Town of Orange

Municipal Vulnerability Preparedness (MVP) Program

MVP Resiliency Plan

June 2020

Facilitated by the
Franklin Regional Council of Governments
A State-Certified MVP Provider

MVP Resiliency Plan

Including the Summary of Findings from the Community Resilience Building Workshop
October 2019

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Town of Orange
Community Resilience Building Workshop
Summary of Findings

Overview:

Throughout Franklin County, Massachusetts, communities are experiencing more extreme weather events – especially heavy rains and flooding – along with higher temperatures and other climate-related conditions. These types of conditions are predicted to increase as a result of climate change. According to down-scaled climate data from resilientMA.org,[1] the major climate change drivers in Franklin County and Orange are:

- An increase in average temperature, as well as more extreme heat and extreme temperature fluctuations;
- An increase in annual precipitation and an increase in very heavy precipitation events – where more rain, snow, or ice falls in a short period of time – interspersed at times with very dry periods;
- Stronger storms with higher winds, due to an overall warmer climate with more moisture in the atmosphere.

In the face of these changes, municipalities have more of a sense of urgency to increase their resilience and adapt to extreme weather events and mounting natural hazards. Relatively recent events in Franklin County, such as Tropical Storms Irene (August 29-30, 2011) and "Snow-tober"(October 28, 2011), have reinforced this urgency and compelled communities like the Town of Orange to proactively plan and mitigate potential risks. This type of planning will reduce the vulnerability of Orange's people, infrastructure and natural resources, and will empower Orange's officials and citizens to take steps to protect themselves and their community.

In the early spring of 2019, with funding from the Massachusetts Executive Office of Energy and Environmental Affairs, the Franklin Regional Council of Governments (FRCOG) offered the Town of Orange technical assistance in completing their Community Resilience Building Workshop to achieve a designation as a Municipal Vulnerability Preparedness Community or "MVP" Community. As a State-certified MVP Provider, the FRCOG helped Orange engage in a community-driven process that brought together climate change information and local knowledge to conduct the workshop, whose central objectives were to:

- Define top local natural and climate-related hazards of concern;
- Identify existing and future strengths and vulnerabilities;
- Develop prioritized actions for the Community;
- Identify immediate opportunities to collaboratively advance actions to increase resilience.

This report summarizes the findings of the Town of Orange's Community Resilience-Building Workshop.

[1] http://www.resilientma.org/map/

Community Resilience Building Workshop

Summary of Findings

The Town of Orange, population 7,839, has conducted a number of planning projects in previous years, including its updated 2020 Hazard Mitigation Plan, which enabled the Town to identify high priority hazards as well as areas, infrastructure, and populations vulnerable to a variety of hazards, and action items to potentially address hazards. Other recent planning efforts include: an Open Space and Recreation Plan updated in 2016, and ongoing updates to the Town's zoning bylaws and subdivision regulations with practices to better mitigate localized flooding.

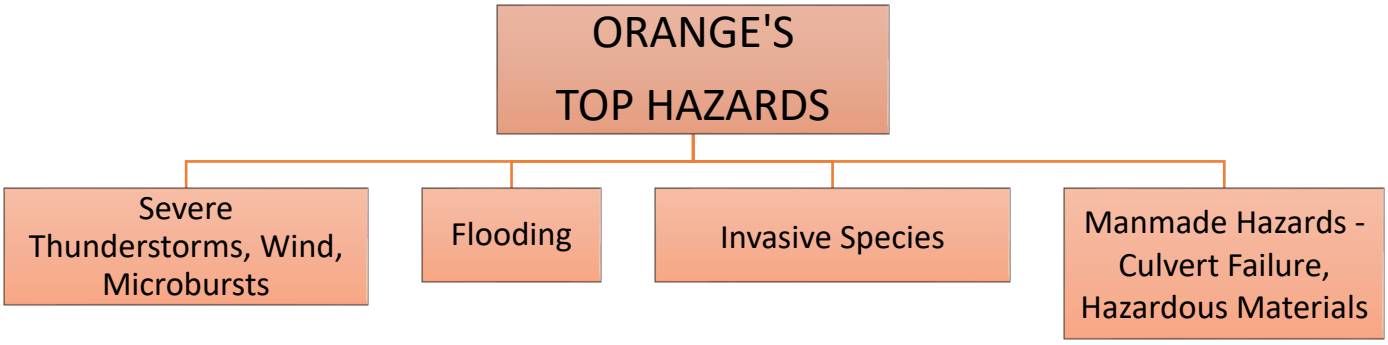
In spite of Orange's diligence in completing these planning efforts, there was still a need for the community to conduct a hazard assessment across scales – from individual buildings and bridges to rivers and landscapes, and across sectors – infrastructure, society and environment – looking specifically through the lens of climate change and its likely impacts.

Workshop participants considered climate change impacts most likely to affect Orange, including rising and extreme air temperatures, extreme weather events and increased precipitation, both in quantity and intensity.

The workshop was critical to enabling participants to think about and engage with people from different sectors. People representing public health, planning, fire, the farming community, and local businesses came together to determine the most threatening hazards to the Town of Orange and to agree upon high priorities and actions to address them.

Top Hazards

Workshop participants discussed a number of hazards that impact Orange, deliberating on how frequent, how intense and how widespread each hazard has been and could potentially be in the future. Hazards discussed included: dam failures, severe winter storms/ice storms, earthquakes, hurricanes, wind storms/microbursts, tornados, ice jams, floods, wild fires, landslides, droughts, manmade hazards and extreme temperatures. Top hazards identified by the participants are as follows:



Areas of Concern

Infrastructure and buildings: Fire stations with limited access during emergencies; vulnerable power grid; drainage infrastructure on North Main Street; poor cell phone coverage throughout Town; outdated DPW equipment; roadside trees; emergency communication infrastructure; privately owned dams; wastewater treatment plant located in the floodplain.

Transportation: Bridges throughout Town, especially those that are located on emergency routes with reduced weight limits due to undersized culverts; limited emergency routes.

Facilities and businesses: Lack of public facilities to serve as heating and/or cooling shelters; small businesses prone to flooding on North Main Street.

Public health: Transportation of hazardous materials through Town, such as compressed natural gas and ethanol.

People: Low-income residents located in inundation zone; elders throughout Town; people living in North Orange and isolated neighborhoods without communication pathways; social determinants of health.

Ecosystems and natural resources: Beaver dams filling or partially blocking culverts; invasive species and pests affecting crops on farms; soil erosion throughout Town and on solar farms.

A fallen tree after a microburst in Orange, June 2017. This storm included bouts of intense rain and hail, and caused thousands of residents to lose power.

The microburst also led to property damage throughout the town.

Current Concerns & Challenges Presented by Hazards

Participants in the workshop discussed a number of hazards that have affected the community in recent years, such as:

- Changes in precipitation including more ice and rain in the winter and increased amounts of precipitation falling in a short period;
- Short-term, acute weather events including severe wind events, extreme and erratic temperatures;
- Rising temperatures, which can lead to a longer period of growth for invasive species and pests such as deer ticks and mosquitos;
- Manmade hazards exacerbated by climate change impacts such as undersized culverts and unsafe road conditions for trucks transporting chemicals through Town.

For many in Franklin County, Tropical Storm Irene in 2011 is a bellwether event, demonstrating the extent and severity of extreme weather and increased rain that is predicted to become more frequent in the coming years. Although Orange was not impacted nearly as severely as towns to the west, the damage and extreme impact from Irene was felt throughout the region.

Workshop participants expressed concern about heavy rain events and potential future flooding, particularly with homes, bridges, and roads located in the inundation zone of the Millers River. Landslide events on solar farms in Town came up as a concern related to heavy precipitation events. Heavy snow, ice and wind events were also identified as a top hazard, due to the potential for downed trees, widespread power outages. Blocked emergency access routes were also a primary concern, especially with regard to how these events can delay emergency responders and affect the community during moments of emergency. Even though most residents in Orange are accustomed to severe winter weather, such events can still have broad and significant impacts on the Town.

Invasive species and the increase in pests on farms due to extreme temperatures were also amongst the top concerns discussed by workshop participants. A later first frost will allow for pests such as mosquitoes and deer ticks to pose health risks to residents later into the year. Additionally, elderly, low income, and homeless residents are particularly vulnerable to extreme temperatures. The elderly are particularly vulnerable to extreme temperatures and may lack air conditioning or ways to adequately heat their homes. Extreme heat can also contribute to poor air quality by trapping emitted pollutants close to the ground, affecting people with asthma and other respiratory diseases. Periods of extended high heat or extreme cold may strain the already vulnerable electrical grid in Town.

Participants also identified manmade hazards as a top concern, particularly culvert failure, and hazardous materials transported by trucks on Route 2. Fragmented communication networks also pose a threat for safe and timely evacuations during an emergency.

Specific Categories of Concerns and Challenges

Location of Fire Departments and Blocked Emergency Access Routes: Participants raised several concerns with regard to the location of the Town's two Fire Departments. The station located on Tully Road can quickly become isolated especially if bridges are out, and does not have cell service. The Fire Chief noted power outages cause the station to lose internet access and cable, further isolating emergency responders during severe weather. The main station is located in the inundation zone of the Miller's River, and emergency vehicles must cross the railroad tracks and a bridge on South Main Street. Both of these structures vulnerable to closures in the event of flooding.

Emergency access routes for residents are quickly shut off with just one or two bridge closures, and the routes are generally difficult to maintain during storms. Participants identified bridges that have already been closed, such as the Exchange Street Bridge in Athol, which cuts off access to Drewville.

Workshop participants identifying top priority hazards.

Vulnerability of local infrastructure: Many culverts and bridges throughout Town are in need of repair or replacement, according to workshop participants. The culvert on Fairman Road was identified as a structure that may fail soon, and another culvert is causing the landfill on Jones Road to flood. Another culvert near the Tully Road fire station was also identified as in need of repair. As previously discussed, bridges are a concern during periods of emergency. Many bridges in Orange have low weight limits, which complicates access routes for emergency vehicles.

The Highway Superintendent explained that many catch basins in Town are not functioning due to sediment and debris buildup, and the Town has not had sufficient finances to have them cleaned out due to staffing limitations. As a result, rain events that would normally be managed by the existing storm drainage infrastructure can instead quickly flood streets making them dangerous for drivers and pedestrians.

Town officials reported that Orange has some of the oldest infrastructure in the state, and despite recent upgrades, the Town still needs to replace approximately 50 utility poles to strengthen the power grid. Tree hazards throughout Town are also a threat to the stability of the power supply. Participants confirmed utility companies have been working to reduce tree hazards, but noted old growth that hasn't been cut down could fall on power lines and cause damage in the future. The last noted hazard to the power grid was residential use of backup generators. Emergency responders brought up safety concerns with regard to misuse of the generators, as there have been several instances of backfeeding.

Sheltering of Orange residents: Participants raised concerns about the limited options for sheltering during severe weather events, should residents need to evacuate their homes. The Fisher Hill School was identified as a potential sheltering location because it has a generator, but it may have poor access and is far from the majority of Orange's residents. Further, using the elementary school as a shelter is less feasible when school is in session. Participants discussed the Armory as another potential shelter and mentioned that it was used as a temporary shelter during a bomb cyclone in October 2019. However, both the Fisher Hill School and the Armory are not set up for overnights and face issues with proper staffing and reliable food supplies. Participants also discussed the

possibility of the Town partnering with local churches or non-profits, but came to the conclusion that there are several regulatory barriers for those organizations to become designated as official shelters.

Isolation of residents: Although the Town of Orange has made significant efforts to add community members to an emergency contact system, some residents are still isolated from communication networks. Orange's Town Administrator sends out Reverse 911 calls, but they won't go out or be received if cell service is down.

Low-income residents throughout Town may have more limited ability to be able to travel to a shelter during a hazardous event and may require better information on responding to an emergency, according to workshop participants.

Elders throughout Town, particularly those who live alone and/or have no transportation, are highly vulnerable to hazards, including high heat and freezing temperatures. Participants specifically noted residents in North Orange rarely have cell phone service, and this population is especially difficult to evacuate in times of emergency.

Vulnerability of the Downtown Area of Orange: Several concerns about the downtown area of Orange were voiced by participants of the workshop. There is a concern about flooding due to poorly sited drains, especially on North Main Street. Local business owners reported the basements of brick buildings in the center of Town flood frequently. Participants also raised concerns with regard to the increase of hazardous materials transported throughout Town, such as ethanol and compressed natural gas. Discussions of a recent truck rollover on Route 2 further raised concerns about the possibility of a future spill. Further, the majority of low-income housing in Orange is located in the inundation zone in the downtown area.

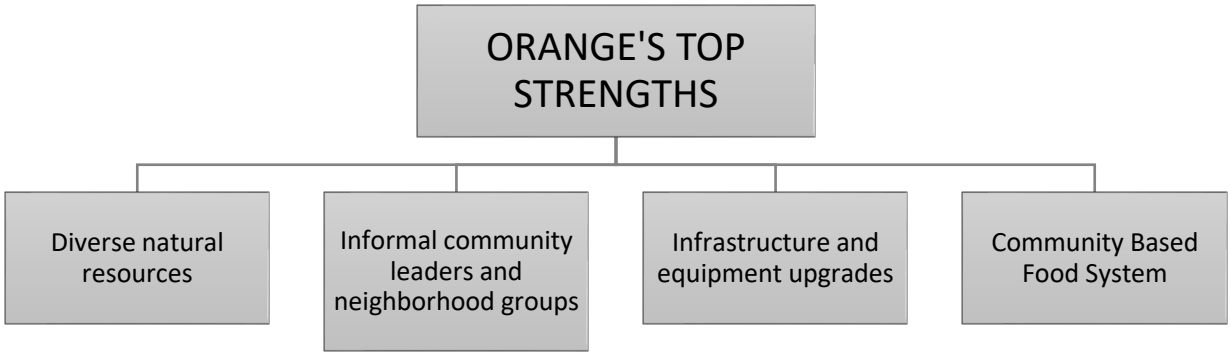
Private dams: The majority of the dams on the Millers River are privately owned, which may delay response times between dam operators and Town officials during a storm. Private dam owners may be difficult to reach in the event that the Town would like to temporarily shut down energy production in order to mitigate the effects of flooding.

Food security: Small farms are an asset to the Town of Orange, but food supplies are becoming increasingly vulnerable due to an increase in pest populations. Rising temperatures can lead to more insects on farms, and allow them to survive longer into winter months. Farmers who participated in the workshop shared that their crops are at risk, which presents a hazard to the local food supply. Additionally, there are concerns with the ability of food to be distributed to residents after a severe storm event. Closed roads, power outages, and crop damage can all limit the ability of food providers to supply the community with food during an emergency. Ensuring producers and distributors can stay connected during a hazard is essential for food security in Orange.

Decentralized emergency supplies: Emergency responders and public health officials shared a concern with regard to emergency supply storage in a central area. Currently, there is not a location where supplies can be stored and utilized by different groups during emergencies, which is especially of concern due to the aforementioned difficulties associated with accessing Orange's two fire stations.

Current Strengths and Assets

Orange residents, for the most part, know how to take care of themselves during routine snowstorms, power outages and other such conditions. Participants expressed pride that people who have lived in Orange for a long time are accustomed to weathering storms and helping out neighbors. Many families in Town know each other and know the first responders and Town staff who help run the Town. Participants sited several strengths and assets that help keep their community resilience in the face of climate change and other challenges. They include:



Diverse Natural Resources: Workshop participants noted that there are many protected open spaces throughout the Town. The ownership of the land parcels is mixed: spaces are publicly or privately owned, and some are owned by non-profits. Depending on the type of ownership and the number of restrictions placed on the open spaces, there may be room for the Town to move forward with climate resiliency projects that could help to mitigate the effects of future severe weather events.

Societal strengths and assets: These include Orange's informal community leaders, neighborhood groups and communication networks. Participants noted there are a number of well-connected informal leaders in the community who could serve to help vulnerable populations in the event of an emergency. For example, a local interfaith group would like to work with Town Officials to gain designation as an official shelter in order to alleviate some of the strains on the Town to staff and supply shelters. Additionally, residents in the North Orange and Tully neighborhoods are working to develop neighborhood network with individual "cluster" leaders. The proposed network would serve as an information resource during emergencies; cluster leaders would help residents in need of assistance evacuate their homes, organize temporary cooling or warming shelters in homes with power or woodstoves, and direct residents to official shelters made available by the Town of Orange. The groups' work began during the outbreak of the COVID-19 pandemic to ensure neighbors had necessary supplies.

Although there are some concerns about isolated residents who may be not be reachable during storms, emergency responders reported that close to 4,000 residents are registered for Code Red. This service is functional even when there is a power outage, and responders believe the large number of contacts mean they are able to reach the majority of households in Orange.

Orange is served by Mount Grace Land Trust, which has helped the Town to preserve properties such as the Gifford Memorial Forest, the Foye Property, and Tully Trail. Additionally, many residents are avid naturalists and share their enthusiasm with their community members. Programming available through organizations such as The Farm School[2] and Seeds of Solidarity provides opportunities for everyone to learn more about environmental stewardship and growing fresh food. Seeds of Solidarity has worked with local schools establish vegetable

[2] Information about Farm School programming available at https://farmschool.org/

gardens, and leads a Grow Food Everywhere initiative to teach people about gardening and create garden beds at local heath care facilities, childcare centers, libraries, women's centers, jails, and recovery centers.[3]

Infrastructure and assets: Workshop participants expressed that failing DPW equipment had recently been replaced, which has improved the Town's ability to respond to natural hazards. Town officials noted a fair amount of equipment that needs to be upgraded, but the newest improvements were a good start. Utility poles throughout the Town were also recently raised and many tree hazards were eliminated so they could better withstand severe weather events.

The Orange Municipal Airport on East River Street was also noted as a strength by participants, as it could serve as a large staging area in the event of an emergency. The airfield is located in a relatively central location, which allows the area to be easily accessible.

