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# TOWN OF PLAINFIELD

January 17, 2019

## Municipal Vulnerably Preparedness Community Resiliency Building Workshop



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## SUMMARY OF FINDINGS



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Cover image courtesy of PVPC

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## OVERVIEW

The need for municipalities, regional planning organizations, and state and federal agencies to increase resilience and adapt to extreme weather events and mounting natural hazards is strikingly evident in the Pioneer Valley Town of Plainfield. Recent events such as the 2016 drought, extreme cold spells in the winter of 2017-2018, and the October ice storm of 2011 have reinforced this urgency and compelled communities like the Town of Plainfield to proactively plan and mitigate potential risks through a community driven process. Ultimately, the commendable leadership demonstrated by Plainfield's efforts will reduce the exposure and vulnerability of its citizens, infrastructure and ecosystems. This work also contributes to the greater climate resilience of the entire Pioneer Valley region.

Recognizing the importance of both mitigation and adaptation strategies to deal with the challenges of climate change, the Town of Plainfield used the Municipal Vulnerability Preparedness (MVP) Planning grant as an opportunity to build on existing programs reaching towards these same goals. The Town has an active Energy Committee, is a certified Green Community, and has passed zoning amendments to accommodate context-sensitive solar development. In 2018, members of the Select Board, Planning Board, Emergency Management community and other town leaders formed a team to pursue funding from the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) to advance a Community Resilience Building workshop under the MVP program. The Town was awarded funding to complete the MVP planning program, as well as support the development of the Town's first ever Natural Hazards Mitigation Plan (HMP) to increase awareness of risks from and decrease vulnerabilities to natural and climate related hazards.

The core directive of the MVP program is to engage community stakeholders to facilitate the education, planning and ultimately implementation of priority climate change adaptation actions. Completion of the MVP process will enable the Town to achieve MVP certified community status from EOEEA by June of 2019 and receive preference for future state grants, while completing a FEMA approved and locally adopted HMP will make the Town eligible for several federal and state grants.

This report provides an overview of the top hazards, current concerns and challenges, strengths, and proposed actions to improve the Town of Plainfield's resilience to natural and climate-related hazards today and in the future. The summary of findings provided in this report is supported by more detailed analyses in the Town's 2018 Natural Hazard Mitigation Plan.

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## COMMUNITY RESILIENCE BUILDING WORKSHOP

The Town of Plainfield employed a unique “anywhere at any scale”, community-driven process known as the Community Resilience Building framework to host an 8-hour workshop on December 8, 2018. The list of workshop invitees and workshop content was guided by input from an interdisciplinary core MVP team comprised of town electeds, community members, and consultants from the Pioneer Valley Planning Commission. The workshop’s central objectives were to:

- Affirm community consensus of the local meaning of extreme weather and local natural and climate-related hazards;
- Identify existing and future vulnerabilities and strengths;
- Develop and prioritize actions for the Town and a broad stakeholder network;
- Identify opportunities for the community to advance actions to reduce risk and increase resilience.



Workshop participants identifying community vulnerabilities  
Source: PVPC

Approximately 25 participants from town boards and committees, land holding conservation agencies, community organizations, local businesses, and other interest groups attended the workshop, which included a combination of large group presentations and small group activities. Pioneer Valley Planning Commission began the day with a presentation outlining the workshop process and goals, updating participants on past and ongoing local planning efforts, and presenting new state-provided climate projection data to provide both decision-support and risk visualization. Participants then broke out into four small groups and assumed different participatory roles and responsibilities to engage in a rich dialogue sharing ideas and experiences.

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## TOP HAZARDS & VULNERABLE AREAS

Leading up to the workshop, the MVP core planning team worked with input from the Hazard Mitigation Planning team to identify the top 4 natural hazards for the Town of Plainfield. These hazards were narrowed down based on findings from previous planning processes, stakeholder input, and new climate change projections. Severe winter weather with snow, ice, and wind was identified as a hazard of greatest concern by most team members, as was severe weather with resulting stormwater and culvert flooding. Environmental changes associated with climate change such as extreme temperatures and an increase in invasive species and vector-borne disease were identified as the final two hazards of concern. During the community resilience building workshop, participants had an opportunity to approve of these selections as the hazards that have the greatest impacts on Plainfield’s operations and natural resources, and on residents’ safety and wellbeing.

### TOP HAZARDS

- Severe winter weather, including snow, ice, blizzard, and wind
- Severe weather, including precipitation-based events leading to localized flooding, as well as thunderstorms and high wind events
- Invasive species and vector-borne disease
- Extreme heat and cold

### AREAS OF CONCERN

**Infrastructure:** Pole-based electricity and communication lines, Broadband hub, town and state-owned paved roads, town-owned dirt roads, culverts, shallow wells

**Natural Resources:** Large woodland areas, drinking water, food systems, invasive species, habitat change

**Human and Social:** Aging population, residents with limited mobility, emergency shelter network, low tax base

**Built Environment:** Historic buildings, older/historic housing stock, highway maintenance building, dams



Aerial view of SR 116 bisecting Plainfield’s historic center  
Source: Stephen Bronstein, Town of Plainfield website

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## CURRENT CONCERNS & CHALLENGES BY HAZARD

The Town of Plainfield has several concerns about, and faces multiple challenges related to, the impacts of climate change and natural hazard-related weather events. In recent years, the Town has experienced a series of disruptive and dangerous weather events including the severe snow and ice storms of 2009 and 2011, and the arctic cold weather in the winter of 2017/2018. Hurricane Irene, which didn't track directly through Plainfield, dropped a significant amount of rain in town and caused road washouts and erosion. Impacts from these storms are exacerbated by increasingly weakened forest and tree health due to influxes in harmful pests in local forests. Unhealthy trees and their limbs are more likely to be brought down onto powerlines by the weight of snow, ice, or water and under the force of wind, leading to more prolonged power outages and elevating risks to residents and infrastructure. The magnitude and intensity of these events over the course of just a few years has increased awareness of natural hazards along with climate change and motivated communities like Plainfield to comprehensively improve resilience at the individual and municipal level.

Plainfield's MVP workshop participants were generally in agreement that the Town and region are experiencing more intense and frequent storm events, the impacts of which affect the daily activities of all residents. There was also a common concern about the challenges of being prepared for future severe weather events, including the ability to shelter residents close to home; the resilience of the transportation network to changing weather and temperature fluctuations and the need for the system to remain operational for emergency travel, at a minimum; and the desire to become energy independent for increased resiliency during system-wide power outages. Furthermore, participants established a common directive to improve the efficiency and efficacy of communication systems throughout town, both in times of emergency and in day-to-day operations, and to improve food security in town.



Plainfield's Congregational Church  
Source: Stephen Bronstein

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## SPECIFIC CATEGORIES OF CONCERNS & CHALLENGES

### TRANSPORTATION INFRASTRUCTURE

The specific issues identified within Plainfield's roadway network were dirt road maintenance and culvert functionality. There are 52 miles of roads in Plainfield, and more than 20 of those miles are dirt roads. Erosion is a major threat to every inch of the dirt roads, and it causes problems for the paved roads and road beds as well. Road passability is important for residents who may need to evacuate or travel in case of emergency, but also important to allow for maintenance on roadside infrastructure such as broadband, electrical lines, etc.

Residents say the Town has two seasons: winter and road repair. Flash run-off conditions in the spring coupled with heavy precipitation in the summer months have created serious flooding and erosion problems in recent years, especially on the many sloped dirt roads throughout town. These types of flash warming events are likely to become more frequent with the changing weather patterns brought on by climate change. Furthermore, an increase in ice events is creating an unwelcomed burden on local highway department, when roads still require treatments to reduce hazards even without visible snowfall. As the rain and cold increases, so has the stress on the roads and crews who keep them safe.

Participants noted that all of River Road is vulnerable to flooding and subject to slump and settling because of its proximity to Mill Brook, and West Hill Road bridge regularly overtops/gets washed out. Undersized culverts around and along Mill Brook overtop regularly, causing service disruptions to Prospect St. and West Hill Rd. The Meadow Brook crossing under Gloyd Rd. near South Central St. intersection also floods regularly. Despite these locally known trouble spots, there is currently no list of capital improvement needs to help the community prioritize replacement and repair of transportation elements.

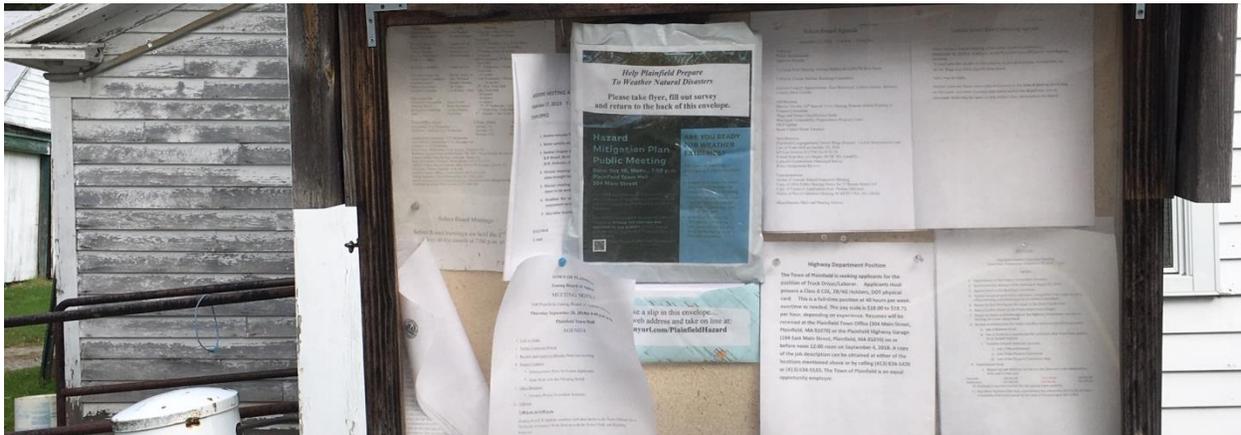
### ELECTRICAL DISTRIBUTION SYSTEM

Electricity is one of the most critical pieces of infrastructure in modern societies, and electrical service outages in Plainfield can be caused or impacted by all of the hazards prioritized during the MVP process. In 2008, a major ice storm left most of the area without electricity and roads blocked with downed trees and debris for days. Plainfield emergency responders, residents, and volunteers rallied together to clear debris and open roadway access for emergency vehicles and repair crews to access powerlines. Despite the tenacity exhibited by Plainfield residents in 2008 to band together, there was broad consensus during the workshop that the community is at risk as long as the electrical distribution system is highly vulnerable to prolonged interruptions from storm events. The many residents in town that are mobility-limited, less technologically advanced, or health impaired in any way are particularly vulnerable to the secondary impacts of a power outage, including prolonged exposure to extreme cold or heat. In recent years, an effort by Eversource to cut up to 1,700 trees endangering power lines in Plainfield, MA, has cleared the way for the planting of new trees at a safe distance from the lines.

