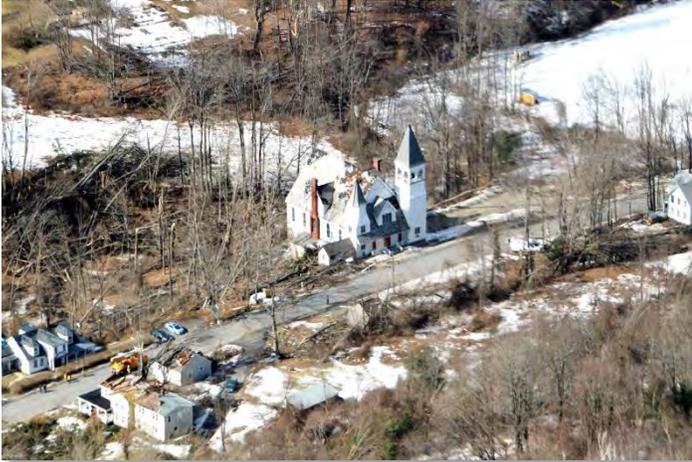




Towns of Ashfield & Conway



Municipal Vulnerability Preparedness (MVP) Program

MVP Resiliency Plan

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

April 2018

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Towns of Ashfield and Conway

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.

In the face of these and other 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 Storm Irene and “Snow-tober”, have reinforced this urgency and compelled communities like the Towns of Ashfield and Conway to proactively plan and mitigate potential risks. This type of planning will reduce the vulnerability of Ashfield and Conway’s people, infrastructure and natural resources, and will empower Ashfield and Conway officials and citizens alike to take steps to protect themselves and their community.

In the spring of 2018, with funding from the Massachusetts Executive Office of Energy and Environmental Affairs, the Franklin Regional Council of Governments (FRCOG) offered the Towns of Ashfield and Conway technical assistance in completing their Community Resilience Building Workshop to achieve a designation as Municipal Vulnerability Preparedness Community or “MVP” Community. As a State-certified MVP Provider, the FRCOG helped Ashfield and Conway 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 both towns and the South River Watershed; and
- Identify immediate opportunities to collaboratively advance actions to increase resilience.

This report summarizes the findings of the Community Resilience-Building Workshop for the Towns of Ashfield and Conway.

Community Resilience Building Workshop

Summary of Findings

The Towns of Ashfield and Conway have conducted a number of planning projects in previous years. Plans include the [2014 Ashfield Local Multi-Hazard Mitigation Plan](#) and the [2014 Conway Local Multi-Hazard Mitigation Plan](#), which enabled the towns 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 plans include [Ashfield Open Space and Recreation Plan](#) which, as of June 2018, is nearly complete. Conway also completed the [2013 Conway Master Plan](#) and the [2013 Conway Open Space and Recreation Plan](#). There are also a number of plans conducted by the FRCOG and other organizations that are relevant to the Towns of Ashfield and Conway and to climate change resilience. They include: 1) the [2013 Fluvial Geomorphic and Habitat Assessment for the South River](#), 2) the [2016 River Corridor Management Plan for the South River Watershed](#) 3) the [2016 Phase I Inspection/Evaluation Report for the Ashfield Lake Dam](#) and 4) the [2017 Watershed-Based Plan to Maintain the Health and Improve the Resiliency of the Deerfield River Watershed](#). Recommendations from these previous plans, particularly those for the South River watershed, tie in directly with recommendations workshop participants developed. Participants stressed that the 20+ river restoration and flood resiliency projects identified in these studies should be implemented.

In addition to these various 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.

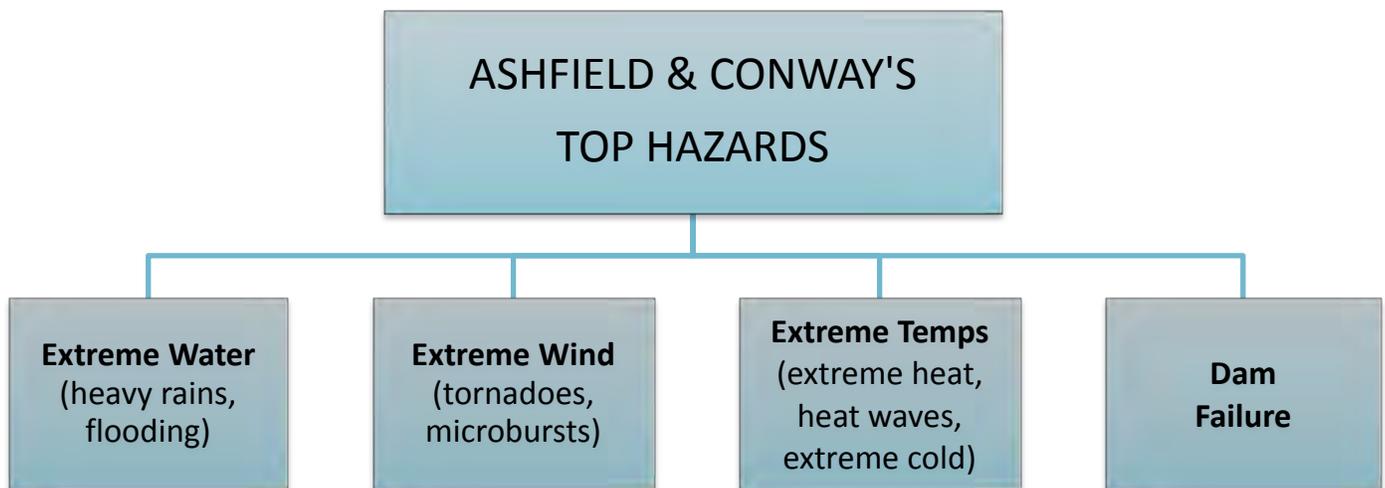
Workshop participants considered climate change impacts most likely to impact their towns, including rising and extreme air temperatures, extreme weather events, and increased quantity and intensity of precipitation. The workshop was critical to enabling participants to think about and engage with people from different sectors. People representing public health, elders, planning, police, fire, emergency management, select board, zoning, energy, river and land



Participants worked together to determine top hazards, strengths, vulnerabilities and recommendations. advocates, parks and others came together to determine the most threatening hazards to the Towns of Ashfield and Conway and to agree upon high priorities and actions to address them.

Top Hazards

Workshop participants discussed a number of hazards that impact Ashfield and Conway, deliberating on how frequent, how intense and how widespread each hazard has been and potentially could be in the future given the changing climate. 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:



In addition to extreme water, wind, and temperatures, and dam failure, participants agreed that “extreme time” or hazards that last a long time are also a top concern. For instance, heavy rains that last for several days or an extended heat wave are the kinds of prolonged events that concerned participants.

Areas of Concern

Infrastructure and buildings: The Ashfield Lake dam in Ashfield a concern to residents of both towns. The dam is classified by the state as a high-hazard potential dam. Workshop participants stressed that if the dam fails, water will be in Conway Center in 7 minutes. Many homes are in the inundation area and historic floods have wiped out homes, businesses, and bridges. The need to monitor/replace/repair undersized and aging/failing culverts throughout both towns; unstable streambanks along South River and Shelburne Falls Road; roads and other infrastructure in the 100-year floodplain and/or the South River corridor; flooding on Apple Valley Road due to beaver dam impoundments; Conway Highway Garage in 100-year floodplain and vulnerable to flooding; Conway Town buildings vulnerable to flooding and the generator at the Conway Town Hall is below grade and vulnerable to flooding; the need for a generator at the Ashfield Highway garage; public transportation lacking in both towns.

Communication: Deficient emergency radio system; lack of complete coverage for broadband and cell phone service in both towns impacts residents and emergency responders.

Public sanitation, water and food: Lack of emergency drinking water back-up for people on private wells; small community water supplies in Conway vulnerable to flooding; failing private septic systems in Conway center; the Ashfield wastewater treatment plant may be vulnerable to flooding due to proximity to 100-year floodplain and mapped river corridor; need for greater food system resilience; need for additional drinking water resources for both towns.

People: Need for greater participation in Triad; need for cooling centers, as well for as air conditioning in schools; need for formal plan for residents requiring extra assistance during emergencies; need for public education concerning climate change related diseases.



Top hazards identified by the workshop participants include heavy rains and flooding such as when the South River, at the Conway Station foot bridge, was scoured and parts of the riverbank washed away at the height of flooding during Tropical Storm Irene.

Ecosystems and natural resources: Need for habitat restoration, streambank stabilization and flood mitigation along South River, which could be accomplished by implementing recommendations in existing studies; potential need for zoning changes to protect river corridor; need for controlling invasive plant species; need to factor climate change impacts into forestry as well as open space planning; need to protect water quality; need to support climate resilience via land conservation and management.

Current Concerns & Challenges Presented by Hazards

Participants in the workshop discussed a number of hazards, both natural and manmade, that have impacted the communities in recent years. For many, Tropical Storm Irene in 2011 is a bellwether event, demonstrating the extent and severity of the types of extreme weather and increased rain that is predicted to become more frequent in the coming years.

Flooding in particular, fueled by heavy rains, was widespread in Ashfield and Conway after Irene. Flood waters washed out roads, culverts and farm fields, and changed the course of rivers and streams, including the South River, pictured above. Workshop participants expressed concern about heavy rain events and potential future flooding, saying impacts on bridges, culverts, roads and other infrastructure in the South River watershed and throughout both towns in areas outside the watershed could be significant. For example, it was noted that in Ashfield the Watson Road/Spruce Corner/Bug Hill Road area and connections to Apple Valley Road (Smith Road, etc.) have been heavily impacted by major rain storms.

Participants also discussed the challenges posed to the Town during high wind and microburst events, as well as extreme cold and ice events. Given that significant portions of both towns are forested, downed trees – especially on roads and power lines – during these types of hazards could cause a significant strain on first responders, highway crews, vulnerable people and town budgets.

Residents and first responders in Ashfield and Conway have first-hand experience with high-wind and extreme ice events. In February 2017, an EF-1 tornado cut a path of destruction through Pumpkin Hollow in Conway, destroying a barn, severely damaging several houses and



Although it occurred a decade ago, the 2008 ice storm is a disaster that people who live in Ashfield and Conway remember well, given the storm's widespread impacts including downed trees and utility lines and extended power outages.



An EF-1 tornado left a path of destruction in its wake including damaged and destroyed buildings and forest.

the UCC church (which has to be demolished), and ripping apart hundreds of trees. This disaster demonstrated the kind of devastation possible during a high-wind event.

Widespread damage and destruction of trees and property also occurred during the 2008 ice storm. Downed trees snagged utility lines, causing power outages and closing off roads. People who rely upon forests for their livelihoods, including farmers who have maple sugaring operations, suffered losses due to this storm. The damage and loss of power was significant enough for the Governor to declare a state of emergency and to mobilize National Guard to help with recovery.

All told, Ashfield and Conway residents and first responders have experienced a number of very serious weather-related calamities over the last decade. Workshop participants acknowledged that the types of storms that have occurred in their towns have the potential to occur more frequently as weather and climate become increasingly volatile.