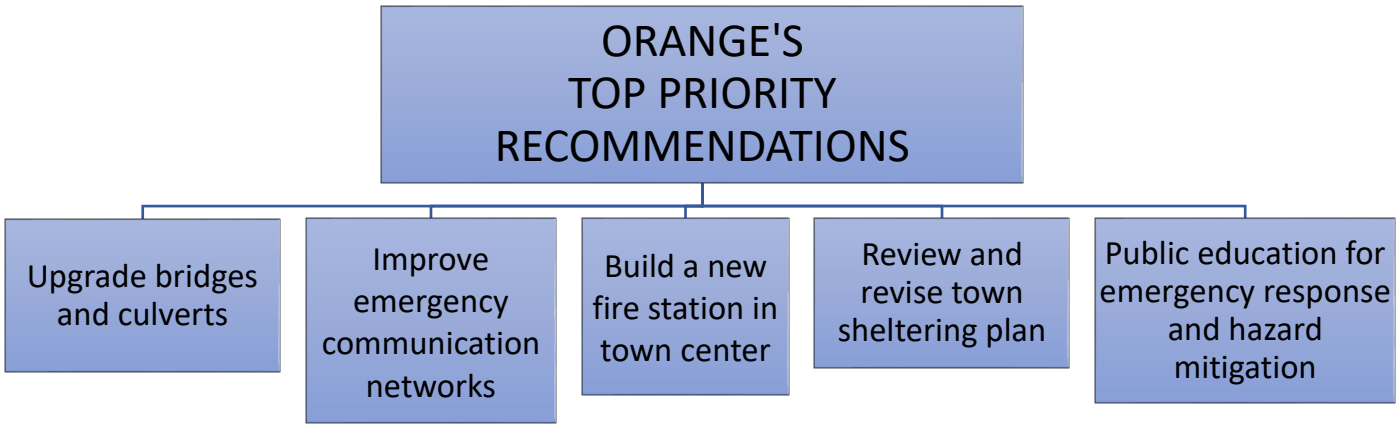
The Town is a designated Green Community, signifying that energy efficiency and renewable energy is important to Orange officials and residents. Orange has an active Energy Committee, which works to implement weatherization, heating system upgrades, and other energy savings projects at municipal buildings.

Community Based Food System: The community food system was identified as an asset to Orange. As previously noted in this section, there are several groups in Town working to ensure all community members can be nourished with healthy fresh foods. Additionally, there is a good distribution system in Orange that provides local food to residents. The Quabbin Harvest Coop in the center of Town purchases produce from local providers such as Diemand Farm, Seeds of Solidarity, Coolidge Hill Farm, and Marty's Local. The coop is closely connected to local and regional farmers, which allows residents to purchase fresh local food. Participants discussed that they are working to get more residents signed up for HIP and SNAP benefits, which would help to provide greater food resiliency.

[3] Seeds of Solidarity Education Programs available at https://seedsofsolidarity.org/

Top Recommendations to Improve Resilience

Orange's top priority recommendations, shown below, address key vulnerabilities while building upon current strengths.



Upgrade bridges and culverts topped the list of highest priority recommendations, with first responders and other workshop participants agreeing that improving these structures is essential. Current conditions of these structures threaten emergency access pathways for both responders and residents. Culverts and bridges should be inventoried and repair should be prioritized based on public safety concerns and evacuation routes with input from public safety. Catch basin clean-outs are a maintenance priority for restoring the functional drainage of existing stormwater infrastructure, ensuring that streets and sidewalks remain safe for drivers and pedestrians, and reducing the risk of flash flooding.

Improving emergency communication networks is also a top priority recommendation, especially for vulnerable populations and residents in North Orange. The Town should continue registering residents for the Code Red program, in addition to identifying areas that would benefit the most from improved cell phone coverage.

Building a new fire station is a high priority recommendation. Workshop participants suggested that the new station could serve as a public safety complex and provide emergency storage for several Town departments. The new station should be built outside of the floodplain, have greater access to emergency routes, and have solar power + battery backup to ensure energy resilience during a hazard event.

Reviewing and revising the Town sheltering plan is essential for the Town of Orange. Current sheltering options are limited, but there are organizations in Town that would like to assist with the Town's needs during emergencies. As a part of this priority recommendation, the Town should also identify shelter staffing requirements, and look into training programs for volunteers. Other key issues that should be evaluated include: legal and fiscal constraints, transportation to shelters, and coordinated sheltering on both sides of the Millers River. The Town is currently interested in completing a reuse study for the Butterfield School.

Public education for emergency response and hazard mitigation should be considered a top priority recommendation. Actions suggested by workshop participants include educating Town employees on public safety and emergency plans and educating residents on emergency preparedness at the household level. Public

outreach could also include a climate change education program. Participants emphasized that the priority should be to educate everyone, and not just vulnerable populations.

Community Resilience Building Risk Matrix

www.CommunityResilienceBuilding.org

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Features	Location	Owner-ship	V or S	Recommendations	Top Priority Hazards: Severe thunderstorms, wind, microbursts	Flooding	Invasive species	Man-made Hazards	Priority (H - M - L)	Time (Short, Long, Ongoing)
Infrastructural										
Fire stations	Water Street	Town	S/V	Hire a consultant to design a new Fire Station for Town Center that can serve as a public safety complex and as a central storage location for shared emergency equipment. The new station should be built outside of the floodplain, have greater access to emergency routes, and have solar power + battery backup to ensure energy resilience during a hazard event.	X	X		X	H	S
	Millyard Street/Tully Hill	Town	S/V		X	X		X	H	S
Culverts	Town-wide	Town	V	Develop a culvert management plan that identifies the locations of culverts in Town, existing and potential issues and the extent of flooding caused at each location, and possible solutions. The plan should prioritize projects in the locations that require intervention, including South Park, Town Farm Road, and West River Street.	X	X		X	H	O
Bridges	Town-wide	Town/State	V	Fix and upgrade bridges throughout Town, especially those that are on emergency access routes routinely used by responders.	X	X		X	H	O
Wastewater treatment plant	West Main Street	Town	V	Hire a consultant to determine appropriate flood proofing measures for the wastewater treatment plant, which is located within the floodplain.	X	X		X	H	S
DPW Equipment	Town-wide	Town	S/V	Continue to prioritize and replace DPW equipment.	X	X			H	O
Mill buildings	Town-wide	Town	V	Promote the redevelopment of mill buildings throughout Town. Review bylaws and develop (if necessary) new bylaws to ensure any changes will be resilient and account for climate change impacts.	X	X		X	L	L

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Sheltering resources	Town-wide	Town	S/V	Develop a contingency plan for the Town's designated emergency shelters and disseminate this information to appropriate Town departments, as well as Town residents. When evaluating facilities as options for public shelters, assess vulnerability to severe hazards and determine any necessary retrofitting measures. Ensure that current shelters have access routes. Complete a reuse study of the Butterfield School, which could potentially be used as a shelter. Potentially work with farmers to coordinate sheltering plans. Obtain input from the Agricultural Sector on emergency planning.	**X**	**X**		**X**	**H**	**O**
Drainage structures	Town-wide	Town	V	Identify funding to pay for catch basin cleanouts. Conduct a Town-wide assessment of drainage structures and drainage driven flood issues to determine where upgrades should be made, especially in the downtown area. Pursue funding for final design, construction documents and implementation of stormwater BMPs identified in the FRCOG's *Franklin County Stormwater Pilot Project for the Town of Orange.*	**X**	**X**		**X**	**H/M**	**L**
Dams	Town-wide	Town/Private	V	Update dam inspections and update internal processes for tracking status & conditions. Ensure contact information for private dam owners is up to date. The Vorces Pond dam and the Orange Water District Reservoir dam are no longer being used for water supply purposes and could be removed.	**X**	**X**			**L**	**O**
Mobile storage	Town-wide	Town	S/V	Continue to identify possible storage locations for emergency equipment that can be shared by Town Officials.				**X**	**H**	**L**
Backup generators	Town-wide	Private	S/V	Develop a public education program on proper backup generator use to prevent residents from backfeeding power onto the Town's electrical grid. Additionally, the water department is in need of a backup generator for well #3.	**X**			**X**	**H**	**S**
Building and parcel assessment	Town-wide	Town	S	Assess & inventory Town owned buildings and parcels to determine which could be repurposed.				**X**	**L**	**O**

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Tree hazards	Town-wide	Town/Private	V	Identify high priority areas for tree pruning and work with the utility company or the Tree Warden to prioritize and implement necessary pruning.	X			X	L	S
Water Main Crossings	Millers River	Town	V	Secure funding to replace the western-most water main crossing the Millers River. The replacement is needed in order to mitigate the potential of the pipe being destroyed by flooding. Design work for this project is already underway.		X		X	L	O
Societal										
Code Red emergency contact system	Town-wide	Town	S	Continue to raise awareness about the Code Red system and get more residents to sign up for the program through social media posts, the Town Website, public notices, and other outreach materials.	X	X		X	H	O
Emergency planning public education	Town-wide	Town	S/V	Continue to educate the public on emergency plans, such as sheltering in place. Additionally, establish a Village Neighbor Network to help address access issues in isolated neighborhoods.	X	X		X	H	O
Village planning initiative	Town-wide/North Orange + Tully Neighborhoods	Town	S	Develop a village planning initiative to address access and communication issues in isolated neighborhoods, in tandem with the action item above. *See information about ongoing work with this group in the Appendix.*	X	X		X	L	O
Public information outreach	Town-wide	Town	S	Continue public information outreach initiatives to educate residents about the value of land use vs. economic development. This could also be incorporated into the elementary science curriculum.				X	L	O
Evacuation planning & communications	Town-wide	Town	S/V	Develop a residential brochure to educate residents on evacuation routes and how to communicate with neighbors during emergencies.	X	X		X	L	O
Local interfaith groups	Town-wide	Public/Private	S	Work with local interfaith groups to develop a comprehensive sheltering plan that can cover residents on both sides of the Millers River.	X	X		X		

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Access to local food	Town-wide	N/A	S	Promote access to healthy, local food for residents through education and outreach about programs such as SNAP/Healthy Incentives, Farm to School, food pantries and community meals, elder food and wellness programs, and Food as Medicine programs. Seek sources for funds and technical assistance, and help to strengthen collaborations that increase food access for community members.	**X**	**X**		**X**	**H**	**O**
	Town-wide	N/A	S	Support Orange-based food businesses, groups, and organizations that are part of the local food system, such as farms, food cooperatives, farmers markets, and food entrepreneurs; and community based organizations that promote fresh food and food access. Seek sources for, and include such entities in funding and other opportunities that strengthen local food resilience.	**X**	**X**		**X**	**H**	
	Town-wide	N/A	S	Conduct a Community Food Assessment or periodically build on existing formal and informal assessments to identify vulnerabilities in the Town's local food distribution system and develop recommendations to minimize disruptions to food access.	**X**	**X**	**X**	**X**	**H**	
Vector-borne diseases	Regional/ Town-wide	Private	V	Join the Pioneer Valley Mosquito Control District, which is currently under-development, for the sole and primary purpose of access to trapping, testing, and educational programming. If, in the future state-wide control protocol (such as spraying) is proposed, the Town will engage in a process for exclusion and/or ensure any proposed action excludes and protects natural ecosystems, watersheds, farmland, and population centers.			**X**		**M**	**S**
Environmental										

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Inventory farm land	Town-wide	Private	S	Assess farmland parcels throughout Town that could be conserved, using information from Mount Grace Land Trust's Farmland Inventory for Orange. Use the suggested criteria included in the Inventory when selecting farmland to conserve.	X	X		X	M	O
Protected open space	Town-wide	Public/Private	S	Develop a better understanding of protected open spaces in Orange. Evaluate how land can be used to develop resiliency, including but not limited to strategies for carbon sequestration, erosion reduction, water conservation, habitat protection, and production of local food.	X	X	X	X	M	L
Climate Resilient Farms	Town-Wide	Private	S/V	Assist farms with assessing and prioritizing climate resiliency options to protect crops, farm fields, and farm workers from extreme weather such as greenhouses, irrigation systems, and innovative drainage solutions, and identify funding for implementation.	X	X	X		M	O
Insects and pests on farms	Town-wide	Public/Private	V	Promote biological and integrated pest management strategies and other strategies to assist farmers with climate adaptation, along with related support. Determine where urban gardens and pollinator habitats could be installed.			X		M	O
Lyme disease	Regional	Town	V	Conduct public education and outreach about Lyme disease.			X		M	O
Town/State Forests	Town-wise	Public/Private	S/V	Continue to coordinate access for fires on State owned property to ensure responses can be completed in a timely manner. Identify Town owned forested areas that are at high risk for wildfires and implement climate resilient forest management practices that reduce the risk of fire hazards (such as the removal of slash).	X		X	X	L	O

Highest Priority Recommendations

- Hire a consultant to design a new Fire Station for Town Center that can serve as a public safety complex and as a central storage location for shared emergency equipment. The new station should be built outside of the floodplain, have greater access to emergency routes, and have solar power + battery backup to ensure energy resilience during a hazard event.

- Develop a culvert management plan that identifies the locations of culverts in Town, existing and potential issues and the extent of flooding caused at each location, and possible solutions. The plan should prioritize projects in the locations that require intervention, including South Park, Town Farm Road, and West River Street.

- Secure funding to fix and upgrade bridges throughout Town, especially those that are on emergency access routes routinely used by responders.

- Hire a consultant to determine appropriate flood proofing measures for the wastewater treatment plant, which is located within the floodplain.

- Continue to prioritize and replace DPW equipment as needed.

- Develop a contingency plan for the Town's designated emergency shelters and disseminate this information to appropriate Town departments, as well as Town residents. When evaluating facilities as options for public shelters, assess vulnerability to severe hazards and determine any necessary retrofitting measures. Ensure that current shelters have access routes. Complete a reuse study of the Butterfield School, which could potentially be used as a shelter. Potentially work with farmers to coordinate sheltering plans. Obtain input from the Agricultural Sector on emergency planning.

- Continue to identify possible storage locations for emergency equipment that can be shared by Town Officials if a new Fire Department is not feasible.

- Develop and implement a public education program on proper backup generator use to prevent residents from backfeeding power onto the Town's electrical grid.

- Continue to raise awareness about the Code Red system and get more residents to sign up for the program through social media posts, the Town Website, public notices, and other outreach materials.

- Continue to educate the public on emergency plans, such as sheltering in place. The focus should be on educating all Orange residents, and not just vulnerable populations. Additionally, establish a Village Neighbor Network to help address access issues in isolated neighborhoods.

- Work with local interfaith groups to develop a comprehensive sheltering plan that can cover residents on both sides of the Millers River.

- Promote access to healthy, local food for residents through education and outreach about programs such as SNAP/Healthy Incentives, Farm to School, food pantries and community meals, elder food and wellness programs, and Food as Medicine programs. Seek sources for funds and technical assistance, and help to strengthen collaborations that increase food access for community members.

Moderate Priority Recommendations

- Identify funding to pay for catch basin cleanouts. Conduct a Town-wide assessment of drainage structures and drainage driven flood issues to determine where upgrades should be made, especially in the downtown area. Pursue funding for final design, construction documents and implementation of stormwater BMPs identified in the FRCOG's *Franklin County Stormwater Pilot Project for the Town of Orange*.

- Assess farmland parcels throughout Town that could be conserved, using information from Mount Grace Land Trust's Farmland Inventory for Orange. Use the suggested criteria included in the Inventory when selecting farmland to conserve.

- Develop a better understanding of protected open spaces in Orange. Evaluate how land can be used to develop resiliency, including but not limited to strategies for carbon sequestration, erosion reduction, water conservation, habitat protection, and production of local food.

- Conduct public education and outreach about Lyme disease.

- Assist farms with assessing and prioritizing climate resiliency options to protect crops, farm fields, and farm workers from extreme weather such as greenhouses, irrigation systems, and innovative drainage solutions, and identify funding for implementation.

- Join the Pioneer Valley Mosquito Control District, which is currently under-development, for the sole and primary purpose of access to trapping, testing, and educational programming. If, in the future state-wide control protocol [such as spraying] is proposed, the Town will engage in a process for exclusion and/or ensure any proposed action excludes and protects natural ecosystems, watersheds, farmland, and population centers.

- Promote biological and integrated pest management strategies and other strategies to assist farmers with climate adaptation, along with related support. Determine where urban gardens and pollinator habitats could be installed.

Lower Priority Recommendations

- Promote the redevelopment of mill buildings throughout Town. Review Town bylaws and develop (if necessary) new bylaws to ensure any changes will be resilient.

- Update dam inspections and update internal processes for tracking status & conditions. Ensure contact information for private dam owners is up to date.

- Assess & inventory Town owned buildings and parcels to determine which could be repurposed for resiliency measures such as floodwater storage.

- Identify high priority areas for tree pruning and work with the utility company or the Tree Warden to prioritize and implement necessary pruning.

- Develop a village planning initiative to address access and communication issues in isolated neighborhoods.

- Continue public information outreach initiatives to educate residents about the value of land use vs. economic development. This could also be incorporated into the elementary science curriculum.

- Develop and distribute a residential brochure to educate residents on evacuation routes and how to communicate with neighbors during emergencies.

- Secure funding to replace the western-most water main crossing the Millers River. The replacement is needed in order to mitigate the potential of the pipe being destroyed by flooding. Design work for this project is already underway.

- Continue to coordinate access for fires on State owned property to ensure responses can be completed in a timely manner. Identify Town owned forested areas that are at high risk for wildfires and implement climate resilient forest management practices that reduce the risk of fire hazards (such as the removal of slash).

CRB Workshop Participants: Department/Commission/Representative:

James Young, Orange Fire Department
Tom Bates, Mahar Regional School
Colin Killay, Orange Highway Department
David Small, Athol Planning Board
Mercedes Clingerman, Orange Planning Board
Jami Kolosewicz, Orange Board of Health
Kenneth Wysk, Orange Water Department
Phil Harris, Orange Building Commissioner
Deb Habib, Seeds of Solidarity
Pat Larson, Quabbin Harvest
Alex MacLeod, Launch Space
Julie Davis, Quabbin Harvest
Andrew Smith, Massachusetts Executive Office of Energy and Environmental Affairs
Brenda Anderson, Local business
James Sullivan, Orange Police Department

CRB Workshop Project Team: Organization and Role

Town of Orange

Gabe Voelker, Town of Orange Administrator
Amanda Carey, Town of Orange Administrative Assistant

Franklin Regional Council of Governments:

Kimberly Noake MacPhee, Lead Presenter
Megan Rhodes, Co-Facilitator
Helena Farrell, Scribe
Xander Sylvain, Scribe
Allison Gage, Scribe

Recommended Citation

Noake MacPhee K. Rhodes M. Farrell H. Sylvain X. Gage A. (2020) Town of Orange Community Resilience Building Workshop Summary of Findings. Franklin Regional Council of Governments.

