



Town of Rowe



Municipal Vulnerability Preparedness (MVP) Program

MVP Resiliency Plan

June 2021

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

March 2021

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Town of Rowe

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 Rowe 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 are working to increase their resilience and adapt to natural hazards and extreme weather events. Relatively recent events in Franklin County, such as Tropical Storm Irene (August 29-30, 2011) and “Snow-tober” (October 28, 2011), have reinforced the need for resiliency planning and compelled communities like the Town of Rowe to proactively plan and mitigate potential risks. This type of planning will reduce the vulnerability of Rowe’s people, infrastructure and natural resources, and will empower Rowe’s officials and citizens to take steps to protect themselves and their community.

In late 2019, with funding from the Massachusetts Executive Office of Energy and Environmental Affairs’ Municipal Vulnerability Preparedness (MVP) program, the Town of Rowe hired the Franklin Regional Council of Governments (FRCOG) to assist the Town in completing the planning process to achieve designation as a Municipal Vulnerability Preparedness Community or “MVP” Community. As a State-certified MVP Provider, the FRCOG helped Rowe engage in a community-driven process that brought together climate change information and local knowledge to conduct community outreach and the Community Resilience Building (CRB) workshop, whose central objectives were to:

- Define top local natural and climate-related hazards of concern;

¹ <http://www.resilientma.org/map/>

- Identify existing and future strengths and vulnerabilities;
- Develop prioritized actions for the Town;
- Identify immediate opportunities to collaboratively advance actions to increase resilience.

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

Community Resilience Building Workshops

Summary of Findings

The Town of Rowe, population 441, has conducted a number of planning projects in previous years, including its 2016 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 address hazards. Other planning efforts include the recently completed Forest Stewardship Plan for Pelham Lake Park.

In spite of Rowe's diligence in completing these planning efforts, there is 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.

The Town of Rowe planned to hold their Community Resilience Building Workshop in late March 2020, but the meeting was ultimately cancelled due to the ongoing COVID-19 pandemic. In place of an in-person workshop, the Committee devised a plan to remotely complete the objectives of the MVP Planning process. The Town was committed to gathering input from community members in order to build the recommendations presented in the plan.

Town of Rowe and FRCOG staff prepared a series of newsletters, which were published in the *Rowe Goal Post*, a monthly newsletter sent out to all residents. The newsletter series provided context for the MVP planning process, highlighted how Rowe's infrastructure, society, and environment are already being impacted by climate change, explained how the Town may be impacted in the future, and provided several opportunities for public input through online surveys. The Town then held a public workshop in late March. Prior to the workshop, surveys were sent to all of the invited stakeholders to better understand how climate change has been impacting Rowe from each of the stakeholders' unique municipal perspective.

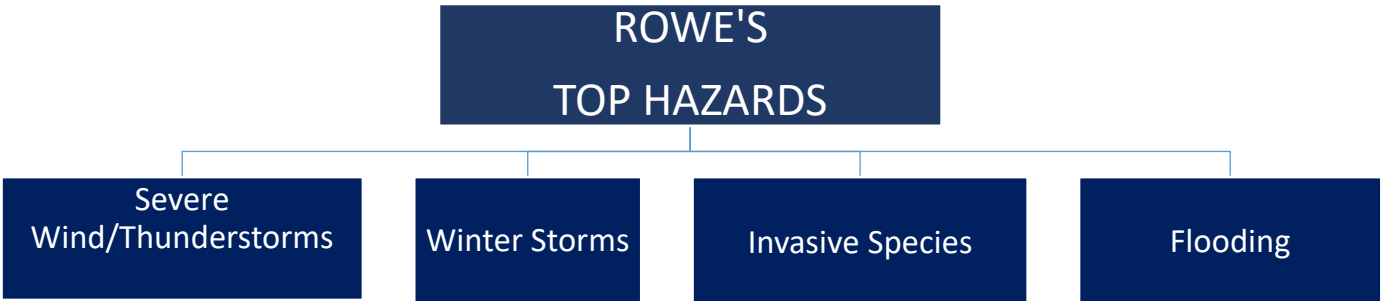
During the workshop, participants considered climate change impacts most likely to affect Rowe, including rising and extreme temperatures, extreme weather events and increased precipitation, both in quantity and intensity. The workshop also allowed participants to develop resiliency actions Rowe can take to build on identified strengths and vulnerabilities.

The workshop was critical to enabling participants to think about and engage with people from different sectors. Representatives from the Highway Department, Town Administration, Board of

Health, Rowe Elementary School, Park Commission, Select Board, Yankee Rowe, the Rowe Conference Center, and local conservation organizations came together to discuss the most threatening hazards to the Town of Rowe and to agree upon high priorities and actions to address them.

Top Hazards

Workshop participants discussed a number of hazards that affect Rowe, 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, human-made hazards and extreme temperatures. Top hazards identified by the participants are as follows:



Areas of Concern

Infrastructure and Transportation:

Prolonged power outages; above ground power lines and utilities are vulnerable to all hazards; aging and/or failing culverts; stormwater drainage on emergency access/evacuation routes; washouts and erosion on unpaved roads; earlier and longer mud seasons, which churn unpaved roads; weakening of infrastructure due to more frequent and intense storm events; vulnerability of the Town's internet service, which is critical for residents to communicate during emergencies; strained electrical grid during heat waves; the Town Hall, DPW building, Fire Station, and Broadband Hut are all at risk of flooding.

Public health: Increase of insect-borne diseases such as Lyme disease and EEE; respiratory illness associated with higher temperatures; impact of extreme temperatures on vulnerable populations; private wells running dry during drought or are not operable during power outages; power outages create a sense of fear and stress residents.

People: Elders throughout Town who may become isolated during/after storms due to hazards such as icy roads; seniors on fixed incomes who may not be able to make costly repairs due to damage from flooding or severe storms; lack of public transportation for seniors to get to doctor appointments or the grocery store; homes in the floodplain and/or wildland urban interface; effective emergency communications with residents.

Ecosystems and natural resources: Increase of invasive species on private and public property choking out native plants and stressing critical infrastructure; aquatic invasive species at Pelham Lake Park; rising temperatures threaten the overall health of the lake and aquatic species; northern hardwood forest species are vulnerable climate change and pests such as the emerald ash borer and hemlock wooly adelgid; wildfire potential throughout Town.



In Rowe, Tropical Storm Irene caused over \$160,000 of damages, primarily from clogged culverts, flooding and erosion of the roads and road shoulders.

Current Concerns & Challenges Presented by Hazards

Community members and 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; and
- Prolonged periods of drought, such as in the summer of 2020, which threaten water supply resources and dry conditions that increase the potential for a wildfire outbreak.

Participants in the workshop expressed concern about the impacts flooding and winter storms have on the Town's roads, especially with regard to hazardous erosion from heavy rain events and frequent icy conditions. Washouts, mudding, and ice can make roads impassable leaving residents isolated in remote locations. For example, many of Rowe's residents are seniors who do not feel safe traveling in such conditions.

Severe windstorms and thunderstorm events were also identified by workshop participants as a top hazard. Community members noted that residents have become accustomed to losing power several times a month due to the frequency of storms with high-speed wind gusts. These frequent outages can last anywhere from a couple of hours to a couple of days. In addition to interrupting services, participants noted that this also creates a sense of fear in the Town and is not beneficial to the overall wellbeing of residents.

Invasive species and the increase in pests 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, invasive species are encroaching on public and private property, and the Town's infrastructure has been affected by invasive species such as oriental bittersweet and Japanese knotweed. Representatives from the Park Commission also spoke to concerns about aquatic invasive plants affecting the health of Pelham Lake.

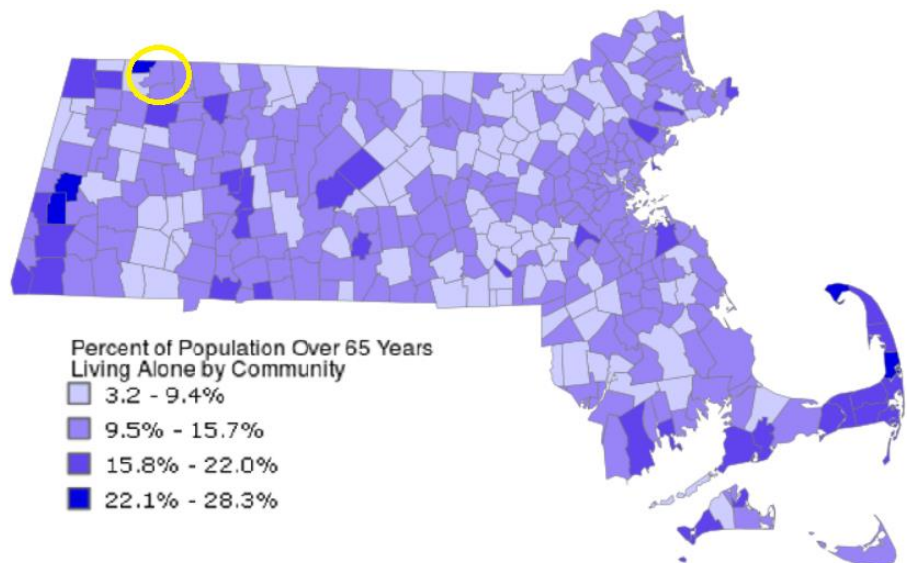
Specific Categories of Concerns and Challenges

Energy Resilience: Rowe's power grid was considered by MVP workshop participants to be vulnerable to natural hazard impacts, such as severe storms that topple trees and bring broken branches down on power lines. Snow has been less of an issue compared to ice storms causing power outages in recent years. The Town's electrical infrastructure is above ground and repairs are becoming more expensive. Workshop participants noted that the Town loses power several times per month, which can interrupt services.

The Town has backup power available at the Highway Department, Fire Department, Town Hall, Broadband Hut, and the Elementary School. The School is the Town's emergency shelter and currently uses a diesel generator. School staff are interested in procuring battery storage for the solar array in order to increase resiliency during an extended power outage, in addition to increasing the size of the solar array.

Vulnerable populations:

Elderly residents, isolated residents, and residents who are dependent on medical devices were also of concern to workshop participants. These residents may not have reliable access to information concerning emergencies or access to regular, reliable transportation. Ice storms and winter storms were noted to impact seniors the most, as even if they do have their own private



Approximately 10-15% of seniors in Rowe live alone. Source: resilientMA.org

transportation, icy roads are dangerous and difficult to traverse. Additionally, ensuring elderly residents have access to home heating and cooling equipment was a concern for workshop participants, due to the negative health impacts associated with extreme temperatures.

Throughout the COVID-19 pandemic, Board of Health members have worked to collect data on the needs of elderly residents, but noted a need to continue this assessment.

Road Drainage: Approximately 30% of the roads in Rowe are gravel, which are more vulnerable to washouts during heavy precipitation events. Workshop participants discussed concerns about stormwater runoff causing hazardous erosion, sometimes making roads impassable in locations throughout the town and rendering residents isolated. Residents and emergency responders in Town are used to dealing with snow, ice, downed trees and other hazards, but flooding causes the most disruption to their services and can leave residents isolated.