Specific Categories of Concerns and Challenges

Vulnerabilities related to the South River: The village centers of Ashfield and Conway are located along the South River, which originates at the Ashfield Lake and meanders along the main road connecting the two towns. There are a number of concerns related to the South River that were identified by workshop participants. The dam on Ashfield Lake is categorized as having a high-hazard potential, is in need of rehabilitation and could benefit from additional study, design and inundation mapping. There are a number of structures, facilities, roads and culverts that are in the South River's 100-year floodplain and mapped river corridor and are, therefore, vulnerable to flooding and fluvial erosion. There are riverbanks that need stabilization and habitats that need restoration along the South River, as well as flood mitigation projects that need to be implemented. Many projects (over 20) have already been identified in the [2013 Fluvial Geomorphic and Habitat Assessment](#); [2016 River Corridor Management Plan](#); and [2017 Watershed-Based Plan to Maintain the Health and Improve the Resiliency of the Deerfield River Watershed](#).

Vulnerabilities related to streams and rivers outside the South River watershed: It was noted that roads and culverts in areas of both towns that are outside the South River watershed are also vulnerable to flooding and erosion from storm events. There is a critical need to develop and implement a plan to monitor, repair and replace these structures. Funding is needed for all phases of this work.

Safety and well-being of Ashfield and Conway's residents: Ashfield and Conway are very rural and many residents live in isolated locations. There is unreliable or no cell phone service and internet for some residents. Residents who live alone and who have not opted in to Triad may not have reliable access to information concerning emergencies. Residents also do not have access to regular, reliable public transportation.

Protection of natural resources: In addition to vulnerabilities related to the South River described at the beginning of this section, other natural resources in Ashfield and Conway need rehabilitation and/or protection. Workshop participants identified invasive plant species – which

are likely to become more prevalent due to climate change – as a threat to their towns' natural resources. They also agreed to the importance of protecting water quality and drinking water supplies.

Funding for needed projects: Small, rural towns such as Ashfield and Conway are strapped for cash and in need of funding to help them implement projects identified in previous studies and as part of the MVP process. Specific projects already identified include implementing the recommendations from: 1) the [2013 Fluvial Geomorphic and Habitat Assessment for the South River](#); 2) the [2016 River Corridor Management Plan for the South River watershed](#); 3) the [2016 Phase I Inspection/Evaluation Report for the Ashfield Lake Dam](#); and 4) the [2017 Watershed-Based Plan to Maintain the Health and Improve the Resiliency of the Deerfield River Watershed](#).

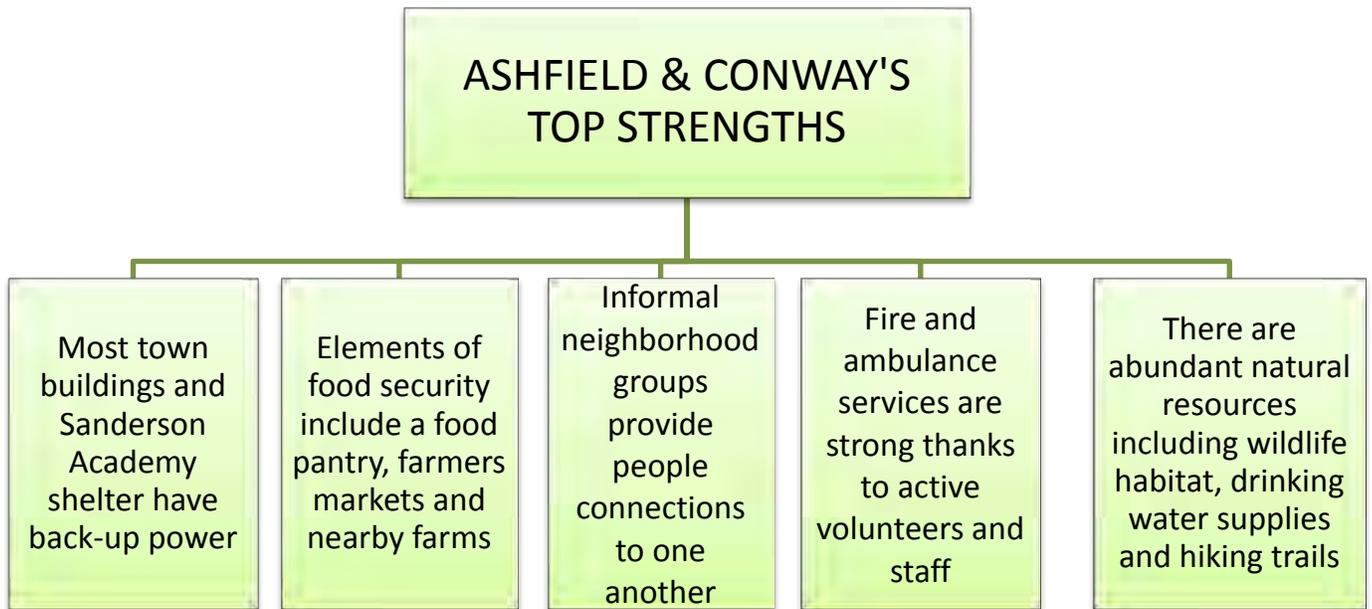
As noted above, funding is needed for all phases of work associated with the monitoring, repair and replacement of failing and aging culverts in the areas of both towns located outside the South River watershed.

Funding is also needed to: 1) complete an Inundation Mapping study of Ashfield Lake Dam, 2) conduct a hydraulic / engineering study to evaluate if the Ashfield Lake water levels and releases can be controlled to help mitigate downstream flooding during heavy, frequent rain events due to climate change and 3) evaluate a redesign of the armored, straight "chute" of the Ashfield Dam spillway.

Ashfield is working again on a MassWorks grant application to help fund repairs to Ashfield Lake dam. As they have for previous applications, Conway's Board of Selectmen is supporting Ashfield's grant request. Workshop participants noted that over the years, various ideas and concerns have been expressed by residents of both towns about the dam, including responsibility for and how to fund needed repairs. It was noted during the Workshop that the recent cost estimate to make the dam and gate-and-spillway system more resilient to climate change (more frequent and intense rain events) has a \$1M+ price tag.

Current Strengths and Assets

Ashfield and Conway have a number of strengths and assets, as identified by workshop participants. The top strengths and assets are shown in the following chart:



Other strengths and assets identified by workshop participants are contained in the Community Resilience Building Risk Matrix and include:

Infrastructural strengths and assets: Most essential municipal buildings and the Shelter at Sanderson Academy have back-up power. Ashfield Town water system is gravity-fed with large storage tank and generators for pumps. Sinclair Waterworks in Ashfield is an inactive drinking water supply that may be able to be brought back into operation.

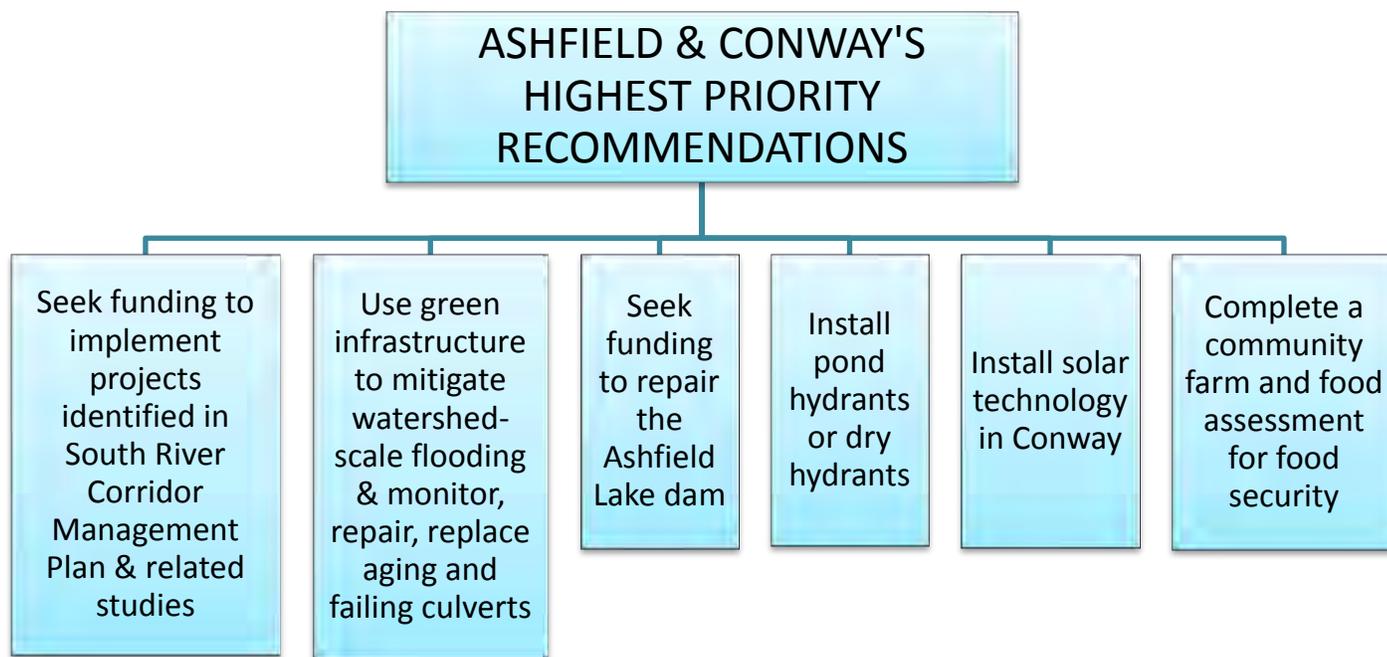
Strength of Town Services: There are active fire and ambulance volunteers. Ashfield has an emergency siren to warn residents of emergency situations.

Societal strengths and assets: There are active informal neighborhood groups in Ashfield and Conway, and a community phone book in Ashfield. Some food is produced and sold locally, and residents care about their local food system and pollinators.

Environmental strengths and assets: Both Towns are designated Green Communities and energy efficiency and renewable energy is important to both Towns and their residents. People care about their rural assets including wildlife habitat, biodiversity, and absence of light and noise pollution.

Top Recommendations to Improve Resilience

Infrastructure and facilities were common themes in many of the recommendations to emerge from the workshop, including the top five highest priorities shown in the chart and discussed on the following page.



Implementing projects on the South River corridor and its floodplain topped the list of the two towns' highest priority recommendations. Participants identified as a strength the work that has already been done to assess issues along the South River corridor and agreed that implementing habitat restoration, bank stabilization, flood mitigation and river corridor management projects identified in the [2013 Fluvial Geomorphic and Habitat Assessment for the South River](#), the [2016 River Corridor Management Plan for the South River](#), and the [2017 Watershed-Based Plan](#) is a top priority.

Implementing green infrastructure stormwater management projects to mitigate flooding at the watershed scale and to mitigate runoff into Ashfield Lake is another highest priority recommendation agreed upon by participants.

Participants also agreed upon the importance of **seeking funding to repair the Ashfield Lake dam**. This highest priority recommendation will include such steps as implementing recommendations from a 2016 inspection and evaluation of the dam, completing inundation mapping, conducting a hydraulic and engineering study on controlling lake water levels to help mitigate downstream flooding, and other critical steps. Workshop participants noted that if the dam fails, water will reach Conway Center in 7 minutes.

Monitoring, repairing and replacing culverts in areas of both towns that are outside the South River watershed was noted as a priority.