Photo credits:

Cover	Flooded Cemetery	Greenfield Recorder
Cover	Storm Damage	Greenfield Recorder
Page 5	Tree Downed on Car	Greenfield Recorder
Page 5	Microburst Damage	Greenfield Recorder

All other photos not cited above were taken by the FRCOG

Appendices

Maps

Exercise Outputs

Workshop Presentation

Community Survey

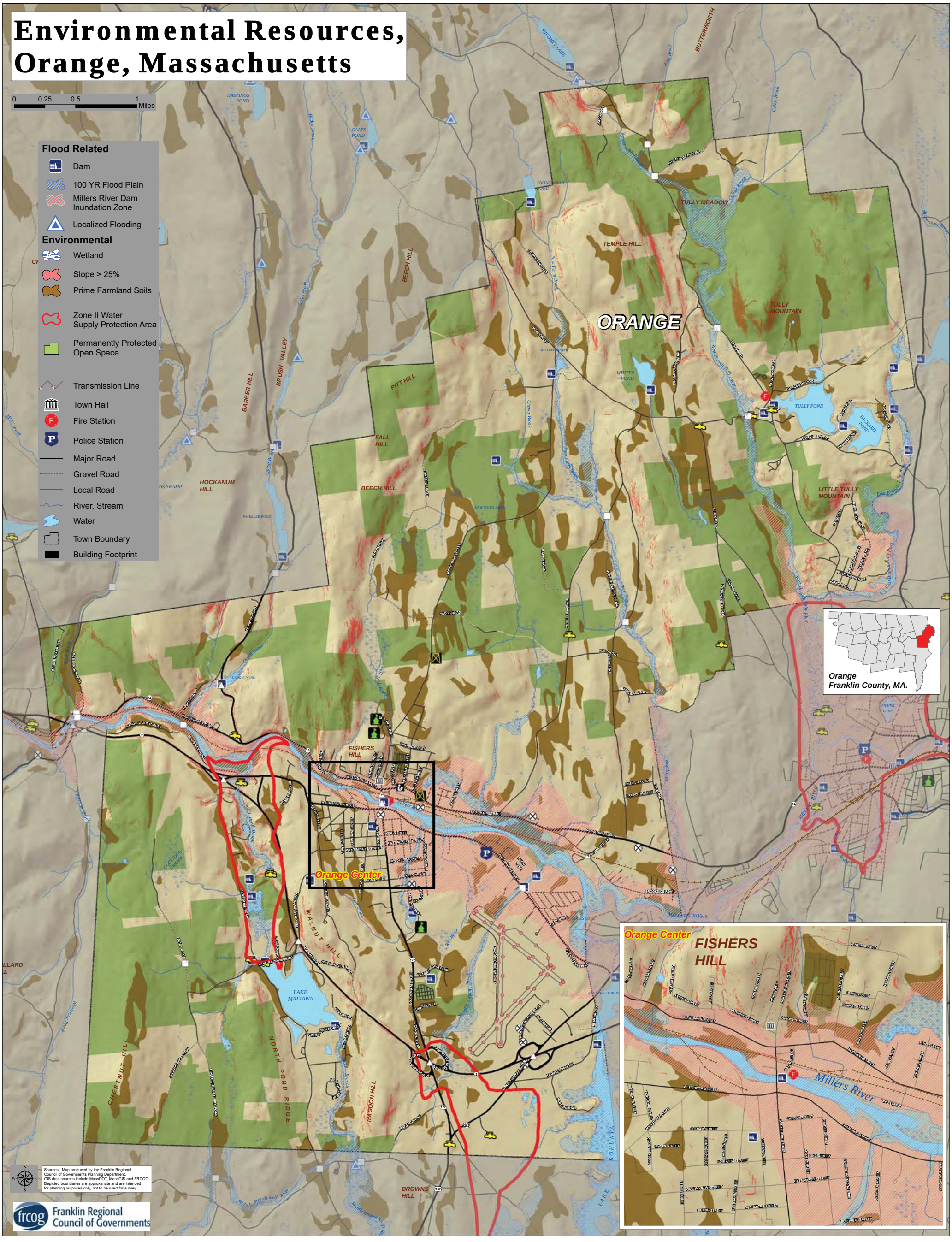
Village Neighbor Network Documentation

Public Comment Period

Listening Session Presentation

Infographics

Environmental Resources, Orange, Massachusetts



Hazards and Infrastructure, Orange, Massachusetts

0 0.25 0.5 1 Miles

Flood Related
- Dam
- 100 YR Flood Plain
- Millers River Dam Inundation Zone
- Localized Flooding

Evacuation Route
- Alternative
- Primary
- Secondary
- Tertiary

- Radio Tower
- Public Water Supply
- Sewage Treatment Plant
- Chemical Facility
- Gas Station
- Solar Field
- Transmission Line
- Rail Line
- Sewer Line
- Water Line

- School
- Library
- Town Hall
- Fire Station
- Police Station
- DPW
- Ambulance

Bridge Ownership
- MassDOT
- Municipal

- Major Road
- Gravel Road
- Local Road
- River, Stream
- Water
- Town Boundary
- Building Footprint

ORANGE

Beaver Activity

Drainage Issues

Culvert Undersized

Bridge Deterioration

Beaver Activity/ road damage

Vulnerable Bridge

Bridge Closed

Culvert Issue

Culvert Issue

Culvert Issue

Orange Center

Orange Center

Undersized Culvert

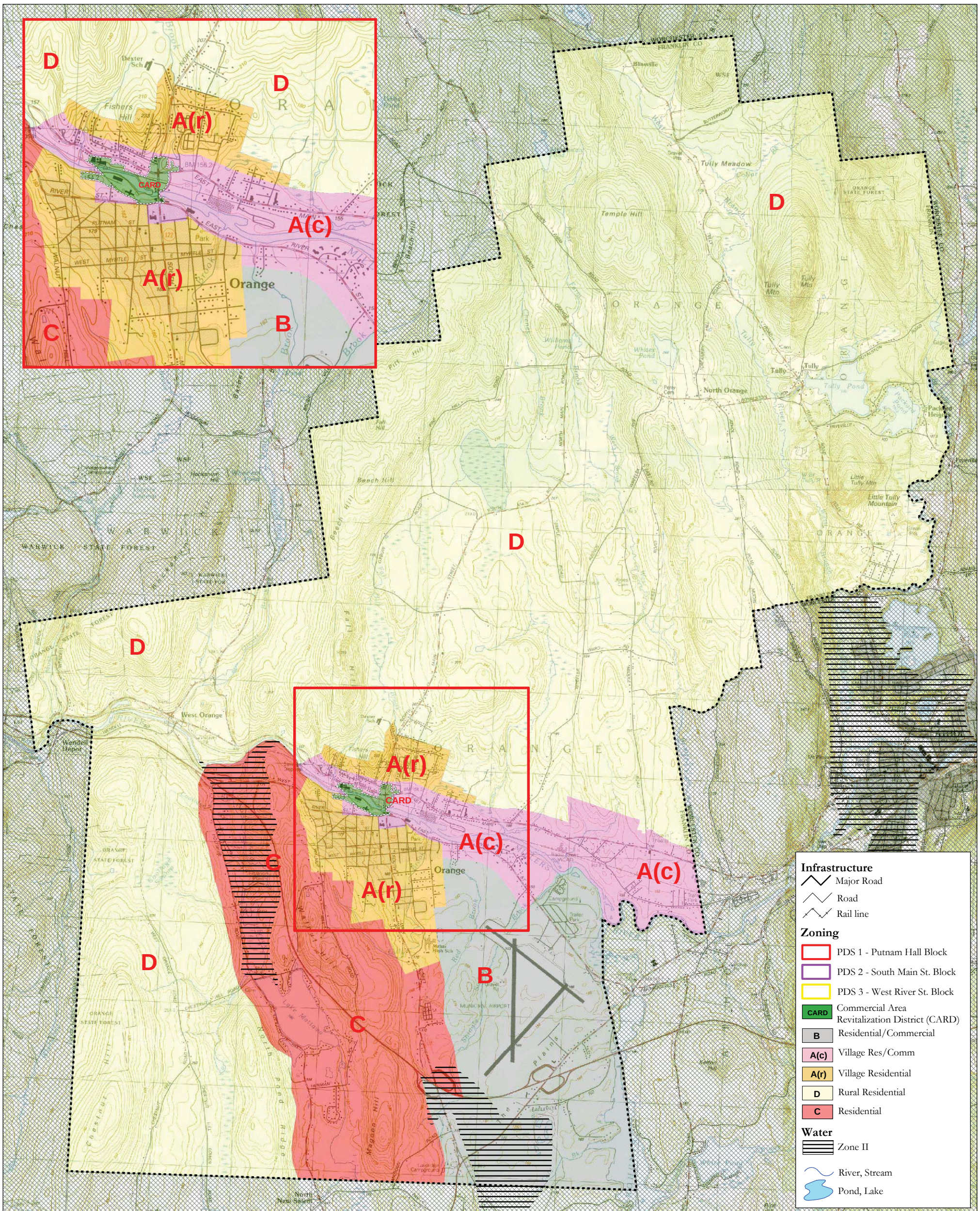
Water Dept.

Orange
Franklin County, MA.

Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.

Franklin Regional Council of Governments

Town of Orange
Official Zoning Map
June 16, 2014



Franklin Regional Council of Governments

N
W E
S

100 Acres

50 Acres

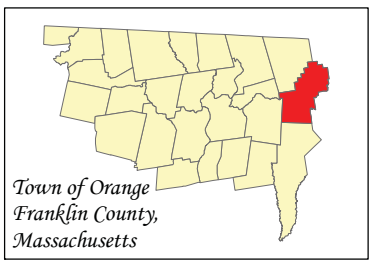
0 0.5 1 2 Miles

map composed by Ryan Clary, FRCOG Planning Department, 04/10 c:\a_projects\Updated_zoning\orange\new\zoning_new_6_16_14officiall.mxd

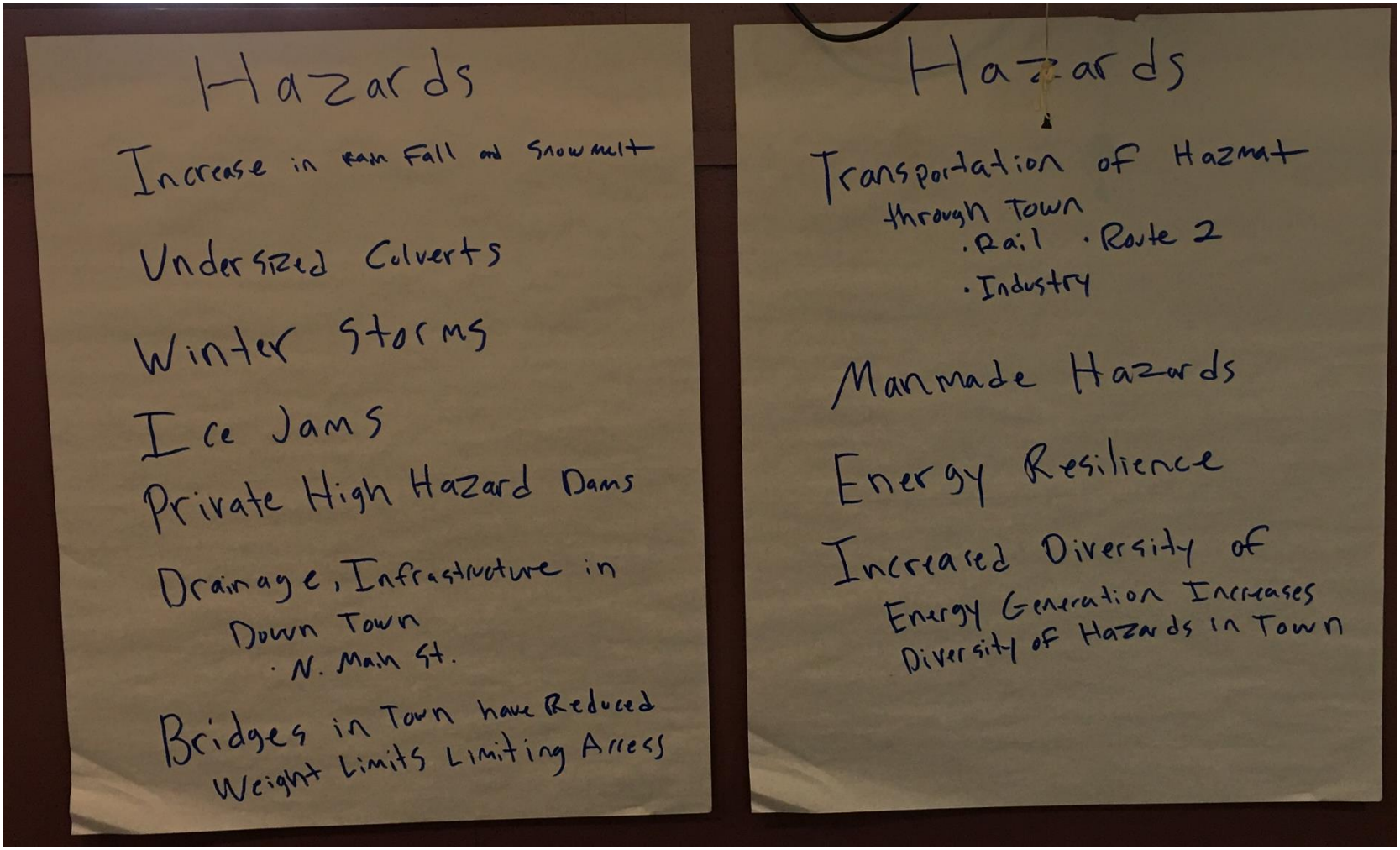
Map Sources:

Map Produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include the FRCOG Planning Department, the Massachusetts Highway Department and MassGIS. Digital Data obtained from MassGIS represent the efforts of the Massachusetts Executive Office of Environmental Affairs and its agencies to record information from the sources cited in the associated documentation. EOEA maintains an ongoing program to record and correct errors in the GIS data that are brought to or as to the implied validity of any uses of the GIS data. EOEA maintains records regarding all methods used to collect and process these digital data and will provide this information on request. Executive Office of Affairs, MassGIS EOEA Data Center, 251 Causeway St., Suite 900, Boston, MA, 617-626-1000.
Note: Depicted boundaries are approximate and are intended for planning purposes only. Portions of the source data were obtained from 1:100,000 scale maps, therefore the accuracy of the line work on this map in +/- 100 feet.

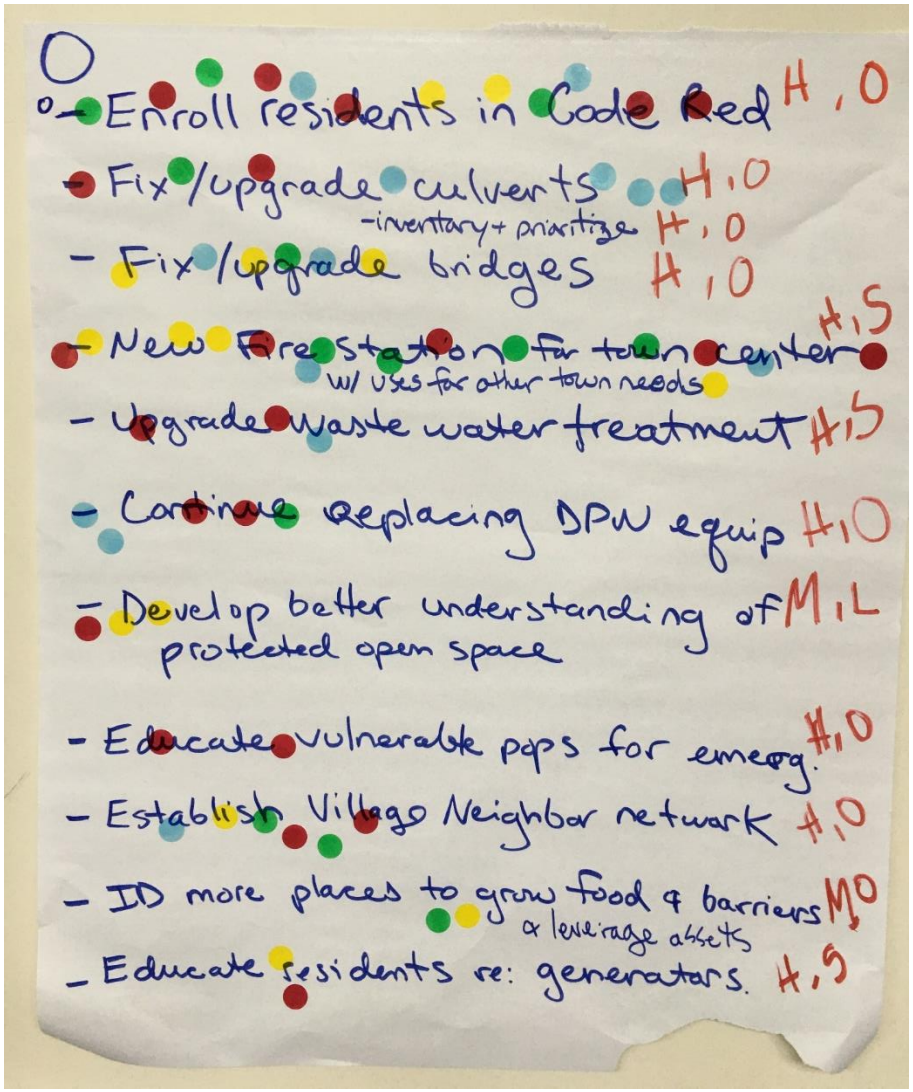
1999 MacConnel Land Use created by Resource Mapping, Forestry and Wildlife Department, UMASS: Amherst
Roads data provided by Massachusetts Highway Department 1:5000.
Town line, water, rail, zone II, aquifer and wetlands data provided by MASSGIS.
Water line, sewer line and prime farmland data created by FRCOG planning staff. Potentially developable land created with .aml in Arc/Info that removed absolute constraints to development.(FRCOG planning staff)