## COMMUNICATION NETWORKS

Like many Hilltowns in the region, Plainfield is beset by spotty cell service and limited internet access. With the closest cell tower located to the southeast in Cummington, poor cell coverage is a real challenge for residents, businesses, and first responders. State police owns and operates a communications tower at 46 Union Street that is used by Eversource and serves local emergency radios. Town officials report that a repeater on this pole provides emergency radio to radio connection to and from most parts of town, but not all. For their part, residents are hopeful that service will be drastically improved later in 2019 when the new broadband network comes online.

In addition to equipment and infrastructure challenges, workshop participants noted a need to increase education about and uptake of existing communication channels that could serve residents during an emergency and for day-to-day announcements. All Town meetings are posted on the Town website and Town Hall bulletin board, though many residents who aren't computer savvy rely on local news or word of mouth. The Town subscribes to Blackboard Connect, a reverse 911 system that can distribute information to any residents who sign up for alerts but which only helps those residents who know about it and sign up. Participants also expressed concern over the social isolation that ensues from residents aging in place without close neighbors, and needing to institutionalize a system of checking in on one another when preparing for a winter storm or during power outages. The needs for improved community gathering spaces and increased diversity of communication methods were highlighted.



Local bulletin board outside Plainfield Town Hall  
Source: PVPC

## VULNERABLE POPULATIONS

Plainfield's most significant social challenge is that 40% of its population is over 60 years of age. Volunteers with the Council on Aging help older citizens with daily life issues, and have created the "Plainfield Cares" group to see that volunteers transport folks to medical appointments and other crucial life errands. Unfortunately, many of these volunteers are over 60 themselves. With little public transportation, travel is often an issue of health and safety.

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The greatest concern with this population is isolation during a winter power outage or heat wave. Power outages, especially when concurrent with extreme temperatures, leave the elderly and medically vulnerable populations at extremely high risk. In Plainfield, members of the local fire and police departments routinely check in on the most vulnerable residents during severe weather events, despite the fact that these residents are scattered in private homes all across the Town.

## LAND USE MIX

Plainfield's land use mix was identified as an asset and a challenge. Historically agricultural land is rarely used for active farming today, and residents rely wholly on outside sources for food. Poor cell service has created a hostile environment for small home-based business. New pressure for large-scale solar development poses a threat to the long-term viability of un-protected open space. Large swaths of partially or permanently protected forested land owned by non-profits and state agencies make up a large percentage of the Town's overall acreage, minimizing those parcels' contributions to the local tax roll.

Forests are also at great risk of disease and infestation from habitat changes occurring with climate change, including influxes of new species such as the emerald ash borer and wooly Adelgid that can obliterate entire species of trees in affected forests. Large-scale tree mortality events can lead to an increased risk of forest fire, erosion, and surface water contamination. Currently the Town has very little understanding of how, or whether, these landowners are approaching forest management and species die-off or wildfire risk reduction.



Trees are abundant in Plainfield, as are historic landscape elements like these stone walls  
Source: David Kramer, Town of Plainfield website

## EMERGENCY OPERATIONS

The Town Public Safety Complex is the Town's designated emergency shelter. However, many workshop participants expressed a desire to expand the idea of emergency sheltering to a neighborhood by neighborhood scale. There is currently no inventory of which Plainfield homes are equipped with back-up power. If that information were shared voluntarily, those homes could serve as mini-shelters for close neighbors to visit in a time of need, especially if transportation routes to the Public Safety Complex were compromised as in after a severe snowstorm.

The Town has two mobile generators to serve critical facilities without permanent back-up sources, but the functionality of that system relies on sufficient staff to transport the generators, as well as passable roads to deliver them. The Town highway garage is the hub of all roadway operations, yet it does not have a permanent source of backup power and the facility's roof is in dire need of repair. The Town's trash compactor is located at the Highway Garage, and has neither dedicated back-up power nor a hook-up to connect to a mobile generator. Permanent back-up generators at the highway garage, town hall, police station/Hathaway Hall, and Earthdance (a private company that hosts large groups of people for multi-day events) would improve the Town's ability to safely weather future storms that cut power or access to emergency services.

Finally, the Swift River Treatment Facility located in the southeast corner of town is home to a concentration of individuals with special needs who would be particularly vulnerable to the impacts of an extreme weather event. The facility is equipped with its own emergency power source and drinking water source and filtration system, which could be an asset for the Town in local groundwater were to become contaminated, however there is currently very little communication between the two entities.



Plainfield's Public Safety Complex  
Source: David Alvord, Town of Plainfield website

## WATER AND DRINKING WATER RESOURCES

Plainfield has an abundance of sub-surface drinking water accessed by its residents via private wells. Access to this resource has never been significantly compromised, although few private residences with very shallow wells were impacted during the drought of 2016. Some participants expressed concern

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over groundwater contamination from previous land uses such as farms and dumps, and from the increasing use of salt for winter road maintenance.

The past dependability of this resource may leave the Town flat-footed if a serious drought were to occur, or if the ground-water was somehow contaminated.

## DAMS

There are five dams in Plainfield, the operation and maintenance of which is the sole responsibility of the private owners. Maintenance costs and inspection requirements can be prohibitive, and private dams often fall into disrepair. The Crooked Pond Dam has been identified by Massachusetts Department of Conservation and Recreation as a “Significant Hazard Dam,” requiring an emergency action plan and routine inspections. While the dam is listed under state records as in “Satisfactory” condition, workshop participants noted that the lack of town-control of the dam’s function is a vulnerability.

## CURRENT STRENGTHS & ASSETS

As a result of Plainfield’s broad experience with extreme weather and the impacts of climate change, workshop participants were quick to point out their communities’ strengths in responding to the challenges identified above. Reinforcing and expanding upon these strengths and community assets is a common theme to the proposed actions presented later in this report to increase resiliency against the impacts of climate change.

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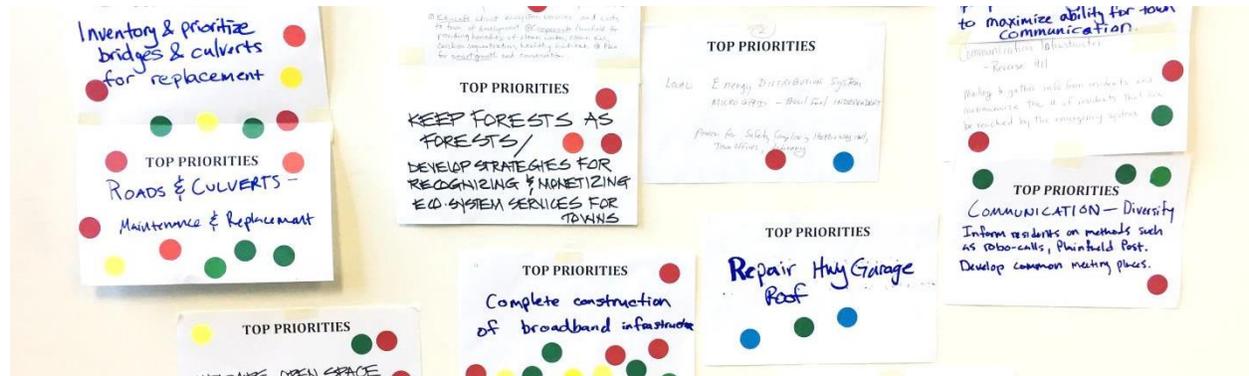
Some of the key strengths discussed included:

- The Town Public Safety Complex is equipped as a full-service emergency shelter with a dedicated water source and back-up power, and has been used successfully as such in the past. This facility can also function as a warming and cooling center in the event of extreme weather.
- Various “third places” in town, such as the library, Town Offices, and Congregational Church, are well-used as common space meeting areas (though improvements are needed).
- The daily operation of the Town of Plainfield is reliant on a strong group of resident volunteers. Workshop participants all wore many hats, many of them active in one or more town committees and local groups such as the Council on Aging, and Plainfield Cares. One participant noted that of Plainfield’s roughly 600 residents, 150 are municipal staff or volunteers. This level of civic engagement underscores the importance of human capital and good neighbors to maintaining a sense of pride and community, and is a valuable asset for resilience.
- Plainfield is rich in water resources, containing the headwaters for both the Deerfield and Westfield rivers, and the Town is fortunate to have an abundance of ground and surface water.
- Large open spaces, such as Mass Audubon’s West Mountain Wildlife Sanctuary and Dubuque Memorial State Forest, serve as sponges during heavy precipitation, provide ongoing carbon sequestration, recharge groundwater, and provide cooling spaces for people and wildlife. They also hold an economic value as recreational assets and contributing to historic and valuable landscapes. There is also ample (though mostly unused) land for agricultural and/or food production. Much of Plainfield’s open space land is permanently protected conservation land, ensuring these benefits will be realized by future generations.
- The Town’s municipal light plant (MLP) Plainfield Broadband is realizing a decade-long effort to create a town-owned fiber-optic network that can serve every Plainfield residence and business. The volunteer network in Plainfield has been engaged for years to build a high speed broadband distribution network - the largest infrastructure project in the history of the town. When completed in 2019, the town will own the high-speed electronic highway, vastly improving intra-town communications and connecting Plainfield homes and businesses with the rest of the world.
- The Plainfield "Mall" is a local shop for convenience items (year round) and Manda Farm provides access to and fresh, naturally raised pork and beef products, and eggs year round, and vegetables and herbs in the summer/fall.

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## TOP RECOMMENDATIONS TO IMPROVE RESILIENCE

Workshop participants identified more than 50 actions that the Town of Plainfield, in collaboration with neighboring municipalities, regional partners and state agencies should take to improve resilience to the impacts of climate change. Towards the end of the workshop, each small group presented its three top priority actions to the large group. These actions were grouped with like actions from other small groups, and then voted on by the large group<sup>1</sup>.