Concern about this challenge has increased with the impacts of more frequent and intense precipitation events. The Highway Department regularly clears out culverts and drainage ditches throughout Town to ensure proper drainage, but flash flooding, washouts and mudding occur regularly. Key troublesome locations include Davenport Road, Davis Mine Road, and Potter Road. Additionally, there is a bridge on Kings Highway without any drainage infrastructure that has caused problems in the past.

The FRCOG is currently conducting a project in other Franklin County towns to develop and pilot an assessment and right-sizing protocol for drainage culverts that do not cross a perennial stream. The results of this analysis can be used by Rowe Highway Department to determine the appropriate size of the culverts that the town is able to replace on its own. The FRCOG can work with the Highway Department to refine this protocol so that it applies more specifically to Rowe.

In general, dirt roads in Rowe are vulnerable to washouts and disrepair. The FRCOG is also currently conducting a pilot project to showcase how various stormwater management techniques could be applied to towns with many rural and unpaved roads. The project works with Highway Superintendents to examine roads that have been experiencing stormwater issues and assess the potential for applying stormwater Best Management Practices (BMPs) to improve the situation. The information and stormwater BMP concepts provided by the FRCOG can then be used when allocating Chapter 90 funds or applying for other grant funding. Stormwater concepts can also be incorporated into future roadway improvement projects to create a more resilient roadway, save the town funding from repetitive repairs, and help protect the water quality of the many streams that run alongside our roads.

When conducting any roadway improvements, the Town should be cognizant of the need to balance the rural/scenic character of the roads with any actions to increase their resiliency to climate change.

Invasive Species: Workshop participants explained that a variety of landscapes in Rowe - from home gardens and roadsides, to forests, and wetlands - have become increasingly susceptible to invasive species. These non-native plants pose an ecological risk by crowding out native plants, decreasing the availability of food, forage, and nesting habitat for insects, including wild native pollinators, which are keystone species that are vital to sustaining the whole ecosystem. Invasive species also threaten transportation infrastructure in Town by clogging culverts, overwhelming roadsides, and destabilizing drainage areas. Invasive species are especially a concern in Pelham Lake Park, and the Park Commission has developed a Forest Stewardship Plan² with recommendations to monitor and address invasive species such as the Hemlock Woolly Adelgid and Emerald Ash Borer.

Northern Hardwood Forests: Workshop participants also discussed the ways in which climate change is affecting the Town's forests. A longer growing season and increasing temperatures

² Forest Stewardship Plan 2020-2030 for Pelham Lake Park, prepared by Wigmore Forest Resource Management. https://www.rowe-ma.gov/files/Rowe-Pelham_Lake_Forest_Stewardship_Plan__FINAL_9-30-20.pdf

are shifting habitat conditions for trees northward and to higher elevations. Over time, the birch-beech-maple forests typical of New England will decline while oak-hickory forests more typical in areas south of New England will thrive. An expected increase in periods of drought between intense precipitation events may weaken some trees, leaving them more susceptible to insects and diseases, while it may improve conditions for other trees.

Pelham Lake Park is a cherished recreational amenity and ecological resource in Town, but is susceptible to the impacts of climate change. The Forest Stewardship Plan for the Park details several sustainable forestry practices that can be implemented, such as underplanting red and white oak seedlings to assure oak's continued presence. Although the Forest Stewardship Plan is an excellent resource for maintaining the 1,264 acres associated with the Park, the Town does not yet have an Open Space and Recreation Plan that could aid in identifying additional parcels of land that should be conserved to increase resiliency.

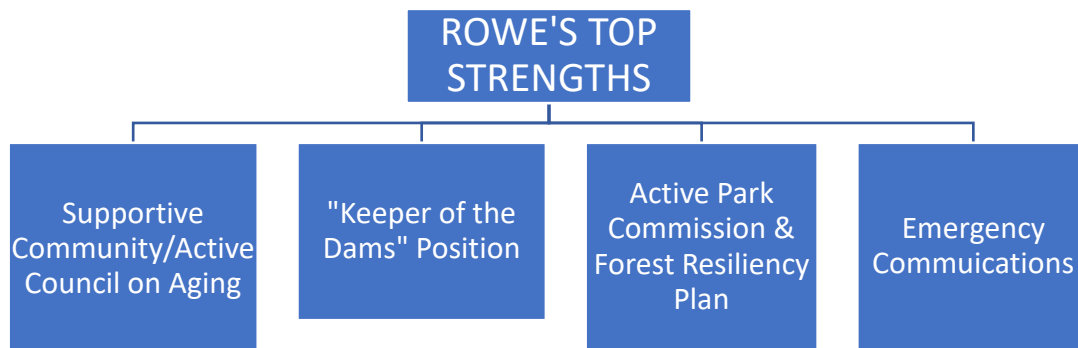
Vulnerabilities related to wildfire: When considering the numerous wildfire outbreaks across Massachusetts in 2020, workshop participants raised concerns about the Town's limited infrastructure for firefighting. Developing a maintenance plan for dry hydrants and acquiring adaptive fire-fighting equipment such as a UTV vehicle were identified as top needs.

Vector-borne Diseases: Massachusetts has seen cases of once non-existent or very rare tick-borne illnesses rise, including Anaplasmosis, Babesiosis, Lyme, Powassan, Spotted fever rickettsiosis and Tularemia. Tick activity and tick-borne diseases occur year-round in Massachusetts. Although tick activity is weather dependent, there are two peaks during the year; the first begins in March/April and lasts through August, and the second occurs in October-November. The majority of cases of tick-borne disease occur in June through August. Tick-borne diseases experienced in residents and identified in lab tests of ticks have increased in number and in kind across Franklin County due to climate change over the last ten years. Franklin County's rate of emergency department visits for tick-borne diseases is among the highest in the state.

Emergency Response: Although the Town is already working to support residents during emergencies, workshop participants identified a need to formalize response plans and distribute emergency preparedness information. Rowe does not yet have a Comprehensive Emergency Response Plan (CEMP), so developing an initial plan was identified as a necessary step for the Town to take on.

Current Strengths and Assets

The Town has taken a proactive approach to emergency preparedness, which was evident at the workshop as participants readily provided known vulnerabilities, but also strengths and actions to address these vulnerabilities. Participants cited several strengths and assets that help keep their community resilient in the face of climate change and other challenges. They include:



Infrastructural Strengths: The Town's bridges are overall in good condition and the Town has already secured funding for a major repair on Yankee Road.

During the development of Rowe's Hazard Mitigation Plan in 2016, the Town implemented a "Keeper of the Dams" position, whose responsibilities include monitoring water levels during weather events and controlling overflow to reduce flooding in the Town Center.

Records are relatively well protected from flooding; Town staff try to keep them at higher ground. In addition, the Town has been working on scanning records and digital backup and has two off site backups. Records dating back to 1700s are stored in a vault.

The Highway Department, Fire Department, Town Hall, Elementary School, and Broadband Hut all have backup generators. The School has a diesel backup generator and is looking into alternative methods of backup power that do not require the use of fossil fuels.

Societal Strengths: During the workshop, participants agreed that the Town has great support networks, especially for seniors in Town. Approximately 27% of Rowe's residents are seniors, and the Town would like to ensure they have adequate resources during emergencies and are continuing efforts to determine what their specific needs are.

Rowe has a part-time town nurse who keeps in touch with seniors by phone and assesses needs. They have a year round program to check in on people without transportation. The Elementary school also has a full time nurse. Rowe is a member of FRCOG's CPHS, which is a regional health department.

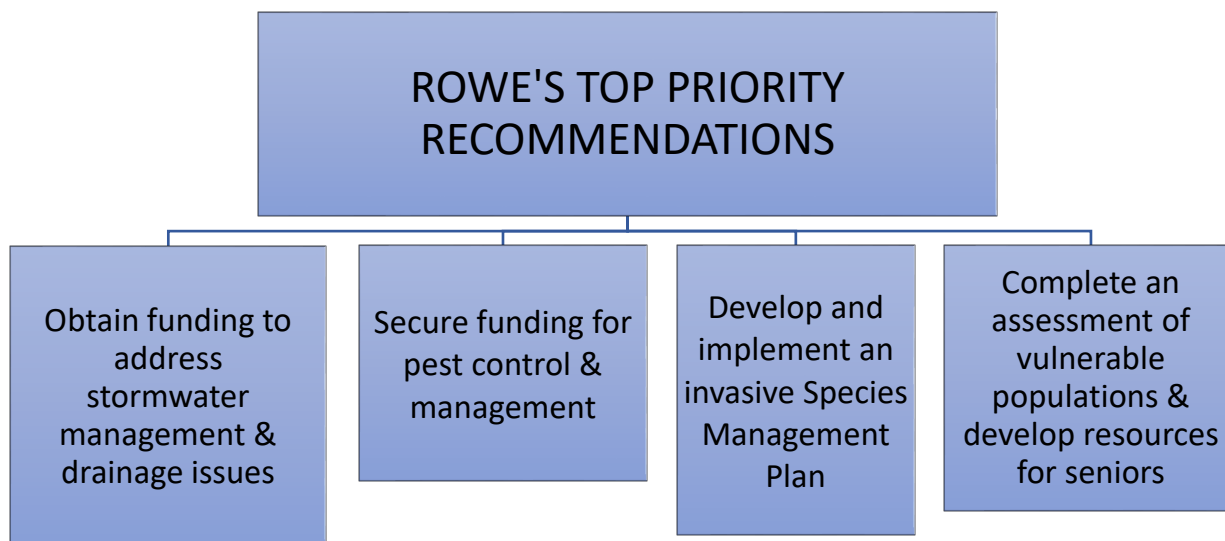
The Town publishes a monthly newsletter with announcements from municipal departments. The newsletter is widely read by residents. Rowe also uses a reverse 911 service to communicate with residents during an emergency.

Environmental Strengths: Rowe has an active Park Commission that oversees the 1,000+ acres of protected land associated with Pelham Lake Park. A Forest Stewardship Plan was recently developed for the Park with funding through the MA EoEEA and the Mohawk Trail Woodlands Partnership.

Rowe is a member of the Pioneer Valley Mosquito Control District, and participates in the tick-testing program through UMass.

Top Recommendations to Improve Resilience

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






Obtaining funding to address stormwater management & drainage issues topped the list of highest priority recommendations. Flash flooding is an ongoing issue affecting the extensive network of gravel roads in the Town, which can be addressing by developing Nature Based Solutions (NBS) such as green stormwater BMPs in combination with conventional drainage structures to mitigate runoff and erosion. For priority locations, the Town can coordinate with FRCOG to conduct stormwater site assessments and develop stormwater BMP concept designs based on the recent Franklin County Stormwater Pilot Project. This work will need to be balanced with the rural character of Rowe's roadways, as all of the roads in town are designated as Scenic Byways. This action item includes obtaining funding to complete an assessment of all culverts and drainage system in Town. During the community listening session participants noted the network of dirt roads is an important part of Rowe's rural character, so implementing strategies that will help to make these roads more resilient to heavy precipitation events is essential.

Conducting an assessment of vulnerable populations is also considered a top priority recommendation. The Town would like to have better information about needs for communication, evacuation, and sheltering for the Town's vulnerable populations, especially the Town's seniors. Once the assessment is complete, resources should be developed and distributed. The Town is committed to making Rowe an age-friendly community; implementing this action item would be a good step forward.