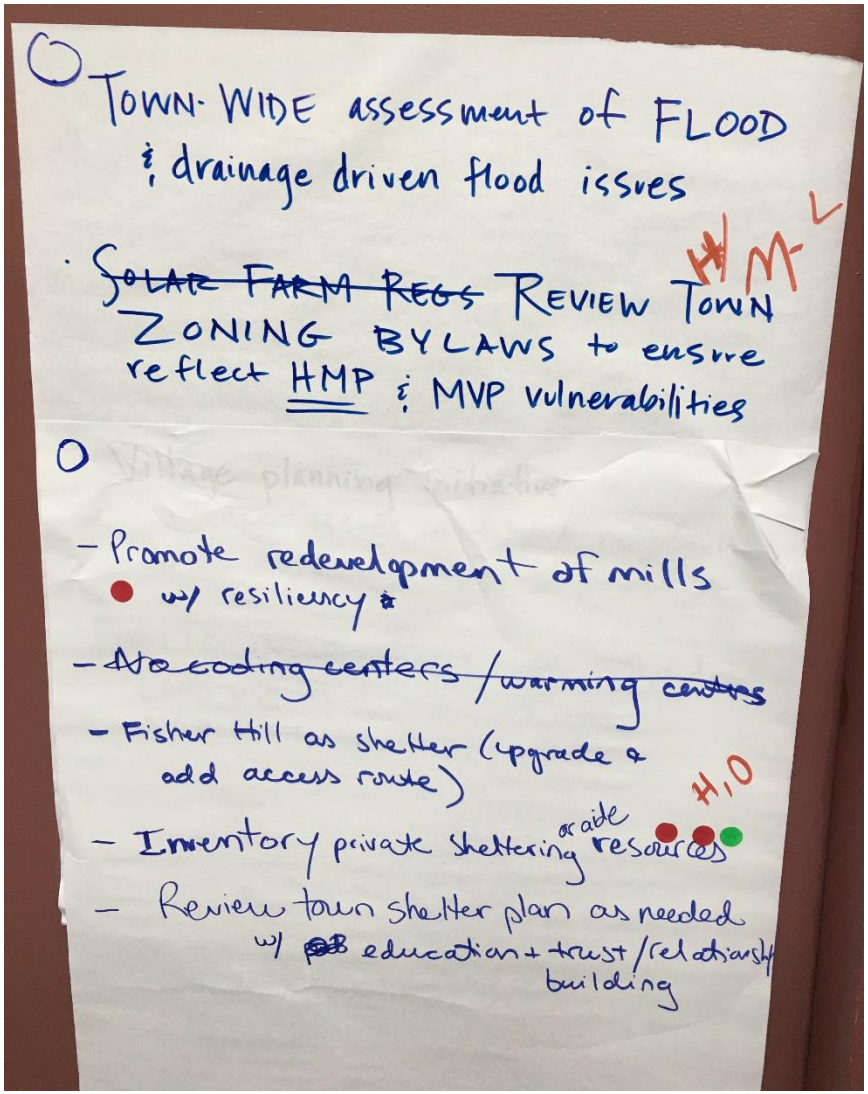


Exercise Outputs – Hazard Characterization

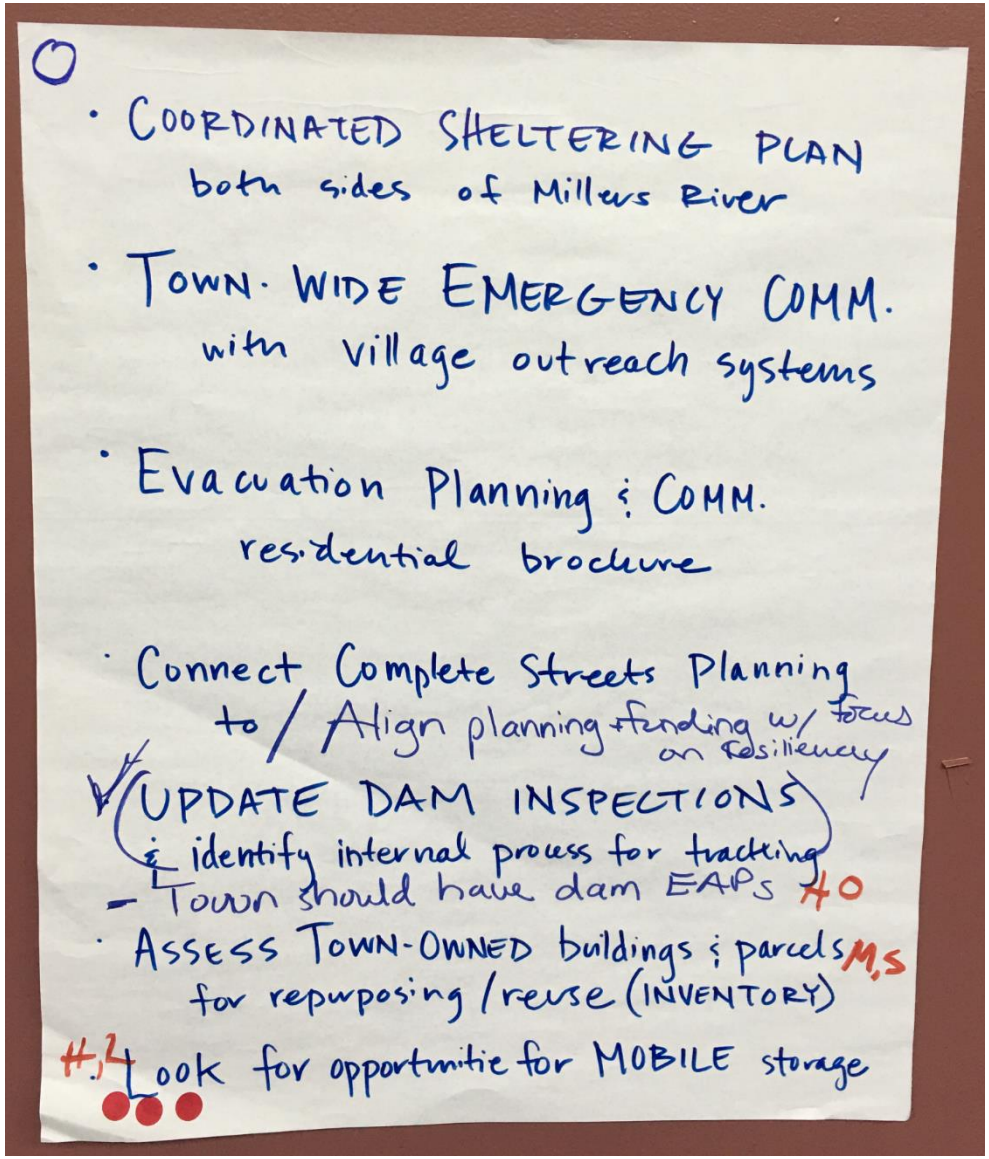


Exercise Outputs – Recommendation Prioritization

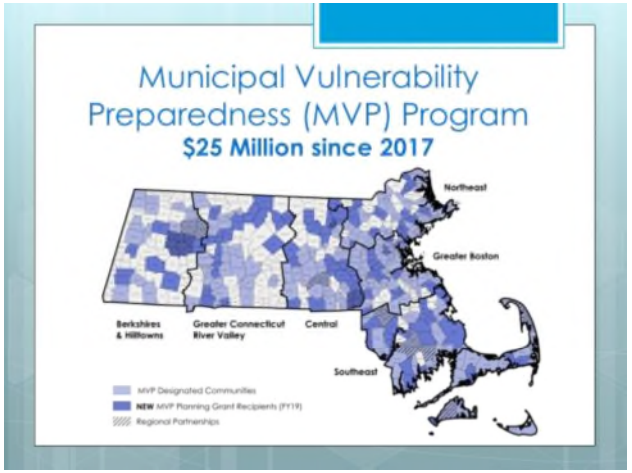


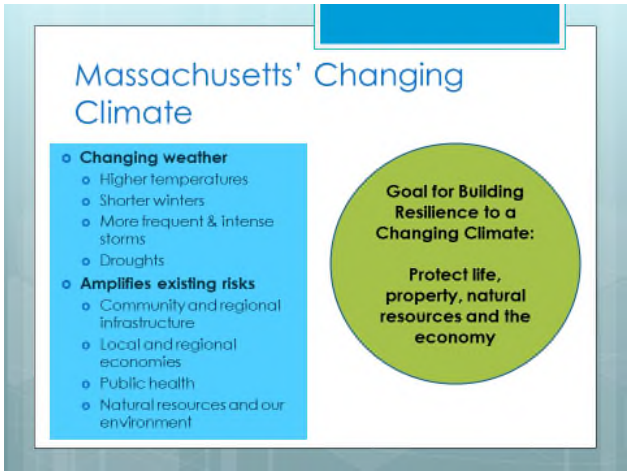


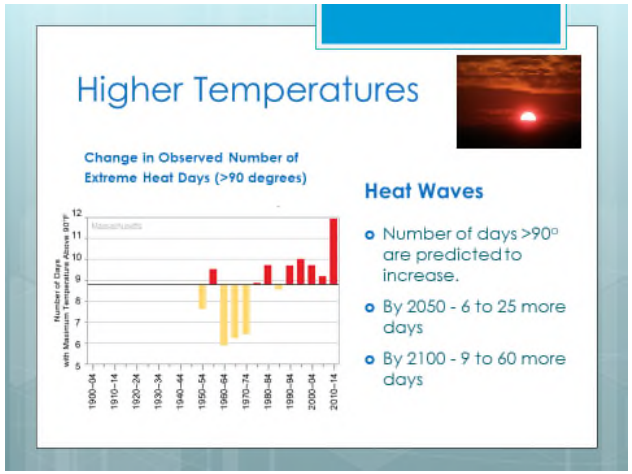
Exercise Outputs – Recommendation Prioritization (Continued)



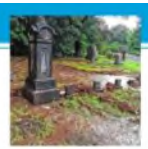
MVP Workshop Presentation Slides





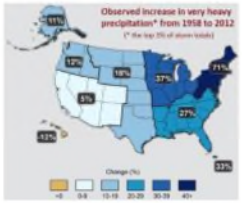


Heavy Precipitation



Observed Annual Precipitation

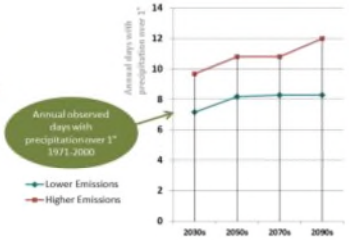
Observed Increase in Heavy Precipitation



Heavy Precipitation

Predictions

By the end of the century, our area could have 5 additional days of rainstorms that dump over 1 inch of rain.



Extreme Weather Events

- Tropical storms
- Tornadoes
- Thunderstorms
- Snow storms
- Drought

- The frequency, intensity, duration and geographic extent of these extreme storms is likely to increase.

Recent Severe Storms 2008 Ice Storm

Recent Severe Storms 2017 Conway Tornado

Recent Severe Storms 2011 Tropical Storm Irene

Snowtober!!! 2011 Historic Nor'easter

THE RECORDER

Snowstorm slams region

Thousands without power

THE RECORDER LOCAL

100 percent of Gill still without power

THE RECORDER

Storm recovery slow

Widespread tree damage hampers line repairs

■ Storm

THE RECORDER

Area cold seek shelter

Residents flock to Turners high school

■ Shelter: People get warm, charge devices

Microburst June 27, 2017

"the sky turned black and sheets of rain blew sideways" during a storm that knocked out power for thousands and caused significant damage in Orange.

Pictures by Recorder Staff/Matt Burkhart

Greenfield: 2.59"
Orange: 2.78"

October 30, 2017

Heavy rains bring flash flood warnings and high winds knock out power to thousands. Roads flood .....

Pictures by Recorder Staff/Paul Franz

Recent Severe Storms 2019 Microburst

Microburst wreaks havoc in Deerfield, Montague - The Recorder 7/31/2019

Montague and Deerfield took heavy damage from Tuesday afternoon's storm, with Eversource reporting about 800 power outages from downed trees and utility poles between the two towns.

In addition, the storm damaged crops and greenhouses.

Pictures by Recorder Staff/Alex Marcus

October 16, 2019

The storm that brought heavy rain and damaging winds Wednesday night into Thursday morning is being referred to as a "bomb cyclone."

MVP Program

- Focuses on climate resiliency
- Strengths & Vulnerabilities in 3 sectors:
  - Infrastructure
  - Societal
  - Environment

Multi-Hazard Mitigation Plan Update

- Inventories *historic* hazard events – frequency, magnitude and damages
- Considers impacts of climate change and probability of *future* events
- Prioritizes *all* hazards and includes action items for each hazard

2019 **DRAFT** Natural Hazard Mitigation Hazard Vulnerability Assessment

Type of Hazard	Location of Occurrence	Probability of Future Events	Impact	Overall Hazard Vulnerability Rating
Severe Winter Storms	Large	Very High	Limited	High
Flooding	Medium	Moderate	Limited	Medium
Tornadoes	Isolated	Moderate	Catastrophic	Low
Dam Failure	Isolated	Moderate	Critical	Medium
Hurricanes / Tropical Storms	Large	Moderate	Limited	Medium
Severe Thunderstorms / Wind / Microbursts	Large	Very High	Limited	High
Extreme Temperatures	Large	High	Critical	Medium
Earthquakes	Large	Very Low	Catastrophic	Low
Landslides	Isolated	Low	Limited	Low
Drought	Large	Moderate	Limited – Might be critical for agriculture	Low Medium for Agriculture
Wildfires	Isolated	Very High	Minor	Low
Invasive Species	Large	Very High	Critical	High

Infrastructure

A changing climate is exposing us to greater risk.

What is it?

- Roads and bridges
- Power grid
- Drinking Water
- Wastewater Treatment
- Communications
- Housing
- Emergency Response
- Schools

Vulnerabilities

- Increase in Precipitation and Extreme Storm Events
- Damages from Flooding, Wind Storms, Snow/Ice Storms, & Extreme Temperatures

Expected Impacts from Higher Temperatures

Infrastructure

Energy

- Increased demand will strain energy infrastructure
- Disrupt service (potential for widespread brownouts or blackouts)

Transportation

- More frequent maintenance required to address:
  - deterioration of asphalt roads
  - buckle railroad tracks
  - thermal expansion of bridges

Societal (Orange Residents)

A changing climate is exposing us to greater risk.

What is it?

- Availability of health care services
- Access to lifelines (food/water, emergency response personnel, etc.)
- Support networks that connect and maintain the supply of goods and services to vulnerable populations.

Vulnerabilities

- Vulnerable populations
  - Elderly
  - Low/moderate income
  - Special needs
  - Languages spoken

Effects of Climate Change on Town Residents (societal)

A changing climate is exposing us to greater risk.

- Heat-Related Illness and Death
- Danger from Storms & Flooding
- Insect-Borne Diseases
- Allergies & Pollen
- Waterborne Disease & Algal Blooms
- Vulnerable populations
- Shelters & services

Health impacts from a changing climate are magnified by individual health issues and circumstances of vulnerable populations

Environment

A changing climate is exposing us to greater risk.

Natural Resources

- Millers River
- Coldwater streams
- Forests
- Farmland
- Floodplains
- Habitat
- Wetlands
- Aquifers

Vulnerabilities

- Flooding
- Erosion
- Impacts to water quality and quantity
- Loss of species diversity
- Invasive pests and plants
- Wetland soils become less absorptive
- More stormwater runoff, less groundwater recharge

Let's Get Started!

- **Identify Past, Current and Future Hazards**
- **Determine Top Priority Hazards**
  - Which 4 hazards pose the greatest threat to the town currently and in the future?
- **Brainstorm resiliency actions for Infrastructure, Societal and Environmental vulnerabilities.**
  - Examples:
    - Upgrade culverts, flood-proof drinking water supplies
    - Evacuation drills and extreme weather communications protocols to protect vulnerable populations
    - Protect wetlands and floodplains to improve flood resiliency
- **Determine top priority Resiliency Actions for Orange**

Let's Get Started!

Identify past, current, and future hazards

- **What hazards have impacted your community?**
- **Where and how often have the hazards occurred?**
- **What effects will these hazards have on your community in the future (5, 10, 25 years)?**
- **What is exposed to hazards and climate threats within your community? For example, roads, elderly, natural resources.**
- **What have been the impacts to the town's operations and budgets, planning and mitigation efforts?**
- **Other concerns?**

Orange Community Resilience Building Workshop

Tuesday, October 22, 2019

American Legion, Post 172, Orange

Name	Affiliation	Position	Contact
James Young	Orange Fire Dept.	Chief / EMD	jyoung@townoforange.org 978-569-7816
Tom Bates	Mahar Regional	Facilities Director	tbates@rcmahar.org 978-544-2542 ext 9
Colin Killay	Orange Highway Department	superintendent	publicworks@townoforange.org (978) 544-1111
DAVID Small	Athol Planning Board	Chair	Dave@dhsmall.Net 978-413-1772
Amanda Carey	Town of Orange	Administrative Assistant	acarey@townoforange.org 978-544-1100 x106
Gabe Voelker	Town of Orange	Town Administrator	gvoelker@townoforange.org 978-544-1100 x 106
Mercedes Clayton	Plan Board Orange	←	planning@townoforange.org
Jami Kolodziejczyk	Orange BOH	Health Agent	jkolodziejczyk@townoforange.org 978-544-1107
Robert Smith Jr	orange Sanitation Dept	superintendent	sanit@townoforange.org 978-544-1118
Kenneth Wysk	Orange Water Dept.	superintendent	watersuper@townoforange.org 978-544-1115
Phil Harris	Building Commissioner	Orange B-C	pharris@townoforange.org 978-544-1105
Deb Habib	Seeds of Solidarity	Exec Director	deb@seedsofsolidarity.org 978 544 7564
Pitt Larson	Quabbin Harvest BOD Town Energy Comm	QH Board	plarson24@hotmail.com 978-975-1226

Name	Affiliation	Position	Contact
Alec MacLeod	Launch Space	COO	alec@launchspace-orange.com
Julie Davis	Quabbin Harvest	team leader	quabbinharvest@gmail
Andrew Smith	EEA - MVP		
Brenda Anderson	business	business owner	trailheadinc@yahoo.com
James Sullivan	Police Chief Orange PD	Police Chief	

GREENFIELD RECORDER

Talk of the Towns: Oct. 15, 2019

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Published: 10/14/2019 5:52:49 PM

Ashfield

"Healthy Bones and Balance" Thursdays, 9:30 a.m., St. John's corner. Free. For more information, call 413-625-2502.

Athol

Take Off Pounds Sensibly (TOPS): Meets Thursdays at 5:45 p.m. at Athol Memorial Hospital, 2033 Main St. Attendees should use the main entrance and turn left to the conference room on the right. Visitors to a TOPS chapter are welcome to attend their first

meeting free. Membership is $32 a year plus nominal chapter fees. Harvey Laprade has been named new chapter leader. To find another local chapter, visit tops.org or call 800-932-8677.

Bernardston

The Alzheimer's Association's MA/NH chapter will host a program on healthy aging practices on Wednesday beginning at 1 p.m. at the Bernardston Council on Aging, 20 Church St. Free and open to the public.

Healthy Living for Your Brain and Body: Research addressing the areas of diet and nutrition, exercise, cognitive activity and social engagement to promote a brain-healthy lifestyle. The program will provide hands-on tools to help incorporate recommendations into a plan for healthy aging. To register, or for more information, call the Alzheimer's Association at 800-272-3900.

Greenfield

The Documentary "Reel Injun" will be shown Thursday at 10 a.m. in the LeVanway Room at Greenfield Public Library. "Reel Injun" explores the portrayal of North American natives through the history of cinema. Traveling through the heartland of America, Cree filmmaker Neil Diamond looks at how the myth of "the Injun" has influenced the world's understanding — and misunderstanding — of Native Americans. With candid interviews with directors, writers, actors and activists. The Thursday Morning Movie Club, sponsored by the Friends of the Greenfield Public Library, is free and open to the public.

Building Bridges Veterans Initiative will offer free weekly veterans lunches Thursdays from noon to 1:30 p.m. at the Greenfield Elks Lodge, 2 Church St. Building Bridges is a veterans initiative of the Episcopal Diocese of Western Mass. buildingbridgeswma.com.

Greenfield Moose Family Center: A pasta meal is served Wednesday, 6 p.m., at the center. The cost is $8. Open to members and guests. A line dance is at 7.

Gamblers Anonymous: Wednesdays, 6:30 p.m., The RECOVER Project. Use 1 Osgood St. entrance. For more information, call 413-325-1389.

Knights of Columbus: Lt. John J. Galvin Council No. 133 of Greenfield will meet Thursday, 7 p.m., Holy Trinity Church's parish hall. Meetings take place the third Thursday of the month.