Installing pond hydrants or dry hydrants to guard against wild fires and ensure first responders have sufficient water to fight fires is another highest priority recommendation that emerged from the workshop.

The topic of self-reliance was discussed during the workshops, including **installing solar technology in Conway** to increase the Town's energy self-sufficiency. This could include a

municipal solar farm, community shared solar, and PV and hot water systems on individual buildings. Workshop participants said that **conducting a community farm and food assessment** in Ashfield and Conway would increase food security.

Following the matrix is a complete bulleted list of all recommendations, sorted by highest priority, moderate priority and lower priority.

H-M-L priority for action over the Short or Long term (and Ongoing)

V = Vulnerability S = Strength

Top Priority Hazards

Features	Location	Ownership	V or S	Recommendations	Extreme Water (flooding)	Extreme Wind (microbursts, tornadoes)	Extreme Temperatures (hot & cold)	Dam Failure	Priority		Time	
									H - M - L	H - M - L	Short	Long Ongoing
Infrastructural												
Ashfield Lake and dam - The dam is classified as an Intermediate-size, High (Class I) Hazard Potential Dam by the state.	Ashfield	Town	V	Secure funding to implement the Short-Range and Rehabilitation recommendations in the 2016 Phase I Inspection/Evaluation Report for the Ashfield dam prepared by Tighe & Bond.	X			X	H		S/O	
				Secure funding to complete an Inundation Mapping study to identify vulnerable areas during a dam failure.	X			X	M		L	
				Secure funding for a hydraulic / engineering study to evaluate if the lake water levels and releases can be controlled to help mitigate downstream flooding during heavy, frequent rain events due to climate change.	X			X	H		S	
				Implement green infrastructure stormwater management projects to mitigate flooding at the watershed scale and to mitigate runoff into the lake.	X			X	H		O	
				Secure funding to evaluate a redesign of the armored, straight "chute" of the Ashfield Dam spillway to be more "green" and better able to slow down and manage water.	X			X	H		S	
Roads and Bridges - many are vulnerable to erosion and wash-outs	Ashfield & Conway	Town or State	V	Upgrade undersized culverts so that they are properly sized and more resilient to flooding and climate change.	X				H		O	
				Seek funding to conduct an engineering study, design and implementation of streambank stabilization projects along Shelburne Falls Road in Conway and other roads in both towns that are in the 100-year floodplain and/or the mapped river corridor for the South River.	X				H		O	
	Ashfield	Town	V	Monitor/repair/replace culverts in areas that aren't connected to the South River Watershed—Watson Road/Spruce Corner/Bug Hill Road area, connections to Apple Valley Road (Smith Road), and so forth.	X				H		O	
	Ashfield	Town	V	Determine strategies to address flooding due to beaver dams/impoundments on Apple Valley Road.	X				M		O	
Communications Infrastructure - There are a number of challenges including no broadband in Ashfield and spotty cell phone coverage in both towns. Presents problems with emergency and non-emergency situations.	Ashfield & Conway	Private	V	Improve emergency radio system. Communications between Ashfield Fire & Ashfield Police is difficult because there are many dead spots in emergency radio system and lack of cell phone coverage.	X	X	X	X	H		S	
				Improve broadband and cell phone coverage.	X	X	X	X	H		O	
				Educate residents about communication protocol and identify weaknesses in the system.	X	X	X	X	M		O	
				Conduct an assessment of existing and potential neighborhood watch systems, including any needed training and/or resources.	X	X	X	X	H		L	
				Develop a joint emergency response and communications plan between Ashfield and Conway.	X	X	X	X	H		S/O	
Provide public education on Ashfield's siren and codes.	X	X	X	X	M		O					
Private wells: During power outages, people who rely upon private wells will not have water.	Ashfield & Conway	Private	V	Purchase portable generators. Stockpile drinking water. Encourage neighbors to check on each other. Enlist volunteers to deliver.	X	X	X	X	M		O	

H-M-L priority for action over the Short or Long term (and Ongoing)

V = Vulnerability S = Strength

Top Priority Hazards

Features	Location	Ownership	V or S	Recommendations	Extreme Water (flooding)	Extreme Wind (microbursts, tornadoes)	Extreme Temperatures (hot & cold)	Dam Failure	Priority		Time	
									H - M - L	Short Long Ongoing		
Electricity: Most Town buildings have back-up power, but there is a need for back up power for other municipal buildings, businesses and homes. Both Ashfield and Conway are Green Communities.	Conway	Town/Private	S/V	Secure funding to conduct a feasibility study of solar options for Conway, including a municipal solar farm, community shared solar, and PV and hot water systems for individual buildings.	X	X	X		H	S		
	Ashfield	Town	V	Install generator for Neighbor's gas station in Ashfield.	X	X	X	X	H	S		
	Ashfield & Conway	Town/Private	V	Conduct a feasibility study for the installation of independent solar micro-grids.	X	X	X		L	L		
	Conway	Town	V	Flood-proof generator at Conway Town Hall.	X			X	H	S		
	Ashfield	Town	V	Provide generator for Highway Department garage.	X	X	X	X	H	S		
	Ashfield & Conway	Town/Private	V	Conduct a resource inventory to help understand capacity and need/demand for back-up power.	X	X	X	X	L	L		
South River culvert in Ashfield Center.	Ashfield		V	Conduct an assessment of the culvert capacity and retrofit or replace accordingly.	X			X	H	S		
Conway Highway Department garage. This facility houses all emergency response equipment and is located in the 100-year floodplain and vulnerable to flooding.	Conway	Town	V	Develop action plan for the Conway Highway Garage to be prepared for hazardous event including having equipment on both sides of the river.	X	X	X	X	H	S		
				Conduct a feasibility study for the location and design of a new Conway Town Garage.	X	X	X	X	H	S		
Infrastructure in 100-year floodplain and mapped river corridor (roads, bridges, homes, businesses, municipal buildings, etc.)	Ashfield & Conway	State, Town, Private	V	Seek funding to implement projects identified in South River Corridor Management Plan and related studies.	X				H	S/O		
				Plant trees along river's edge to stabilize banks, filter stormwater runoff and shade the river.	X				M	L		
				Conduct an assessment, identification and mapping of upland tributary stormwater management and floodwater storage locations. Build on recommendations in the South River Corridor Management Plan and Fluvial Geomorphic and Habitat Study.	X				M	L		
				Conduct periodic monitoring of river bank and waterway conditions.	X				L	O		
				Use green infrastructure stormwater management to mitigate flooding at the watershed scale and to mitigate runoff into the South River and its tributaries.	X				H	O		
Conway Town Center, including Town Hall, Town Offices and EOC, are vulnerable to flooding.	Conway	Town	V	Digitize Town records and move/store historic records away from threat of flooding	X			X	L	L		
South River dams	Ashfield & Conway	Private/To be determined	V	Conduct an assessment of the viability, impacts and benefits of removing dams along South River to improve climate change resiliency and habitat.	X			X	L	L		
Conway Grammar School shelter: Some Conway residents cannot access the shelter during flooding and/or road closures.	Conway	Town	S/V	Reach an agreement with the Town of Ashfield for Conway residents to be able to use the shelter at Sanderson Academy.	X	X	X	X	M	L		
				Consider a secondary shelter location.	X	X	X	X	M	L		
Sanderson Academy shelter has back-up generator and is located next to the newer Ashfield DPW facility.	Ashfield	Town	S		X	X	X	X				
Private septic systems are failing in Conway Center.	Conway	Private	V	Seek funding to continue to study the feasibility of a community septic system, including the viability of innovative/non-traditional systems.	X				H	L		
				Conduct public education on the need for a community sewer system in Conway center.	X				M	O		
Ashfield Town water system is gravity-fed with large storage tank and generators for pumps.	Ashfield	Town	S	Distribute information on ways for homes and businesses to conserve water and capture rainwater to use during droughts for irrigation and livestock.				X	L	O		

H-M-L priority for action over the Short or Long term (and Ongoing)
 V = Vulnerability S = Strength

Top Priority Hazards

Features	Location	Ownership	V or S	Recommendations	Extreme Water (flooding)	Extreme Wind (microbursts, tornadoes)	Extreme Temperatures (hot & cold)	Dam Failure	Priority		Time	
									H - M - L	S/O	Short	Long Ongoing
Societal												
Neighborhood groups. Historic school districts still "exist" in both towns and still function as quasi-neighborhoods.	Ashfield & Conway	Private	S	Form and support groups, and encourage cohesion.	X	X	X	X	M/H	S/O		
Siren warns residents of emergencies.	Ashfield	Town	S	Investigate reinstating the emergency siren in Conway.	X	X	X	X	L	L		
Food security	Ashfield & Conway	Public/ Private	S/V	Food pantry at Ashfield Congregational Church serves the 11 hill towns including Ashfield & Conway. Church is near the South River but outside of the 100-year floodplain and river corridor. Generator needed.	X	X	X	X	H	S		
			S	Ashfield Farmers Market.								
			S	Natural Roots Store in Conway.								
			V	Complete a Community Farm and Food Assessment Plan to help identify climate change risks & vulnerabilities; identify ways to support new and aging farmers; make land available for farming; provide affordable access to farmland; prioritize farmland to pres	X	X	X		H	S		
Community Wood Bank	Ashfield & Conway	Public	V	Create a community wood bank to provide heating assistance to low income families.		X	X		L	S		
Transportation	Ashfield & Conway	Public	V	Explore options for public transportation, including for elders, with the two towns sharing services.	X	X	X	X	M	S		
			V	Develop a volunteer shoveling network.			X		L	S		
			V	Establish a senior center.	X	X	X	X	M	O		
Elders	Ashfield & Conway	Public	V	Help Triad by publicizing information about it and encouraging people to sign up for Triad.	X	X	X	X	H	S		
			V	Establish cooling centers and provide information to the public re their location.			X		H	S		
			V	Install air conditioning in schools.			X		M	L		
People with special needs, disabilities and/or seniors.	Ashfield & Conway	Public	V	Develop plan to assist residents and periodically update the list of residents needing assistance.	X	X	X	X	H	O		
Fire Department & Ambulance Service	Ashfield & Conway	Public	S	Active volunteers and supportive employers.	X	X	X	X				
Community Phone Book	Ashfield	Public	S	Establish community phone book in Conway.	X	X	X	X	H	S		
Diseases			V	Educate residents on how to deal with and/or prevent diseases and to be prepared.	X		X		M	O		
Environmental												
South River Watershed - its floodplains and tributaries.	Ashfield & Conway	Town/Private	V	Secure funding to implement habitat restoration, bank stabilization and flood mitigation projects identified in the 2013 Fluvial Geomorphic and Habitat Assessment for the South River and the 2016 River Corridor Management Plan for the South River watershed and 2017 Watershed-Based Plan for the Deerfield River Watershed.	X		X		H	S/O		
			V	Conduct outreach to residents about the flood mitigation benefits of managing and protecting lands in the river corridor. Review corridor maps with residents.	X				M	O		
			V	Adopt a River Corridor Management Overlay Zoning District and/or other river corridor protection strategies.	X				M	L		
			V	Conduct outreach to private landowners about a River Corridor Easement to protect floodplains and areas vulnerable to fluvial erosion.	X				M	O		
			V	Secure funding and enlist volunteers to help with managing invasive plants, particularly Japanese knotweed. Continue education/outreach efforts.	X		X		M	O		
			V	Use CPA funds to protect river corridor land as available.	X		X	X	H	O		