Priority actions from each small group were voted on by all participants.

Source: PVPC

The following priority recommendations were developed at the 4 small group tables, and are presented here in no specific order:

- Conduct a town-wide inventory of roadways, culverts, bridges, and other transportation infrastructure to assess condition, identify vulnerable infrastructure in need of maintenance, repair, or replacement, and prioritize projects for investment.
- Support healthy forests by educating residents about ecosystem services and the costs of development to the Town; plan for smart growth and open space preservation; develop strategies for recognizing and monetizing the ecosystem services provided by Plainfield's open spaces, including the benefits of clean water, clean air, carbon sequestration, and healthy habitat
- Update Town's Open Space and Recreation Plan
- Complete construction of Broadband network
- Conduct preventative maintenance and other measures to reduce power outages, including tree trimming, installing home and public generators, and creating a wood bank
- Pursue balanced demographic composition to build human capital framework
- Investigate improvements to the local energy distribution system including reducing reliance on fossil fuels and the feasibility of installing a microgrid to serve all town critical facilities.

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<sup>1</sup> The actions with the most votes were to complete construction of the Broadband network in town, Improve communications through use of Blackboard Connect, community meetings, and other avenues, and Conduct a town-wide inventory and investment prioritization plan of transportation infrastructure.

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- Repair Highway Garage roof
  - Improve food security – educate residents about food production, preservation, and storage or stock piling, both on the private and public scale
  - Develop categories for Blackboard Connect and encourage people to sign up to maximize the ability for town to communicate with residents.
  - Diversify communication avenues in town, informing residents about existing methods such as Blackboard Connect and Plainfield Post, and improving common meeting spaces to encourage more community dialogue

The entire suite of recommendations can be categorized into the following categories:

- Communications
- Energy distribution system
- Transportation
- Water Management
- Open Space and Land Management
- Emergency Management

All recommended MVP actions were shared with the public at a public listening session on February 13, 2019. Priority actions identified through the MVP workshop were incorporated into the concurrent Hazard Mitigation Plan process, the final result of which will be finalized in 2019. Materials from the Public Listening Session are provided in Appendix E.

A full list of the final recommendations, organized by high, medium, and low priority, is provided below.

## HIGH PRIORITY ACTIONS

CATEGORY	ACTION	LEAD
<b>COMMUNICATIONS</b>	Complete construction of broadband hub, inform public & encourage use; Maximize penetration of broadband to all residences and commercial structures in town	Town
	Continue preventative maintenance of tree limbs and work with Eversource to keep up their maintenance	Hgwy.
	Attract and engage younger families as a way to help build human capital framework	
	Identify methods for facilitating better awareness of the "Plainfield Cares" program	
	Improve meeting spaces: Identify locations for community/senior center; Increase library operation hours; Make upgrades to the library basement as potential meeting place	
	Conduct an outreach effort/ door to door survey to gather information like phone numbers, and get people to sign up as volunteers to be "neighborhood captains" working with Plainfield Cares, to improve communications town-wide	
	Provide Plainfield Post to all addresses free of charge	
	Improve communication "dead zones": <ol style="list-style-type: none"> <li>1. Encourage cellular providers to use Eversource tower to reduce cell dead zones</li> <li>2. Resolve confusion over radio dead zones by developing guidelines and training for municipal radio users</li> </ol>	
<b>EMERGENCY MANAGEMENT</b>	Maximize buy-in and utilization of Blackboard Connect/ Reverse 911 <ol style="list-style-type: none"> <li>1. Identify protocol for use of Blackboard Connect</li> <li>2. Identify categories of alerts for user to opt into, which will encourage more users to sign up as they will not feel spammed by irrelevant messaging.</li> <li>3. Educate residents about using Blackboard connect.</li> </ol>	Select Board, IT, Em. Mngr.
	Loop COA and Plainfield Cares into all Fire Department and Police Department emergency planning discussions	
	Build neighborhood emergency networks: identifying in each area a place/home equipped with generator, radio, storehouse of food, and drinking water source that can help neighbors get through period of time	
	Communicate with DCR to encourage them to restrict dam release access at Crooked Pond Dam (private residents have dam keys)	

CATEGORY	ACTION	LEAD
<b>ENERGY DISTRIBUTION SYSTEM</b>	Explore feasibility of developing a microgrid to serve town facilities and reduce reliance on fossil fuel for emergency power	
	1. Inventory emergency power supplies throughout town, including private generators at private homes. 2. Install permanent back-up power at the highway garage, town hall, police station (Hathaway Hall), Earthdance	
	Encourage continued tree trimming via Eversource Electric	
	Explore the use of battery sequestered solar power installations at town properties	Energy Com.
<b>ENERGY DIST. SYST./ COMMUNICATIONS</b>	Educate residents on residential energy efficiency cost deferment programs; Improve town-wide communications	
<b>EMERGENCY MANAGEMENT/ COMMUNICATIONS</b>	1. As part of the survey described in the Blackboard connect action above, find volunteers with SUV's to transport stranded residents with limited mobility to emergency resources and facilities 2. Restart Franklin County Connector bus service, formerly provided by Franklin Regional Transit Authority 3. Increase uptake of lock-boxes and reflective house numbers, available at no cost from Fire Department and Highway Department	
	1. Codify the "volunteer network" - institutionalize the proto-network that already exists 2. Create a welcome package for new residents, explaining all of the committees and volunteer opportunities they could get involved in, and what resources area available to them as residents	
	1) Encourage use of Blackboard Connect ; (2) Develop & maintain a list of residents self-identifying as being on life-sustaining equipment; (3) identify and outfit warming and cooling stations	
<b>TRANSPORTATION</b>	1. Inventory roadways, culverts, bridges, and other transportation infrastructure; assess condition; and plan for improvement and maintenance and designing for higher standards that accommodate changing climate conditions and MA Stream standards.	
	2. Develop a Capital Improvements Plan, aka Highway/Roadway Infrastructure Investment and Maintenance Plan to help in prioritization of maintenance and the development of grant applications	
	Dirt road improvements	
	Triad Sand & Salt Delivery-Work with police and DPW to establish methods for greater use of this program	
	Town garage improvements: 1. Repair roof 2. Maintain drainage ditch to protect fuel, equipment from flooding 3. Install a permanent generator	

CATEGORY	ACTION	LEAD
	Streamline emergency repair permitting	
<b>OPEN SPACE AND LAND MANAGEMENT</b>	<ol style="list-style-type: none"> <li>1. Conduct public outreach and education about the services provided by healthy forests</li> <li>2. Plan for smart growth to preserve forests</li> <li>3. Improve compliance with Ch. 61 forest management plans</li> </ol>	Local forester, DCR
	<ol style="list-style-type: none"> <li>1. Access state resources to broaden awareness of changing/shifting ecology and invasive species</li> <li>2. Increase forest management to reduce risk of wildfire</li> <li>3. Hold a stakeholder-driven discussion or forum on forest conservation and management</li> </ol>	Con. Com., Mass Audubon, DCR
	Educate residents on food production and preservation practices; Encourage use of regenerative farming practices	Ag. Com.
	Be proactive with rapid response program for invasive species / pests	
	<ol style="list-style-type: none"> <li>1. Quantify values that our region’s forests contribute (carbon sequestration, clean air, etc.)</li> <li>2. Monetize the forests for the service they provide to the greater region/state/earth</li> </ol>	
	Keep forests as forests in spite of commercial threats (solar and timber), (Swift River model) provide incentives and \$s for Town	
	Update Open Space Plan to protect wetlands	Select Board
	Expand tax base: (1) complete construction of broadband infrastructure; (2) simplify zoning bylaw to be more business-friendly; (3) Identifying home-based businesses/collect personal property taxes on business assets	

## MEDIUM PRIORITY ACTIONS

CATEGORY	ACTION	LEAD
<b>OPEN SPACE AND LAND MANAGEMENT</b>	Communicate with land owners to encourage forest fire management best practices on large conservation properties	
	Consider CPA Adoption to preserve historic landscape	
	Monitor deer population and keep low to reduce spread of disease	
<b>WATER MANAGEMENT</b>	Explore salt alternatives for winter road maintenance to protect ground water quality	
	Conduct an education campaign or hold a community gathering to talk about hobby and small scale farming practices and their impacts on surface and sub-surface water quality	
	Certify vernal pools throughout town	
	Ensure sufficient emergency drinking water supply <ol style="list-style-type: none"> <li>1. Complete an inventory of available water sources to supply in an emergency</li> <li>2. Develop an MOA between the Town and existing "Public Water Suppliers" (facilities with at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year) such as Peppermint Park, Earthdance, and Swift River</li> <li>3. Explore feasibility of installing a public water purification system</li> </ol>	
<b>COMMUNICATIONS</b>	Conduct outreach to Swift River Treatment Center to establish line of communication b/t Town and property managers	
	Work with Hawley-Cumington on mutual aid (expanding definition to include other ways to help one another)	Select Board, Em. Mngr.
	Maintain a list of active volunteers & town staff and publicize opportunities for involvement	
	Improve common space meeting areas <ol style="list-style-type: none"> <li>1. Investigate other options for public meeting / gathering spaces</li> <li>2. ID funding sources to pay for generators at these sites</li> <li>3. Explore CPA as a way of providing funding for upgrades to community spaces</li> <li>4. Add AC to community spaces for use as cooling shelters</li> <li>5. ID funding sources for insulating Town &amp; community buildings</li> </ol>	

CATEGORY	ACTION	LEAD
<b>ENERGY DISTRIBUTION SYSTEM</b>	Bury electrical lines underground wherever possible	
	Maintain road passability for utility repair crews <ol style="list-style-type: none"> <li>1. Purchase more reliable equipment to keep roadways maintained and clear for utility access</li> <li>2. Coordinate safety training for volunteers and maintain a volunteer network to help with road clearing</li> </ol>	
<b>EMERGENCY MANAGEMENT</b>	Public Safety Complex Improvements <ol style="list-style-type: none"> <li>1. Install battery sequestered solar power system at Public Safety Complex</li> <li>2. Add AC to Public Safety Complex for use as a cooling center</li> <li>3. Determine maximum capacity at Public Safety Complex</li> <li>4. Develop and maintain emergency non-perishable food supplies</li> </ol>	
	Upgrade Town Hall/Town Offices insulation & install generator to outfit as additional shelter	
	Upgrade Town Church insulation & install generator to outfit as additional emergency shelter	
	Create a Community Animal Disaster Plan or Emergency Animal Shelter Plan for pets and livestock	
	Broaden emergency shelter network - Inventory which homes have back-up power and are willing to serve as mini-shelters, and incorporate that information into the larger emergency response protocol.	
	Publicize Public Safety Complex's availability for use during power outages to get water, etc.	
<b>TRANSPORTATION</b>	Replace Highway Maintenance Building to better protect road maintenance equipment	
	Investigate and implement best practices (even experimental) for road surface management	