Franklin County Cadet Squadron (CAP) Seeks Recruits: Meets Thursdays, 6:45 to 9 p.m. Greenfield Teen Center, Sanderson Street. CAP is seeking new recruits, ages 12 to 18. If interested, call Maj. Gary Longley at 413-773-9331.

Al-Anon — Struggles for Intimacy: Thursday, 7:15 to 8:30 p.m., The RECOVER Project, 68 Federal St. Anyone who feels her/his life has been affected by close contact with a problem drinker is eligible for membership in Al-Anon or Alateen. Al-Anon is online at al-anon.org (http://www.al-anon.org).

Northfield

Ongoing Yoga for Ages 60 and Up: Mats and props provided. Drop in anytime Thursdays, 9:30 to 10:30 a.m., at Town Hall, 69 Main St., second floor. Elevator available at ground level; parking at rear of building. Donations appreciated but not required. Donations are used for equipment and additional exercise sessions. Simple seated and standing yoga postures, breathing exercises, relaxation and concentration techniques. Accessible to men and women with any amount of flexibility and yoga experience. Funded by grants from the Commonwealth of Massachusetts Title III grant administered by LifePath, and Executive Office of Elder Affairs (EOEA).

Orange

The Town of Orange will host a Municipal Vulnerability Preparedness (MVP) Community Resilience Building Workshop on Tuesday, Oct. 22, from 9 a.m. to 2 p.m. at the American Legion, Orange Post 172, 40 Daniel Shays Highway. Workshop participants will help define Orange's greatest vulnerabilities to climate change, as well as existing community strengths, with a goal of increasing Orange's resilience to the impacts of climate change. The workshop will culminate in a prioritized list of actions for Orange that can help improve the resiliency of town infrastructure, residents and the environment. Once adopted by the Selectboard, the town will be eligible to apply to the state's new MVP Action Grant program for funding to implement identified projects. The workshop will include refreshments and lunch. RSVP to Amanda Carey, administrative zssistant, at 978-544-1100, ext. 106 or acarey@townoforange.org.

Shelburne

Tai Chi led by Lois Bascom runs every Thursday morning from 9 to 9:45 a.m. at the Senior Center. Easy forms and repetition. Good for improving balance and stability.

Shelburne Falls

The first-ever Changing Seasons golfing/bowling biathlon will take place Friday and Saturday. On Friday, bowl at the Shelburne Falls Bowling Alley. On Saturday (Sunday rain date), golf at Edge Hill Golf Course. The scores will be cleverly combined to come up with the best combined score. Bowl: three strings on Friday evening, 6:30 p.m. Arrive early to get shoes. Golf: nine holes on Saturday at 10 a.m. Arrive early to get a cart. $35 includes three strings of bowling, nine holes of golf with cart, prizes and pizza after the golf. **Pizzas will be brought in after the golf; beer and soft drinks are available at the golf course. Register at the bowling alley, the golf course or by mail to: Dennis Merritt, 86 Main St., Shelburne Falls MA 01370. Make checks payable to Dennis Merritt.**

Turners Falls

A Low-Cost Yoga class will be offered for seniors (55 and older) Thursdays, 4 to 5 p.m. at the Gill-Montague Senior Center, 62 5th St. Andrea Chesnes will offer gentle mat yoga stretches, yoga breathing techniques and deep relaxation. Seniors from all towns, including beginners, are welcome. A $1 donation is requested. For more information, call 413-863-4500.

Community Survey

Public Outreach

The MVP Planning Committee identified local stakeholders who did not attend the workshop and mailed or emailed a follow up survey. The purpose of the survey was to identify how local businesses or community services have been impacted by natural hazards and what their concerns are as climate change continues to impact the Town. A total of four responses were received and their comments were incorporated into the plan as appropriate. Below is a copy of the survey stakeholders were asked to complete.

Instructions: You may complete the survey **online** or by **mail**. Should you respond via mail, please use the enclosed envelope to do so. If you would like to quickly respond online please navigate to SurveyMonkey site via the following link: https://www.surveymonkey.com/r/OrangeCom.

You can also access the survey via the QR code if you use a smartphone. Open your rear-facing camera and hover it above this image and then open the link that pops up:

Thank you for your time!

1. What is your name and the name of your organization?

2. What type of service do you manage?
    a. Community mental health
    b. Assisted living
    c. General community services
    d. Medical services
    e. Other

3. Extreme weather events in recent years have affected your service in recent years
    a. Not at all
    b. Somewhat
    c. Moderate
    d. Frequent
    e. Extreme

4. Which hazards have interrupted your service in recent years?
    a. Flooding
    b. Drought
    c. Extreme Temperatures
    d. Invasive Species
    e. Other

5. Which aspects of your service are the most vulnerable to hazards?
    a. Treatment plans
    b. Access to clients
    c. Infrastructure
    d. Other (please detail)

6. Are you aware of how extreme weather or changes in climate could impact your services?
    a. Do you feel that you have adequate information on how your business could be impacted in the future?

7. What steps (if any) are you taking to safeguard your services against severe weather hazards? Some examples include developing an emergency plan, installing hurricane windows, basement drainage, partnering with other local businesses)
    a. If yes, please describe the actions taken.
    b. If yes, what hazard was the adaptation in response to?

8. Are there any steps you are planning to take?
    a. If yes, do you project any barriers to implement the changes?

9. What resources would be the most beneficial to you?
    a. Information on funding
    b. A workshop on how to prepare/enhance protection
    c. Detailed region/sector impacts
    d. Contact details for state or town officials
    e. Details on how future climate changes will impact my business
    f. A network of other small businesses in the area who face similar risks

10. Have you previously engaged your clients in issues relate to climate change or resiliency?
    a. If yes, what was your approach?
    b. If not, has your organization considered conducting outreach?
11. What could the Town do to support your continued success?

12. ***Any other information you would like to provide?***

Village Neighbor Network Documentation

Notes from Neighborhood Potluck and Discussion for No. Orange and Tully – Nov. 15, 2019

After a potluck supper (6-7 p.m.) attended by about 45-50 people residing in the neighborhood of No. Orange and Tully), about 30-35 people stayed for a discussion. Charlotte Weltzin facilitated the discussion using questions to guide our discussion regarding concerns and ideas for the neighborhood. This event was held at the Community Church of No. Orange and Tully as a community-wide event.

1. What do we see as climate threats for N. Orange/Tully? Ideas listed –

1) Ice storms	2) Snowstorms
3) Hurricane	4) Micro-bursts
5) Wind storm	6) Bomb "cyclone"

2. What are some issues for this area? People suggested that entrance and exit from area could be a problem during certain events (e.g., bomb "cycle" with many trees down on roads – 10/16/2019). Another issue brought up could be difficulty with "evacuation" from area if necessary.
3. What are our big concerns for area?
   - Aging population
   - Communication with each other and town (e.g., fire, highway, etc.)
   - Power outages
   - How does electricity get to neighborhood? For example Tully Road, Royalston Road, Athol Road may tie into grid in different places. Maybe need a map showing this so people can figure out who has power first and also water. Need to define a network
   - Households are not on town water. With drilled wells, people have pumps that go out if no electricity and thus no water. A few with shallow dug wells may be able to get water with hand pump or bucket.
4. What are strengths and weaknesses of area?

Some strengths

a) Some people heat with woodstoves – perhaps need to know where these houses are.

b) Great neighbors in times of emergency. This was seen in October storm with people who had large tractors helping neighbors.

c) Emphasis on fact that No. Orange/Tully have and are good neighbors.

d) People come together to help neighbors

e) Low crime area – suggested that we do not want emphasis on "watch" as part of language in forming a network.

f) Some people look in on others

Some weaknesses

a) No safe haven designated if you cannot get out (?of area?)

b) Question of – How do we support the most vulnerable?

c) Who are key contact people? Does something need to be set up?

5. Open up to questions, ideas and comments to share with group. Shared thoughts and ideas –

a) Communication – maybe need to set up neighborhood network. How do we do this if all power out?

b) How do we communicate if we lose everything including cell phones. Someone suggested that people can still use cell phone to call 911.
c) Should we start with clusters of 5-6 houses and have a spokesperson for that cluster?
d) Need contact point where people can get out and talk with each other.
e) Each household should know what to have on hand in case of emergency and have those items quickly available (perhaps get out a list of items for people)
f) Question of using Tully Fire Station which has a generator but no cooking facility. But it is a place where people can stay warm and use bathrooms. In latest storm, most people gathered on Nov. 15th did not know it was open. How do we communicate about these things? There were updates about roads, etc. during Oct. 16th storm by the Police Department on Facebook if you had access to that.
g) How do we set up communication in No. Orange/Tully neighborhood? Who has generators?
h) We need small and large meeting places. Some that are in neighborhood include: Tully Fire Station (generator), Community Church (kitchen and eating space but no generator), Farm School (Maggie's Farm + other – generator + water)
i) Should we set up a committee to investigate going further? Climate change has affected our weather and we will continue to have tough weather.
j) Organize notes and send to people who signed attendance sheet.
k) Possibly set up email list or group -- question of "How do we communicate for meetings?" What should we call network list – "Next Door" list or use Facebook Messenger. If messenger group set up should only be for emergencies. Need to work on how to communicate with neighbors.
l) Other happenings in community – post on church door and Moore-Leland Library door. This could include all events in area.
m) Tie in to Municipal Vulnerability Preparedness planning that town of Orange is doing now with help from Franklin Regional Council of Governments (FRCOG).

Notes compiled by Pat Larson –

Email from Pat 12/09/19:

Hello:

First thank you for talking with me over the past month about Municipal Vulnerability Planning (MVP). In North Orange and Tully people seem very interested in developing a neighborhood network to deal with issues about climate change events and other emergencies. Below is a copy of the email that was just sent to people who attended a community pot luck supper and discussion at the Community Church of North Orange and Tully on November 15, 2019. I have also attached the discussion notes from that meeting. I hope that you find these useful as a MVP proposal is developed for Orange.

Thank you for the work you are doing on planning for extreme weather events and other possible emergency events.

Email Message To: No. Orange and Tully From Nov. Pot Luck -- Neighborhood Network (Dec. 2019) Sent to about 25-30 households who were present at gathering.

Attached are notes from the neighborhood discussion held on Nov. 15, 2019. In the week before Thanksgiving Charlotte and I met to review the notes and talk briefly about what might be possible to help create a resilient neighborhood network for North Orange and Tully.

The main question seems to be – How do we organize a neighborhood network and then perhaps smaller clusters that are inclusive? One idea –

- Get people (a small working group) to meet 3 times a year to organize network.
- Have 3 large neighborhood potluck suppers a year to get updates regarding network.

If we get 7-10 people from all parts of North Orange and Tully to meet in January, we could start to set up clusters in each area and a neighborhood contact list. People interested in helping with this may reply to Charlotte Weltzin) and Pat Larson (

Holding a meeting in **January** to form a working group seems important to get things going. As most people are already very busy, it is important to figure out ways to organize without a lot of meetings and figure out ways to share the work load.

Thank you for participating in November Potluck and Discussion.

Pat Larson –

Possible Resources and Updates for Now –

1. Official Emergency Shelter in Orange – According to Chief Jim Young, official town emergency shelters are not opened until 72 hours after emergency event in town if necessary. This gives fire, highway, police, emergency management and others time to assess event.
2. Resource List/Manual for neighborhood – Charlotte is starting a 3-ring binder with resources for emergencies.
3. Neighborhood Contact List – This email gets this started.

Other Resources to possibly help with organizing –

1. Municipal Vulnerability Preparedness – Franklin Regional Council of Governments (FRCOG) is working with Orange to help develop plans related to impacts from climate change and ways to build community resilience.
2. Communities Responding to Extreme Weather (CREW) – This is a network of local leaders building grassroots climate resilience through inclusive & hands-on education,

service, and planning. This is a project of the Better Futures Project/350.org and currently based in Boston area. Rev. Vernon Walker is program coordinator and is organizing CREW teams in all parts of state and willing to meet with people in Orange.

3. Churches organizations such as UCC Disaster Ministries have developed a "Disaster Preparedness Manual" which could be helpful as we go forward.

Pat Larson -

North Orange, Ma.

0 500 1,000 2,000 Feet

Franklin Regional Council of Governments

Land Use (2016)

- Cultivated/Hay/Pasture
- Forest
- Grassland
- Impervious Surface
- Wetland

- Stream
- Intermitten Stream
- Water
- Road
- Building Structure
- Parcel Boundary

Sources: Map produced by the Franklin Regional Council of Governments Planning Department. GIS data sources include MassDOT, MassGIS and FRCOG. Depicted boundaries are approximate and are intended for planning purposes only, not to be used for survey.

Area of Detail
Orange, Ma.

GALES POND
JOHNSONS POND
BEECH HILL
FLAGG ROAD
BUTTERWORTH ROAD
TULLY ROAD
TULLY MEADOW
TEMPLE HILL
TULLY MOUNTAIN
MAIN STREET
TOWN FARM ROAD
CREAMERY HILL ROAD
MOUNTAIN ROAD
ROYALSTON ROAD
WILLIAMS POND
WHITES POND
PINE HILL ROAD
TULLY POND
PACKARD POND
PITT HILL
FAIR HILL
BEECH HILL
DFW MGMT AREA
NORTH MAIN STREET
WHEELER AVENUE
ATHOL ROAD
LITTLE TULLY MOUNTAIN
OXBOW ROAD
TEMPLE ROAD
JONES CEMETERY ROAD
EAST ROAD
BROOKS ROAD
CROSS ROAD
SPORTSMANS POND

Public Comment Period

A public listening session and public comment period were held to provide Orangeresidents and Town Officials an opportunity to review and comment upon the draft Orange MVP Resiliency Plan.

The public listening session was held as a standalone meeting on November 16th at 6:00 p.m. via zoom. The meeting was also televised live on Athol Orange Community Television (AOTV). FRCOG staff presented the MVP program as well as findings from the workshop, provided opportunities for feedback on the Town's top resiliency actions, and answered questions from attendees.

The Director of Community Development and Fire Chief were present. Members of the public attended and asked questions and provided comments, summarized below. Overall the meeting attendees were happy with the plan and the presentation.

Summary of comments from the November 16, 2020 Listening Session:

- Participants were asked to provide comment on some of the Town's vulnerabilities. Participants noted local farms & the food supply is vulnerable, especially in terms of disruptions in the food supply chain during an extreme weather event. Other vulnerabilities identified included social determinants of health.
- When we reviewed the Town's top strengths, participants requested that the "Local Food Coop" is changed to "Community Based Food System." Other participants requested that we add local naturalists and active conservation organizations to the discussion section as well.
- We held a vote on which resiliency actions the Town should take on first and the following responses were recorded:

    - Public education
    - Emergency communication
    - Upgrading bridges and culverts

The public comment period was held from November 16th through November 30, 2020, during which the public was invited to submit comments via email. Copies of comments are on the following pages and were addressed when revising the final plan.

The public listening session and public comment period were advertised on the Town of Orange's website. The press release, shown below, was provided to the local newspaper and the event was also advertised via a flyer posted on the Town website.

Orange
Municipal Vulnerability Preparedness (MVP)
Public Meeting

Photos courtesy of the Greenfield Recorder

The Town of Orange and the Franklin Regional Council of Governments invite Orange residents to hear about and comment on the MVP Plan:

- ✓ **Attend the public meeting: November 16th at 6pm via Zoom**
- ✓ **Provide public comment between November 16 – November 30:**
  - **MVP Plan is located at https://www.townoforange.org**
  - **Submit a comment via email to Alec Wade, Director of Community Development: awade@townoforange.org**

WE WANT YOUR FEEDBACK!

Monday, November 16, 6:00 p.m.

Zoom Webinar

Please register in advance of the meeting

https://us02web.zoom.us/webinar/register/WN_s17N_r_ARRGO1zLlIm_8kQ

GREENFIELD RECORDER

(https://www.recorder.com)

North Quabbin Notebook: Nov. 11, 2020

(/byline?byline=)
Published: 11/12/2020 3:06:31 PM

Orange holding virtual meeting on MVP plan

ORANGE — The town is hosting a public meeting to review the results of the Municipal Vulnerability Preparedness (MVP) Community Resilience Building Workshop, as well as the draft MVP Resiliency Plan, on Monday, Nov. 16, at 6 p.m. via Zoom and Athol-Orange Community Television (AOTV).

Participants at the workshop, held in October 2019, included representation from the Orange Fire, Police, Highway and Water departments, Planning Board, Board of Health, Energy Committee, Seeds of Solidarity, Quabbin Harvest and LaunchSpace, as well as interested residents, according to a notice from Allison Gage, land use and natural resources planner with the Franklin Regional Council of Governments (FRCOG). Workshop

Allison Gage

From: Deb Habib <deb@seedsofsolidarity.org>
Sent: Sunday, November 15, 2020 11:54 AM
To: Allison Gage
Cc: Phoebe Walker
Subject: Language addition suggestion- Orange Municipal Vulnerability Preparedness Plan

Hello again,
I did re-read the section that lays out high, medium, and low priorities. On page 17, second bullet item- might this be added?
...Evaluate how land can be used to develop resiliency, including but not limited to strategies for carbon sequestration, erosion reduction, water conservation, habitat protection, and production of local food.
Thanks for your consideration,
Deb

HI Allison and Phoebe,
Many thanks to you and to all at FRCOG for this great effort.
I will do my very best to participate and have registered to receive the link.
I did get a chance to look over the plan. One thing that strikes me is of course timing. I remember that when this (well facilitated!) session happened it was just after 3 days of non-stop public works and emergency clean up after a storm. So many of the comments and needs clearly reflect that experience. Now of course we've experienced a whole different emergency period, continuing, scary, and also related to climate change, health, resilience, and preparedness. I imagine a draft such as this would be ever-changing and hard to encompass all! But a really comprehensive foundation. But, while I know that food and agriculture is included in the document, at the gathering in October the majority of folks were in public and safety management so that lean is evident. I am concerned that there is not enough here that links food/farming, public health, and climate change. I will do my best to request more on this during the meeting in a way that contributes to the whole without too much more work for you!. But I hope there might somehow be more opportunity to contribute recommendations related to food and ag, looking forward towards increased resilience and public health. The main mention is of pests, but truly, that is just one small part of the whole- more of a pro-active recommendation would be focused on, as mentioned town center and farmland for growing food, using organic and regenerative methods that also sequester carbon. And please, I am very much hoping that line about bringing us into the mosquito spraying district is omitted. That would be devastating to local farms and the ample conservation lands and watersheds, and extremely time consuming to manage exemptions for something that is not forward thinking. If anything, it is weakening rather than strengthening resilience. If for any reason I cannot get on the call, I respectfully request that you take that out of the recommendations as my feedback. And, I'd be happy to add more about food and ag recommendations through a lens of resilience and local food security to the draft.
I'll do my best to participate tomorrow though!
Many thanks,
Deb

Deborah Leta Habib, Ed.D
Seeds of Solidarity

she/her

"Remember this in the darkest moment, when the work doesn't seem worth it,
and change seems just out of reach: out of our willingness to push through comes a tremendous power…use it."