H-M-L priority for action over the Short or Long term (and Ongoing)
 V = Vulnerability S = Strength

Top Priority Hazards

Features	Location	Ownership	V or S	Recommendations	Extreme Water (flooding)	Extreme Wind (microbursts, tornadoes)	Extreme Temperatures (hot & cold)	Dam Failure	Priority	
									H - M - L	Short Long Ongoing
Drinking water sources	Conway	Private	S	Protect Sinclair Waterworks. This drinking water supply ceased operations in 1956. Investigate the feasibility of bringing it back on-line.	X		X		L	L
	Ashfield & Conway	Public	V	Identify alternative drinking water resources for both towns. Small community water supplies in Conway Center are vulnerable to flooding. Ashfield Water District provides drinking water to the area around Ashfield Lake and the center of town.	X		X		L	O
Forests	Conway	Public	V	Create a forest management plan for the Town Forest that includes climate change considerations.	X	X	X		H	S
	Ashfield & Conway	Public/ Private	V	Provide outreach/education about climate change impacts and management of invasive plant species on forested land.	X	X	X		M	O
				Support the Mohawk Trail Woodlands Partnership.	X	X	X		H	S
				Provide outreach/education about forest management plans and forest cutting plans, including information about enforcement, which is the responsibility of the MassDCR Service Forester.	X	X	X		L	O
Ashfield Lake	Ashfield	Public	V	Manage invasive plant species. Address bank erosion.	X	X	X		H	S
Beaver Dams	Ashfield & Conway	Public/ Private	V/S	Beaver dams contribute to flooding and erosion problems. Dams can fail during heavy rain events. Explore options to address these problems. Beavers are important species in the local ecology because their activity create wetlands. Distribute information from MassWildlife to landowners.	X		X	X	L	O
Fire ponds	Ashfield & Conway	Public	V	Install pond hydrants or dry hydrants.			X		H	O
Honeybees	Ashfield & Conway	Public/ Private	S/V	Plant bee-friendly habitats for pollinators.	X		X		H	S
Water quality	Ashfield & Conway	Public/ Private	S/V	Protect water quality by planting and/or maintaining buffers along open water and wetlands.	X		X		M	O
				Protect water/wetlands by providing education and enforcement related to the disposal of hazardous materials. Provide for free disposal of hazardous materials.	X		X		H	S
				Implement debris management plan.	X	X		X	M	O
				Secure funding for farm management strategies that protect water quality by controlling runoff and preventing flood waters from being contaminated by manure, fertilizer and other potentially hazardous materials used on farms. Distribute information to landowners.	X		X		M	O
Biodiversity	Ashfield & Conway	Public/ Private	S/V	Provide information to landowners about programs and funding that support conservation and management of land to support climate resiliency and biodiversity.	X	X	X		L	O
Mosquito Control District	Conway	Public	S/V	Review the risk analysis for participating communities that includes habitat mapping and surveillance to determine species type and abundance. Review recommendations of risk analysis. Continue discussion about whether this program is beneficial for Conway.	X		X		L	S
Open Space & Recreation Planning	Ashfield & Conway	Public	S	Incorporate climate change considerations and analyses into future updates of the towns' Open Space & Recreation Plans.	X	X	X	X	M	S
				Encourage residents and businesses to participate with MassSave for energy efficiency.	X	X	X	X	H	O



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

V = Vulnerability **S** = Strength

Top Priority Hazards

Features	Location	Ownership	V or S	Recommendations	Extreme Water (flooding)	Extreme Wind (microbursts, tornadoes)	Extreme Temperatures (hot & cold)	Dam Failure	Priority		Time	
									H	M	L	Short
Renewable energy	Ashfield & Conway	Public/ Private	S/V	Encourage residents and businesses to participate with MassSave for energy efficiency.	X	X	X	X	H		O	
				Increase the use of appropriately scaled and local energy including wind and solar. Both towns are Green Communities.	X	X	X	X	H		O	
Trail Committee / trail systems	Ashfield & Conway	Public/ Private	S	Extend existing trails and make recommendations for more trail connections and links.					L		O	
Dark skies and quiet	Ashfield & Conway	Public	S/V	Implement a ridgeline protection bylaw. Add shielding of lights to zoning bylaw.					L		L	
Wildlife Corridors	Ashfield & Conway	Public/ Private	S									

All Highest Priority Recommendations

- Secure funding to implement the Short-Range and Rehabilitation recommendations in the 2016 Phase I Inspection/Evaluation Report for the Ashfield dam prepared by Tighe & Bond.
- Secure funding for a hydraulic / engineering study to evaluate if the lake water levels and releases can be controlled to help mitigate downstream flooding during heavy, frequent rain events due to climate change.
- Implement green infrastructure stormwater management projects to mitigate flooding at the watershed scale and to mitigate runoff into Ashfield Lake.
- Secure funding to evaluate a redesign of the armored, straight "chute" of the Ashfield Dam spillway to be more "green" and better able to slow down and manage water.
- Upgrade undersized culverts so that they are properly sized and more resilient to flooding and climate change.
- Seek funding to conduct an engineering study, design and implementation of streambank stabilization projects along Shelburne Falls Road in Conway and other roads in both towns that are in the 100-year floodplain and/or the mapped river corridor for the South River.
- Improve emergency radio system. Communication between Ashfield Fire & Ashfield Police is difficult because there are many dead spots in emergency radio system and lack of cell phone coverage.
- Improve broadband and cell phone coverage.
- Conduct an assessment of existing and potential neighborhood watch systems, including any needed training and/or resources.
- Secure funding to conduct a feasibility study of solar options for Conway, including a municipal solar farm, community shared solar, and PV and hot water systems for individual buildings.
- Install generator for Neighbor's gas station in Ashfield.
- Install generator at Ashfield Highway Department garage.
- Monitor/repair/replace culverts in areas that aren't connected to the South River Watershed—Watson Road/Spruce Corner/Bug Hill Road area, connections to Apple Valley Road (Smith Road), and so forth.
- Conduct an assessment of the Ashfield Center South River culvert capacity and retrofit or replace accordingly.
- Develop action plan for the Conway Highway Garage to be prepared for hazardous event including having equipment on both sides of the river.
- Conduct a feasibility study for the location and design of a new Conway Town Garage.
- Use green infrastructure stormwater management to mitigate flooding at the watershed scale and to mitigate runoff into the South River and its tributaries.
- Seek funding to continue to study the feasibility of a community septic system, including the viability of innovative/non-traditional systems.
- Form and support groups, and encourage cohesion.
- Food pantry at Ashfield Congregational Church serves the 11 hill towns including Ashfield and Conway. Church is near the South River but outside of the 100-year floodplain and river corridor. Generator needed.

- Complete a Community Farm and Food Assessment Plan to help identify climate change risks & vulnerabilities; identify ways to support new and aging farmers; make land available for farming; provide affordable access to farmland; prioritize farmland to preserve; strengthen Agricultural Commissions in the two towns; explore creation of farmers market in Conway, etc.
- Help Triad by publicizing information about it and encouraging people to sign up for Triad.
- Establish cooling centers and provide information to the public re their location.
- Develop plan to assist residents and periodically update the list of residents needing assistance.
- Establish community phone book in Conway.
- Secure funding to implement habitat restoration, bank stabilization and flood mitigation projects identified in the 2013 Fluvial Geomorphic and Habitat Assessment for the South River, the 2016 River Corridor Management Plan for the South River watershed and 2017 Watershed-Based Plan.
- Use CPA funds to protect river corridor land as available.
- Create a forest management plan for the Town Forest that includes climate change considerations.
- Support the Mohawk Trail Woodlands Partnership.
- Manage invasive plant species.
- Address river bank erosion.
- Plant bee-friendly habitats for pollinators.
- Protect water/wetlands by providing education and enforcement related to the disposal of hazardous materials. Provide for free disposal of hazardous materials.
- Encourage residents and businesses to participate with MassSave for energy efficiency.
- Increase the use of appropriately scaled and local energy including wind and solar. Both towns are Green Communities.
- Install pond hydrants or dry hydrants.
- Develop joint emergency response and communications plan between Ashfield and Conway.

Moderate Priority Recommendations

- Secure funding to complete an Inundation Mapping study to identify vulnerable areas during an Ashfield Lake dam failure.
- Educate residents about communication protocol and identify weaknesses in the system.
- Purchase portable generators. Stockpile drinking water. Encourage neighbors to check on each other. Enlist volunteers to deliver.
- Provide public education on Ashfield's siren and codes.
- Plant trees along river's edge to stabilize banks, filter stormwater runoff and shade the river.
- Conduct an assessment, identification and mapping of upland tributary stormwater management and floodwater storage locations. Build on recommendations in the Watershed-Based Plan, South River Corridor Management Plan and Fluvial Geomorphic and Habitat Study.

- Reach an agreement with the Town of Ashfield for Conway residents to be able to use the shelter at Sanderson Academy.
- Conduct public education on the need for a community sewer system in Conway center.
- Establish a senior center.
- Determine strategies to address flooding due to beaver dams/impoundments on Apple Valley Road.
- Explore options for public transportation, including for elders, with the two towns sharing services.
- Install air conditioning in schools.
- Educate residents on how to deal with and/or prevent diseases and to be prepared.
- Conduct outreach to residents about the flood mitigation benefits of managing and protecting lands in the river corridor. Review corridor maps with residents.
- Adopt a River Corridor Management Overlay Zoning District and/or other river corridor protection strategies.
- Conduct outreach to private landowners about a River Corridor Easement to protect floodplains and areas vulnerable to fluvial erosion.
- Secure funding and enlist volunteers to help with managing invasive plants, particularly Japanese knotweed. Continue education/outreach efforts.
- Provide outreach/education about climate change impacts and management of invasive plant species on forested land.
- Implement debris management plan.
- Secure funding for farm management strategies that protect water quality by controlling runoff and preventing flood waters from being contaminated by manure, fertilizer and other potentially hazardous materials used on farms. Distribute information to landowners.
- Incorporate climate change considerations and analyses into future updates of the towns' Open Space & Recreation Plans.
- Protect water quality by planting and/or maintaining buffers along open water and wetlands.

Lower Priority Recommendations

- Conduct a feasibility study for the installation of independent solar micro-grids.
- Conduct a resource inventory to help understand capacity and need/demand for back-up power.
- Conduct periodic monitoring of river bank and waterway conditions.
- Digitize Town records and move/store historic records away from threat of flooding
- Conduct an assessment of the viability, impacts and benefits of removing dams along South River to improve climate change resiliency and habitat.
- Distribute information on ways for homes and businesses to conserve water and capture rainwater to use during droughts for irrigation and livestock.
- Investigate reinstating the emergency siren in Conway.
- Create a community wood bank to provide heating assistance to low income families.

