a relationship with the food pantry which is adjacent to the Senior Center.

Next Steps

Created a Survey to vet resilience priorities and the list of seed projects.

The survey will be posted online via FB ads, town website and other online groups

Each member of the core team will share the resilience priorities and seed project list to at least 3-5 members within their networks.

They will also return to as many community nodes / centers as they can and post the poster, share the survey.

The Core team will analyze the survey results and key findings from the vetting process to pick the seed project. The rest of the project ideas will be integrated in the MVP 2.0 deliverables and can be utilized by the towns for MVP Action Grants or other grants.

Questions?

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