## LOW PRIORITY ACTIONS

CATEGORY	ACTION	LEAD
<b>EMERGENCY MANAGEMENT</b>	<p>Improve Emergency Food Supply</p> <ol style="list-style-type: none"> <li>1. Start a donation center for canned goods to increase reserves of food for emergencies</li> <li>2. Be open to development of local food production to increase self-sustainability during a major supply chain disruption</li> </ol>	
<b>OPEN SPACE AND LAND MANAGEMENT</b>	Encourage nonprofit land owners to make payments in lieu of taxes on conservation & forested land. Select Board could send out an annual letter reminding organizations of how many acres they own in town, what town services they benefit from, and encourage contribution to taxes.	Select Board
<b>TRANSPORTATION</b>	Work with trucking companies to keep trucks on certain roads (that have best capacity for such traffic)	
<b>WATER MANAGEMENT</b>	Publicize availability of Public Safety Complex for access to water during power outages	
	Identify grants to test soil where underground storage tanks and previous high intensity land uses were known to be	
	<p>Protect surface water quality</p> <ol style="list-style-type: none"> <li>1. Explore options to reduce salt usage on roads next to ponds</li> <li>2. Explore regrading roads bordering waterbodies to drain away from surface waters</li> </ol>	
	Assess status of all dams in town	

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## ACTION IMPLEMENTATION DESIGN

Once participants voted on the top priority actions, each team was asked to select one action and begin to develop an implementation plan. For each action, the small groups filled out an Action Implementation Design worksheet, providing information on the lead agency/ department for implementation, the partners that would need to be involved for successful project completion, an estimated cost for the project, known or potential funding sources, and implementation milestones. This exercise was a tool for Plainfield decision makers to get a head start on the thought process that would be required to apply for a MVP Action Grant, a funding opportunity from EOEEA that was announced shortly after the completion of Plainfield’s MVP workshop. The completed Action Implementation Design worksheets are provided in Appendix C.

## WORKSHOP PARTICIPANTS

Approximately 25 participants from Town departments, committees and boards, large land owners, community organizations, and businesses were in attendance at the MVP workshop.

PARTICIPANT NAME	DEPARTMENT/COMMITTEE AFFILIATION, POSITION
Howard Bronstein	Select Board Chair
Judy Williams	Conservation Commission Chair
Peg Keller	Plainfield ZBA
Pleun Boricius	Plainfield Tree Alliance, Historical Society
David Kramer	Financial Committee Chair
Jack Nelson	Plainfield Con Comm
Hilary Weeks	Plainfield Select Board, local business owner
Kate Buttolph	Mass Audubon
Victor Mistretta	Earthdance groundskeeper
Emily Slotnick	PVPC
Mert Taylor, JR	Highway Superintendent and Emergency Management Director
Ellen Baer	Plainfield MVP Comm
Brian Hawthorne	Plainfield Plang Brd
Ellen Dupont	Plainfield Brd of Hlth
Alain Peteroy	Franklin Land Trust (Land Protection SPEC)
Matt Love	Swift River CEO
Tim Walter	Plainfield Energy Comm
Ann Irvine	Plainfield COA, ZBA
Ed Stockman	Plainfield AG Comm
Will Sloan	Franklin Land Trust (head land Steward)
Laurie Isreal	Town Moderator
Ann Kohn	Plainfield Library, Council on Aging
Dudley Wms	School Committee, Board of Assessors

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## CITATION

Plainfield (2018) Community Resilience Building Workshop Summary of Findings. Pioneer Valley Planning Commission. Plainfield, Massachusetts.

## MVP WORKING GROUP

- Howard Bronstein, Town of Plainfield Select Board Chair
- Ellen Baer, Town of Plainfield Council on Aging
- Tim Walter, Town of Plainfield Energy Committee
- Jack Nelson, Town of Plainfield Conservation Commission
- Emily Slotnick, Pioneer Valley Planning Commission

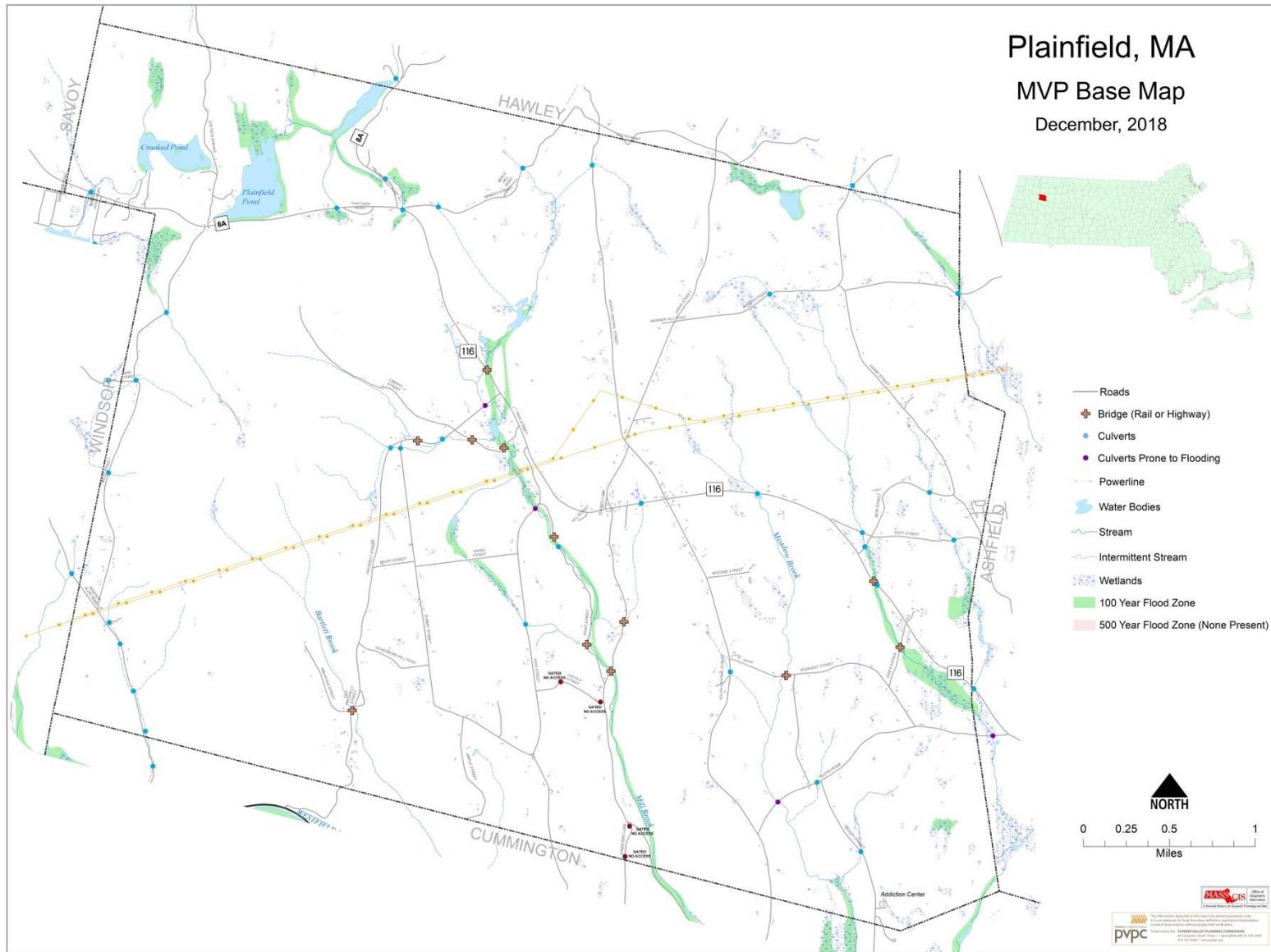
## WORKSHOP FACILITATORS

- Emily Slotnick, Pioneer Valley Planning Commission
- Patty Gambarini, Pioneer Valley Planning Commission
- Corrin Meise-Munns, Pioneer Valley Planning Commission
- Jacob Dolinger, Pioneer Valley Planning Commission

## ACKNOWLEDGEMENTS

Special thanks to the Town of Plainfield Board of Selectmen and staff for their willingness to enhance this process and provide the facilities to convene. This project was made possible in part through funding from the Massachusetts Executive Office of Energy and Environmental Affairs, and from significant volunteer commitments from the Plainfield MVP and HMP core working groups.

