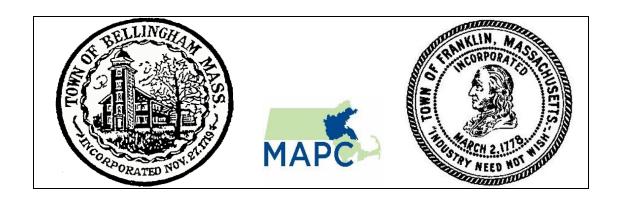
Towns of Bellingham and Franklin Municipal Vulnerability Preparedness







Community Resilience Building Workshop Report

September 2020

Acknowledgements and credits

This project was conducted for the Towns of Bellingham and Franklin by the Metropolitan Area Planning Council (MAPC) with funding from the Executive Office of Energy and Environmental Affairs. Special thanks to James Kupfer, Bellingham Town Planner and Bryan Taberner, Franklin Director of Planning and Community Development for managing the project for the two towns, to the municipal MVP Core Team (listed on page 21), and to all the workshop participants (listed on page 20) who enthusiastically and diligently worked to create a more resilient Bellingham and Franklin.

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Towns of Bellingham and Franklin Community Resilience Building Workshop Summary of Findings

OVERVIEW

Recent years have seen notable weather extremes in Bellingham and Franklin and the surrounding region. The record rainfall of April 2010 resulted in a disaster declaration across the Commonwealth of Massachusetts. The winter of 2015 brought record-breaking snow of 110 inches. The following year, the Towns and the region were under a drought warning from July to December 2016, the most severe since the 1980s. The winter of 2018 once again brought severe winter storms, including nor'easters in January and March, also resulting in a state disaster declaration. Globally, the years 2014 through 2018 were the five hottest years on record.

In 2017, the Commonwealth of Massachusetts inaugurated the Municipal Vulnerability Preparedness (MVP) program to assist municipalities in planning for and implementing strategies to adapt to predicted changes in our warming climate. The predicted changes include both increased flooding from large rain events and a greater likelihood of drought, increased extreme heat days and heat waves, and increased flooding from sea level rise.

The Towns of Bellingham and Franklin, neighboring towns in the headwaters of the Charles River and part of the Blackstone River watersheds, saw the value of collaborating across municipal boundaries. The two towns also needed to update their FEMA Hazard Mitigation Plans which had been completed in 2011 and 2012. The towns applied jointly for a Municipal Vulnerability Preparedness grant to collaborate on a two-town Community Resilience Building (CRB) Workshop and to prepare updated FEMA Hazard Mitigation Plans for each town. Upon completion of the MVP program and their updated Hazard Mitigation Plans, the towns will be eligible to apply for state MVP Action Grants to address identified climate risks, as well as FEMA hazard mitigation grants to implement projects that reduce the communities' vulnerability to natural hazards. Hazard Mitigation Plans for both towns have been completed and submitted to the Massachusetts Emergency Management Agency and the Federal Emergency Management Agency for review and approval.

The Towns of Bellingham and Franklin partnered with the Metropolitan Area Planning Council (MAPC) to complete the MVP projected and prepare the updated Hazard Mitigation Plans for both towns. The Towns convened an MVP Core Planning Team to prepare for the CRB workshop, members of which also met in each town to coordinate the Hazard Mitigation planning process. The project was overseen for the Towns by James Kupfer, Bellingham Town Planner/Zoning Enforcement Officer and Bryan Taberner, Franklin Director of Planning and Community Development. They each identified and recruited community stakeholders to participate in the CRB Workshop. Forty people representing both Towns' staff, boards and commissions, as well as NGO's, community organizations, and regional partners gathered for the CRB workshop at the Black Box Theatre in Franklin on November 20, 2019 (see Workshop Participants, page xx). The Workshop's central objectives were to:

- Understand extreme weather and climate related hazards
- Identify existing and future strengths and vulnerabilities
- Develop and prioritize opportunities to take action to reduce risk and build resilience

Materials provided for the CRB Workshop included local and regional data on changing trends in temperature and precipitation, as well as future projections to the end of the century. Posters provided data and mapping specific to Bellingham and Franklin's infrastructure, demographics, and natural resources (see Appendix A). Workshop participants considered the towns' strengths and vulnerabilities, focusing on three categories: infrastructure, society, and the environment. Working in five small groups and then together as a large group, workshop participants identified and prioritized actions designed to increase Bellingham and Franklin's resilience to extreme weather events. These are shown by priority and category in the following sections.