Stacey Abrams, politician, lawyer, voting rights activist

Get inspired with our new book! Making Love While Farming: A Field Guide to a Life of Passion and Purpose for events, praise, and purchasing.
Learn and Participate: Seeds of Solidarity Farm and Education Center workshops, resources, and support.

On Nov 6, 2020, at 12:36 PM, Allison Gage <AGage@frcog.org> wrote:

Good afternoon all,

Thank you for either attending Orange's Municipal Vulnerability Preparedness Workshop last October, or for providing feedback for the plan. I am writing to let you know that the Town of Orange and FRCOG will be holding the public listening session on **Monday, November 16th at 6:00pm via zoom** to present the workshop findings. Please join us! Attached is a copy of the draft plan in case you would like to review it before the meeting. Please use the link below to register in advance.

Hope to see you there,
Allison

When: Nov 16, 2020 06:00 PM Eastern Time (US and Canada)
Topic: My Webinar

Register in advance for this webinar:
https://us02web.zoom.us/webinar/register/WN_s17N_r_ARRGO1zLllm_8kQ

After registering, you will receive a confirmation email containing information about joining the webinar.

Allison Gage
Land Use & Natural Resources Planner
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301
413-774-3167 x136
www.frcog.org

<Draft Orange MVP Report 11-6-2020.pdf><Orange MVP Listening Session Flyer.pdf>

Allison Gage

From: Deb Habib <deb@seedsofsolidarity.org>
Sent: Thursday, December 10, 2020 12:54 PM
To: Kimberly Noake MacPhee
Cc: Allison Gage; awade@townoforange.org
Subject: Re: Mosq Control District follow-up info

Greetings to all,
I am truly appreciative of your attentive research and communication on this matter!
It is very helpful to see. It is good to better understand the distinction between the PV Mosquito Control District and state level actions on this.
The suggested text I sent in previously remains fairly close then. I looked back at my original email to Alec and am
resending it here, with just a bit of adjustment for future protection and with a better understanding of the current information provided.
My previous feedback is below and I've changed/added my suggestions to number 2 just a bit (pink) given all of your helpful info. Mosquito control is not my area of expertise, but I've lived through a few things considered safe later proven not at all so! So, I offer the additions below hoping it covers this to the best of ability with what is known (and recognizing the current non-invasive benefits of participation in the regional district), and supporting public process should things change in the future.
Thanks!
Deb

1) On page 15 of the matrix, a recommendation to join the mosquito district is combined with, and suggested in relation to Insects and pests on farms. However, this is not a farm issue but more of a public health topic. I request that this line be deleted here and placed elsewhere. Keeping the line about urban gardens and pollinator habitats is indeed relevant as a recommendation. Another line to add to that same box as a recommendation might be to
Promote biological and integrated pest management strategies and other strategies to assist farmers with climate adaptation, along with related support.

It would follow then that these same changes would be applied to the second to last bullet item on page 17.

2) …Not sure where any mosquito info would now go (not under the Ag recommendations) but…

Join the Pioneer Valley Mosquito Control District, which is currently under-development, for the sole and primary purpose of access to trapping, testing, and educational programming. If, in the future state-wide control protocol [such as spraying] is proposed, the town will engage in a process for exclusion and/or ensure any proposed action excludes and protects natural ecosystems, watersheds, farmland, and population centers.

On Dec 10, 2020, at 11:59 AM, Kimberly Noake MacPhee <KMacPhee@frcog.org> wrote:

Hello Deb – Tracy Rogers, FRCOG's Emergency Preparedness Program Manager spoke to Greg Lewis, a former FRCOG employee who is a Commissioner on the PV Mosquito Control District. Tracy prepared the attached summary of her conversation with Greg. Greg's email address is on the bottom of the document and he's happy to talk with you, Deb, or anyone else if there are additional questions or if you need more information.

At the moment, the PV Mosquito Control District does not spray, and they don't intend to, but that of course could always change depending on who the commissioners are at any given time. But the power in knowing whether you have EEE/WNV-positive mosquitos before finding out you have positive people or horses means member towns can use preventive measures that might help them avoid spraying by the state. That said, once the Governor decides to spray, it's difficult to stop him/her.

Please let me know if you want me to do additional follow-up and if your position is still that you still want the Action Item related to the PV MCDistrict removed from the plan. We could always modify the Action Item to be more reflective of the information we have gathered from Greg and the information from Sen. Comerford. If you have ideas along those lines, please share them with us.

Thank you!

Kimberly

Kimberly Noake MacPhee, P.G., CFM
Land Use & Natural Resources Planning Program Manager
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301
Phone: 413-774-3167 x130
Fax: 413-774-3169
Email: KMacPhee@frcog.org
Web: www.frcog.org
Connect with us here:

Deborah Leta Habib, Ed.D
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"Remember this in the darkest moment, when the work doesn't seem worth it,
and change seems just out of reach: out of our willingness to push through comes a tremendous power…use it."

Stacey Abrams, politician, lawyer, voting rights activist

Allison Gage

From: Patricia Larson <plarson343@gmail.com>
Sent: Wednesday, November 18, 2020 10:21 AM
To: Allison Gage; awade@townoforange.org
Subject: FRCOG MVP Draft Report

Allison and Alec:
I am sending you both a couple of comments. I read the draft before the listening session, and it seems to cover the things discussed at the workshop last year in a good way. I just have a couple of comments/questions. They are listed below, and I made no attempt to put in formal language for draft, etc.

- On page 10 it is stated that Quabbin Harvest has a back up generator. **Quabbin Harvest does not have a back generator/**
- There was a table shown at the listening session that lumped "forests and farms" together. I could not really find the chart in the draft report I read. However those two items should be separated as there are separate areas of concern, and I think Deb Habib spoke very well to this issue. Also I did not see much about soil erosion in various areas of Orange.
- Food Systems -- As we have seen with COVID-19, food security is a big issue. Thus tying all the parts of the local/regional food system together which includes farms and other producers, distributors (farmers' markets, coops, Marty's Local, Orange Food Pantry, schools, etc) and consumers together seems necessary in order to build a resilient food system for Orange. This is a complex system but one to be concerned about in the face of the climate crisis -- extreme weather, etc.
- Although Mount Grace Land Conservation Trust was not listed they are a good resource regarding an inventory of farmland in Orange and local forest land. Both Emma Ellsworth (new exec. director) and Sarah Wells (MGLCT staff) live in Orange and could provide more insight about land in Orange, etc.
- I am not sure how this fits, but Orange is also involved in working to use less energy in town buildings and other places. All of this ties into helping make Orange a more resilient community in the face of climate crisis, public health issues and other issues.

There may be more. I will stop now. as I am in the process of finishing the final report for Orange's Green Communities Designation grant. However I will share the MVP draft report with the cluster leaders for the North Orange Neighbors Group. Thank you for mentioning the work we started before COVID-19 restrictions. Some of the work we planned for the spring had to be put on hold. However at our last meeting of cluster leaders in March, we switched to checking on people regarding needs during COVID-19 restrictions. Thus we have tried to stay in touch with people via phone and email. I guess it will be 2021 before we can hold an event in person for Neighbors Meeting in person.
Thank you for putting together MVP Draft report.
Pat Larson - plarson343@gmail.com (978-575-1226)

Orange Farmland Inventory

The town of Orange has a rich history as both a hub of industry and a center of agricultural production. Farmers in Orange today produce hay, beef, dairy, and a variety of other products and contribute to the regional economy. There is potential to produce even more food and fodder by protecting the farmland that exists and selectively reclaiming underutilized agricultural soils. Conservation of Orange's most important farms is a critical first step to achieving the goals of the town's Open Space Plan and expanding the town's role in the regional food economy.

HENRY P. KENDALL FOUNDATION

Prepared for the Town of Orange in June 2016 by Mount Grace Land Conservation Trust with support from the Henry P. Kendall Foundation and the Massachusetts Land Initiative for Tomorrow (MassLIFT).

About the inventory

Purpose

This farmland inventory provides a snapshot of agriculture in Orange and can serve as a tool for towns, conservation organizations, and community members to build support for farming in the future.

Key definitions

Farm parcels are tax lots from town Assessor's data that have farm fields on them. Many farm parcels are partially wooded, with some only some open fields being actively farmed.

Farm fields are open fields being used for pasture or crop production.

Data sources

Background information

- Franklin County Farm and Food Systems Project, published in 2015 by the Franklin Regional Council of Governments

Community conversations

- Meetings with members of the Orange Open Space Committee
- Interviews with other community members and farmers

MassGIS datalayers

- Land Use (2005)
- Level 3 Assessor's data
- Prime and statewide important farmland soils for Franklin County
- Protected open space

Authors

The inventory is a project of Mount Grace Land Conservation Trust, with support from the Henry P. Kendall Foundation and the Massachusetts Land Initiative for Tomorrow (MassLIFT-AmeriCorps). This factsheet was prepared by Kathleen Doherty, MassLIFT-AmeriCorps 2015-2016, with help from Jamie Pottern, Mount Grace Land Conservation Trust, and Bradley Kennedy, MassLIFT-AmeriCorps 2014-2015.

A snapshot of agriculture in Orange

There are **1,257** acres of farm fields in Orange.

9,343 acres of land in Orange are covered by prime and statewide important farmland soil, or **41%** of the total land area.

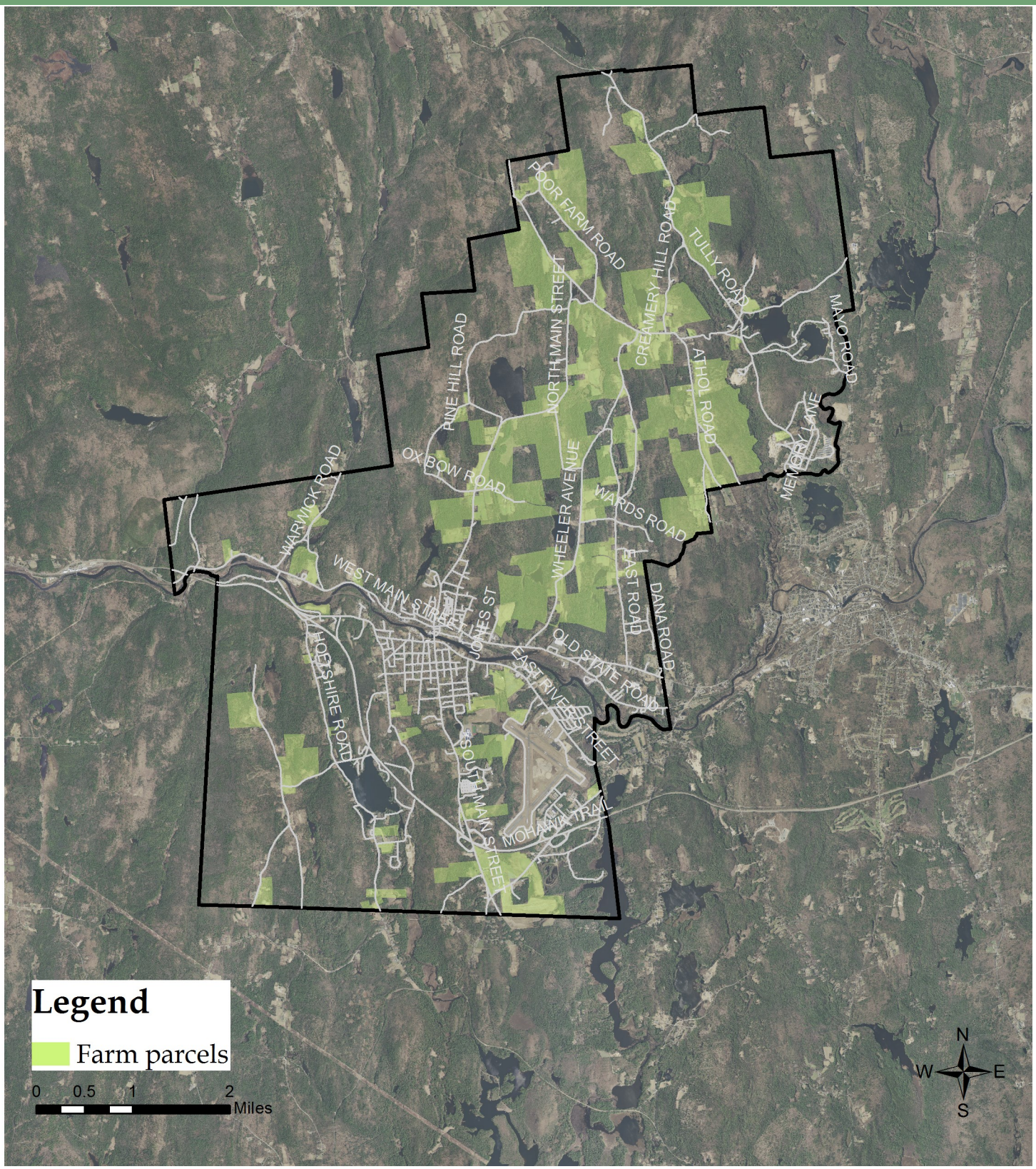
89% of prime and statewide important farmland soils are **not** being utilized for food crops, fodder, or pasture.

Hay is the most commonly raised crop in Orange.

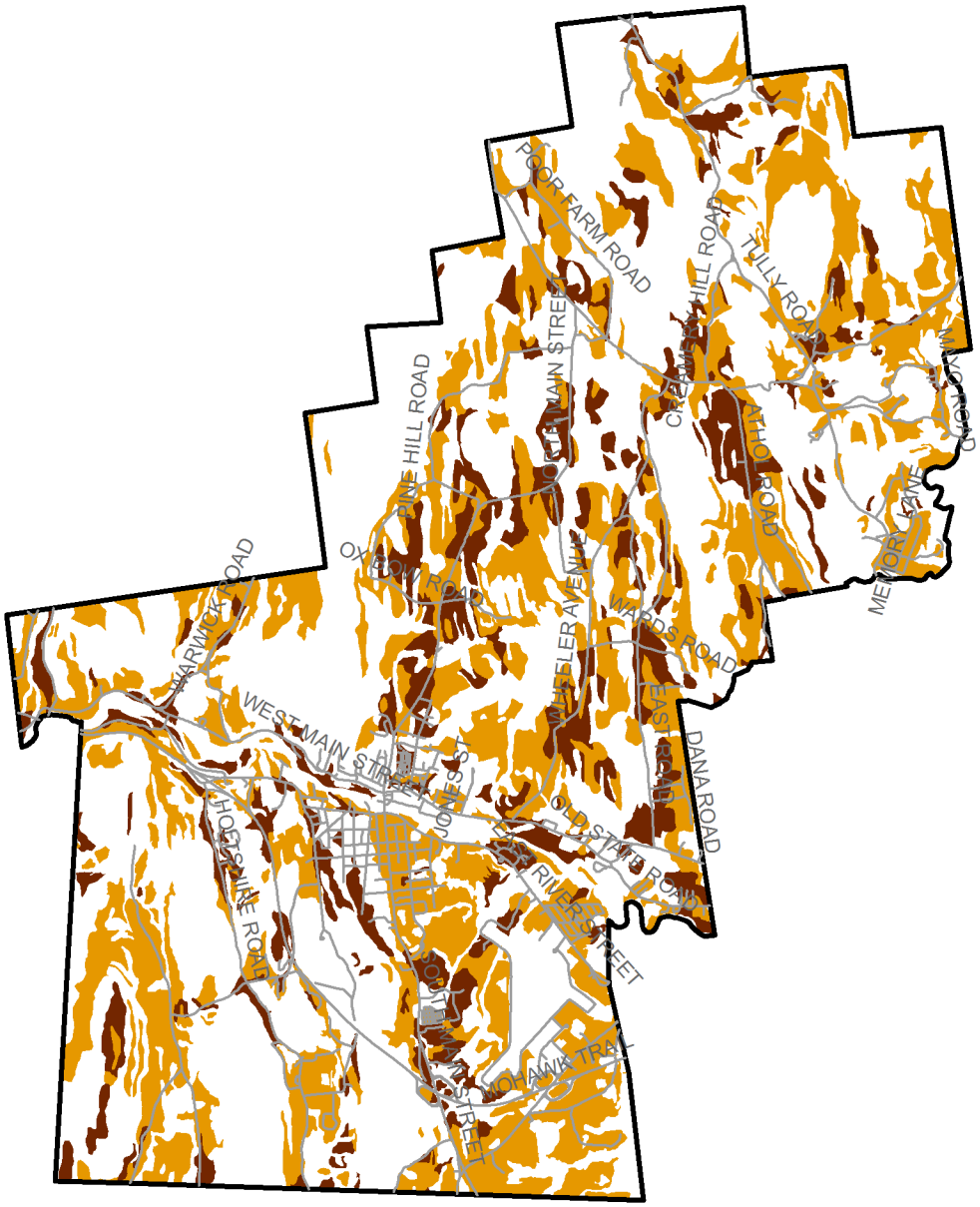
56% of farm fields in Orange are not permanently protected.

Only **26%** of farmland in Orange is utilized for open fields, with the rest covered by forest.