# APPENDIX A: WORKSHOP BASE MAP

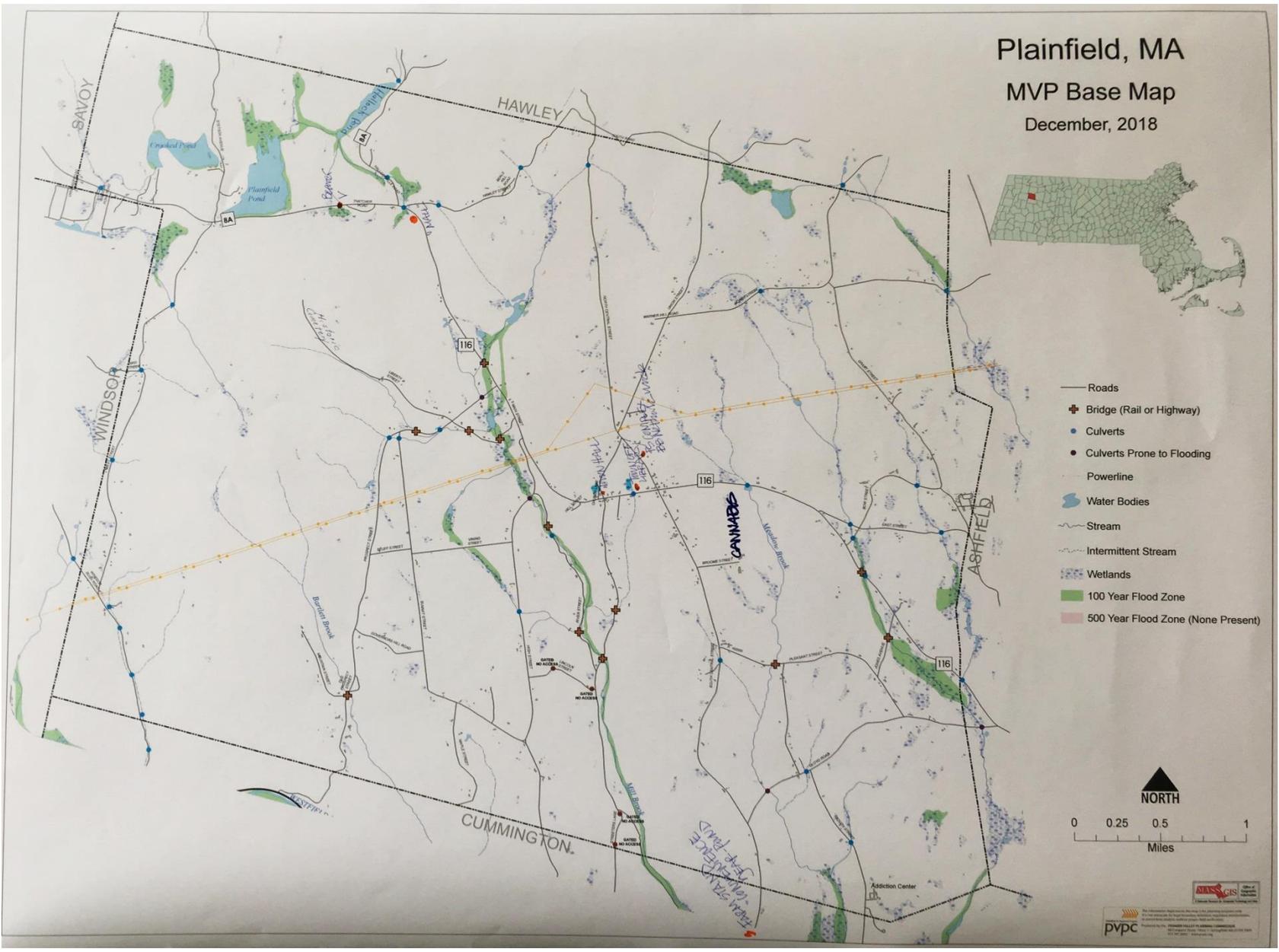
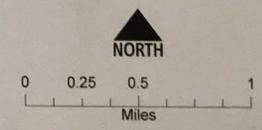




Plainfield, MA  
 MVP Base Map  
 December, 2018

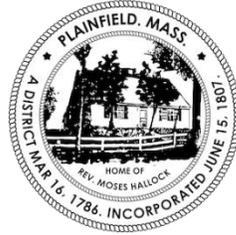


- Roads
- ⊕ Bridge (Rail or Highway)
- Culverts
- Culverts Prone to Flooding
- Powerline
- Water Bodies
- Stream
- Intermittent Stream
- Wetlands
- 100 Year Flood Zone
- 500 Year Flood Zone (None Present)



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## APPENDIX C: PARTICIPANT HANDOUTS



### Plainfield Municipal Vulnerability Preparedness Workshop

**DATE:** Saturday, December 8, 2018  
**TIME:** 8:30a.m. – 4:30p.m.  
**PLACE:** Plainfield Town Hall  
304 Main Street  
Plainfield, MA

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#### AGENDA

- 8:30 a.m.                   **Registration**
- 9:00 a.m. – 10:30 a.m.   **Introductions**
- Presentation:** MVP, Climate Resources, and Priority Hazards
- 10:30 a.m. – 10:40 a.m. **Break**
- 10:40 a.m. – 12:30 p.m. **Morning Small Team Workshop**
- Identify Community Vulnerabilities and Strengths
  - Identify and Prioritize Community Actions
- 12:30 p.m. – 1:15 p.m. **Lunch**
- 1:15 p.m. – 2:45 p.m.   **Afternoon Small Team Workshop**
- Identify and Prioritize Community Actions (continued)
  - Identify Priority and Urgency
  - Report Outs
- 2:45 p.m. – 2:55 p.m.   **Break**
- 2:55 p.m. – 4:00 p.m.   **Large Group Vote on Top Priorities**
- Implementation Design and Final Report Outs**
- 4:00 p.m. – 4:30 p.m.   **Wrap-up and Next Steps**

## CRITICAL FACILITIES (12/8/18 EXCERPT FROM DRAFT TOWN OF PLAINFIELD HAZARD MITIGATION PLAN)

### FACILITY CLASSIFICATION

A Critical Facility is defined as a building, structure, or location which:

- Is vital to the hazard response effort
- Maintains an existing level of protection from hazards for community residents and property
- Would create a secondary disaster if a hazard were to impact it

The Critical Facilities List for the Town of Plainfield has been identified utilizing a Critical Facilities List provided by the State Hazard Mitigation Officer. Plainfield's Hazard Mitigation Committee has broken up this list of facilities into three categories:

- Facilities needed for emergency response in the event of a hazard event.
- Facilities identified as non-essential and not required in an emergency response event, but which are considered essential for the everyday operation of the Town.
- Facilities or institutions that include special populations which would need additional attention in the event of a hazard event.

The critical facilities and evacuation routes potentially affected by hazard areas are identified following this list. The Past and Potential Hazards/Critical Facilities Map (Appendix D) also identifies these facilities.

### CATEGORY 1 – EMERGENCY RESPONSE SERVICES

The Town has identified the emergency response facilities as the highest priority in regards to protection from natural hazards:

#### **Emergency Operations Center**

Primary: Public Safety Complex, 38 North Central St.

Alternate: Plainfield DPW, 184 East Main St./SR 116

#### **Fire Station**

Plainfield Fire Department, Public Safety Complex, 38 North Central St.

#### **Police Station**

Plainfield Police Station, Hathaway Hall, 315 Main Street/SR 116

#### **Highway Garage**

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**Municipal Vulnerability Preparedness**  
**Action Implementation Design**

	<b>Lead Agency/ Department for Implementation</b>	<b>Partners</b>	<b>Cost</b>	<b>Funding Sources</b>	<b>Implementation Milestones</b>
<b>COMMUNITY ACTIONS</b>	Examples: Emergency Manager, Select Board, DPW, Fire Chief, Community Preservation Act Committee, Finance Committee, Planning Board, etc.	Examples: Neighboring municipalities, State actors, local non-profits and land trusts, community groups, etc.	Low: < \$50,000 Medium: \$50,000 – \$100,000 High: > \$100,000	Examples: Capital Improvement Plan, Staff Time, Chapter 90, Hazard Mitigation Grant Program (HMGP), other grants, etc.	Examples: 1. Create and convene a committee to oversee progress; 2. Disseminate 300 information packets to raise awareness about the initiative; 3. Apply for a grant to fund more robust public outreach, education, and awareness campaign.

**Note:** Cost estimates take into account the following resources:

- Town staff time for grant application and administration (at a rate of \$25 per hour)
- Consultant design and construction cost (based on estimates for projects obtained from town and general knowledge of previous work in town)
- Town staff time for construction, maintenance, and operation activities (at a rate of \$25 per hour)

**Municipal Vulnerability Preparedness  
Action Implementation Design**

	<b>Lead Agency/ Department for Implementation</b>	<b>Partners</b>	<b>Cost</b>	<b>Funding Sources</b>	<b>Implementation Milestones</b>
<b>COMMUNITY ACTIONS</b>	Examples: Emergency Manager, Select Board, DPW, Fire Chief, Community Preservation Act Committee, Finance Committee, Planning Board, etc.	Examples: Neighboring municipalities, State actors, local non-profits and land trusts, community groups, etc.	Low: < \$50,000 Medium: \$50,000 – \$100,000 High: > \$100,000	Examples: Capital Improvement Plan, Staff Time, Chapter 90, Hazard Mitigation Grant Program (HMGP), other grants, etc.	Examples: 1. Create and convene a committee to oversee progress; 2. Disseminate 300 information packets to raise awareness about the initiative; 3. Apply for a grant to fund more robust public outreach, education, and awareness campaign.
Inventory <sup>with prioritization</sup> of culverts & bridges	Highway Dept Planning Board	-DER -Town unl. -Mass DOT -Local Hwy Dept <del>-Local Hwy Dept</del> -Con Comm -PIB -PVPC -Land Trusts	L	-Chapter 90 -Small bridge repair -Town unlimited -DER culvert replacement	1. ID grant 2. Apply grant 3. Identify partner to conduct inventory 4. Complete prioritization
Replace / reconstruction	Local Highway Dept	-Mass DOT (funding)	H	Chap 90 Small Bridge TU DER	1. ID funding 2. Design / engineering 3. MassDOT approval 4. Prioritized construction
Maintenance	Local Hwy Dept	→			goal is to reduce maintenance cost this an already ongoing action item for existing culverts

Note: Cost estimates take into account the following resources:

- Town staff time for grant application and administration (at a rate of \$25 per hour)
- Consultant design and construction cost (based on estimates for projects obtained from town and general knowledge of previous work in town)
- Town staff time for construction, maintenance, and operation activities (at a rate of \$25 per hour)

**Municipal Vulnerability Preparedness  
Action Implementation Design**

	<b>Lead Agency/ Department for Implementation</b>	<b>Partners</b>	<b>Cost</b>	<b>Funding Sources</b>	<b>Implementation Milestones</b>
<b>COMMUNITY ACTIONS</b>	Examples: Emergency Manager, Select Board, DPW, Fire Chief, Community Preservation Act Committee, Finance Committee, Planning Board, etc.	Examples: Neighboring municipalities, State actors, local non-profits and land trusts, community groups, etc.	Low: < \$50,000 Medium: \$50,000 – \$100,000 High: > \$100,000	Examples: Capital Improvement Plan, Staff Time, Chapter 90, Hazard Mitigation Grant Program (HMGP), other grants, etc.	Examples: 1. Create and convene a committee to oversee progress; 2. Disseminate 300 information packets to raise awareness about the initiative; 3. Apply for a grant to fund more robust public outreach, education, and awareness campaign.
Emergency Communication Improvement	Task Force or Committee <del>Brian Hawthorne</del> <del>Emergency Manager</del>	Brian Hawthorne Emergency Manager	Low	Staff time + Volunteers	1. Form the committee 2. Develop informational letter to residents informing them of our current emergency contact system. 3. Request current contact info to sign up