Developing and implementing an invasive species management plan is also a high priority for Rowe. Several necessary actions were identified in the Pelham Lake Park Forest Stewardship Plan that could be included in the overall management plan for the Town.

Securing funding for pest control & management is another top priority. The Board of Health reported participating in services such as the Pioneer Valley Mosquito District and the tick-testing program through UMass is critical for the Town, but they are cost prohibitive to continue.

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				Recommendations	Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority	Time		
									H - M - L	S hort L ong O ngoing		
Features	Location	Ownership	V/S									
Infrastructural												
Road Drainage/Culverts	Town-wide; problem areas include: Davenport Road, Davis Mine Road, Potter Road	Public	V	30% of Rowe's roads are gravel, which are often washed out during storm events. Kings Highway road does not have any culverts below the bridge and is experiencing erosion. Additionally, increased winter rains are leading to a prolonged mud season. Hire a consultant to identify low cost drainage solutions/nature based solutions on gravel roads to mitigate stormwater flows off the road.	X					H	S	
	Town-wide; problem areas include:		V	Hire a consultant to complete an assessment of all culverts and drainage systems in Town. The assessment should include an evaluation of the physical state of the culverts and GIS data to have record of where culverts are located. Based on the results of the inventory, prioritize repairs and replacements. Develop right-sizing protocol of culverts for Rowe.	X					H	S	
Bridges	Town-wide	Public	S	The Town’s bridges are overall in good condition and the Town has already secured funding for a major repair on Yankee Road.	X	X	X			N/A	N/A	
Water Resiliency	Town-wide	Public/Private	S	During recent droughts, private wells have run dry and residents have had to drill new ones. The Town has several ways to supply residents with water if their wells run dry: the Church has a spring that is tested monthly and residents could get 5-10 gallons at a time if needed, and the Park, School, and Town Hall are all Public Water Supplies.		X				N/A	N/A	
Water Supply/Infrastructure for Firefighting	Priority Areas	Public	S/V	Rowe’s volunteer fire department can use pond water and dry hydrants as a backup water supply. Identify the location of all dry hydrants throughout Town and come up with a maintenance/flushing plan to ensure the hydrants will be functional during an emergency.						M	L	
	Town-wide	Public	V	Acquire a UTV that could be used for brushfires or driving on muddy roads as a part of emergency response needs.	X	X	X			L	L	




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




<u>H</u> - <u>M</u> - <u>L</u> priority for action over the <u>S</u> hort or <u>L</u> ong term (and <u>O</u> ngoing) <u>V</u> = Vulnerability <u>S</u> = Strength				Recommendations	Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority	Time
Features	Location	Ownership	V/S						<u>H</u> - <u>M</u> - <u>L</u>	<u>S</u> hort <u>L</u> ong <u>O</u> ngoing
Power grid	Town-Wide	National Grid	S/V	Wind storms consistently knock out power for residents. Some trees were cutback when broadband was installed, additionally National Grid has been completing cutbacks on Zoar Road and Cyrus Stage/Old Cyrus Stage. The majority of problems are located where there are stands of pine trees. All of the roads in town are designated as scenic byways so the Town cannot easily cut down problem trees.		X	X		N/A	N/A
			V	Above ground power lines are vulnerable to natural hazards; burying all power lines in the Town is a cost prohibitive measure. Advocate to the Franklin County legislative delegation about these issues and request they communicate with utility companies (Eversource/DPU) about these issues.		X	X		M	S
Significant Hazard Dams	Pelham Lake Dam, Mill Pond Dam	Town	S	Heavy rains put a lot of pressure on dams; the Town needs to stay on top of releases to mitigate impact on dams. Rowe created "keeper of the dam" positions to help stay on top of releases. Both were assessed in 2017 and the next evaluation will be in 2023.	X	X			N/A	N/A
	Pelham Lake Dam	Town	V	Secure funding to hire a Registered Professional Engineer to investigate and identify measures to improve the hydraulic capacity of the dam to safely pass the Spillway design flood with one foot of freeboard, as suggested in the most recent dam inspection.	X	X			M	O
	Mill Pond Dam	Town	V	Secure funding to hire a Registered Professional Engineer to complete a detailed Hydrologic and Hydraulic Analysis (H&H) in order to identify an appropriate method to improve the dams hydraulic capacity, as suggested in the most recent dam inspection.	X	X			M	O
Municipal Buildings	Town center	Town	V	Municipal buildings are located around waterbodies, which makes them vulnerable to flooding. The Town Hall is most vulnerable as it is right next to the Mill Pond. The DPW building, Fire Station, Broadband Hut, and Historical Society building are also vulnerable. The Rowe Elementary School and Public Library are uphill and less vulnerable; DPW equipment can be kept at the school. Hire a consultant to identify necessary flood proofing measures for Rowe’s municipal buildings.	X	X			L	L

Community Resilience Building Risk Matrix				  			www.CommunityResilienceBuilding.org				
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									H - M - L	S hort L ong O ngoing	
Features	Location	Ownership	V/S	Records are somewhat flood proofed; Town staff try store them in a vault at higher ground, but they may still be vulnerable to a flooding event. The Town has been working on scanning records and digital backup and has two off site backups. Records dating back to 1700s are stored in a vault.	X	X	X		N/A	N/A	
Energy Resiliency	Town Buildings	Town	S	The Highway Department, Fire Department, Town Hall, Elementary School, and Broadband Hut all have backup generators. The School has a diesel backup generator and is looking into alternative methods of backup power that don't require the use of fossil fuels. The school would also like to expand its solar array.		X	X		N/A	N/A	
Transfer Station	Zoar Road	Town	V	The Town landfill is right on the edge of Taylor Brook and is not formally capped. There have been minor issues in the past, but there are concerns that this could be a larger problem in the future with stronger storms. Hire a consultant/engineer to evaluate the conditions at the landfill and provide recommendations to mitigate erosion issues.	X				L	L	
Societal											
Shelters	Rowe Elementary School	Town	S	The Rowe Elementary School is the main shelter; it was built in 2014, so is ADA accessible and has showers/other necessary amenities.		X	X		N/A	N/A	
			V	Obtain funding for a larger generator for the school for sheltering purposes. Additionally, obtain funding for more solar panels at the school and incorporate battery backup to improve resiliency.		X	X		M	O	
Food Pantry	Federated Church	Town of Charlemont	S	Residents have access to the Federated Church Food Pantry in Charlemont.		X	X		N/A	N/A	
Isolated Residents	Town-Wide	Public	V	Senior citizens may be isolated, especially those who live in areas of Town where roads become mudded or icy, and may not have access to electronic communications that would notify them of an emergency.	X	X	X		N/A	N/A	

Community Resilience Building Risk Matrix				   www.CommunityResilienceBuilding.org						
<u>H</u> - <u>M</u> - <u>L</u> priority for action over the <u>S</u> hort or <u>L</u> ong term (and <u>O</u> ngoing) <u>V</u> = Vulnerability <u>S</u> = Strength				Recommendations	Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority	Time
									<u>H</u> - <u>M</u> - <u>L</u>	<u>S</u> hort <u>L</u> ong <u>O</u> ngoing
Features	Location	Ownership	V/S							
			V	Develop and distribute resources for seniors, such as a directory for available services.	X	X	X		H	O
			V	Make Rowe elderly friendly so people can age in place. Support a small elderly housing project/apartments, so the elderly wouldn't have to leave Town if they had to sell their house.	X	X	X		H	O
Neighborhood Networks	Town-wide	Public/Private	S	At the beginning of the COVID-19 pandemic, the Board of Health sent out a survey to all residents to ask what type of assistance they need/what resources they already have. The BOH put these data on a map and were able to use it throughout the pandemic to ensure residents had necessary resources. The BOH is now working on sending out a new survey and identifying vulnerable populations. Secure funding to continue surveying residents, identifying needs, and developing a resource plan.	X	X	X		H	O
Council on Aging	Town-wide	Public	S	Rowe has an active COA. The group does not have a van, but can help with communications. The COA is focused on the community building rather than emergency response.	X	X	X		N/A	N/A
Town Nurse	Town-wide	Public	S	Rowe has a town nurse (24 hours a week) who keeps in touch with seniors by phone and assesses needs. They have a year round program to check in on people without transportation. The Elementary school also has a full time nurse. Rowe is a member of FRCOG’s CPHS, which is a regional health department.				X	N/A	N/A
Emergency Communications	Town-wide	Public	S	Rowe uses reverse 911 service. Most signups are through VOIP phones, but if the power goes out, this means most people would not get the call. Rowe has a noon-time alarm, which could be used for emergencies.					N/A	N/A
			S	The Town publishes a monthly newsletter with announcements from municipal departments. The newsletter is widely read by residents.					N/A	N/A

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Features	Location	Ownership	V/S						H	O
			V	Educate people & remind people of cell phone battery backups. Develop a brochure with household emergency preparedness info, which could also be posted as a newsletter series in the Rowe Goal Post.						
Emergency Response	Town-wide	Public	S/V	Rowe has good equipment that allows them to clean up debris after a storm and a committed work force. Rowe takes longer to get power back after storms than surrounding Towns because of their small population.		X	X		N/A	N/A
			V	Develop a comprehensive emergency management plan (CEMP) to facilitate a coordinated response to hazard events. The CEMP should also include evacuation routes, with specific instructions for how to evacuate if there were to be an emergency at the Yankee Rowe spent fuel storage site.	X	X	X		H	S
Environmental										
Vector-Borne Diseases	Town-wide	N/A	S/V	Rowe is a member of the Pioneer Valley Mosquito Control District, and participates in the tick testing program through UMass. Both of these programs have provided valuable services for the Town, but both programs are expensive for the Town. Seek funding/grants to help offset the costs of maintaining PVMCD membership.				X	H	S
Forests and Open Spaces	Town-wide	Public/Private	V	Prolonged droughts are leading to dry conditions throughout the region & Rowe. Rowe's forests and open spaces are vulnerable to drought and are at an increased risk of wildfire. Additionally, the Hemlock Woolly Adelgid, and Emerald Ash borer are impacting Rowe's forests - if large % of hemlock trees die the Town's forests will be even more vulnerable to wildfire.				X	N/A	N/A
Forest Health	Pelham Lake Park ³	Town	V	Identify and treat white ash trees to inoculate them against the Emerald Ash Borer in order to maintain biodiversity in the Town's forest. Install a feasible number of Hemlock Health monitoring plots to annually look for signs of Hemlock Woolly Adelgid and Elongate Hemlock Scale.				X	H	O

³ Action items for Pelham Lake Park drawn from the Forest Stewardship Plan 2020-2030, prepared by Wigmore Forest Resource Management

Community Resilience Building Risk Matrix				<div></div> Top Priority Hazards							www.CommunityResilienceBuilding.org	
<div><div>H-M-L priority for action over the Short or Long term (and Ongoing) V = Vulnerability S = Strength</div></div>				Recommendations	Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority	Time		
									H - M - L	S hort L ong O ngoing		
Features	Location	Ownership	V/S									
Invasive Species	Pelham Lake Park	Town	V	Hire a consultant to develop an invasive species management plan; Japanese knotweed, multiflora rose, and oriental bittersweet are beginning to choke out native plants in Town. Alternatively, identify available opportunities available through the NRCS for invasive species control.				X	H	S		
Open Space & Recreation Plan	Town wide	Town	V	Convene an Open Space & Recreation Plan Update Committee to prepare an Open Space and Recreation Plan to prioritize areas of town to preserve from development, which helps to maintain natural flood storage capacity, reduce erosion threats, and maintain/increase biodiversity. As a part of the planning process, identify parcels of land around Pelham Lake Park that could be acquired to create wildlife corridors.	X			X	H	L		