Farmland in Orange



Orange's Agricultural Soils



Legend

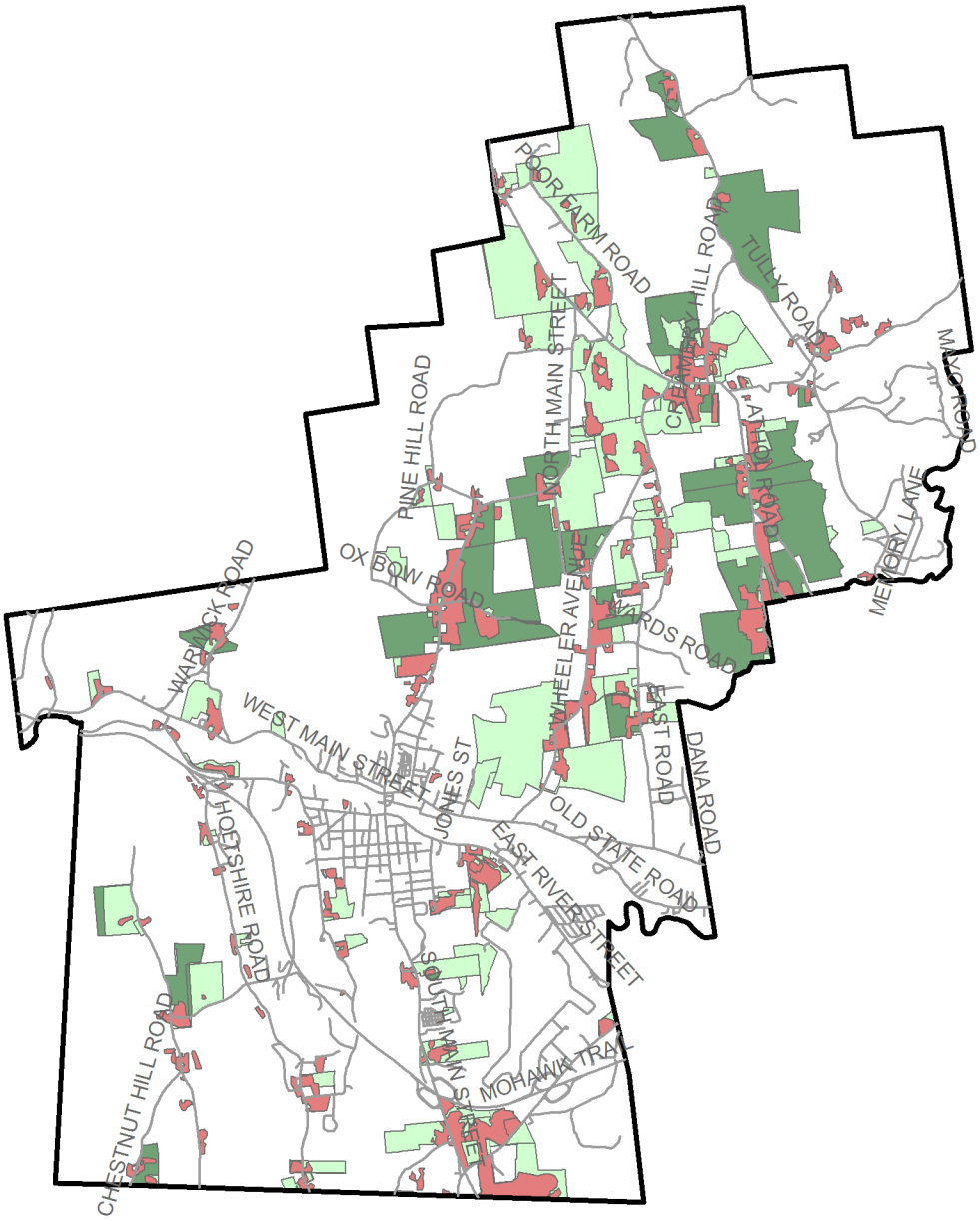
All areas are prime farmland

Farmland of statewide importance

0 0.5 1 2 Miles

N W E S

Unprotected Farms in Orange



Legend

- Farm fields (crops or pasture) (1,257 acres)
- Unprotected farm parcels (3,302 acres)
- Protected farm parcels (1,795 acres)

0 0.5 1 2 Miles

N W E S

Landowner Name	Farm Name	Farm Address	Book	Page	Parcel Acreage	Field Acreage	Conserved?
170 Wheeler Ave Realty Trust	Chase Farm	170 Wheeler Ave	3914	221	27.6	9.5	No
Adams, Joseph & Joanne		133 Jones Cemetery Rd	2038	0175	5.0	1.2	No
Adams, Joseph & Joanne		0 Jones Cemetery Rd	5725	172	4.0	3.7	No
Andrzejczyk, Helen		235 Main St	736	182	168.0	11.0	No
Aron, Richard		290 East River St	4348	29	33.4	21.0	No
Arsenault, Fred W & Irene I		735 Pine Hill Rd	1336	225	37.0	2.0	No
Aukstikalnis, John	Fox Hill Farm	96 Main St	4551	80	17.5	6.5	No
Barnes, Steven Jr.		125 East Rd	5203	177	5.0	1.1	No
Baruc, Ricky & Habib, Deb	Seeds of Solidarity	165 Chestnut Hill Rd	3179	314	30.3	7.3	Partially
Bittenbender, Karl & Doris		110 Athol Rd	3168	208	50.2	7.1	Partially
Blackmer, Nancy		287 Wheeler Ave	1591	0051	58.2	21.6	No
Blackmer, Nancy		0 Wheeler Ave	01591	0051	4.0	3.1	No
Blackmer, Nancy		0 Creamery Hill Rd	2601	1	7.0	4.4	No
Blake, Kevin & Kim		455 Tully Rd	2658	323	3.5	0.0	No
Brown, Cynthia		0 Warwick Rd	5387	226	32.2	12.7	No
Busby, Robert	Gale Farm	485 Tully Rd	5559	233	74.8	9.0	Partially
Canning, Gerald L.		377 Walnut Hill Rd	4751	112	12.3	3.4	No
Canning, Steven		380 East River St	4404	9	30.2	14.5	No
Carr, Nancy		0 South Main St	5664	270	41.1	10.2	No
Carrich Nominee Trust	Hayley's Apple Orchard	166 Main St	5100	258	17.5	14.4	No
Chenausky, Alphonse		860 North Main St	4674	74	4.6	0.0	No
Chenausky, Alphonse		862 North Main St	3585	151	4.6	0.0	No
Chenausky, Alphonse		0 North Main St	3381	28	5.4	4.9	No
Coffin, Lois	Town Line Farm	290 Main St	1082	0133	6.8	3.4	No
Commonwealth Of Massachusetts		0 North Main St	5118	24	30.0	6.5	Yes
Cumberledge, Victor & Marie		140 Athol Rd	01853	0338	33.4	12.1	No
Daughraty, John & Renee		633 North Main St	4189	131	8.0	7.7	No
Davis, Bernard		0 East Rd	01350	0119	41.5	12.3	Partially
Deans Beans	Dean's Beans	50 R W Moore Ave	3656	348	0.0	0.0	No
Dickinson, Barbara		783 North Main St	5359	255	256.2	4.8	No
Dickinson, Barbara		0 North Main St	5359	255	0.0	8.1	No
Dickinson, Barbara		0 North Main St	5359	255	1.0	2.4	No
Doubleday, Allen		0 Pine Hill Rd	5368	257	2.8	1.9	No
Dowal, John P & Thibadeau, Susan	Warren Rice	0 Creamery Hill Rd	3006	172	5.0	3.7	No
Ellis, Dana & Mary Ann	Fox Hill Farm	331 East Rd	2727	184	2.2	1.1	No
Ellis, Dana & Mary Ann	Fox Hill Farm	0 East Rd	3422	322	2.1	1.8	No
Ellis, Dana & Mary Ann	Fox Hill Farm	0 East Rd	3860	263	2.1	1.8	No
Ellis, Michael	Fox Hill Farm	365 East Rd	3187	165	9.7	1.2	No
Elwood, Myndi & Seth		122 Town Farm Rd	5176	8	135.1	2.8	No
Estabrooks, Helen	Warren Rice	63 Main St	4699	97	60.0	12.7	No
Farrell, John & Aquanetta	Fox Hill Farm	315 East Rd	02124	0335	7.0	2.0	No
Forster, Dorothy		0 Chestnut Hill Rd	4017	235	7.2	6.0	Yes
Forster, Dorothy		0 Gidney Rd	01265	0047	51.5	6.0	Partially
Foye, William O		0 Tully Rd	01153	0348	217.0	6.2	Yes
Frost, Adam & Andrea		0 Holtshire Rd	5566	172	9.0	3.1	No
Frye, David & Dorothy		0 Holtshire Rd	5608	168	14.4	6.1	No
Gonzalez, Frank & Rachel	Rachel's Everlastings	185 Prentiss St	3533	148	5.0	1.9	No
Gullage, Gary & Carole		121 Royalston Rd	01637	0295	5.0	10.8	No
Hains, Christian & Wells, Sarah	Fox Hill Farm	345 East Rd	2420	84	20.0	9.6	No
Hains, Frank & Lottie	Fox Hill Farm	346 East Rd	2420	84	68.0	3.2	No
Hastings, Helen		157 East Rd	3771	162	25.0	4.6	No
Hastings, Susan & Elizabeth	Maple Grove Farm	395 Jones Cemetery Rd	5390	22	25.0	4.1	No
Heyes, Fred		645 North Main St	4527	77	34.4	4.8	No
Heyes, Fred		0 North Main St	4066	185	9.3	8.8	No
Hiscock, Deanne & Barbara		110 Town Farm Rd	1413	208	60.0	3.3	No
Holmes, Ben		62 Main St	5016	151	7.5	3.5	Partially
Hunt, George	Hunt Farm	0 Fairman Rd	02130	0088	9.8	9.6	No
Hunt, George	Hunt Farm	0 South Main St	1213	48	14.5	7.1	No
Hunt, George	Hunt Farm	0 South Main St	938	465	26.8	11.1	No
Hunt, George	Hunt Farm	0 Daniel Shays Hwy	1486	178	57.2	42.2	No
Hunt, George	Hunt Farm	265 Daniel Shays Hwy	02221	0027	17.0	12.6	No
Hunt, George	Hunt Farm	0 Old South Rd	1161	691	32.9	7.3	No
Hunt, George	Hunt Farm	OFF Route 2	2998	285	9.0	7.1	No
Hunt, George	Hunt Farm	207 Daniel Shays Hwy	1486	178	8.7	0.0	No
Hunt, George	Hunt Farm	235 Daniel Shays Hwy	1539	158	67.6	46.3	No
Hunt, George Jr.	Hunt Farm	708 South Main St	1213	47	0.7	7.6	No
Hunt, George Jr.	Hunt Farm	200 Shingle Brook Rd	3210	280	29.2	0.0	No
Innes, Rick	Clear View Composting	159 Quabbin Blvd	5395	29	1.7	0.0	No
J & S Realty Trust	Creamery Hill Farm	52 Creamery Hill Rd	5455	277	39.0	5.6	No
Johnson, Elwyn & Beverly		0 North Main St	2792	202	25.4	23.5	No
Johnson, Justin		15 Johnson Rd	00937	0262	1.0	0.9	No
Johnson, Kathryn		0 Ward Rd	5474	190	18.6	12.4	No
Johnson, Stephen & Diane		0 Wheeler Ave	4393	236	37.0	6.4	No
Johnson, Stephen & Diane		210 Wheeler Ave	3739	6	33.6	16.9	Partially

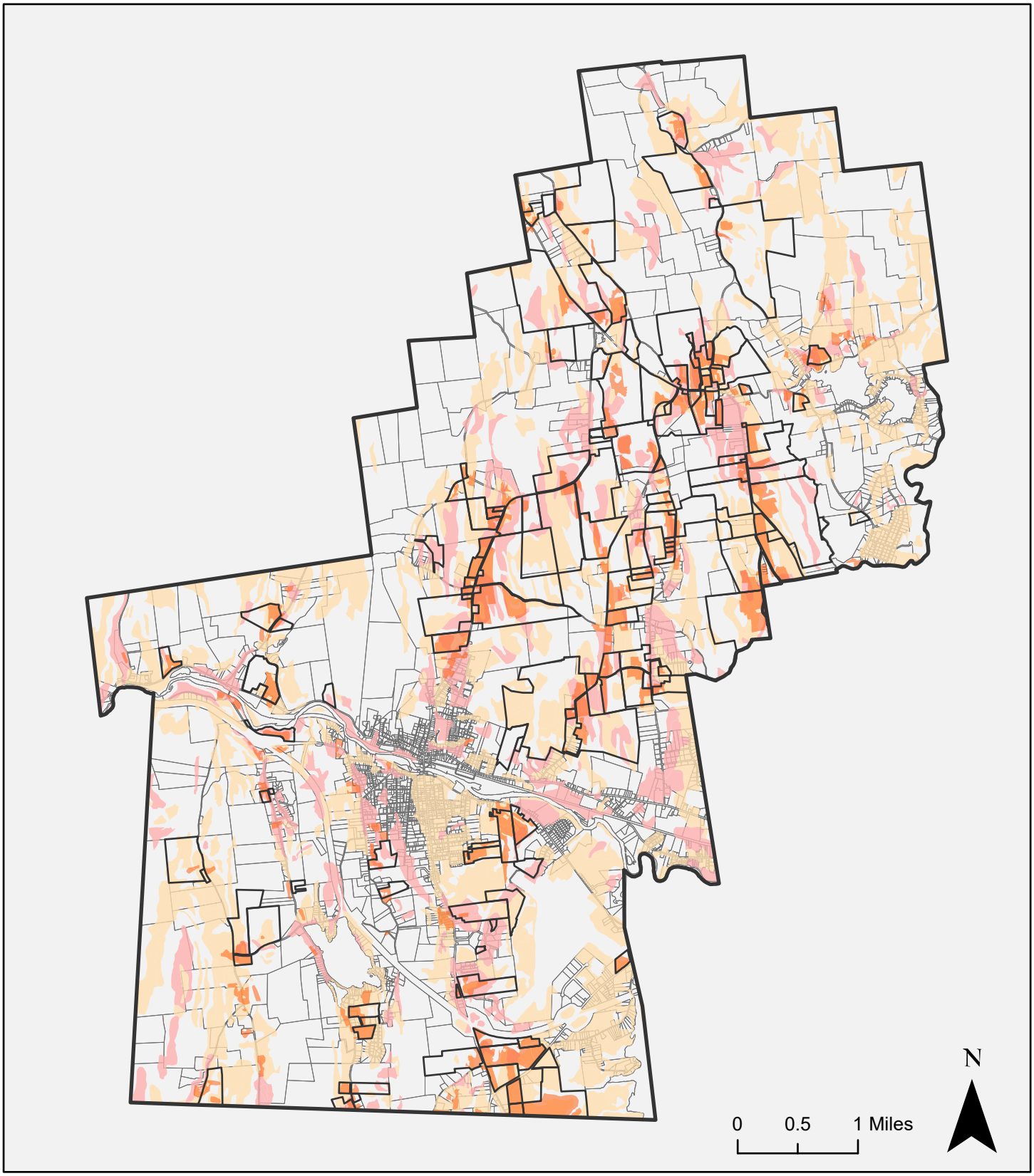
Landowner Name	Farm Name	Farm Address	Book	Page	Parcel Acreage	Field Acreage	Conserved?
Katz, Neil & Subritzky, Karen	Kiwi Meadows Farm	63 Warwick Rd	3226	210	28.0	7.8	Partially
Katz, Neil & Subritzky, Karen	Kiwi Meadows Farm	0 Warwick Rd	3226	210	7.7	2.2	Partially
Kimball, Daniel & Deirdre		67 Main St	4424	216	4.0	4.5	No
Knechtel, Doris	Willow Farm	313 Gidney Rd	3545	3	2.3	0.0	No
Knechtel, Doris		113 Athol Rd	4303	222	14.0	1.4	No
Lake, Doris	Lakers 29 Acre Farm	720 North Main St	3920	47	29.7	2.9	No
Leger, Anthony & Grace	Foothill Farm	40 Chestnut Hill Rd	5240	148	52.9	0.5	No
Lindgren, John & Linda		0 North Main St	2112	22	3.1	3.0	No
Lindgren, John & Linda		603 North Main St	2112	0022	4.2	3.2	No
Littlewood, Curt & Angela	Westside Farm	16 West Orange Rd	4695	309	9.1	0.0	No
Love, Theresa & Powell, Bruce	Whitmore Poultry	235 Holtshire Rd	4680	192	5.7	0.0	No
Macleod, Norman & Beverly		10 Main St	3055	72	38.1	0.0	No
Magee, Michael	North Quabbin Community Garden	0 Holtshire Rd	2855	41	15.0	6.5	No
Michaud, Robert	Maple Valley Farm	190 Main St	1566	130	13.0	5.9	No
Mock, Edith		24 Temple Rd	3435	33	59.3	11.9	Partially
Monette, Mark & Laura		127 Wheeler Ave	3703	205	4.3	3.7	No
Moore, Daniel S		579 North Main St	3970	192	2.0	0.9	No
Moore, John M III	Maple Grove Farm	0 North Main St	4036	146	75.0	1.9	Yes
Moore, John M III	Maple Grove Farm	0 North Main St	4036	146	148.1	17.4	Partially
Moore, John M III	Maple Grove Farm	220 Cross Rd	4036	146	110.4	46.4	Partially
Noel, Charles & Arlene	Noel's Nursery	77 Tully Rd	1063	0338	7.6	0.0	No
O`Brien, Harold K Et Al		0 Holtshire Rd	01623	0315	5.0	4.0	Yes
O'Brien, Ed		0 Holtshire Rd	02066	0034	4.0	2.4	No
O'Brien, Ed		0 Holtshire Rd	4786	191	2.6	0.9	No
O'Brien, Ed		505 Holtshire Rd	01623	0315	23.0	2.1	No
Oleksiw, Susan		0 Main St	5016	180	100.0	10.9	Yes
Olson, Doris	Hunt Farm	218 Prentiss St	5655	260	19.8	9.8	No
Pals Realty Trust		0 East Rd			20.3	3.2	No
Pease, John & Gail		153 Wheeler Ave	4496	122	7.0	6.6	No
Poirier, Linda		655 North Main St	3933	66	1.6	4.8	No
Pratt, Frances	The Farm School	105 Athol Rd	2750	347	85.0	6.3	Partially
Proctor, Donald	Breeze Hill Farm	26 Bartlett Ln	3731	255	5.3	1.4	No
Rice, True B.		23 Royalston Rd	5398	53	3.0	2.1	No
Rice, Warren	Creamery Hill Farm	39 Creamery Hill Rd	4418	283	25.0	5.8	No
Robichaud Family Realty Trust		345 Walnut Hill Rd	4344	285	18.3	3.3	No
Rouleau, Robert & Marguerite		85 Athol Rd	01011	0202	51.5	2.6	No
Rumrill, Bonnie L		320 Wheeler Ave	01518	0322	2.5	0.0	No
Rumrill, Eunice		107 Main St	4787	19	32.0	9.8	No
Scherer, Bruce & Rachel	Heritage Fields Farm	309 Gidney Rd	01694	0073	67.5	2.2	No
Schiappa, Frank		679 North Main St	3490	187	2.0	1.5	No
Schiappa, Frank & Kathryn		673 North Main St	5314	190	3.5	4.6	No
Shaughnessy, Phillip		48 Wheeler Pond Rd	5458	79	21.6	2.9	No
Shovan, Ronald	Hunt Farm	21 Warwick Rd	5662	144	13.0	12.7	No
Sims, Marcia		0 Town Farm Rd	1817	332	78.7	16.8	No
Smart, Desiree	Fox Hill Farm	383 East Rd	3255	334	10.4	2.3	No
Smith, Stephen		720 Oxbow Rd	5104	51	10.8	2.2	No
Spackman, David G		110 Wheeler Pond Rd	02334	0116	113.0	19.9	No
Taylor, Sydney & Penelope	Taylor Agricultural Services	515 South Main St	2999	233	40.2	1.9	No
The Farm School, Inc	The Farm School	485 Sentinel Elm Rd	3650	27	124.3	34.0	Yes
The Farm School, Inc	The Farm School	330 Sentinel Elm Rd	4604	36	70.2	11.0	No
The Farm School, Inc	The Farm School	0 Sentinel Elm Rd	1698	242	13.5	8.9	Yes
The Farm School, Inc	The Farm School	0 Sentinel Elm Rd	4604	36	15.6	7.5	No
The Farm School, Inc	The Farm School	0 Athol Rd	1815	92	58.0	17.9	Yes
The Farm School, Inc	The Farm School	80 Athol Rd	5652	1	150.0	23.7	Yes
Town Of Orange		25 Jones St			26.3	0.0	No
Town Of Orange		0 Jones St	2813	66	3.3	0.0	No
Town Of Orange	Creamery Hill Farm	0 Main St			14.0	3.8	Yes
Town Of Orange	The Farm School	0 Athol Rd	1107	137	1.7	5.2	Yes
Town Of Orange		50 Millyard Rd			11.9	2.9	Yes
Truehart, Keith & Melissa	Ox Bow Country Stable	204 Oxbow Rd	4710	138	15.8	0.0	No
Walsh, Daniel		60 Main St	5294	233	6.0	4.3	No
Walsh, Douglas & Jean		121 Main St	01627	0146	60.0	4.9	No
Warder, Gary & Elizabeth		80 Shingle Brook Rd	5001	135	13.3	0.0	No
Wesson, Merrill		170 West Orange Rd	5595	229	14.2	6.5	No
Wesson, Merrill		175 Holtshire Rd	2066	0034	1.1	0.0	No
Wheeler Avenue Realty Trust		135 Wheeler Ave	3319	115	164.7	7.5	No
Wheeler Avenue Realty Trust		0 Wheeler Ave	3319	115	176.0	18.7	No
Whitmore, Kenneth & Sandra	Crimson Acres	16 Daniel Shays Hwy	01423	0220	8.5	6.3	No
Wright, Gregory & Michaele	Blue Ox Farm	517 Tully Rd	3628	27	29.0	13.4	Partially