Note: Cost estimates take into account the following resources:

- Town staff time for grant application and administration (at a rate of \$25 per hour)
- Consultant design and construction cost (based on estimates for projects obtained from town and general knowledge of previous work in town)
- Town staff time for construction, maintenance, and operation activities (at a rate of \$25 per hour)

**Municipal Vulnerability Preparedness  
Action Implementation Design**

	Lead Agency/ Department for Implementation	Partners	Cost	Funding Sources	Implementation Milestones
<b>COMMUNITY ACTIONS</b>	Examples: Emergency Manager, Select Board, DPW, Fire Chief, Community Preservation Act Committee, Finance Committee, Planning Board, etc.	Examples: Neighboring municipalities, State actors, local non-profits and land trusts, community groups, etc.	Low: < \$50,000 Medium: \$50,000 – \$100,000 High: > \$100,000	Examples: Capital Improvement Plan, Staff Time, Chapter 90, Hazard Mitigation Grant Program (HMGP), other grants, etc.	Examples: 1. Create and convene a committee to oversee progress; 2. Disseminate 300 information packets to raise awareness about the initiative; 3. Apply for a grant to fund more robust public outreach, education, and awareness campaign.
Create & sustain neighborhood networks for emergencies	Fire Dept & Assoc.; <del>COA</del>	Assessor Mans Exp Board of Health Plainfield Post Office Town website Plainfield Cares COA	Low	Weston Foundation Hillman Co MVP Imp Coles Dickerson	1. Create an advisory group gather information (include responses/obligations) develop plan recruit lead/neighborhood captains 2. Inventory for skills, transport supplies, fuel
				Other sources Tifts-walton AAPP Lt Gov-service elders	

Note: Cost estimates take into account the following resources:

- Town staff time for grant application and administration (at a rate of \$25 per hour)
- Consultant design and construction cost (based on estimates for projects obtained from town and general knowledge of previous work in town)
- Town staff time for construction, maintenance, and operation activities (at a rate of \$25 per hour)

# APPENDIX D: MVP WORKSHOP PRESENTATION

# MUNICIPAL VULNERABILITY PREPAREDNESS

Town of Plainfield, Ma

Municipal Participation  
 MVP Approved  
 Participate  
 Regional Partnership

## Introductions

1. Name
2. Relationship to Plainfield, or your role in the Town (for staff, board and committee members, etc.)
3. One area, topic, or idea that you are passionate about, and excited to talk about today

## MVP Planning Grant Purpose and Goals

- **Community-led process** that employs local knowledge
- **Mainstream** climate change data
- **Look to communities** as local innovators
- **Coordinate** statewide efforts

Complete workshop – vulnerability assessment and action plan

Preference for projects that propose **“Nature based solutions”**

## Plainfield MVP Purpose and Goals

- Share ideas about climate change, impacts, and actions to reduce vulnerabilities
- Become a “MVP “Certified” Community
- Access additional MVP funding to complete first-ever hazard mitigation plan!
- Manages Risk
- Makes community eligible to apply for MEMA/FEMA grant opportunities for hazard mitigation projects

## Outline of Workshop

DURING WORKSHOP	<b>A</b> Prepare for the Workshop	<ul style="list-style-type: none"> <li>1. Establish a core team with goals.</li> <li>2. Engage stakeholders.</li> <li>3. Prepare materials for workshop.</li> <li>4. Decide on participant arrangements.</li> </ul>	<b>Community Components</b>  Infrastructural Societal Environmental
	<b>B</b> Characterize Hazards	<ul style="list-style-type: none"> <li>1. Identify past, current, and future impacts.</li> <li>2. Determine the highest-priority hazards.</li> </ul>	
	<b>C</b> Identify Community Vulnerabilities and Strengths	<ul style="list-style-type: none"> <li>1. Identify infrastructural vulnerabilities and strengths.</li> <li>2. Identify societal vulnerabilities and strengths.</li> <li>3. Identify environmental vulnerabilities and strengths.</li> </ul>	
	<b>D</b> Identify and Prioritize Community Actions	<ul style="list-style-type: none"> <li>1. Identify and prioritize infrastructural actions.</li> <li>2. Identify and prioritize societal actions.</li> <li>3. Identify and prioritize environmental actions.</li> </ul>	
	<b>E</b> Determine the Overall Priority Actions	<ul style="list-style-type: none"> <li>1. Identify highest-priority actions.</li> <li>2. Further define urgency and timing.</li> </ul>	
	<b>F</b> Put It All Together	<ul style="list-style-type: none"> <li>1. Generate final workshop products.</li> </ul>	

SYNERGY

## Agenda

Time	Activity
8:30 a.m.	Registration
9:00 a.m.	Introductions, Climate Resources, and Priority Hazards
10:30 a.m.	Break
10:40 a.m.	Small Team: ID/Map Community Vulnerabilities and Strengths
11:30 a.m.	Small Team: Identify and Prioritize Community Actions
12:30 p.m.	Lunch
1:00 p.m.	Small Team: Identify and Prioritize Community Actions (Cont.)
2:00 p.m.	Small Team: Identify Priority and Urgency
2:15 p.m.	Report Outs
2:45 p.m.	Break
2:55 p.m.	Vote on Top Priorities Implementation Design Exercise
4:00 p.m.	Wrap-up and Next Steps

## Concerns and Challenges - Plainfield's HMP Survey

1. **Have you ever experienced a natural disaster in Plainfield such as a severe wind storm, flood, wildfire, or other type of natural disaster?**
  - > 8 yes, 3 no
2. **If you answered "Yes" to Question #1, which kind of natural disaster have you experienced?**
  - > Severe Winter Weather/Blizzard/Ice Storm 63.64% (7)
  - > Severe Storm or Hurricane 63.64% (7)
  - > Severe Wind/Tornado/Micro burst 45.45% (5)
  - > Extreme Temperatures 36.36% (4)
  - > Other 27.27% (3)
    - > The ice storm of December 2008 power outage for about 10 days
    - > electrical outages, restricted roadway travel due to debris, sustained cold temperature, water and heating pipes freeze, stop working and worse, burst.
    - > Hurricane Irene of August 2011
    - > hurricane Agnes in 1972 dumped all of the town road, then a dirt road, in the front yard of our house
    - > Severe wind/Micro bursts - down trees and electric wires. a prolonged severe storm or damaging bursts would impact access to water, & food
    - > car got stuck on River Road when a culvert washed out from flooding from Mill Brook

## Concerns and Challenges in Plainfield

- Transportation
  - ½ off all roads are unpaved
  - Maintenance needs on MassDOT roads Inconsistencies in maintenance on roads connecting to neighboring towns (Cummington/Shaw Rd.)
  - Increased intensity of rain events → More frequent dirt road ruts/gullies, increasing burden on highway department
- Communication: Ice Storms and/or Heavy Wind → multi-day outages → limits communication for people without hard-wire landlines
- Household Preparedness
  - Limited buy-in on emergency notification system
- Town owns very little open space or conservation land
- Low tax base = low funding to address increased needs



## Assets and Features in Plainfield

- Regulatory
  - Zoning
  - Stormwater bylaw in the works
- New public safety building
  - with its own power and ability to serve as command center and shelter
- Broadband
- Active volunteers and citizen-led committees
- Natural resources
  - Open space and forest land
  - Ground water
  - Other

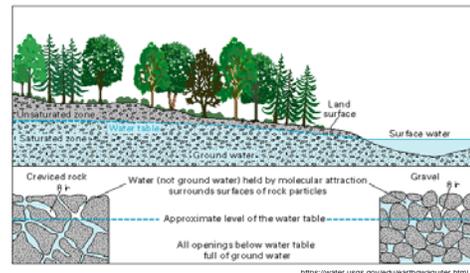


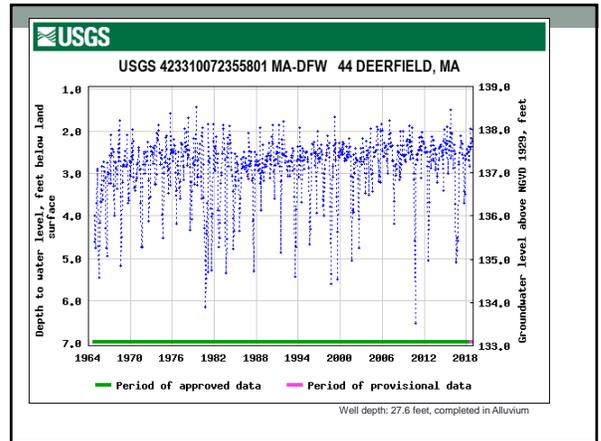
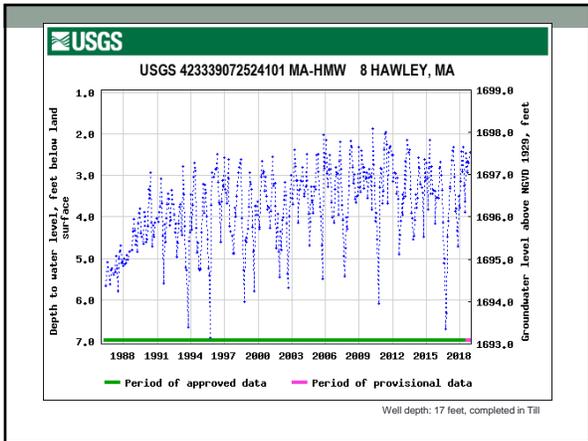
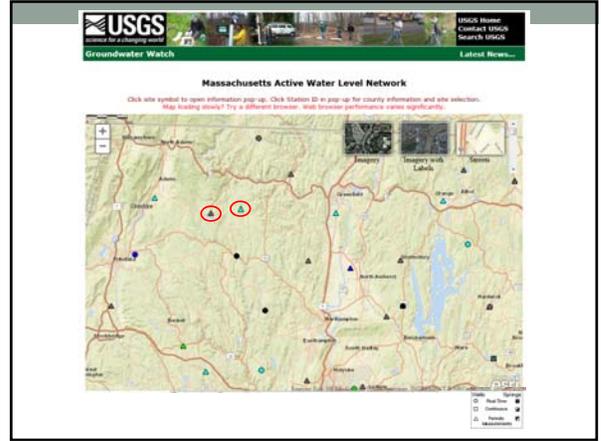
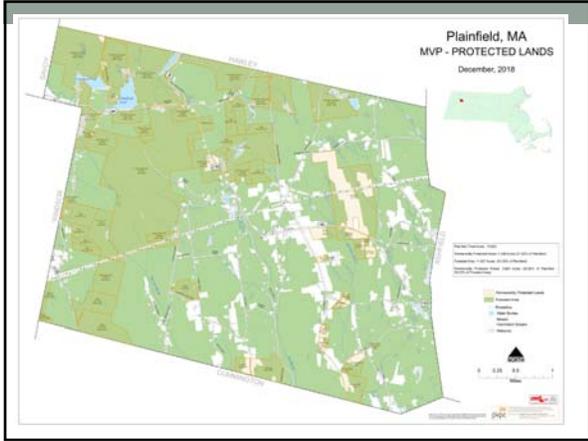
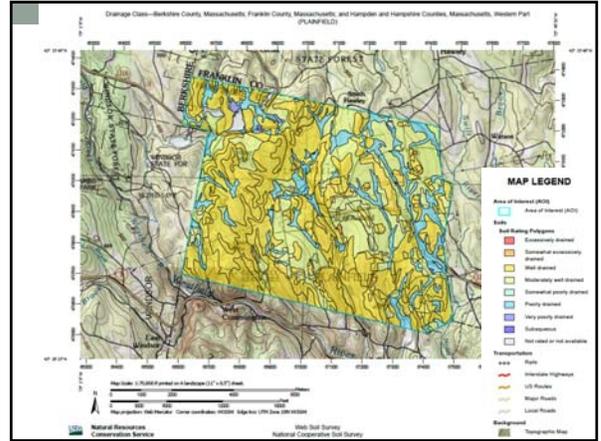
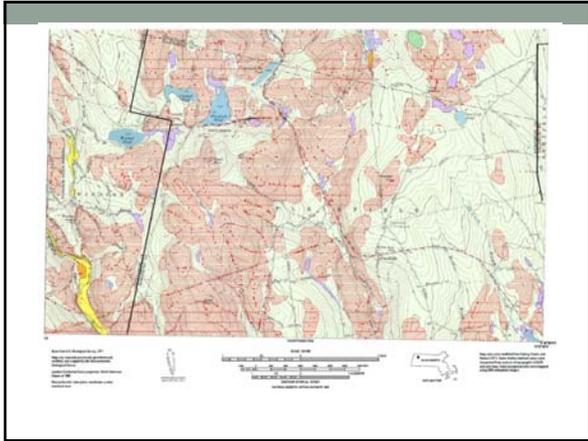
## Drinking water