- Develop a volunteer shoveling network.
- Protect Sinclair Waterworks. This drinking water supply ceased operations in 1956. Investigate the feasibility of bringing it back on-line.
- Identify alternative drinking water resources for both towns. Small community water supplies in Conway Center are vulnerable to flooding. Ashfield Water District provides drinking water to the area around Ashfield Lake and the center of town.
- Provide outreach/education about forest management plans and forest cutting plans, including information about enforcement, which is the responsibility of the MassDCR Service Forester.
- Beaver contribute to flooding and erosion problems. Dams can fail during heavy rain events. Explore options to address these problems. Beavers are important species in the local ecology because their activity creates wetlands. Distribute information from MassWildlife about 5 options for resolving conflicts with beaver populations.
- Provide information to landowners about programs and funding that support conservation and management of land to support climate resiliency and biodiversity.
- Review the risk analysis for participating communities that includes habitat mapping and surveillance to determine species type and abundance. Review recommendations of risk analysis. Continue discussion about whether this program is beneficial for Conway and take the information to Town Meeting.
- Extend existing trails and make recommendations for more trail connections and links.
- Implement a ridgeline protection bylaw. Add shielding of lights to zoning bylaw.

CRB Workshop Participants: Department/Commission/Representative:

Name	Affiliation	Position	Contact
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Sue Budge	Conway	Energy Committee	suebudge@wildsidegarden.com
Joe Stojanowski	Conway	Planning Board	stojig@concast.net
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Ann Ferguson	Ashfield ZBA + CoA		

CRB Workshop Project Team: Organization and Role

Franklin Regional Council of Governments:

Kimberly Noake MacPhee, Principal Contact, Lead Presenter and Co-facilitator
 Megan Rhodes, Co-facilitator
 Alyssa Larose, Scribe

Town Project Leads:

Kayce Warren, Ashfield Town Administrator
 Tom Hutchison, Conway Town Administrator

Recommended Citation

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Photo credits:

Cover	Conway tornado aerial	MA State Police
Cover	Spillway and dam at Ashfield Lake	Recorder
Cover	Downed utility pole	WMECO
Cover	Fallen trees	MA State Police
Page 8	South River in Conway	Recorder / Paul Franz
Page 9	Conway tornado aerial	MA State Police
Page 9	Ice storm	WMECO

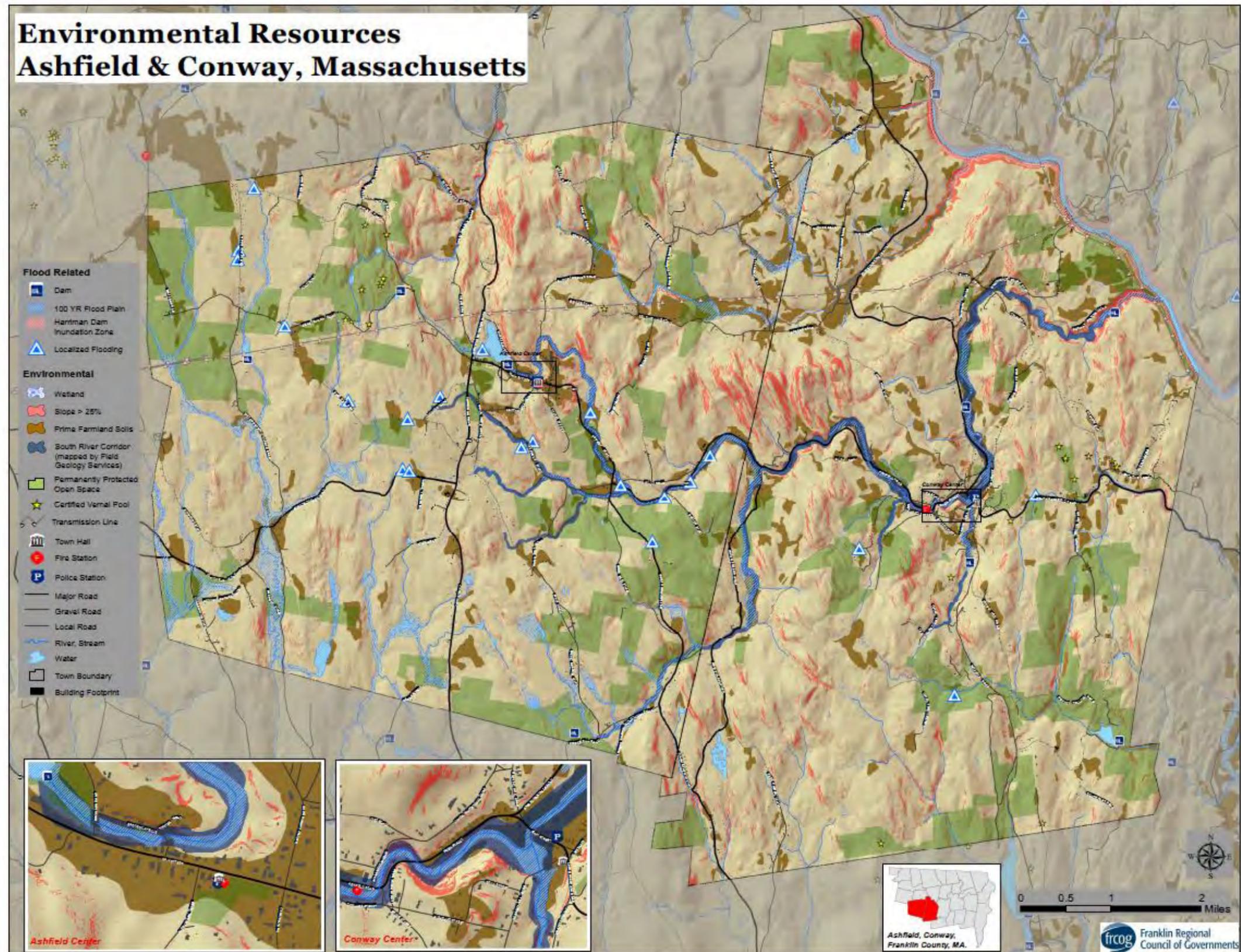
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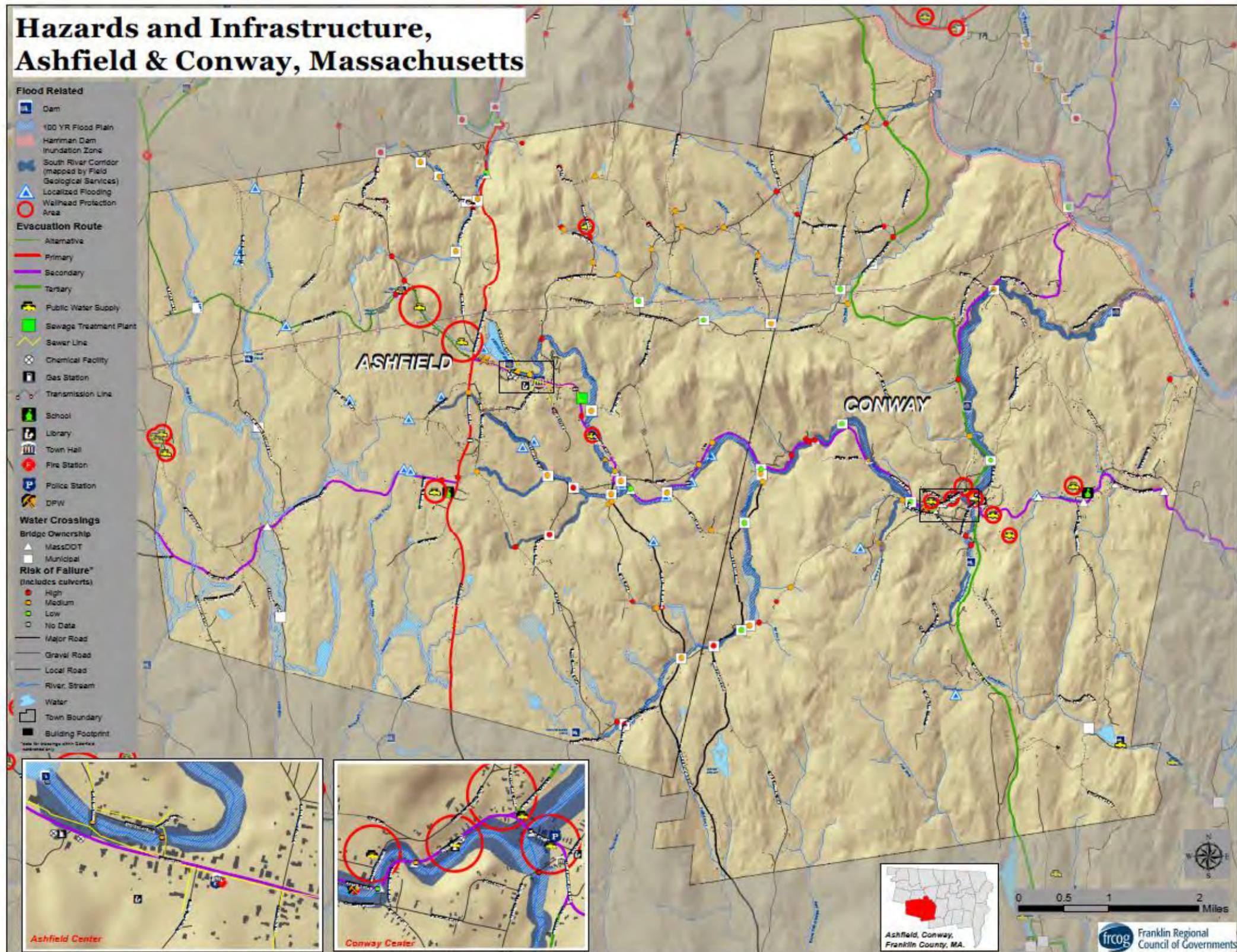
APPENDICES

Maps

Exercise Outputs

Workshop Presentation





EXERCISE OUTPUTS

Top Hazards

EXTREME WATER
"
WIND
"
TEMP
TIME

DAM FAILURE ~ Man made
FLOODING
*STORMS ~ SEVERE
(wind, water) ice
EXTENDED EVENTS
DROUGHT
FIRE RISK ~~WIND~~
EXTREME TEMPERATURE

Top Recommendations

Environment High Priority

- Invasive Management/Educ.
- Plant "pollinator friendly" habitat
- Install pond/dry hydrants
- Educate/enforce disposal of haz. materials + provide free disposal
- Complete forest management plan for Town forest
- Support Mohawk trail wood lot partnership
- Encourage ~~more~~ renewable energy + energy efficiency

High Priority: Infrastructure

- Repair Ashfield Lake Dam
- Assessment w/ Dam Project
- Revisit river management plan + projects
- Shel. Falls Road engineering analysis + Streambank Stabilization
- Study for Community septic system in Con. Center
- Resurrect Neighborhood Watch Systems
- Improve emergency radio system/warning system
- Plan for new Conway Garage
- Implement green infra to mitigate watershed scale flooding

Top Recommendations (cont.)