Strategic farmland conservation plan: Suggested criteria to rank farms for conservation

Suggested Criteria for Farm Conservation Priority Ranking							
	Description	Criteria for Rank Number:					Rationale
		1	2	3	4	5	
Acreage	Total acreage of parcel	1-10 acres	11-50 acres	51-100 acres	101-200 acres	200+ acres	Larger farms will be prioritized in order to conserve more acres of farmland at once and improve regional food security.
Prime Soil - Total	Percent of total acreage covered by prime ag soil	1-20%	21-40%	41-60%	61-80%	81-100%	The presence of prime soil is an indicator of the land's potential capacity for food production, regardless of current land use.
Prime Soil - Fields	Percent of open fields covered by prime ag soil	1-20%	21-40%	41-60%	61-80%	81-100%	Farms whose prime soil is not covered by buildings or forest will be prioritized for conservation.
Development Threat	Likelihood land will be lost for commercial agricultural use, based on availability for development, ownership status, relationship to excluded parcels, rental/lease security and other specific factors	Threat is very low or non-existent	Threat is low	Threat is somewhat serious	Threat is high	Threat is imminent	Once farm fields are converted to building lots, their potential utility for food production is effectively destroyed forever. Farms that are imminently threatened by development should be prioritized for conservation.
Infrastructure	Presence of farmhouses, barns, and other buildings.	No infra. present	Minimal infra. in poor condition	Some infra. present, but condition is poor	Sufficient infra. for future farm operations	Infra. in good condition and more than sufficient for farm operations	Beginning farmers especially need infrastructure, including a farmhouse, to get their farm business started. Farms with at least one farmhouse and a sufficient number of barns and other farm structures in good condition will be prioritized for conservation.
Proximity to Protected Land	Distance from farm parcel to permanently protected land	>10 miles	>5 miles	>2 miles	>1/4 mile	Abutting	Clustering protected land promotes wildlife movement and landscape connectivity. Farms that abut other protected land will be prioritized for conservation.

Suggested Criteria for Farm Conservation Priority Ranking							
	Description	Criteria for Rank Number:					Rationale
		1	2	3	4	5	
Historical/ community significance	A qualitative measure of the value placed on the farm by the community that accounts for the length of the farm's history and community connections to the land	Not at all significant	Not very significant	Somewhat significant	Very significant	Extremely significant	Community buy-in is an important piece of any conservation project. Farms that are significant to the community for historic or other reasons will be prioritized for conservation.
Scenic Value	The farm's aesthetic value as understood by community members	Not scenic or not visible	Not very scenic	Somewhat scenic	Scenic	Iconic	Certain farms are likely to be recognized by community members as iconic landmarks that tie them to the history of their town. These farms should be protected from development in order to preserve community identity.
Economic Significance	How much income the landowner makes from farming, and how much of that income comes from local sales	Minimal	-	Average	-	High	Farming can form an important facet of the regional economy. Farms that contribute significantly to the health of the local and regional economy should be prioritized for conservation.
Product	The types of products produced on the farm	Hay; eggs; forest products (1 point each)	Vegetables; meat; dairy; value-added products; orchard (2 points each)	Any combo. of products adding up to 3 points	Any combo. of products adding up to 4 points	Any combo. of products adding up to 5 points	Farms that produce a diversity of products that directly feed people will be prioritized for conservation.
Other	Other considerations that may affect the importance of a farm or farm cluster for development						The criteria listed above may not capture the whole picture for every farm; this category allows managers and community members to identify farms that wouldn't traditionally be prioritized for conservation but that have value in other respects.

These criteria were developed by Mount Grace staff as a method of ranking farms in terms of conservation priority. They are included here to provide guidance if the Town is interested in designing its own strategic planning process for farmland conservation. It should be noted that any ranking system is inherently subjective, and the Town should engage with farmers and residents to identify their own priorities for farmland conservation.



Orange Potential and in use Farmland

- Orange Farm Parcels
- Farm fields (crops or pasture)
- Prime Farmland
- Farmland of Statewide Importance

MVP Listening Session Presentation

Photos courtesy of the Greenfield Recorder

Municipal Vulnerability Preparedness (MVP) Listening Session

Town of Orange

November 16, 2020

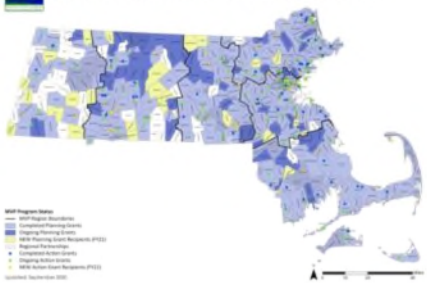
Municipal Vulnerability Preparedness (MVP)

- ✓ Provides support for MA municipalities to plan for climate change resiliency and implement priority projects.
- ✓ Provides a simple, straightforward process
- ✓ Certifies municipalities as MVP communities
- ✓ Can award communities with funding to complete vulnerability assessments and implement resilience projects

1. Engage Community → 2. Identify impacts & hazards → 3. Assess vulnerabilities & strengths → 4. Develop & prioritize actions → 5. Take action

Massachusetts Municipal Vulnerability Preparedness (MVP) Program Launched 2017

$44 Million to cities and towns since 2017



Municipal Vulnerability Preparedness (MVP)

Community Components

- Infrastructural
- Societal
- Environmental

Community Resilience Building Workshop

- ✓ Define top local natural and climate-related hazards of concern;
- ✓ Identify existing and future strengths and vulnerabilities;
- ✓ Develop prioritized actions for the Community; and
- ✓ Identify immediate opportunities to collaboratively advance actions to increase resilience.

Workshop Participants

- Orange & Athol Planning Board
- Police Department
- Fire Department
- Water Department
- Town Administrators
- Board of Health
- Energy Committee
- Highway Department
- Quabbin Harvest
- Seeds of Solidarity
- Mahar Regional School
- Local businesses
- Building Inspector
- Launch Space

Benefits of having participants from different sectors/departments:

- ➢Local knowledge and experience
- ➢Working across departments / sectors
- ➢Reaching consensus

Changing Climate Variables

- Higher temperatures
- Increased precipitation
- More frequent & intense storms
- More frequent droughts

Amplify existing risks:

- ➢ Community and regional infrastructure &economies
- ➢ Public health and well being
- ➢ Natural resources and our environment

Goal for Building Resilience to a Changing Climate: Protect life, property, natural resources and the economy

Workshop Outcomes

A climate resilient town will be able to maintain functions, protect its residents and emerge stronger and better prepared for future storm events and a changing climate.

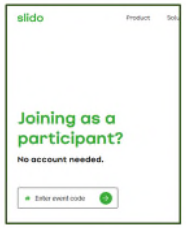
The goal of building resilience is protect life, property, natural resources and the economy

What changes have you seen in the natural environment over the course of your lifetime?

Participate in a live poll at:

www.slido.com

Event #11381



Orange's Vulnerabilities

Areas of Concern

Infrastructure: Fire stations with limited access during emergencies; vulnerable power grid; drainage infrastructure on North Main Street; poor cell phone coverage throughout Town; privately owned dams; wastewater treatment plant located in the floodplain

Society: Low-income residents located in inundation zone; elders throughout Town; people living in North Orange and isolated neighborhoods without communication pathways;

Environment: Beaver dams filling or partially blocking culverts; invasive species and pests affecting crops on farms

Which features of Orange do you think are most vulnerable to climate change impacts?

www.slido.com, Event #11381

Critical Facilities / Infrastructure:

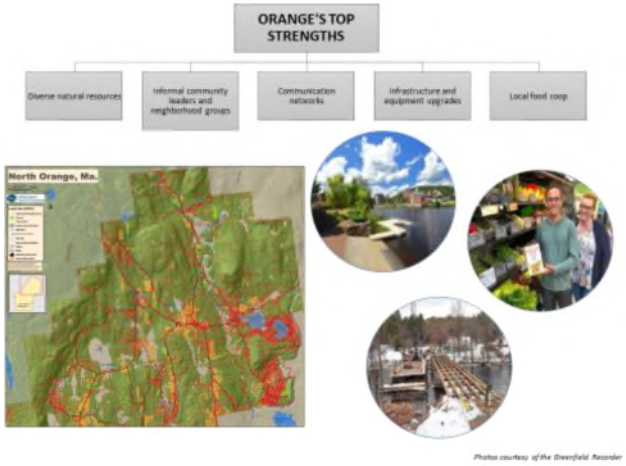
- Roads and bridges
- Power grid
- Drinking Water
- Wastewater Treatment
- Communications
- Housing
- Emergency Shelters / Town Buildings
- Schools
- Access to Hospitals / Medical Facilities

Population / Society:

- Public health
- Access to lifelines (food/water, emergency response personnel, etc.)
- Vulnerable populations
- Public services
- Local / regional economy

Environment:

- Invasive species
- Wildlife and plant life
- Forests and farms
- Water quality
- Water supply
- Urban forests / street trees



Orange's Top Priority Recommendations

Upgrade bridges and culverts	✓ Inventory culverts and prioritize repairs ✓ Perform catch basin clean outs to restore functional drainage of existing Stormwater infrastructure
Improve Emergency Communication Networks	✓ Continue to enroll residents in the CodeRED notification system ✓ Identify areas that would benefit from improved cell phone coverage
Build a new fire station in town center	✓ Provide emergency storage for several Town departments ✓ Build new structure outside of the 100-year floodplain
Review and revise town sheltering plan	✓ Evaluate legal and fiscal constraints of adding new sheltering facilities, transportation to shelters, and coordinated sheltering on both sides of the Millers River ✓ Identify new training opportunities for volunteers
Public Education for emergency response and hazard mitigation	✓ Educate town employees on public safety and emergency plans and educate residents on emergency preparedness and risks associated with climate change

High Priority Action Items from Orange's Hazard Mitigation Plan

Hire a consultant to determine appropriate flood proofing measures for the wastewater treatment plant, which is located within the floodplain.

Consider hiring a consultant to map Fluvial Erosion Hazard (FEH) areas in town, and adding a Fluvial Erosion Hazard Area Overlay District bylaw to the zoning bylaws to limit development in FEH areas along rivers and streams that are highly susceptible to flood-related erosion.

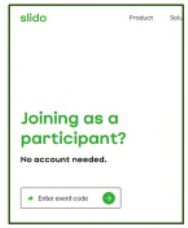
Conduct a town-wide assessment of drainage structures and drainage driven flood issues to determine where upgrades should be made, especially in the downtown area.

Which resiliency action should Orange pursue first?

Participate in a live poll at:

www.slido.com

Event #11381



Municipal Vulnerability Preparedness: NEXT STEPS

1. Endorse your MVP Plan
2. Apply for MVP Grants which can include:

a) Detailed Vulnerability and Risk Assessment
b) Public Education and Communication
c) Local Bylaws, Ordinances, Plans, & Other Management Measures
d) Redesigns and Retrofits
e) Nature-Based Storm-Damage Protection, Drought Prevention, Water Quality, & Water Infiltration Techniques
f) Nature-Based, Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality
g) Nature-Based Solutions to Reduce Vulnerability to other Climate Impacts
h) Ecological Restoration and Habitat Management to Increase Resiliency

Municipal Vulnerability Preparedness (MVP)

Q & A

Ask in the Q&A Chat or raise your hand

If watching via AOTV use slido.com and event #11381

We need your input!

- Public Comment Period through November 30th
- The full draft plan is available at: https://www.townoforange.org
- Submit comments to Alec Wade, Director of Community Development awade@townoforange.org

Municipal Vulnerability Preparedness (MVP) Program

2020 Town of Orange Report Summary

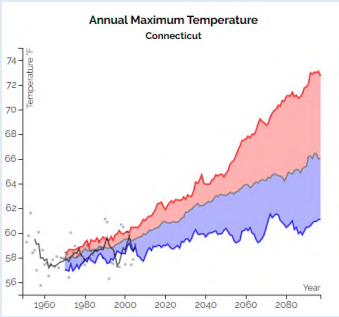
Facilitated by the
Franklin Regional Council of Governments
A State Certified MVP Provider

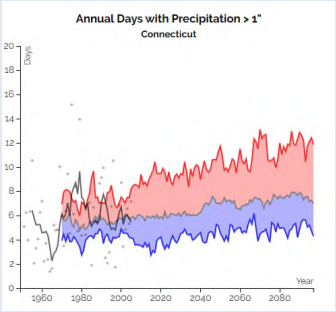
Overview

The Municipal Vulnerability Preparedness grant program (MVP) provides support for cities and towns in Massachusetts to begin the process of planning for climate change resiliency and implementing priority projects. Here in Franklin County, communities are experiencing more extreme weather events – especially heavy rains and flooding – along with higher temperatures and other climate-related conditions, increasing the urgency to address resilience and adaptation.

Climate Change Impacts

- Increased Temperatures
- Increased Precipitation
- More Extreme Weather





Data source: Resilient MA

Engage

Facilitated by FRCOG in Fall 2019, the Community Resiliency Building Workshop and Public Listening Session helped the town of Orange to:

- Define top local natural and climate related hazards;
- Identify existing and future strengths and vulnerabilities;
- Develop prioritized actions for the community; and
- Identify opportunities to advance actions to increase resilience

Participants:

Select Board, Police Department, Planning Board, Town Administrator, Energy Committee, EMD, Board of Health, Conservation Commission, Historical Commission, Highway Department, Residents, FRCOG

Identify

Workshop participants discussed a number of hazards that impact Orange, deliberating on how frequent, how intense and how widespread each hazard has been and could potentially be in the future. The top hazards identified for Orange:

Orange's Top Hazards

- Severe Weather
- Flooding
- Invasive species
- Manmade Hazards

All images courtesy of the Greenfield Recorder

Breakdown of Orange's Top Vulnerabilities:

Infrastructural

Many culverts and bridges throughout Town are in need of repair or replacement, according to workshop participants. The culvert on Fairman Road was identified as a structure that may fail soon, and another culvert is causing the landfill on Jones Road to flood. Many bridges in Orange have low weight limits, which complicates access routes for emergency vehicles. Another culvert near the Tully Road fire station was also identified as in need of repair.

Societal

Although the Town of Orange has made significant efforts to add community members to an emergency contact system, there are some residents that are isolated from communication networks. Orange's Town Administrator sends out Reverse 911 calls, but they won't go out or be received if cell service is down.

Environmental

Small farms are an asset to the Town of Orange, but food supplies are becoming increasingly vulnerable due to an increase in pest populations. Rising temperatures can lead to more insects on farms, and allow them to survive longer into winter months. Farmers who participated in the workshop shared that their crops are at risk, which presents a hazard to the local food supply.

Municipal Vulnerability Preparedness (MVP) Program

2020 Town of Orange Report Summary

Facilitated by the
Franklin Regional Council of Governments
A State Certified MVP Provider

3) Assess

Orange has a number of strengths and assets, as identified by workshop participants. These include strong social, physical, and environmental infrastructure that increases the resiliency of communities in the face of climate change.

Orange's Top Strengths

- Informal community leaders and neighborhood groups
- Diverse natural resources
- Infrastructure equipment upgrades
- Community Based Food System

Photo Credit: David Brothers

Breakdown of Orange's Top Strengths:

Infrastructural

Failing DPW equipment has recently been replaced, which has improved the Town's ability to respond to natural hazards. Town officials noted that there was still a fair amount of equipment that needs to be upgraded, but the newest improvements were a good start. Utility poles throughout the town were also recently raised and many tree hazards were eliminated so they could better withstand severe weather events.

Societal

The community food system was identified as an asset to Orange. There are several groups in Town working to ensure all community members can be nourished with healthy fresh foods. Additionally, there is a good distribution system in Orange that provides local food to residents. The Quabbin Harvest Coop in the center of Town purchases produce from local providers such as Diemand Farm, Seeds of Solidarity, Coolidge Hill Farm, and Marty's Local. The Coop is closely connected to local and regional farmers, which allows residents to purchase fresh local food. Participants discussed that they are working to get more residents signed up for HIP and SNAP benefits, which would help to provide greater food resiliency.

Environmental

Workshop participants noted that there are many protected open spaces throughout the town. The ownership of the land parcels is mixed: spaces are either publicly or privately owned, and some are owned by non-profits. Depending on the type of ownership and the number of restrictions placed on the open spaces, there may be room for the Town to move forward with climate resiliency projects that could help to mitigate the effects of future severe weather events.

4) Develop

Strengthening infrastructure was a common theme in many of the recommendations to emerge from the workshop, all aimed at increasing resilience and reducing vulnerability to the impacts of climate change. The top five highest priorities are shown below.

Orange's Highest Priority Recommendations

- Upgrade bridges and culverts
- Improve emergency communication networks
- Build a new fire station in Town center
- Revise and review town sheltering plan
- Public education for emergency response and hazard mitigation

5) Action!

- ❑ Integrate MVP findings into Hazard Mitigation Plan update
- ❑ Endorse MVP Plans to become MVP communities
- ❑ Apply for MVP Action Grants

Eligible projects include:

- Vulnerability and risk assessment
- Education and communication
- Local bylaws and ordinances
- Redesigns and retrofits
- Nature-based solutions
- Ecological restoration and habitat management