High Priority Recommendations

- Hire a consultant to identify low cost drainage solutions/nature based solutions on gravel roads to mitigate stormwater flows off the road.
- Hire a consultant to complete an assessment of all culverts and drainage systems in Town. The assessment should include an evaluation of the physical state of the culverts and GIS data to have record of where culverts are located. Based on the results of the inventory, prioritize repairs and replacements. Develop right-sizing protocol of culverts for Rowe.
- Develop and distribute resources for seniors, such as a directory for available services.
- Make Rowe elderly friendly so people can age in place. Support a small elderly housing project/apartments, so the elderly wouldn't have to leave Town if they had to sell their house.
- At the beginning of the COVID-19 pandemic, the Board of Health sent out a survey to everyone to ask what type of help they would need/what resources they already have. The BOH then put these data on a map and were able to use it throughout the pandemic to ensure residents had necessary resources. The BOH is now working on sending out a new survey and identifying vulnerable populations. Secure funding to continue surveying residents, identifying needs, and developing a resource plan.
- Educate people & remind people of cell phone battery backups. Develop a brochure with household emergency preparedness info, which could also be posted as a newsletter series in the Rowe Goal Post.
- Develop a comprehensive emergency management plan (CEMP) to facilitate a coordinated response to hazard events. The CEMP should also include evacuation routes, with specific instructions for how to evacuate if there were to be an emergency at the Yankee Rowe spent fuel storage site.
- Rowe is a member of the Pioneer Valley Mosquito Control District, and participates in the tick-testing program through UMass. Both of these programs have provided valuable services for the Town, but both programs are expensive for the Town. Seek funding/grants to help offset the costs of maintaining PVMCD membership.
- Identify and treat white ash trees to inoculate them against the Emerald Ash Borer in order to maintain biodiversity in the Town's forest. Install a feasible number of Hemlock Health monitoring plots to annually look for signs of Hemlock Woolly Adelgid and Elongate Hemlock Scale.

- Hire a consultant to develop an invasive species management plan; Japanese knotweed, multiflora rose, and oriental bittersweet are beginning to choke out native plants in Town.
- Alternatively, identify available opportunities available through the NRCS for invasive species control.
- Convene an Open Space & Recreation Plan Update Committee to prepare an Open Space and Recreation Plan to prioritize areas of town to preserve from development, which helps to maintain natural flood storage capacity, reduce erosion threats, and maintain/increase biodiversity. As a part of the planning process, identify parcels of land around Pelham Lake Park that could be acquired to create wildlife corridors.

Medium Priority Recommendations

- Identify the location of all dry hydrants throughout Town and come up with a maintenance/flushing plan to ensure the hydrants will be functional during an emergency.
- Aboveground power lines are vulnerable to natural hazards; burying all power lines in the Town is a cost prohibitive measure. Advocate to the Franklin County legislative delegation about these issues and request they communicate with utility companies (Eversource/DPU) about these issues.
- Secure funding to hire a Registered Professional Engineer to investigate and identify measures to improve the hydraulic capacity of the dam to safely pass the Spillway design flood with one foot of freeboard, as suggested in the most recent dam inspection.
- Secure funding to hire a Registered Professional Engineer to complete a detailed Hydrologic and Hydraulic Analysis (H&H) in order to identify an appropriate method to improve the dams hydraulic capacity, as suggested in the most recent dam inspection.
- Obtain funding for a larger generator for the school for sheltering purposes. Additionally, obtain funding for more solar panels at the school and incorporate battery backup to improve resiliency.

Low Priority Recommendations

- Municipal buildings are located around waterbodies, which makes them vulnerable to flooding. The Town Hall is most vulnerable as it is right next to the Pelham Lake. The DPW building, Fire Station, Broadband Hut, and Historic Commission are also vulnerable. The Rowe Elementary School and Public Library uphill and less vulnerable; DPW equipment

can be kept at the school. Hire a consultant to identify necessary flood proofing measures for Rowe's municipal buildings.

- Acquire a UTV that could be used for brushfires or driving on muddy roads as a part of emergency response needs.
- The Town landfill is right on the edge of Taylor Brook and is not formally capped. There have been minor issues in the past, but there are concerns that this could be a larger problem in the future with stronger storms. Hire a consultant/engineer to evaluate the conditions at the landfill and provide recommendations to mitigate erosion issues.

CRB Workshop Participants -- Department/Commission/Representative:

Janice Boudreau, Town Executive Secretary

Bill Knittle, Rowe Elementary School Principal

Lance Larned, Highway Department

Sean Loomis, Park Manager

Alain Peteroy, Director of Land Conservation, Franklin Land Trust

Carrienne Petrik, MVP Berkshires & Hilltowns Regional Coordinator (MA EoEEA)

Laurie Pike, Park Commission

Margaret Rice, Board of Health

Joanne Semanie, Select Board, Board of Health clerk

Kevin Shea, Yankee Rowe

Benjamin Werner, Executive Director of the Rowe Center

CRB Workshop Project Team: Organization and Role***Town of Rowe***

Paul McLatchy III, Town Administrative Assistant/ Town Clerk / Finance Committee

Franklin Regional Council of Governments:

Kimberly Noake MacPhee, Land Use & Natural Resources Program Manager

Megan Rhodes, Senior Land Use & Transportation Planner II

Allison Gage, Land Use & Natural Resource Planner

Recommended Citation

Noake MacPhee K., Rhodes M., Gage A. (2021) Town of Rowe Community Resilience Building Workshop Summary of Findings. Franklin Regional Council of Governments.

Appendices

Maps

Newsletters

Survey Responses

Workshop Presentation

Listening Session Presentation

[Placeholder for Critical Facilities and Infrastructure Map]

[Placeholder for Environmental Map]



Volume 39

Issue 11

Established 1975

THE Rowe Goal Post

November 2020

Classic



photo by Selmi Hyytinen

MUNICIPAL VULNERABILITY PREPAREDNESS (MVP) PROGRAM

Rowe has received a grant from the State to create a Municipal Vulnerability Preparedness Plan and become an “MVP” community. This MVP status will allow Rowe to apply for implementation grants to build projects and advance work that helps the Town be more resilient and prepared for the lasting effects of climate change. The Plan will examine both the strengths and vulnerabilities in town, particularly looking from the three perspectives of infrastructure, people, and natural resources.

DID YOU KNOW?¹

- The number of days per year in Franklin County with daily maximum temperatures over 90°F is projected to **increase by 18 days by the 2050s, and by 32 days** by the end of the end of the century. Under a high emissions scenario, however, **there could be as many as 100 days** with a maximum temperature above 90°F by the end of the century.

Some of the potential impacts to our natural resources and habitats include:

Shift in seasons

Mismatch of key food sources & wildlife

Mismatch of bloom time & pollinators

Drying of streams and wetlands

Stresses on forest & ecosystem health

Loss of ecological diversity

- The Northeast has seen a greater increase in extreme precipitation than any other part of the country, experiencing a **71% increase** in heavy precipitation events between 1958 and 2012. By the end of the century, our area could have **5 additional days** of rainstorms that dump over 1 inch of rain.
 - Tropical Storm Irene caused over \$160,000 of damages in Rowe, primarily from clogged culverts, flooding, and erosion of the roads and road shoulders.

- Extreme weather events are anticipated to increase due to climate change. Scientists predict severe storms will occur more frequently and with greater intensity over time. For example, a 2017 U.S. Climate Science Special report forecasts that future hurricanes will drop more rain and have higher wind speeds.

The Franklin Regional Council of Governments (FRCOG) will be helping Rowe with the MVP planning process and **we WANT TO HEAR FROM YOU!**

Go to <https://www.surveymonkey.com/r/RoweMVP1> and fill out a quick survey to tell us how you think climate change is/or will be impacting Rowe.

What natural or built features in Rowe have recently been affected by changes in precipitation? What extreme weather events has Rowe recently experienced? Have wells been in danger of going dry in the current or previous droughts? How did Tropical Storm Irene affect you?

For more info on this project, contact Paul McLatchy III (adminasst@rowe-ma.gov) or Megan Rhodes, FRCOG Senior Planner (mrhodes@frcog.org).



Route 2 in Charlemont after Tropical Storm Irene



Volume 39

Issue 12

Established 1975

THE Rowe Goal Post

December 2020

Classic



photo by Sue Williams

Municipal Vulnerability Preparedness (MVP) Program

Rowe has received a grant from the State to create a Municipal Vulnerability Preparedness Plan and become an “MVP” community. This MVP status will allow Rowe to apply for implementation grants to build projects and advance work that helps the Town be more resilient and prepared for the lasting effects of climate change. The Plan will examine both the strengths and vulnerabilities in town, particularly looking from the three perspectives of infrastructure, people, and natural resources.

Climate Change impacts on Rowe’s Community Members

In our last newsletter, we discussed the main effects of climate change you have likely already witnessed, such as increasing temperatures, changes in precipitation, and extreme weather events. In this article, we would like to highlight how those changes could have a direct impact on Rowe’s residents.

One of the main concerns for Rowe is its aging community. A changing climate can affect the ability of seniors to age in place. For example, seniors on fixed incomes may not be able to repair their homes after an extreme storm event. Additionally, increased flooding events could lead to mold development, which can be costly to remediate. Other costly measures to alleviate stressors such as prolonged heat waves include the need to run air conditioning units for longer periods. Transportation and communication is also a concern for an aging population, as seniors living alone may become isolated during severe weather events and not be able to safely evacuate or reach emergency responders.

Extreme heat will likely affect many of Rowe’s residents. Rising temperatures causes populations of invasive species such as ticks and mosquitos to grow and live longer due to a delay of the first frost of Fall. This means that Rowe residents face an increased risk of diseases such as Lyme, Equine Encephalitis (EEE), and other insect borne illnesses. Franklin County’s rate of emergency department visits for tickborne diseases is among the highest in the state (only Martha’s Vineyard/Nantucket and Hampshire County have higher rates). 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, as well as young children and the elderly.