Three characteristics that shape nature of supply



- Geology
- Soils
- Land use/forest cover





### What do we know?

- Most of Town reliant on private wells  
Most 200 to 300 feet deep
- Nearby USGS groundwater wells show clear responses to major droughts  
Wells are relatively shallow
- With last drought (2016-2017), no reports of wells running dry or poor water quality in Town
- Only 2 sources identified as public water supplies  
Earthdance, Peppermint Park Camping Resort

### Past and Ongoing Actions



plainfield  
broadband

### Past Planning

Plainfield Vision and Action Plan (2003)  
Open Space and Recreation Plan (2007)

**Goal #1:** Plainfield's well-planned growth has protected its open spaces, habitat and working farms and forestlands.

**Objectives:**

- Zoning and land use policies protect open space by requiring adequate site plan review for environmental considerations.
- Residents have a general awareness about the environmental risks associated with the spread of invasive plants and animals
- Protect quantity and quality of drinking water resources.

**Strategies:**

- Update zoning bylaw to protect aquifer
- Promote open space conservation
- Perform outreach about invasives and their associated impacts

Master Plan (Land Use Chapter) (2013)

**Recommendations:**

- Upland requirements for building lots
- Scenic upland zoning

### What does Climate Vulnerability Preparedness Look Like to You?



### Global Climate Trends

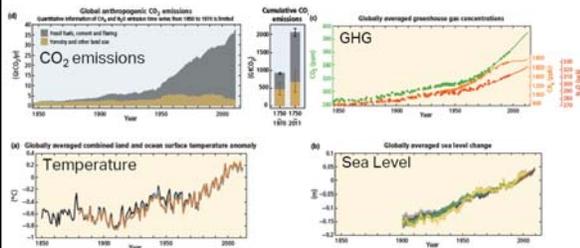
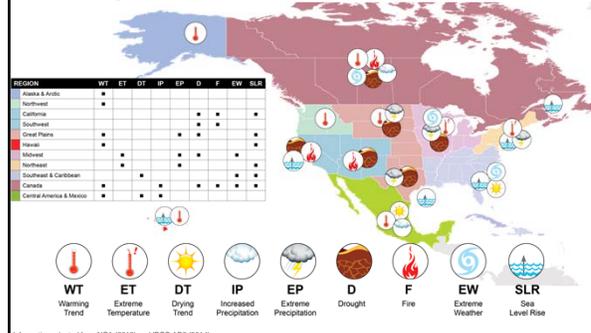


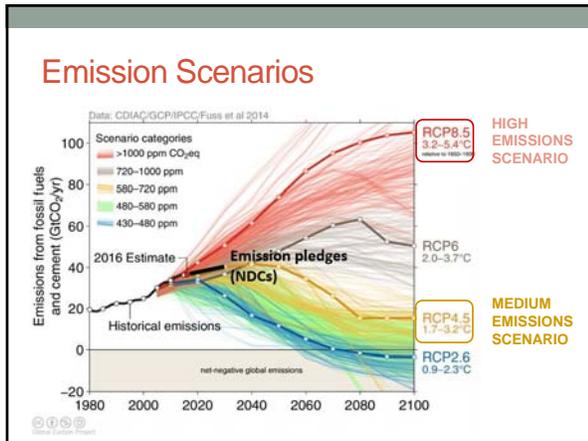
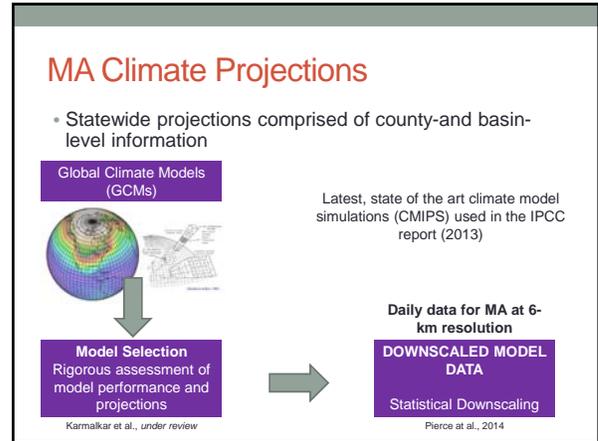
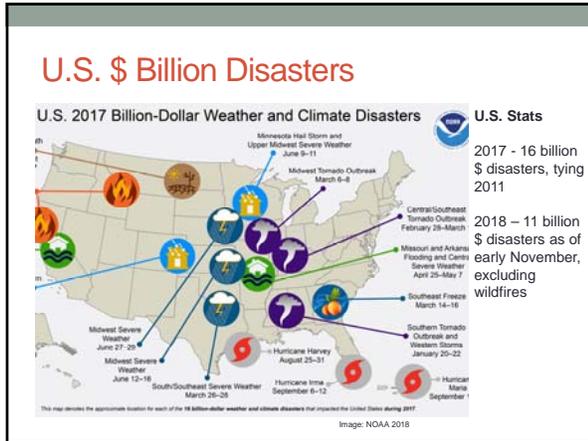
Image: IPCC 2014

- 14 of 15 hottest recorded years since 2000
- July, August 2016, then July 2017 – hottest months on record

### High Level Overview of Climate Change Trends in North America

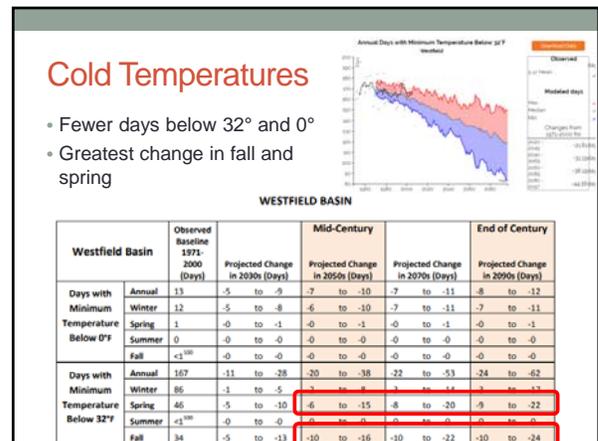
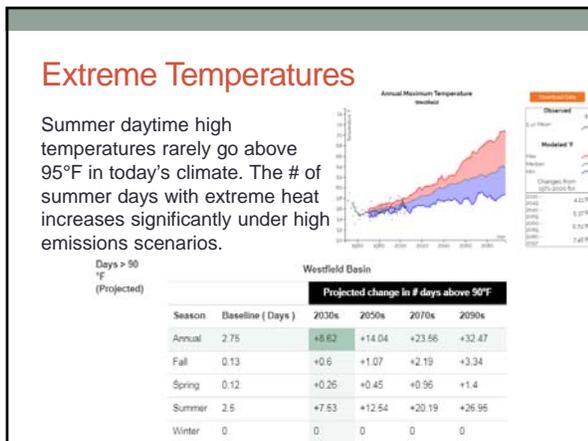


Information adapted from NCA (2013) and IPCC AR5 (2014)



### Westfield River Watershed Climate Projections

- Average temperatures increase through 2100
- Increasing frequency, intensity and duration of heatwaves.
- Up to 25% increase in winter precipitation by mid-century
- Increase in the frequency of heavy winter storms



## Precipitation

- Annual Total Precipitation ↑ 3.78" by 2050
- Greatest increases in spring and winter
  - +2.06" in spring by 2090s
  - +2.22 in winter by 2090s

Westfield Basin					Projected change in # of consecutive dry days					
Season	Baseline (inches)	Projected change in inches of total precip				Baseline (# Consecutive Days)	Projected change in # of consecutive dry days			
		2030s	2050s	2070s	2090s		2030s	2050s	2070s	2090s
Annual	50.7	+2.95	+3.98	+4.58	+5.11	16.8	+0.45	+0.84	+0.82	+0.66
Fall	12.87	+0.47	+0.52	+0.26	+0.14	11.82	+0.8	+1.05	+1.35	+1.28
Spring	13.41	+0.92	+1.32	+1.68	+2.06	11.67	-0.11	-0.04	-0.08	-0.14
Summer	13.23	+0.71	+0.91	+0.97	+0.95	11.33	+0.2	+0.31	+0.42	+0.25
Winter	11.2	+0.67	+1.09	+1.74	+2.22	11.66	+0.16	+0.28	+0.03	+0.07