- Redesign Ashfield Dam Spillway
- Build solar field in Conway
- Install Generator to gas station in Ashfield
- Properly size culverts

High Priority: Societal

- Complete Farm + Food Plan
- Publicize + encourage Triad sign up
- Develop plan to assist residents needing assistance
- Establish community phone book in Conway
- Generator for Food Pantry
- Determine if there are cooling centers
- ID alternative drinking water supplies

Infrastructure

Community Resilience Building Risk Matrix



Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

H-M-L priority for action over the Short or Long term (and Ongoing)
 V = Vulnerability S = Strength

Extreme Water	" " Wind	" " temp	" " time	Priority	
				H - M - L	Short Long Ongoing

Features	Location	Ownership	V or S					
Infrastructural								
Dam	A	T	V	Do a hydraulic / engineering study as to how dam can be used / manipulated in flooding events?				H S
				warning system improve.				H S
Roads / Bridges		T / S	V	properly sized culverts				H O
Communication			V	improve emergency radio / dead holes / no broadband / cell coverage spotty				H S
Private Wells			V	no power / p				
DPW	conway		V	do planning for new garage.				H S
Societal								
Electricity back-up				Build solar field in / install generator to gas station in Ashfield				H/H S
Dam				Implement green infra. to mitigate flooding watershed scale				H O
				redesign spillway.				

Matrices: Infrastructure (2 of 2)

Infrastructure

Asker Irene list of vulnerable paper compiled - strength
Support TRIA's outreach to get folks to sign up.
Wellness check

www.CommunityResilienceBuilding.com

Community Resilience Building Risk Matrix

H-M-L priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

Location	Ownership	V or S	Extreme Water	Extreme Wind	Extreme Temp	Dam Failure	Priority		Time	
							H-M-L	H-M-L	Short	Long
Ashfield Lake Dam	Ash.	Town	V	Repair dam	lobby for \$ (both towns) / options for draw down		H	S		
				Mitigate runoff into lake	design for future conditions		M	O		
S. River Culvert in Ashfield Center			V	include assessment w/ dam project	- reconnect River to floodplain - river easement to allow restrict devel.		H	S		
Floodplains	both		S/V	Protect what is left	Be proactive - use of CPA funds / CPA		H	O		
Town Garage - Conway	Conway		V	Vulnerable to flooding	Station equipment on both sides of river, have action plan, more garage		H	S		
				Revisit River Management Plan + projects	- seek funding to implement		H	S		
				Plant trees along river edge	slow water with wood + boulders in stream		M	L		
				Identify upland storage projects	- storage		M	L		
				Monitoring condition of banks + waterway			L	O		
Roads - many subject to erosion/washout			V	Shel. Falls Rd. + other roads	Engineering analysis, stream bank stabilization		H	O		
Town Center	Conway Town Hall - 2nd floor Town Office		V	Apple Valley Rd - based dams -	one - flooded - flooding + dam failure digitize records, move Historic and town records		L	L		
S. River Dams			V	Assess removal of dams			L	L		
Conway Grammar School (shelter)			S/V	residents on other side of river can't reach w/ flooding / trees	Agreement w/ Ashfield to use Sanderson - waterproof generator - consider secondary shelter on other side of building		M	L		
Sanderson Academy (shelter)			S	have backup generator						
Private wells			V	no elec. no drinking water						
Private septic			V	failures in Con. center	establish community septic system continue to study Look at non-conventional / innovative systems		H	L		
Town water	Ash. center		S/V	gravity fed, large storage tank	have generators at pumps					
Power lines				Independent solar microgrids	All town bldg. have generators → Heavy haul portable resource inventory generator storage, elec. cars		L	L		
Communication Systems			S/V	cell + cable not working in emerg.	Neighborhood watch systems - resurrect - trainings - resource inventory		H	L		

W

13 has home neighbor based in Conway
14 in Ashfield

- Siren - one in Ashfield, not any hazards → educate about codes
- Joint emergency management plan

Societal

Environmental

Community Resilience Building Risk Matrix



Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

H-M-L priority for action over the Short or Long term (and Ongoing)
 V = Vulnerability S = Strength

Features	Location	Ownership	V or S	Top Priority Hazards		Priority	Time
						H - M - L	Short Long Ongoing
Infrastructure							
Farmland	drought	management		establish Woodland buffers	leasements along streams	M	O
Water quality				• keep farms open - mowed/hayed			
Bio diversity				- buffers along open water, protect wetlands		H	S
Misquito control district				conservation, education about how to manage lands - pamphlet	quality management, long-term planning	M	O
Low density				Woodland management - extension services	Forest Management Plan for Town Forest - incorporate climate change	H	S
Unfragmented Forest				connection to surrounding	Incorporating climate change in next OSRP	M	S
• Support MTWP for Sustainable forestry							
Societal							
Wildlife corridors			S	recreation resource	encourage more use, use locally	H	O
Renewable energy				Use GIS system to map sustainable assets	Some for energy efficiency, appropriate scale wind/indiv. mit	M	S
Trial Committee/Systems				Establish community compost program	Promote community solar		
Rivers + wetlands				Extending trails + community hike to make	recommendations on connections/links	L	O
Dark skies, quiet				implement ridge line protection bylaw	- add shielding lists to zoning	L	L

Matrices: Environment (1 of 2)

Environmental

Community Resilience Building Risk Matrix



www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
 V = Vulnerability S = Strength

Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

Drinking water

Features	Location	Ownership	V or S	Top Priority Hazards	Priority		Time	
					H - M - L	Short Long Ongoing		
Infrastructural								
Protect Sinclair Water works	Conway		S		L	L		
1) alt. water source S	Ash/Conway		S		L	O		
Forest Cover				- Invasive management / Education	M	O		
				- Forest Management Plan/enforcement	L	O		
Ashfield Lake & River				- Invasive management / riverbank erosion	H	S		
Societal								
Beaver Dams					L	O		
Drinking water	Conway			- conduct public outreach re: need for community sewer system	M	O		
Fire Ponds				- install pond hydrants (dry hydrants)	M	O		
Floodplains				- outreach program re: river corridor mgt. education	M	S		
Honey bees			S/V	- plant bee-friendly habitat pollinator	H	S		
Environmental								

Matrices: Societal (1 of 2)

JULIETA

Community Resilience Building Risk Matrix



www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)
 V = Vulnerability S = Strength

Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S	Top Priority Hazards	Priority		Time		
					H-M-L	Short Long Ongoing			
Infrastructural									
Private wells			V	deliver bottled water, stockpiles around town/in neighborhoods	M		O		
Neighborhood groups			S	Form, support Encourage cohesion	H		S		
Siren	Ashfield		S	Investigate re-installing emergency siren (Conway)	L		L		
Food security				food pantry at Ashfield church Support for new & aging farmers Work with Agricultural Commission connect people w/ farmland to run	Making land available for farming, access to affordable land	H	S		
Community wood				Natural Roots Store				complete	Farm + Food Plan
Fuel					Ashfield Farmers market - strength				
Societal									
Transportation				need more public transportation not able to get out due to ice, trees etc. volunteer shovelling	Establish a Senior center	M	O		
Seniors			S/V	Help Triad, publicize and encourage seniors to sign up	Ashfield had a room for seniors - share services, have agreement	H	S		explore options for community transportation M S
Livestock				large farms have generators small self-sufficient					
Crops/farming			S/V						
Special needs & seniors				develop plan to assist residents +		H	O		
Disabilities	Conway		S/V	UPkeep identification of residents needing assistance					
Environmental									
Fire Department	Conway		S	active volunteers, supportive employees (orchard equip)					
Community phone book	Ashfield		S	establish comm. phone book in Conway		H	S		
Ambulance Service			S						
Ashfield Cong Church	Ash.		S	Take care of everyone					

Societal

Community Resilience Building Risk Matrix				www.CommunityResilienceBuilding.com				
H-M-L priority for action over the Short or Long term (and Ongoing)				Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)				
V = Vulnerability S = Strength				Extreme				
Features	Location	Ownership	V or S	Wind	Water	Temp	Priority	Time
Infrastructure							H - M - L	Short Long Ongoing
Elders.			✓	Food pantry right next to river → generator needed			H	S
			✓	Seniors have no van access / volunteers. → Conway Investigator temp alt.			M	O
			✓	Determine if there are cabling centers? Air condition schools			H M	S L
Disease				Educate residents on how to deal/prevent & be prepared.			M	O
Societal								
Communications				Educate residents about communication protocol ID weakness re: system.			M	O
Neighborhoods help each other			S	informal networks → encourage networks. hi			M	O
Disabilities				may need to be updated			M	O
TRIAD								
Environmental								

X
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N
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WORKSHOP PRESENTATION



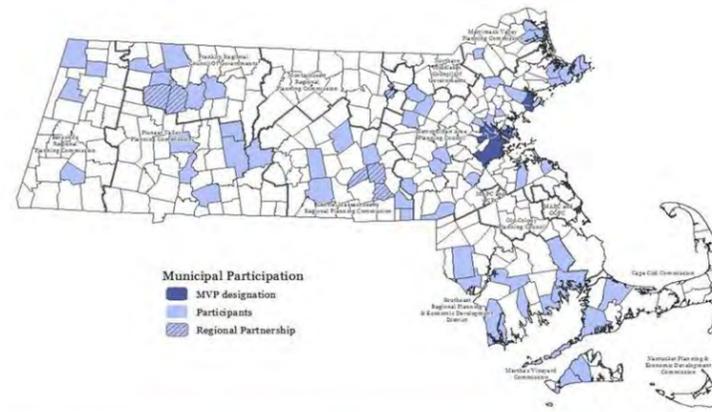
Community Resilience Building Workshop



Ashfield, Conway and the South River Watershed

April 12, 2018

MVP Program Launched 2017 \$1.1M Awarded



Build Resilience and Preparedness - to more frequent and intense weather events.

Improve pre-event planning, response & recovery, and long-term actions.

A prepared and 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.



Workshop Process and Outcomes

- Review climate data to provide context for all participants
- Identify and map vulnerabilities and strengths:
 - Infrastructure
 - Societal
 - Environment
- Develop and prioritize actions and clearly delineated next steps

Massachusetts' Changing Climate

- Changing weather
 - Higher temperatures
 - Shorter winters
 - More frequent & intense storms
 - Droughts
- Amplifies existing risks
 - Community and regional infrastructure
 - Local and regional economies
 - Public health
 - Natural resources and our environment

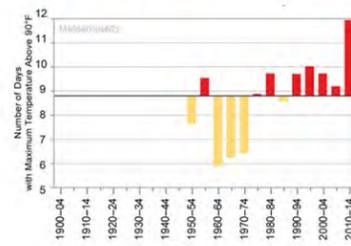
Goal for Building Resilience to a Changing Climate:

Protect life, property, natural resources and the economy

Higher Temperatures



Change in Observed Number of Extreme Heat Days (>90 degrees)



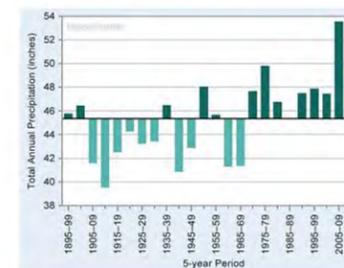
Heat Waves

- Number of days >90° are predicted to increase.
- By 2050 - 6 to 25 more days
- By 2100 - 9 to 60 more days

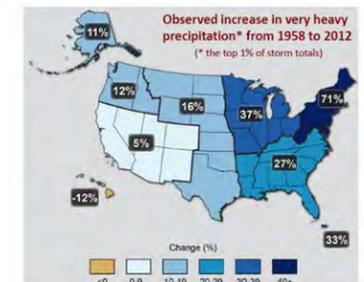
Heavy Precipitation



Observed Annual Precipitation



Observed Increase in Heavy Precipitation

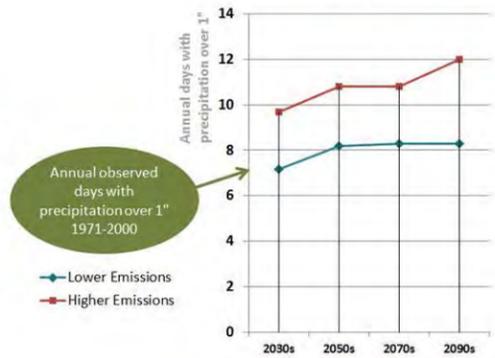


Heavy Precipitation



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



2011 Tropical Storm Irene



Snowtober!!! 2011 Historic Nor'easter

2017 Conway Tornado



Ashfield & Conway Multi-Hazard Mitigation Plans 2014

- Inventoried *historic* hazard events – frequency, magnitude and damages
- Vulnerability assessment for flooding was prepared based on damages from *past* events and location in 100 year floodplain
- Prioritized all hazards and included action items for each hazard

2014 Multi-Hazard Mitigation Plans Hazard ID & Vulnerability Assessment



Potential Hazards Identified for Ashfield & Conway

Dam Failure
Severe Winter Storm/Ice Storm
Earthquake
Hurricane
Wind Storms, Microbursts, etc.
Tornado

A changing climate is exposing us to greater risk.