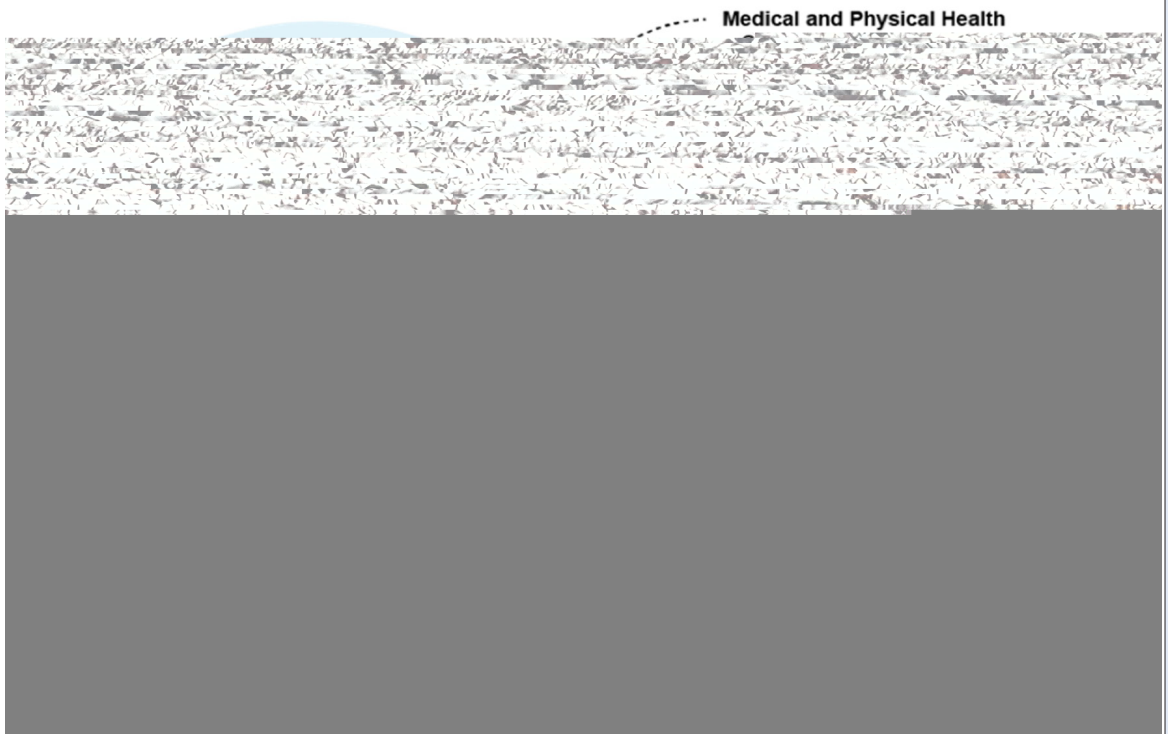
Rowe is also likely to experience more frequent droughts, which will threaten well water for all residents. Prolonged droughts, such as the one we are currently experiencing due to five months of dry conditions, may cause wells to run dry or water quality to decline.

Although there are many ways in which the livelihood of Rowe’s residents could be impacted by climate change, the Town is being proactive and is starting to think of projects to build community resilience. As we move through the planning process, we are hoping to hear from residents about how you have been impacted by climate change, or what your concerns are for the future. You can answer questions related to this newsletter here: <https://www.surveymonkey.com/r/RoweMVP2>,

and if you missed last month's survey you can still respond here: www.surveymonkey.com/r/RoweMVP1. Both surveys are posted on the Town's MVP project page at <https://rowe-ma.gov/p/71/Municipal-Vulnerability-Preparedness-MVP-Planning>.

For more information, please contact Paul McLatchy III or Megan Rhodes, FRCOG Senior Planner at mrhodes@frcog.org.

An Illustration on How Climate Change Impacts Physical, Mental, and Community Health



The impacts of climate change on health in the United States. Source: U.S. Global Change Research Program (2016).



Volume 40

Issue I

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THE Rowe Goal Post

January 2021



photo by Chuck Sokol

Municipal Vulnerability Preparedness (MVP) Program¹

Rowe has received a grant from the State to create a Municipal Vulnerability Preparedness Plan and become an “MVP” community. This MVP status will allow Rowe to apply for implementation grants to build projects and advance work that helps the Town be more resilient and prepared for the lasting effects of climate change.

Climate Change impacts on Rowe’s Infrastructure

In our last newsletter articles, we discussed the main effects of climate change you have likely already witnessed and how they could affect Rowe’s residents. In this article, we would like to highlight how those changes could have a direct impact on Rowe’s infrastructure. These impacts could include:

- Basement flooding that may destroy electrical panels and furnaces;
- Peaks in power demand during hotter summer days could cause outages;
- Extreme heat may cause heat stress in roadway asphalt and increase the frequency of repairs and replacements;
- Flooding caused by heavier downpours may damage roads and stormwater infrastructure like undersized culverts;
- More ponding on roads that could cause dangerous travel;
- Rapid freeze thaw cycles may cause damage to road surfaces, such as frost heaves;
- Costly damage to roads, bridges, and rail networks may occur as a result of extreme nor’easters, hurricanes, severe thunderstorms and blizzards;
- Extensive flood damage to roads and bridges could dramatically affect public health and safety especially where alternative routes are not available;
- High winds could down power lines and poles adjacent to roads; and
- Communities and critical facilities could be cut off after storms.

These impacts from climate change are already being experienced in Rowe and across Franklin County and will only increase in frequency and magnitude in the coming decades. They can be expensive for both residents and Towns to repeatedly fix and deal with. Taking proactive steps, such as installing larger culverts to drain roadways and trimming trees around power lines, can make a community more resilient and also save money in the long run.

¹<http://resilientma.org/sectors/transportation>.



Photo: Failed culverts resulting in road washout on Rowe Road/Dell Road between Rowe and Heath after Tropical Storm Irene.

As we move through the planning process, we are hoping to hear from residents about how you have been impacted by climate change, or what your concerns are for the future. You can answer survey questions related to this newsletter here: <https://www.surveymonkey.com/r/RoweMVP3>, and if you missed previous surveys, they are posted on the Town's MVP project page at <https://rowe-ma.gov/p/71/Municipal-Vulnerability-Preparedness-MVP-Planning>.

For more information, please contact Paul McLatchy III or Megan Rhodes, FRCOG Senior Planner at mrhodes@frcog.org.



Volume 40

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THE Rowe Goal Post

March 2021



photo by Sue Williams

“A light exists in Spring not present in the year at any other period when March is scarcely here.” -Emily Dickinson



Io Sokol attends a Covid Zoom meeting.

photo by Janice Boudreau

Municipal Vulnerability Preparedness (MVP) Program

Rowe has received a grant from the State to create a Municipal Vulnerability Preparedness Plan and become an “MVP” community. This MVP status will allow Rowe to apply for implementation grants to build projects and advance work that helps the Town be more resilient and prepared for the lasting effects of climate change.

****A COMMUNITY RESILIENCE BUILDING WORKSHOP WILL BE HELD ON MONDAY, MARCH 22nd AT 1:00 PM. THIS MEETING WILL BE VIRTUAL AND ALL ROWE RESIDENTS ARE WELCOME TO ATTEND AND PROVIDE INPUT ON HOW THE TOWN CAN BECOME MORE RESILIENT IN THE FUTURE. Meeting information can be found at the Town’s MVP project page: <https://rowe-ma.gov/p/71/Municipal-Vulnerability-Preparedness-MVP-Planning>.****

Climate Change Impacts on Rowe’s Environment

In this article, we would like to highlight how climate change could have a direct impact on Rowe’s environment. Projections show that by the end of this century summer in Massachusetts could feel like present day summer in South Carolina. This change could make Rowe’s existing environment look very different.

If you are a home gardener, you may have already noticed some of these changes. Gardeners throughout Franklin County have commented on the increased unpredictability of the growing season due to earlier spring blooms. We are also more likely to see heavy rain events followed by

periods of drought, which can further stress plants and crops. Longer growing seasons will also bring more invasive plants and pests, such as Japanese knotweed and deer ticks. Japanese knotweed is of particular concern in our area due to its ability to dominate native species and erode riverbanks. Other invasive plant species that have been identified in Rowe to date include Norway Maple, Bittersweet, and Garlic Mustard.

Warming temperatures can also stress the Town's local forests by reducing tree health and growth. Drought conditions are likely to be more prevalent and will increase the chance of forest fires. Although wildfires are rare in Franklin County, the drought this past summer led to two wildfires in the nearby communities of Leverett and Orange. These fires demonstrated how even mild drought conditions can increase the threat of wildfires.

Other impacts that Rowe residents may experience from warming temperatures, changes in precipitation, and changes in freeze/thaw cycles could include:

- Decreased maple syrup production due to shortened tapping seasons, and decreased sap quality and quantity;

- Less snow during winter for recreational activities;

- A drying of streams, which could harm local wildlife such as trout.

Tell us your thoughts on climate change on Rowe's environment: <https://www.surveymonkey.com/r/RoweMVP4>, and if you missed previous surveys, they are posted on the Town's MVP project page at <https://rowe-ma.gov/p/71/Municipal-Vulnerability-Preparedness-MVP-Planning>.

Top Answers from Previous Surveys:

- 1) Which hazards have impacted Rowe the most?
 - Severe Wind
- 2) Which impact of climate change on human health are you the most concerned about?
 - Heat related illness
- 3) What are your main concerns related to extreme heat?
 - Increased cooling costs

For more information, please contact Paul McLatchy III or Megan Rhodes, FRCOG Senior Planner at mrhodes@frcog.org.

Submitted by Paul McLatchy III

#1

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Tuesday, December 01, 2020 4:09:06 PM
Last Modified: Tuesday, December 01, 2020 4:09:54 PM
Time Spent: 00:00:48
IP Address: 216.193.181.105

Page 1

Q1 Respondent skipped this question

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

Q2 Moderate

How have extreme weather events affected Rowe?

Q3 Severe wind

What hazards have affected Rowe the most?

Q4 Respondent skipped this question

Please provide an example of how your selected hazard(s) affected you or the Town.

Q5 Respondent skipped this question

Is there anything else you would like to tell us about regarding your concerns as to how Rowe may be vulnerable in the future from climate change or severe events?

#2

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Wednesday, December 23, 2020 8:33:22 PM
Last Modified: Wednesday, December 23, 2020 8:44:03 PM
Time Spent: 00:10:41
IP Address: 70.176.53.96

Page 1

Q1

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

If you mean from the time I used to live/frequently visit Rowe in the 70's, I would say that there was a lot more snow that I remember and that the brooks and ponds and water falls all seemed to be running well. Now (since 2017 when I bought my house) the growing season seems to have stretched out a month at either end. Used to be that I could begin to plant Memorial Day and assume harvest around Labor Day....its warmer sooner and longer.

Q2

Moderate

How have extreme weather events affected Rowe?

Q3

Other (please specify):

What hazards have affected Rowe the most?

I am not here yet year round to comment. Lots of wind though.

Q4

Please provide an example of how your selected hazard(s) affected you or the Town.

For the first time in my experience, twice in two weeks during 2020 summer, we had to go into basement for safety from tornadoes in area. It gave me time to look around at the basement and wonder how better we could be prepared in the future. Electricity was out for days - my husband who works from home, had to rent office space in Buckland....the minimum for which was one week without refund. So he commuted to Buckland even after the electricity came back on.

Q5

Is there anything else you would like to tell us about regarding your concerns as to how Rowe may be vulnerable in the future from climate change or severe events?

I would like to share my concerns for the older citizens in town....perhaps those who do not have electronic communications. I live on a hill in "Siberia" section of Rowe....I cannot hear the noon-time siren. Since I assume it is meant as a warning signal, perhaps it needs to be tested for sound volume so that if a true emergency is present, then all citizens can hear it. Both my cell phone (which is VOiP) and the house phone kept ringing a warning message - but maybe some community "welcome booklet" could explain these things.