TOP HAZARDS AND VULNERABLE AREAS

The MVP Core Team identified the top natural hazards for the two Towns. Based on review of MVP Workshop materials and the most recent Hazard Mitigation Plans, flooding, severe storms (wind, snow, ice), drought, and extreme heat were identified as the categories of climate hazards of greatest concern. As mentioned above, flooding, drought, and severe storms have all affected the two towns in recent years. Considering the towns' demographics temperature trends, extreme heat was also identified as a top climate concern.

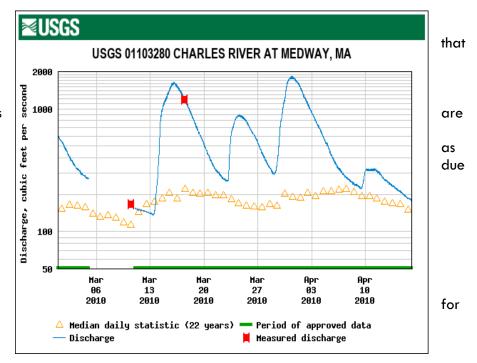
Top Climate Hazards

- Flooding
- Severe Storms (wind, snow, ice)
- Drought
- Extreme Heat

CURRENT CONCERNS AND CHALLENGES

Workshop participants noted the increasing frequency and intensity of storms, including nor'easters bring damaging winds and snowfall and heavy rain events. The principal challenges of the nor'easters the threat of power outages from falling trees and limbs, well as travel restrictions to heavy snow. Large rain events result in flooding in several locations. The most significant recent flooding event occurred in March-April 2010, as shown in Figure 1, when the Charles River exceed flood stage a sustained period of 25 days.

Figure 1: Charles River Discharge, USGS Gage at Medway, 2010



MASSACHUSETTS DROUGHT STATUS
As of December 1, 2016

Northeast Region

Connecticut River Region

NOTE: The MWRA/DCR water system has an individual Drought Management Plan: Some partially supplied member; communities one partially supplied

Figure 2: Massachusetts 2016 Drought Warning

At the other extreme, droughts are harmful to aquatic resources and vegetation, water supplies, and local agriculture.

Massachusetts experienced a significant drought in 2016, when all regions of the state except the Cape and Islands were under a Drought Warning, the second highest category of drought conditions under the Massachusetts Drought Management Plan (which has since been revised in 2019).

As these issues are not new, the Towns of Bellingham and Franklin have taken steps to

prepare for extreme weather and prevent harm to people and property through their emergency management activities and their FEMA Hazard Mitigation Plans, which are being updated as part of this project. Workshop participants shared concerns that projected climate change will heighten current challenges and elevate new concerns, particularly power outages, water supply, and public health issues related to high heat.