Drought
Man-made Hazards
Temperature Extremes

Action Items for most of these hazards were also developed

MVP Program – 3 Focus Areas

- Infrastructure
- Societal
- Environment



Infrastructure



A changing climate is exposing us to greater risk.

What is it?

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

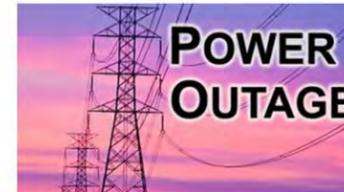
Vulnerabilities

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

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 (Ashfield & Conway 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

- South River
- Coldwater streams
- Forests
- Floodplains
- Wetlands
- Aquifers
- Farm land

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

Environment

A changing climate is exposing us to greater risk.

Natural Resources

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Environment

A changing climate is exposing us to greater risk.

Natural Resources

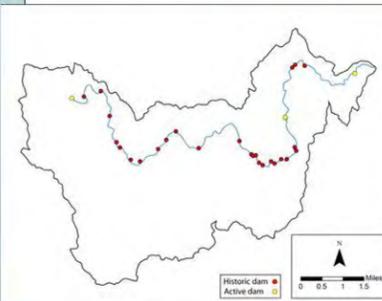
- South River
- Coldwater streams
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- Farm land

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

South River Watershed

Click to add text



Channel Straightening and Berming



Images courtesy of the Conway Historical Society

The Results?



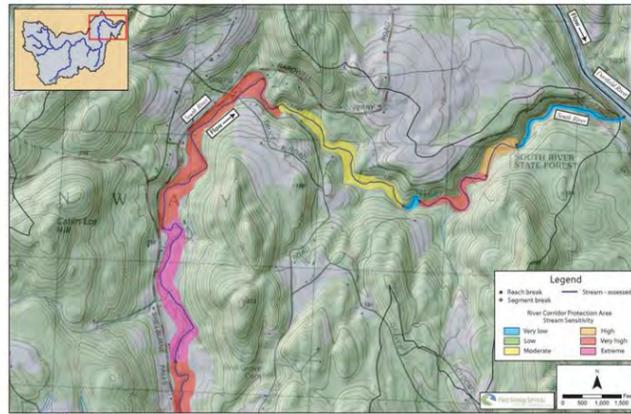
The Results?



2011 Tropical Storm Irene



River Corridor



Workshop Agenda

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

Next Steps

- o Summary Report
- o Follow-up Meeting with the Towns
- o Review of Funding Sources





Potential Hazards Identified for Ashfield & Conway

Dam Failure

Severe Winter Storm/Ice Storm

Earthquake

Hurricane

Wind Storms, Microbursts, etc.

Tornado

Ice Jam

Flood

Wild Fire/Brush Fire

Landslide

Drought

Man-made Hazards

Temperature Extremes

Public Listening Session

Public Listening Session and Public Comment Period

A public listening session and public comment period were provided to ensure adequate opportunities were available Ashfield and Conway residents and Town Officials to review and comment upon the draft Ashfield and Conway MVP Resiliency Plan.

The public listening session was held on June 20 at 6:30 p.m. at the Conway Town Hall, located at 5 Academy Hill Road in Conway. Staff from the FRCOG who were in attendance at the earlier workshop attended the Public Listening Session meeting and provided a presentation on the MVP program as well as findings from the workshop. The PowerPoint slides are available on the following pages.

Representatives from the Ashfield and Conway Select Boards attended, along with Town Administrators, and representatives from Conway's Planning Board, Assessors, and Finance Committee. Several of these people had also participated in the Workshop. On the following page is the sign in sheet from the public listening session.

Towns of Ashfield & Conway MVP Resiliency Plan Public Meeting

June 20, 2018 at 6:30 p.m.
Conway Town Hall

SIGN IN PLEASE

Name	Affiliation	Email
Bob Armstrong	Conway S.B.	bob@armstr.com
Kayce Warren	Ashfield Town Admin	townadmin@ashfield.org
Tom Ruschka	Conway Town Admin	townadmin@townofconway.com
Kimberly MacPhee	FRCOG	kmacphee@frcog.org
Philip Kantor	Conway SB	kantoring@gmail.com
Joe Stojanowski	Conway PB	stojan@concast.net
Lee Whitcomb	Conway Assessors	assessors@townofconway.com
Roy A Cotten	Conway Fin Comm	roy@net-rantex.com
Todd Olanyk	Ashfield SB	tmolanyk@gmail.com

The public comment period was held from June 13th through June 27th, during which the public was invited to submit comments via email or regular mail. The following comments were received during the Public Listening Session and later, during the Public Comment period. These comments were incorporated into the plan as was appropriate.

- Ashfield Fire Chief noted the need to monitor/repair/replace culverts in areas that aren't connected to the South River Watershed—Watson Road/Spruce Corner/Bug Hill Road area, connections to Apple Valley Road (Smith Road), etc. He stressed that these areas were heavily impacted in major storms and, from a public safety perspective, are both emergency access and infrastructure vulnerabilities.
- The generator at Conway Town Hall was installed below grade and is vulnerable to flooding.
- The Ashfield Highway Garage needs a generator.
- The UCC Church, damaged by the 2017 tornado, has to be demolished.
- The MVP plan should stress implementing the recommendations of the scientific studies for the South River Watershed that have already been done.
- Ashfield's wastewater plant is in the floodplain (or at least very close to the 100-year floodplain and mapped river corridor).
- A forestry study was done a couple of years ago that recommended a program of homeowner education for carbon sink optimization.
- Change "Pudding Hollow" to "Pumpkin Hollow"
- Broaden "build solar farm in Conway" to "install solar technology in Conway"; this could include a municipal solar farm, community shared solar, and building-by-building PV and hot water systems.
- If the dam breaks, water will be in Conway in seven minutes. This is a powerful piece of data and should be emphasized in the report. Many homes are in the inundation area. Floods have taken out bridges in the past.
- Ashfield alone is responsible for the dam; the town has allowed buildings near it, which has exacerbated the problem.
- This (MVP PROJECT) is a joint planning process with joint funding.
- Ashfield is working again on a MassWorks grant application; Conway supported that last year. It is on the Select Board agenda for Monday night. For the report, note that various ideas have been expressed about the dam and that pros and cons have been discussed. Fixing the dam will be a \$1M+ project; it is a gate-and-spillway system with mortared stone and an earth berm.
- The MVP program will fund design.
- PV (solar) systems are not much use in an emergency, as they are almost all grid-tied and therefore shut off if the grid fails. This needs new technology to be of use in emergencies.

The public listening session and public comment period were advertised on both Towns' websites as well as on the FRCOG's website. The press release was provided to the local newspaper and the event was also advertised via a flyer. An email was sent to all Workshop participants to notify them of the availability of the draft MVP plan and invite them to attend the Public Listening Session.

www.townofconway.com

town of conway
Conway, Massachusetts 01341

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Photo credits

For emergencies dial 911. (You may also dial 625-8200 for the Shelburne State Police dispatch.)

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MVP Resiliency Plan Draft Now Available; June 20th Public Meeting To Seek Feedback

The draft of the Ashfield & Conway South River Watershed MVP Resiliency Plan is available for review and comment and may be viewed here: [AshCon MVP Summary of Findings DRAFT](#). A public meeting has been scheduled for Wednesday, June 20th from 6:30-7:30 pm at the Conway Town Hall to solicit feedback on the plan. To view the plan click here: [MVP Public Listening Session Flyer Ashfield and Conway](#).

[CONSERVATION COMMISSION](#) [PLANNING BOARD](#) [TOWN ADMINISTRATOR](#) [ZONING BOARD OF APPEALS](#)

Conway Seeking PT Administrative Assistant

The Town of Conway is seeking an Administrative Assistant, reporting to the Town Administrator and serving the Conservation Commission, Planning Board, and Zoning Board of Appeals, with further work possible. The position averages 5 hours per week, with a compensation rate of \$16/hr. The successful candidate will have good written and verbal skills to effectively communicate with other municipal employees and the general public as well as demonstrated clerical skills, including familiarity with computers and Office programs; who should be able to take minutes and perform bill tracking and record keeping. To view/print the job description, click here: [Administrative Assistant \(Board\) W](#). Candidates should submit a letter of interest and resume, along with the Town's general job application (at <http://www.townofconway.com/employment>, volunteer or at the Town Office), to the Town Administrator, PO Box 248, Conway, MA 01341. Position open until filled. Equal Opportunity Employer.

POSTED Jun 18, 2016

GENERAL TOWN HEARINGS [TOWN CLERK](#)

Town Clerk out of office June 18-26

The Town Clerk will be out of the office from June 18 through June 26. Please plan accordingly.