#1

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Tuesday, December 01, 2020 4:10:36 PM
Last Modified: Tuesday, December 01, 2020 4:11:32 PM
Time Spent: 00:00:56
IP Address: 216.193.181.105

Page 1

Q1 Heat related illness

Which impact of climate change on human health are you most concerned about?

Q2 Increased cooling costs

What are your main concerns related to extreme heat?

Q3 Respondent skipped this question

If you have already had experiences with any of the impacts listed above for questions #1 and #2 and would like to share any details, please do so in the text box below.

Q4 Respondent skipped this question

Do you have concerns related to aging in place and climate change? If so, what are they?

#1

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Thursday, March 04, 2021 1:43:37 PM
Last Modified: Thursday, March 04, 2021 2:34:06 PM
Time Spent: 00:50:28
IP Address: 216.193.181.12

Page 1

Q1

What is your name and role in Town (if applicable)?

Janice Boudreau, Executive Secretary

Q2

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

more extreme weather conditions, more severe storms

Q3

Frequent

How have extreme weather events affected Rowe?
Please use the ranking list below:

Q4

Which hazards have affected Rowe the most?

Flooding,
Severe Wind,
Extreme Temperatures,
Invasive Species

Q5

Based on the hazards you selected in the questions above, please provide more detail about how Rowe has been impacted.

Having town "Center" in and around ponds and streams makes it vulnerable
Wind takes out power, invasive species affects Pelham Lake

Q6

Which features of the Town are most vulnerable to hazards? You can describe infrastructural features (such as roads or power lines), environmental features (such as forests or rivers), or aspects of Rowe's community (such as isolated residents).

Roads and Power lines

Potential for flooding from streams, pond and lake

Q7

Which features of the Town are the most resilient to hazards? What do you think the Town's strengths are?

Good equipment and strong, committed work force

Q8

What actions or projects would you like to see the Town undertake to be more resilient in the future or to build on current strengths?

Put together a more comprehensive emergency management plan

#2

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Thursday, March 04, 2021 2:51:34 PM
Last Modified: Thursday, March 04, 2021 3:04:12 PM
Time Spent: 00:12:38
IP Address: 216.193.181.12

Page 1

Q1

What is your name and role in Town (if applicable)?

LANCE LARNED HIGHWAY DEPT

Q2

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

TEMPS,RAIN,TREES DEAD.

Q3**Frequent**

How have extreme weather events affected Rowe?
Please use the ranking list below:

Q4

Flooding,
Severe Wind,
Extreme Temperatures

Which hazards have affected Rowe the most?

Q5

Based on the hazards you selected in the questions above, please provide more detail about how Rowe has been impacted.

MORE TREES IN THE ROADS FROM HIGH WIND
RAIN THAT WASHES ROADS OUT MOST ALL THE TIME
HEAT THAT BURNS THE GRASS ON ROAD SIDES

Q6

Which features of the Town are most vulnerable to hazards? You can describe infrastructural features (such as roads or power lines), environmental features (such as forests or rivers), or aspects of Rowe's community (such as isolated residents).

CULVERT FAILURE DUE TO MUCH WATER AT ONCE

Q7

Which features of the Town are the most resilient to hazards? What do you think the Town's strengths are?

COOLER TEMPS IN MID SUMMER

MAJOR FLOODING

Q8

What actions or projects would you like to see the Town undertake to be more resilient in the future or to build on current strengths?

MORE TREE CUTTING CLEARING BACK FROM ROAD SIDES

#3

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Thursday, March 04, 2021 5:15:28 PM
Last Modified: Thursday, March 04, 2021 5:18:48 PM
Time Spent: 00:03:19
IP Address: 216.193.181.12

Page 1

Q1

What is your name and role in Town (if applicable)?

Paul McLatchy III, Administrative Assistant to the Boards

Q2

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

Warmer winters, which lead to horrible mud seasons. Irene, Sandy, etc.

Q3

Moderate

How have extreme weather events affected Rowe?
Please use the ranking list below:

Q4

Flooding,
Severe Wind,
Invasive Species

Which hazards have affected Rowe the most?

Q5

Based on the hazards you selected in the questions above, please provide more detail about how Rowe has been impacted.

Flooding: Lost some portions of roads during Irene.

Severe Wind: Seem to have a lot more frequent wind storms.

Invasive Species: Have an issue at the lake with an invasive species of plant (though it may be unrelated?)

Q6

Which features of the Town are most vulnerable to hazards? You can describe infrastructural features (such as roads or power lines), environmental features (such as forests or rivers), or aspects of Rowe's community (such as isolated residents).

Senior population. Rowe has a large elderly population. We also seem to be low on the power restoration list, so when the area gets hit hard, we usually wait longer for power to get restored.

Q7

Which features of the Town are the most resilient to hazards? What do you think the Town's strengths are?

We have good buildings that can serve as emergency shelters and backups (generators, technology, etc.)

Q8

What actions or projects would you like to see the Town undertake to be more resilient in the future or to build on current strengths?

Improve culverts- we have a lot that are in sad shape and probably need to be increased in size.

#4

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Friday, March 19, 2021 10:57:18 AM
Last Modified: Friday, March 19, 2021 11:04:22 AM
Time Spent: 00:07:03
IP Address: 216.193.181.112

Page 1

Q1

What is your name and role in Town (if applicable)?

Sean Loomis, Park Manager

Q2

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

More frequent severe storm

Q3

Moderate

How have extreme weather events affected Rowe?
Please use the ranking list below:

Q4

Flooding,
Severe Wind

Which hazards have affected Rowe the most?

Q5

Based on the hazards you selected in the questions above, please provide more detail about how Rowe has been impacted.

Heavy rain in shorter amount of time has put a strain on coverts, dam retention (water flowing over the 2 dams, rapid erosion of the parks trail system. More downed trees

Q6

Which features of the Town are most vulnerable to hazards? You can describe infrastructural features (such as roads or power lines), environmental features (such as forests or rivers), or aspects of Rowe's community (such as isolated residents).

Infrastructure of the public ways and the parks infrastructure (trails and bridges)

Q7

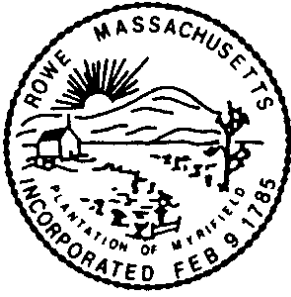
Which features of the Town are the most resilient to hazards? What do you think the Town's strengths are?

Not sure

Q8

What actions or projects would you like to see the Town undertake to be more resilient in the future or to build on current strengths?

Not sure



Franklin Regional Council of Governments

March 5, 2021

Dear Rowe Community Member:

Increasingly, we find ourselves working to respond to more unpredictable and severe weather events that damage Rowe's infrastructure, natural resources, and local economy and threaten the health and welfare of our residents. The costs and impacts to our town remind us that we need to continue working to reduce our risk and increase our resilience to these extreme storm events.

In order to be as proactive as we can in preparing and protecting our residents, the Town of Rowe is partnering with the Franklin Regional Council of Governments to prepare a Municipal Vulnerability Preparedness Plan. This plan will help us to:

- Understand connections between natural hazards and local and regional planning/mitigation efforts;
- Evaluate strengths and vulnerabilities of residents, infrastructure, and natural resources;
- Develop and prioritize resilient actions for the town, residents and our local organizations and businesses; and
- Identify actions that can reduce the impact of hazards and increase resilience.

To complete the objectives of the planning process and gather critical stakeholder feedback, the Town and the FRCOG will be holding a virtual workshop via Zoom on **Monday, March 22 from 1:00pm – 4:00pm**. Registration information is on the attached flyer. **Ahead of the workshop, we are hoping to hear from participants about what issues are most important to you. Please complete the following survey to better inform our working session.** If you would like more information about the project and how climate change may affect Rowe, please navigate through the prepared StoryMap to learn more.

- Take the pre-workshop survey here: <https://www.surveymonkey.com/r/RoweMVP5>
- Rowe's Municipal Vulnerability Preparedness StoryMap: <http://bit.ly/RoweMVPStory>

By going through this planning process, the town will become "MVP certified" and then eligible for state-funded implementation grants to help us become more resilient. We are eager to hear what issues are important to you and what projects you think are most important for Rowe to undertake. Your thoughts will help us to strengthen our climate resiliency plan and prioritize future projects.

We appreciate your time and we look forward to seeing you at the MVP workshop.

Sincerely,

Paul McLatchy III, Rowe Administrative Assistant

Meghan Rhodes, Senior Transportation and Land Use Planner II, FRCOG

Allison Gage, Land Use and Natural Resources Planner, FRCOG

Please save the date and come to our
MVP COMMUNITY RESILIENCE BUILDING WORKSHOP

Join via zoom on Monday, March 22, 2021

1:00pm – 4:00pm

Please join us for a public workshop to discuss your experiences with climate related threats, such as flooding, severe winter storms, and extreme temperatures. Your thoughts will help to strengthen our climate resiliency plan.

This workshop is a part of Rowe's effort to become a designated MVP Community. During the workshop we will:

- ✓ Review the natural hazards impacting Rowe and how climate change is interacting with these hazards
- ✓ Discuss responses gathered from stakeholder outreach and further outline our strengths and vulnerabilities
- ✓ Brainstorm resiliency actions



WE NEED YOUR INPUT!

Register in advance for this workshop: <http://bit.ly/RoweMVP>

Please register for the workshop by March 19th at 5pm.

Questions? Please contact Meghan Rhodes at the Franklin Regional Council of Governments (mrhodes@frcog.org)

Learn more about this project: <http://bit.ly/RoweMVPStory>

Take the pre-workshop survey here: <https://www.surveymonkey.com/r/RoweMVP5>

Workshop Presentation

Community Resilience Building Workshop

Town of Rowe

March 22 2021

Zoom Housekeeping

Unmute/mute yourself – please stay muted if not speaking

Ask questions/report issues

Turn on/off video function

Prevents videos from blocking presentation

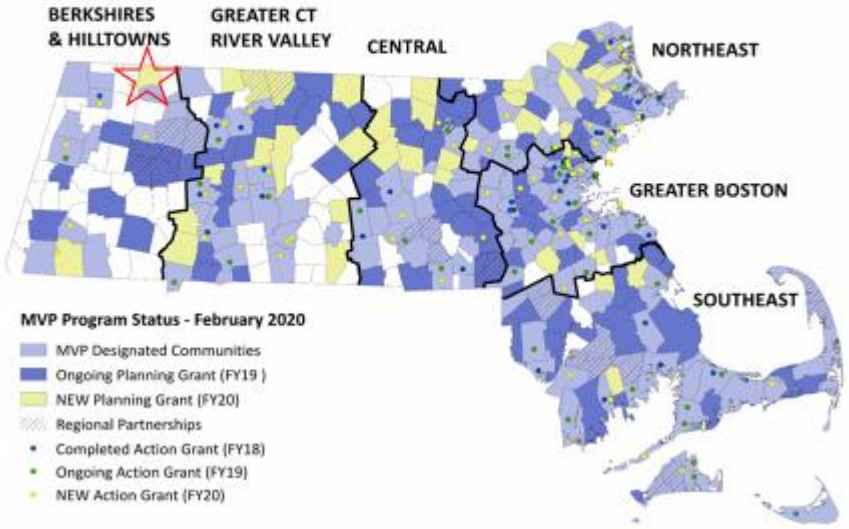


Agenda

- Overview of the Municipal Vulnerability Preparedness (MVP) Program
- Review Massachusetts’ changing climate
- Identify Top Hazards
- Identify Strengths and Vulnerabilities
- Brainstorm Resiliency Actions


Municipal Vulnerability Preparedness (MVP) Program

\$44 Million to cities and towns since 2017




Why the MVP Program?