## Precipitation >1"

- Annual ↑ 1.6 days by 2050
- Greatest increases in spring and winter

Extreme Precipitation > 1" (Projected)

Westfield Basin					
Season	Baseline (days)	Projected change in # Days with precipitation > 1"			
		2030s	2050s	2070s	2090s
Annual	8.18	+1.07	+1.83	+2.26	+2.28
Fall	2.31	+0.32	+0.44	+0.37	+0.34
Spring	2.07	+0.28	+0.47	+0.74	+0.78
Summer	2.39	+0.27	+0.39	+0.42	+0.35
Winter	1.39	+0.3	+0.62	+0.85	+0.91

## Consecutive Dry Days

Consecutive Dry Days (Projected)

Westfield Basin					
Season	Baseline (# Consecutive Days)	Projected change in # of consecutive dry days			
		2030s	2050s	2070s	2090s
Annual	16.8	+0.45	+0.84	+0.82	+0.66
Fall	11.82	+0.8	+1.05	+1.35	+1.28
Spring	11.67	-0.11	-0.04	-0.08	-0.14
Summer	11.33	+0.2	+0.31	+0.42	+0.25
Winter	11.66	+0.16	+0.28	+0.03	+0.07

## Who and what is especially vulnerable?

- Challenges
  - More extreme storm events/precipitation
  - More and longer heat waves
  - More summer drought
- Vulnerable populations
  - Under 5 and over 65 years old
  - Low income
  - Disabled and chronic illness
  - Limited English speakers
  - Socially or physically isolated
  - Agricultural community
- Other vulnerable assets – transportation infrastructure/culverts, drinking water, forests, biodiversity

## Taking Action

**Climate Action and Clean Energy Plan (2014)**  
A plan to guide actions in response to climate-change and its impacts. Offers strategies for local and regional actors to reduce GHG emissions and protect communities from climate-related damage.

**Sustainability and Climate Action Management Plan (SCAMP) (2010)**  
A roadmap to reducing resource use and associated impacts, and a guide to institutional cultural change.

**Deerfield River Watershed Climate Change Vulnerability Assessment Pilot Project (2018)**  
Develops protocols for assessing the present and future extreme flood vulnerability of culverts to be incorporated as part of decision making process

**MA Executive Office of Energy and Environmental Affairs MVP (2017-)**  
Supports cities and towns to begin the process of resiliency planning. Focusing on vulnerabilities associated with climate change.

## MVP and Nature-Based Solutions

- The sustainable management and use of nature for tackling challenges such as climate change, water and food security, biodiversity protection, human health, and disaster risk management.
- Provides co-benefits for people and nature
- Examples
  - Prescribed fire to reduce forest fire risk
  - Bioengineered streambanks to secure from erosion
  - Flood and fish friendly culverts

### Risk Matrix Exercise

Community Resilience Building Risk Matrix Municipal Vulnerability Preparedness				Top Priority Hazards			
Municipal Vulnerability Preparedness				Severe Winter Weather	Flooding	Extreme Temperatures	Drought
Municipal Vulnerability Preparedness				Severe Winter Weather	Flooding	Extreme Temperatures	Drought
Municipal Vulnerability Preparedness				Severe Winter Weather	Flooding	Extreme Temperatures	Drought
<b>INFRASTRUCTURE</b>				<b>COMMUNITY ACTIONS</b>			
EXAMPLE 1: Emergency vehicle access on public and private roads	Town-wide	Emergency Response	Y				
EXAMPLE 2: Storm water susceptible to overflow	Town-wide	Storm Water	Y				
<b>HOUSING</b>				<b>COMMUNITY ACTIONS</b>			
EXAMPLE 1: Emergency Shelter	Town Center	Emergency Management	Y				
EXAMPLE 2: Neighborhood cooperation	Town-wide	N/A	Y				
EXAMPLE 3: Residents with limited mobility on other functional units	Town-wide	N/A	Y				
<b>ENVIRONMENT</b>				<b>COMMUNITY ACTIONS</b>			
EXAMPLE 1: Drinking water resources/ground water quality	Multiple Town-wide	Water Protection	Y				
EXAMPLE 2: Steep slopes prone to landslides	Multiple Town-wide	Water Protection	Y				

### Risk Matrix Exercise

**Top Hazards for Plainfield:**

- Severe Winter Weather
- Severe Weather (Wind, stormwater flooding, heavy rain)
- Invasive Species and Vector-Borne Disease
- Extreme Temperatures

Community Resilience Building Risk Matrix Municipal Vulnerability Preparedness				Top Priority Hazards			
Municipal Vulnerability Preparedness				Severe Winter Weather	Flooding	Extreme Temperatures	Drought
Municipal Vulnerability Preparedness				Severe Winter Weather	Flooding	Extreme Temperatures	Drought
Municipal Vulnerability Preparedness				Severe Winter Weather	Flooding	Extreme Temperatures	Drought
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EXAMPLE 1: Emergency vehicle access on public and private roads	Town-wide	Emergency Response	Y				
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<b>HOUSING</b>				<b>COMMUNITY ACTIONS</b>			
EXAMPLE 1: Emergency Shelter	Town Center	Emergency Management	Y				
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EXAMPLE 3: Residents with limited mobility on other functional units	Town-wide	N/A	Y				
<b>ENVIRONMENT</b>				<b>COMMUNITY ACTIONS</b>			
EXAMPLE 1: Drinking water resources/ground water quality	Multiple Town-wide	Water Protection	Y				
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### Risk Matrix Exercise

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EXAMPLE 1: Drinking water resources/ground water quality	Multiple Town-wide	Water Protection	Y				
EXAMPLE 2: Steep slopes prone to landslides	Multiple Town-wide	Water Protection	Y				

### After Risk Matrices are Complete...

- Turn in Priority Cards
- Report Outs
- Dot Voting
- Implementation Exercise and Report Outs



Community Action	Priority	Cost	Rating	Implementation Measure
EXAMPLE 1: Emergency vehicle access on public and private roads	High	Low	High	...
EXAMPLE 2: Storm water susceptible to overflow	High	Low	High	...
EXAMPLE 3: Residents with limited mobility on other functional units	High	Low	High	...

- ### Data and maps available during workshop
- Resources for today
    - Maps
      - Basemap – for mapping exercise
      - Critical Facilities and (Past) Hazard Area Map
      - Surficial geology
      - Soils
      - Forest cover
    - List of Critical Facilities and evacuation routes
    - Downscaled climate projections (on computer)
    - Open Space and Recreation Plan

### Any Questions?

# APPENDIX E: PUBLIC LISTENING SESSION

## AGENDA



## Plainfield Municipal Vulnerability Preparedness Public Listening Session

And

### Hazard Mitigation Plan Public Meeting #2

**DATE:** Wednesday, February 13, 2019  
**TIME:** 7:00p.m.  
**PLACE:** Plainfield Town Hall

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#### AGENDA

- 7:00 p.m. **HMP Process Overview and Presentation of Draft Mitigation Strategy**
- 7:20 p.m. **MVP Workshop Process Overview and Summary of Findings**
- 7:55 p.m. **Public Q&A**
- 8:20 p.m. **Conclusion and Closing Input**
- 8:30 p.m. **Adjourn**

(The comments recorded below are paraphrased based on the notes taken by the meeting facilitator)

- Participant learned a lot from the Puerto Rico experience with Hurricane Maria. Climate change is a big picture problem, and we can't plan for it assuming that our critical systems will always be functioning the way we expect them to. For instance, why should we assume that we will have electricity? We should be planning for resilience without electricity, at least as provided by some outside source that could be disrupted. In addition, any disruptions that occur in Springfield, Pittsfield, or other surrounding population centers will impact Plainfield. If a bridge on the Mass Pike gets taken out, or if the region loses power for an extended period, how will Plainfield get food? We need contingencies that don't rely on electricity or uninterrupted accesses to outside suppliers of goods and services.
- Residents whose house is 300 yards from the main road may need special assistance in a severe weather event, especially if the resident is alone, has physical limitations, or lacks communication options. One important initiative for the town could be to help people recognize how important it is to set up local, neighborhood scale emergency networks.
- Many people don't know how to be prepared or to provide necessities during an emergency - how to get water, cook dried beans, keep animals fed and watered, etc. The town could do an education series of skills-building workshops about growing and storing your own food (use Catherine Harrison's book as a reference).
- One attendee asked the group how many weeks could everyone last in their homes without needing outside sources for food. Most participants could last 2-3 weeks.
- The town could conduct a personal preparedness poll via the Plainfield Post asking a series of questions for residents to consider about preparedness in their own homes. Questions would be focused on "what resources do I have", "what can I do on my own", "what don't I have or can't I do on my own in my own home".
- The town does not have back-up power at the trash compactor at the highway garage.

## Plainfield Hazard Mitigation Plan Public Meeting #2

and

## Municipal Vulnerability Preparedness Public Listening Session

Wednesday, February 13 2019, 7:00 PM  
Plainfield Town Hall

Sign in

Name	Affiliation	Plainfield Resident? (Y/N)	e-mail
BILL ADAMS	SEAFIELDMAN COMMUNINGTON	N	BILL.ADAMS2@VERIZON.NET
ED STOCKMAN	PLAINFIELD AGCOM	YES	EDSTOCKMAN@VERIZON.NET
Ellen Baer	HMP	YES	baerstein@janitor.net
Jack Nelson & Jeanne Sampert	Com Com	Y	jsampert@aol.com
TIM WALTER	PLAINFIELD EVENT CARE	YES	TIMWALTER@HOTMAIL.COM
Judy Williams	Com Com HMP	YES	judithjwilliams@verizon.net
REBE LARANTE	PLAINFIELD Bd	YES	rebe@rebe.net
DAVID KRIMER	Fire Dept Plainfield Fire Dept	YES	krimer@plainfieldnj.com
Janene Graham	Resident	YES	janene@janene.com
Anna Hariclett	Ag. Comm.	YES	anna@mandafarm.com
Howard Bronstein	Sel Bd	Y	