POSTED Jun 18, 2016

Ashfield, MA | Official Website

https://www.ashfield.org

Create an Account - Increase your productivity, customize your experience, and engage in information you care about

Town of Ashfield
Massachusetts

Helpful Links

- Agendas & Minutes
- Documents
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- Online Bill Pay
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Quick Links

- Hours & Information
- Calendar
- Emergencies
- Town Hall Hours
Monday - Thursday 9 am - 4pm

News & Announcements

Ashfield and Conway/South River Watershed MVP Plan Available for Review and Comment

The draft Municipal Vulnerability Preparedness (MVP) Resiliency Plan for the Towns of Ashfield and Conway and the South River Watershed is available for public review and comment. [Read on...](#)

REQUEST FOR QUALIFICATIONS - ASHFIELD BROADBAND TELECOMMUNICATIONS HUB DESIGNER SERVICES

The Town of Ashfield seeks the services of a qualified Architect to design, create construction documents, and perform construction control services. [Read on...](#)

2018 Household Hazardous Waste Collection Events
The Hilltown Resource Management Cooperative announces regional Household

Meetings

Events

June 2018

S	M	T	W	T	F	S
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Thu, Jun 28
[Parks Commission Meeting](#)

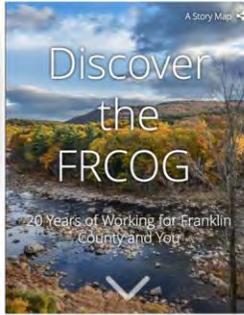
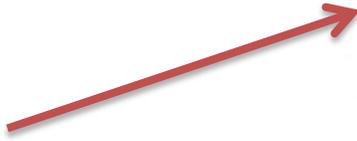
Thu, Jun 28
[Zoning Board of Appeals Meeting](#)

Mon, Jul 2
[Council on Aging Meeting](#)

[Go To Calendar](#)

Latest News

- [Read the Ecological Resilience in Deerfield Report](#)
- [View the Backland Rail Yard Plan](#)
- [Chairman MVP Plan Available for Review and Comment](#)
- [Meeting of the Western MA Historical Commission Coalition](#)
- [Draft Montague MVP Resiliency Plan Available for Public Comment](#)
- [Ashfield and Conway MVP Plan Available for Review and Comment](#)
- [FRCOG signs the Stigma Pledge](#)
- [Cannabis Control Commission presentation slides](#)



Upcoming Meetings & Events

- WED 20** Meeting of the Western MA Historical Commission Coalition
June 20 @ 10:00 am - 12:00 pm
- THU 21** Franklin County Emergency Communication System Oversight Committee
June 21 @ 10:00 am - 12:00 pm
- THU 21** Communities That Care Coalition Coordinating Council
June 21 @ 10:00 am - 12:00 pm
- THU 21** MAPICO Annual Meeting
June 21 @ 4:30 pm - 8:30 pm

Programs and Services



From: Kimberly Noake MacPhee
To: "chief@ashfield.org"; "afd@ashfield.org"; ecboss@franklinlandtrust.org; emd@townofconway.com; suebridge@wildsidegarden.com; Joe Strzegowski; "judy@southfacefarm.com"; "parrall@crocker.com"; "Ron Coler"; Cynthia Lawton-Singer (livingarts@cloud.com); "Michele Tume"; "bob@amstr.com"; Bob Armstrong (bobams@gmail.com); "petak.curtis@gmail.com"; janet@chayes.org; Mollie Babize (mollie.babize@gmail.com); "Anders Roberts" (andersawbut@yahoo.com)
Cc: Conway Selectboard (selectboard@townofconway.com); Kayce Warren
Subject: Draft MVP Resiliency Plan
Date: Tuesday, June 12, 2018 9:59:00 AM
Attachments: MVP Public Listening Session Flyer Ashfield and Conway.pdf
Importance: High

Hello MVP Workshop Participants – The draft of the Ashfield & Conway South River Watershed MVP Resiliency Plan is available for review and comment. A public meeting has been scheduled for Wednesday, June 20th from 6:30-7:30 pm at the Conway Town Hall to solicit feedback on the plan. Please see attached notice. The plan will be posted on the towns' websites and the FRCOG's website by tomorrow and the public comment period runs from June 13-27th.

I am also happy to email the draft plan to you - however it is 7MB. Please let me know if you'd like me to email you a copy of the draft plan.

Please encourage folks to attend the public meeting on June 20th and I hope you are able to attend as well.

Thank you so much for your participation in this project!

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: 



**ASHFIELD & CONWAY
SOUTH RIVER WATERSHED
MUNICIPAL VULNERABILITY ASSESSMENT (MVP) PLAN**

FOR IMMEDIATE RELEASE

CONTACT: *Kimberly Noake MacPhee, Franklin Regional Council of Governments Land Use and Natural Resources Program Manager, kmacphee@frcoq.org OR 413-774-3167 x130*

ASHFIELD & CONWAY RESIDENTS INVITED TO ATTEND MVP PUBLIC MEETING

The Towns of Ashfield and Conway are holding a public meeting to review the findings of the recent Municipal Vulnerability Preparedness (MVP) Community Resilience Building Workshop, as well as the draft MVP Resiliency Plan. Workshop participants included residents, representatives from the Friends of the South River and Franklin Land Trust, and local officials from Ashfield and Conway, including the Fire Department, EMD, Energy Committee, Planning Board Park Commission, Police Department, Select Board, Council on Aging, Zoning Board of Appeals and Open Space & Recreation Plan Committee.

The workshop helped participants define top local natural and climate-related hazards of concern, identify existing and future strengths and vulnerabilities, develop prioritized actions for Ashfield, Conway and the South River Watershed, and identify and prioritize actions and projects the two towns and stakeholders can implement to increase climate change resilience. Once adopted by the Ashfield and Conway Select Boards, the Towns will be designated as MVP Communities and eligible to apply to the State for funding to plan for or implement projects identified as most important to their resilience.

The Ashfield and Conway MVP public meeting will be held on June 20th at 6:30 p.m., at the Conway Town Hall. Public comments will be accepted during the meeting as well as during a public comment period from June 13th to June 27th. View the draft MVP Plan and public comment information on the Towns' websites at <https://www.ashfield.org/> and <http://www.townofconway.com/> or in person at the Ashfield and Conway Town Halls. The draft plan is also available on the FRCOG website www.frcoq.org.

The MVP grant program, a program of the MA Executive Office of Energy and Environmental Affairs, provides support for cities and towns in Massachusetts to begin the process of planning for climate change resiliency and implementing priority projects. The state awards communities with funding to complete vulnerability assessments and develop action-oriented resiliency plans. Communities who complete the MVP program become certified as an MVP community and are eligible for MVP Action grant funding and other opportunities.

Public Meeting

Towns of Ashfield & Conway

South River Watershed

Municipal Vulnerability Preparedness (MVP) Plan



The Towns of Ashfield and Conway and the Franklin Regional Council of Governments invite town officials and residents to hear about and comment on the MVP Resiliency Plan for Ashfield & Conway and the South River Watershed.



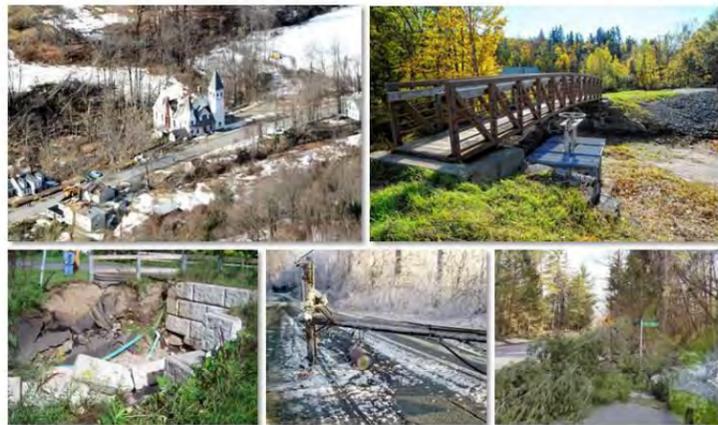
HOW?

- ✓ Attend the public meeting on June 20th at 6:30 p.m. at the Conway Town Hall
- ✓ Provide your written comments during the public comment period that runs from June 13th – June 27th. The draft MVP Plan and public comment instructions are at <http://www.townofconway.com/> or <https://www.ashfield.org/> or in person at the Ashfield or Conway Town Halls.

WE WANT YOUR FEEDBACK!

Public Meeting –
Wednesday, June 20th from 6:30 to 7:30 p.m.
****Conway Town Hall****
Questions/Comments? (413) 774-3167 x130 or kmacphee@frcog.org

MVP Community Resilience Building Workshop
Findings, Priority Recommendations and Projects



Towns of Ashfield and Conway
South River Watershed

Workshop Participants



Benefits of diverse group of participants

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

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.
- ✓ Awards communities with funding to complete vulnerability assessments and implement resilience projects.



Municipal Vulnerability Preparedness (MVP)



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.

Changing Climate Variables



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

ASHFIELD & CONWAY'S TOP HAZARDS



Image courtesy of the Recorder/ Paul Franz.
<http://goinsgreen.recorder.com/2017/08/02/ashfield-making-third-attempt-for-dam-improvement-grant/recorderpaul-franzthe-spillway-and-dam-at-ashfield-lake-2/>

ASHFIELD & CONWAY'S VULNERABILITIES

Areas of Concern

Vulnerabilities related to the South River: The village centers of Ashfield and Conway are located along the South River; infrastructure in 100-yr floodplain and river corridor, Ashfield Lake dam.

Safety and well-being of Ashfield and Conway's residents: Ashfield and Conway are very rural and many residents live in isolated locations. There is unreliable or no cell phone service and internet for some residents. Water supplies vulnerable to flooding; failing septic systems in Conway Center.

Protection of natural resources: In addition to vulnerabilities related to the South River, other natural resources in Ashfield and Conway need rehabilitation and/or protection.

Funding for needed projects: Small, rural towns such as Ashfield and Conway are strapped for cash and in need of funding to help them implement projects.

ASHFIELD & CONWAY'S TOP STRENGTHS



Areas of Strength

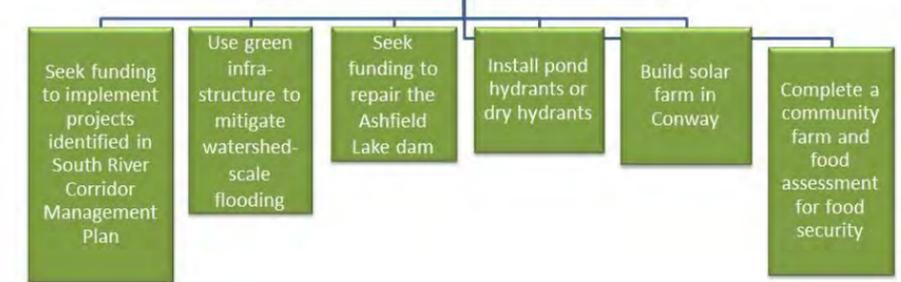
Infrastructural strengths and assets: Essential municipal buildings and the Shelter at Sanderson Academy have back-up power. Ashfield Town water system is gravity-fed with large storage tank and generators for pumps. Sinclair Waterworks is an inactive drinking water supply that may be able to be brought back into operation.

Strength of Town Services: There are active fire and ambulance volunteers. Ashfield has an emergency siren to warn residents of emergency situations.

Societal strengths and assets: There are active informal neighborhood groups in Ashfield and Conway, and a community phone book in Ashfield. Some food is produced and sold locally, and residents care about their local food system and pollinators.

Environmental strengths and assets: Both Towns are designated Green Communities and energy efficiency and renewable energy is important to both Towns and their residents. People care about their rural assets including wildlife habitat, biodiversity, and absence of light and noise pollution.

ASHFIELD & CONWAY'S HIGHEST PRIORITY RECOMMENDATIONS*



All recommendations from the Workshop are documented in the Summary Report

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



Public Comment Period: June 13 through June 27, 2018

Please hand in your comments to FRCOG staff. You may also email comments to kmacphee@frcog.org or mail them to:

Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301
Attention: Kimberly MacPhee



Certificate of Adoption
for the towns of Ashfield and Conway

The Certificate of Adoption is available in a separate document.