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




Source: NJ Climate Change Resiliency Study


Changing Climate Variables



Changing precipitation



Higher temperatures



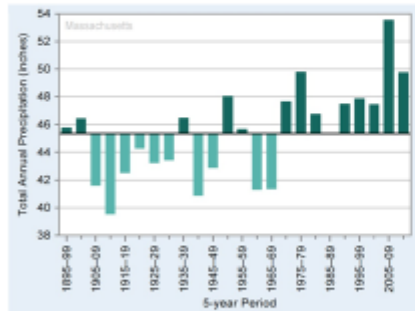
More frequent & intense storms

Climate change **increases** existing risks Rowe is already facing

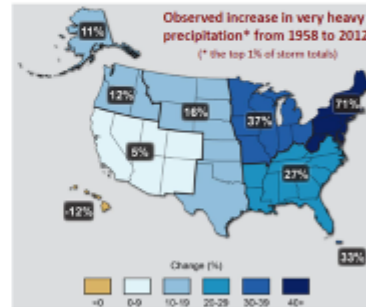


Changing Precipitation

Observed Annual Precipitation



Observed Increase in Heavy Precipitation



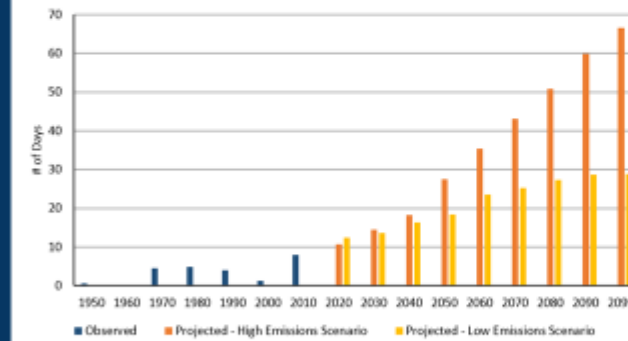
Impacts from Changing Precipitation

- Increased total rainfall
 - Impact on the frequency of minor but disruptive flooding events
 - Impact agriculture, forestry, and natural ecosystems
- More intense downpours
 - Increased risk of flooding
 - Increased damage to property and critical infrastructure
 - Impacts to water quality
- Changes to rainfall and snowfall patterns
 - Impacts to certain habitats and species with specific physiological requirements
 - Reduced snow cover for recreation and tourism
 - Potential increase in frequency of episodic droughts



Higher Temperatures

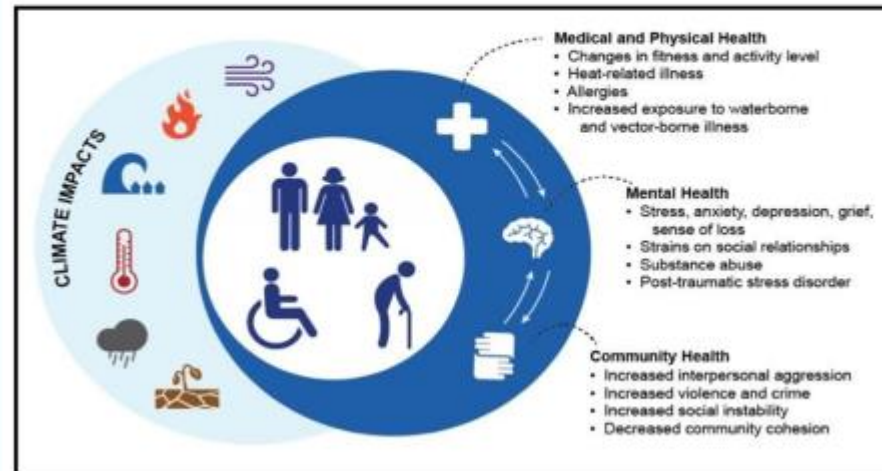
Number of Days with Temperatures over 90° Fahrenheit



- Number of days >90° are predicted to increase.
- By 2050: ~18 more days
- By 2100: ~28 more days



Impacts from Higher Temperatures



Extreme Weather Events



Flash flooding, tropical storms



Severe wind, thunderstorms

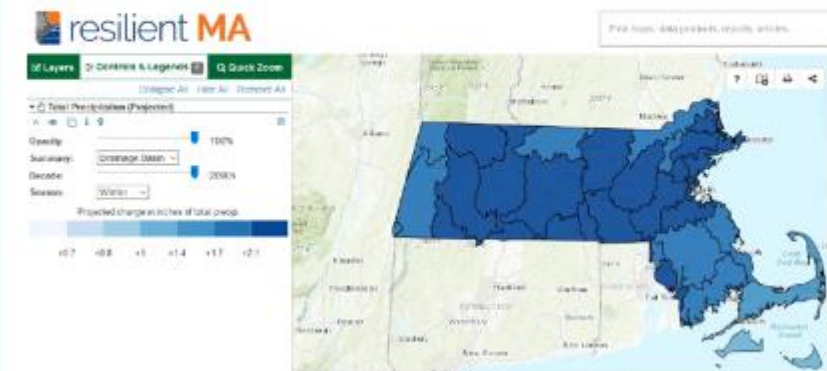


Tornadoes



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

ResilientMA Climate Change Clearinghouse www.resilientma.org



Hazard Characterization

Participant Input



- Name
- Position/Department
- What concerns do you have about *climate change and natural hazards* and their impact on Rowe?
 - ✓ Infrastructure
 - ✓ Residents
 - ✓ Environment

Past & Recent Events

2011 Tropical Storm Irene - \$160,000 of damages



County Road washout



Pelham Lake Park beach erosion

Past & Recent Events

Microburst – June 2020



View of a thundercell from a hilltop in Heath
Photo courtesy of the Greenfield Recorder

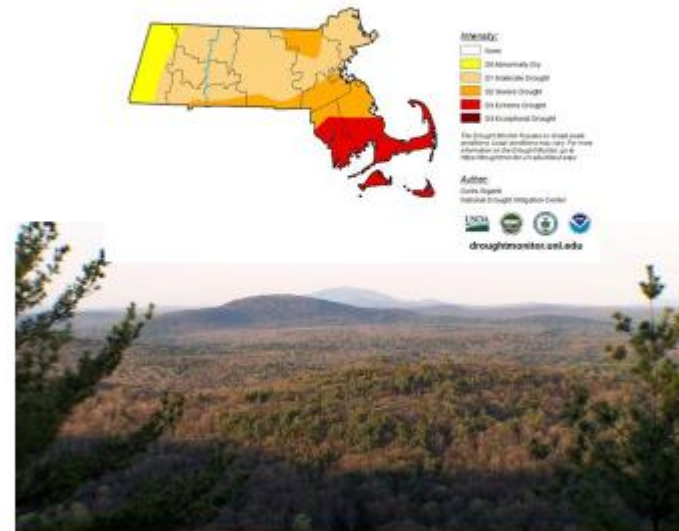
Bomb Cyclone, October 2019



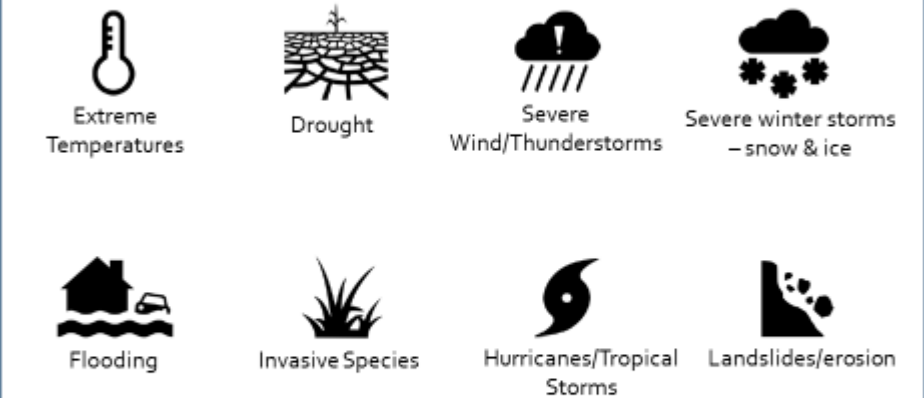
Downed trees in Warwick

Past & Recent Events

Statewide Drought – June to November 2020



Hazard Identification



- ✓ Pose the greatest threat to the community currently
- ✓ Pose the greatest threat to the town over the next decade or longer
- ✓ The community should take action to improve their resiliency

Vote on your Top Hazard

Workshop Agenda

- Overview of the Municipal Vulnerability Preparedness (MVP) Program ★
- Review Massachusetts' changing climate ★
- Identify Top Hazards ★
- Identify Strengths and Vulnerabilities ←
- Brainstorm Resiliency Actions

Workshop Outcomes

Main goal: build resilience!

1. Understand strengths and vulnerabilities in three sectors



2. Brainstorm actions to build on strengths and address vulnerabilities

Identify strengths and vulnerabilities

What is it?



Infrastructure

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



Environment

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



Society

- 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

Identify strengths and vulnerabilities

Examples



Infrastructure

Strength

- Trees near powerlines are routinely cut

Vulnerability

- Undersized culverts or bridges



Environment

- Large parcels of conserved land

- Riverbanks overgrown with knotweed



Society

- Residential emergency preparedness

- Isolated residents

Workshop Activity

Community Resilience Building Risk Matrix



www.CommunityResilienceBuilding.org

ALL HAZARDS: severe winter storms, flooding, tornadoes, dam failure, hurricanes/tropical storms, thunderstorms/microbursts, wildfire, earthquake, landslides, drought, extreme temperatures, invasive species
H, M, L: priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

Features	Location	V or S	Identified Strength or Vulnerability	Resiliency Action
Infrastructure				
Road Drainage		V	Some of Town's roads are gravel, which are often washed out during storm events. Additionally, increased winter rates are leading to a prolonged road season.	
Highway Maintenance				
Bridges				
Water supply for fire prevention				
Infrastructure for firefighting				
Town buildings	Town center	V	Municipal buildings are located around waterbodies, which makes them vulnerable to flooding.	
Undersized Culverts		V	Culverts throughout Town are undersized and cannot accommodate stormwater.	
Electrical grid		V	Wind storms have recently knocked out power for residents.	

Community Resilience Building Matrix

Information collected will be transposed into the matrix for the final MVP Plan

[illegible]

Types of Action Grants

-  Planning, Assessments, and Regulatory Updates
 -  Nature-based Solutions for Ecological and Public Health
 -  Resilient Redesigns and Retrofits for Critical Facilities and Infrastructure

Nature Based Solutions

Projects that restore, protect, and/or manage natural systems and/or mimic natural processes to address hazards like flooding, erosion, drought, and heat islands in ways that are cost-effective, low maintenance, and multibeneficial for public health, safety, and well-being.






Riverbank restoration on the North River, Colrain MA



Low impact development project, Greenfield MA

Why Nature Based Solutions?

-  **Enhanced public safety** by reducing risks from flooding, erosion, drought, and heat risks to vulnerable populations and community assets.
 -  **Avoided infrastructure costs** of short- and long-term maintenance, unplanned repairs and safety improvements due to flooding and failure from intense rain events.
 -  **Promotes biodiversity**, important for environmental health and safeguarding natural resources like water, food, and shelter.
- And other **ecosystem services**, such as improving air and water quality, flood protection, groundwater recharge, carbon sequestration, human health and well-being

Ongoing Outreach

Building a Resilient Rowe

Take a tour to learn more about Rowe's Municipal Vulnerability Preparedness planning efforts, and find out how you can provide input.

1000s of Hwy 100, Rowe, MA

Learn more about the project & respond to surveys

Find up to date information about the planning process

Municipal Vulnerability Preparedness (MVP) Planning

Town of Rowe

Mayor, Brian Lee
301 Main Street
Rowe, MA 01069
Phone: 413.239.9200
Fax: 413.239.9200
CONTACT US
Home

About the town
Local Resources
Schools
Volunteer opportunities
Employment Opportunities
Municipal Vulnerability Preparedness (MVP) Planning

Calendar of Events

Board of Selectmen Meeting Covid-19
4/10/2020
No Meetings for 30 days
Proposed Board of Selectmen
Finance Committee Meeting
4/10/2020
Reserve for 30 days

The Town of Rowe is working under the State Regional Council of Governments (RCOG) to develop a Municipal Vulnerability Preparedness (MVP) Plan. This plan will help the town create strategies to mitigate the effects of climate change and be more resilient in the future.

The Town will be holding a Community Resilience Building Workshop on Monday, March 22 at 5:00 PM to discuss what actions we can take to protect our town from the effects of climate change and be more resilient in the future.

Rowe Virtual MVP Planning Process



MVP
Municipal Vulnerability
Preparedness



Next Steps

TODAY: MVP Workshop ★

Draft Report & Send out for review

May 2021: Public Listening Session

Public Comment Period

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

The public listening session was held as a standalone meeting on May 10, 2021 at 1:00pm via Zoom. FRCOG Staff provided an overview of 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 following town representatives, EoEEA and FRCOG staff attended:

- Janice Boudreau, Town Executive Secretary
- Paul McLatchy III, Town Administrative Assistant/ Town Clerk / Finance Committee
- Margaret Rice, Board of Health
- Emily Boss, Director of Land Conservation, Franklin Land Trust
- Carrienne Petrik, MVP Berkshires & Hilltowns Regional Coordinator
- Allison Gage, FRCOG Land Use & Natural Resources Planner
- Megan Rhodes, FRCOG Transportation & Land Use Planner

At the end of the listening session, participants voted on which action item the Town should pursue first. **Addressing stormwater management & drainage issues** received 3 votes and **completing an assessment of vulnerable populations & developing resources for seniors** received 2 votes. Participants noted the network of dirt roads is an important part of Rowe's rural character, so implementing strategies that will help to make these roads more resilient to heavy precipitation events is essential.

Overall, the meeting attendees were happy with the plan and presentation.

The public comment period was held from May 10, 2021 to May 24, 2021, during which the public was invited to submit comments via email. All comments received during the listening session were incorporated into the plan.

The public listening session and public comment period were advertised on the Town of Rowe's website on the MVP page, and in the Town newsletter.

Listening Session Presentation



Municipal Vulnerability Preparedness (MVP) Listening Session

Town of Rowe

May 10, 2021

Municipal Vulnerability Preparedness (MVP)

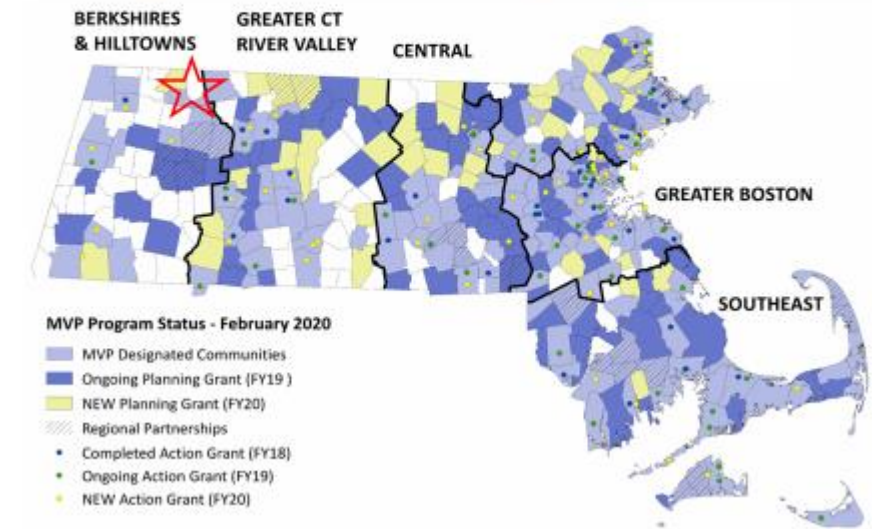


- ✓ Provides support for MA municipalities to plan for climate change resiliency and implement priority projects
- ✓ Provides a simple, straightforward process
- ✓ Certifies municipalities as MVP communities
- ✓ Provides funding to complete design & implementation of resiliency projects



Massachusetts Municipal Vulnerability Preparedness (MVP) Program Launched 2017

\$44 Million awarded for Planning & Action Grants



Program Outcomes

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

RESILIENCE



Changing Climate Variables



Increased precipitation



More frequent droughts



Higher temperatures



More frequent & intense storms

Climate change **increases** existing risks
Rowe is already facing

Municipal Vulnerability Preparedness (MVP)

Community Components



Infrastructural



Societal



Environmental

Rowe Community Resilience Building Workshop – March 22, 2021

- ✓ Identify top local natural and climate-related hazards of concern
- ✓ Identify existing and future strengths and vulnerabilities
- ✓ Develop a list of prioritized actions for the Community

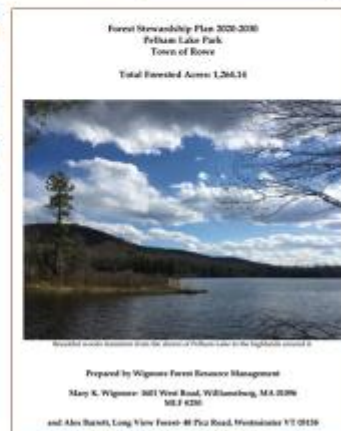
Workshop Participants



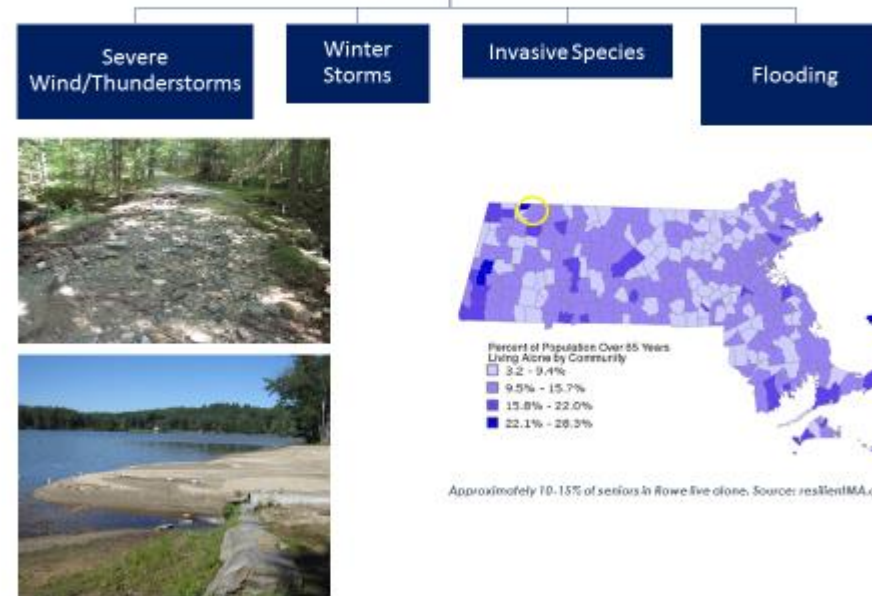
Benefits of having participants from different sectors/departments:

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

ROWE'S TOP STRENGTHS



ROWE'S TOP HAZARDS



Rowe's Vulnerabilities



Infrastructure

- Earlier and longer mud seasons
- Undersized/failing culverts/stormwater drainage
- Aboveground power lines



Society

- Increase of insect-borne diseases
- Elders throughout Town who may become isolated during/after storms
- Emergency communications with residents



Environment

- Invasive species choke native plants & stress infrastructure
- Vulnerability of northern hardwood forests
- Wildfire potential throughout Town

Rowe's MVP Action Plan



1. Discuss MVP Action Grants

2. Summarize the Draft Recommendations

MVP Action Grants



Planning, Assessments, and Regulatory Updates



Nature-based Solutions for Ecological and Public Health



Resilient Redesigns and Retrofits for Critical Facilities and Infrastructure

Draft Recommendations

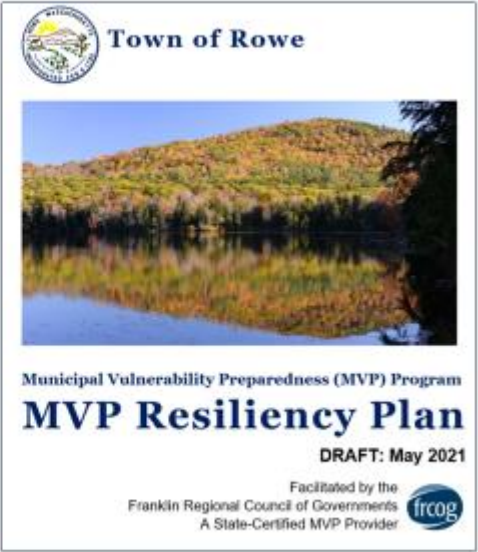
Action	Key Points
Address stormwater management & drainage issues	<ul style="list-style-type: none">✓ Hire a consultant to complete an assessment of all culverts and drainage systems in Town✓ Identify areas where low cost drainage solutions/ nature-based solutions can be installed
Secure funding for pest control & management	<ul style="list-style-type: none">✓ Continue participation in the PVMCD and Umass Tick Testing Program
Develop and implement an invasive species management plan	<ul style="list-style-type: none">✓ Implement actions identified in the Pelham Lake Park Forest Stewardship Plan
Complete an assessment of vulnerable populations & develop resources for seniors	<ul style="list-style-type: none">✓ Obtain better information about needs for communication, evacuation, and sheltering for the Town's Climate Vulnerable Populations✓ Develop resources for seniors

Rowe Municipal Vulnerability Preparedness Plan

Which resiliency action should Rowe pursue first?

We need your input!

- 2 Week Public Comment Period through May 24th
- The full draft is posted on the Town Website
- Submit comments to Megan Rhodes, mrhodes@frcog.org



Q & A