AREAS OF CONCERN

Advisory Normal

Infrastructure-Water Supply

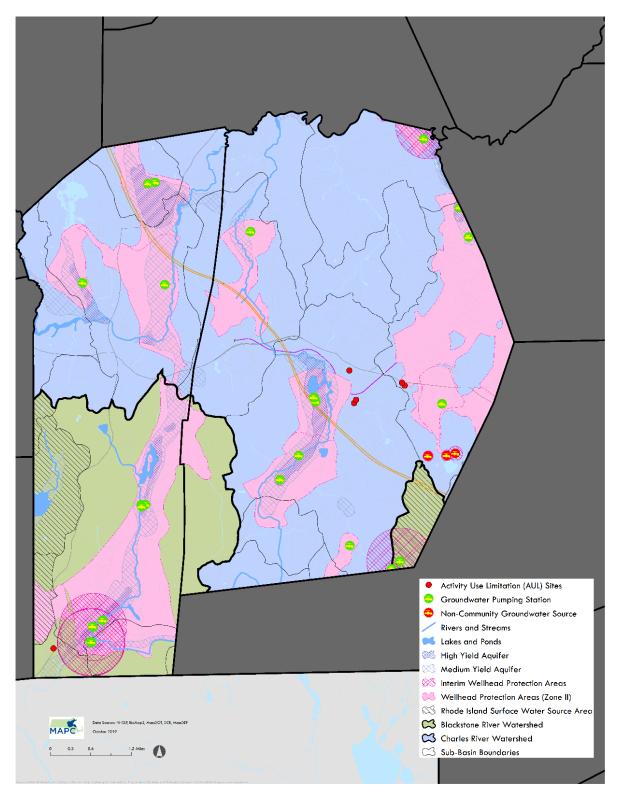
Workshop participants expressed concern for water quality and quantity as both Bellingham and Franklin rely on local groundwater resources for their water supply. The Towns of Bellingham and Franklin straddle two major watersheds. Franklin and the northern part of Bellingham are located at the headwaters of the Charles River watershed, which flows to Boston Harbor. The southern portion of Bellingham is in the Blackstone River watershed, which flows south to Narragansett Bay in Rhode Island. Both towns rely on local wells for their public water supply, with municipal wells located in both the Charles and Blackstone River watersheds. (Figure 3).

Both towns have delineated the "Zone 2" Wellhead Protection Areas that recharge their wells, as defined by DEP. They have both adopted local aquifer protection bylaws that restrict land uses in those recharge areas that could pose a risk of contamination of groundwater.

Water quantity is also a concern; as both towns have grown over the last few decades there have been challenges meeting growing demand. Water availability is a function of both infrastructure and

regulatory limits on water withdrawals related to the Water Management Act. Both towns have implemented robust water conservation programs to help meet this challenge.

Figure 3 Bellingham and Franklin Water Supply Resources



Both towns have significant flood hazard areas, as designated by FEMA, along the main stem and tributaries of the Charles and Blackstone Rivers. However protective land use measures such as floodplain overlay districts have limited development in these areas for the last several decades, and portions of the floodplain areas have been protected as open space.

However, the Towns identified several areas of concern for localized roadway flooding and drainage which are listed in their Hazard Mitigation Plans, including Box Pond Dam, Lake Shore Drive, High Street, Peter's River, Blackstone Street, and Green Acres in Bellingham, and Populatic Street, Spring Street, and Spruce Pond in Franklin.



Figure 4: Bellingham and Franklin Flood Hazard Areas

Societal

Vulnerable populations identified include seniors, people living alone, and low-income residents. Like most area towns, the population of senior citizens is expected to increase over the next several decades in Bellingham and Franklin. By 2030, people over 65 are expected to make up 20% of Bellingham's population and 25% of Franklin's (Figure 5). About 20 percent of the residents in both towns live alone, and about 35% of these are over age 65 (Figure 6). Low income households are 25% of the total in Franklin and about 31% in Bellingham. In both towns, over half of these households are seniors (Figure 7).

Figure 5 Population by Age in Bellingham and Franklin

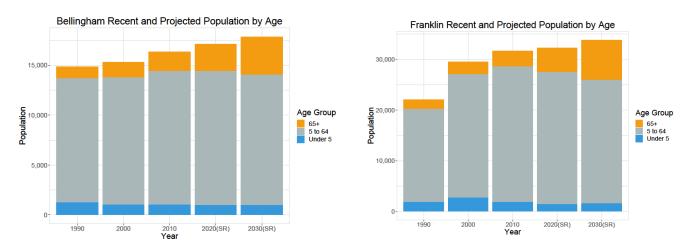
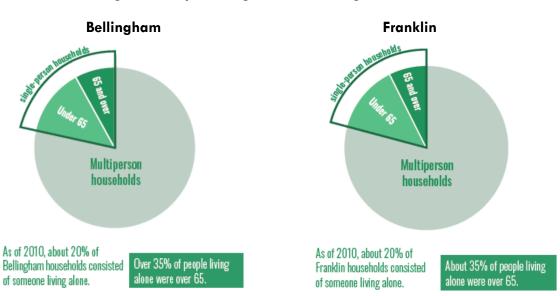
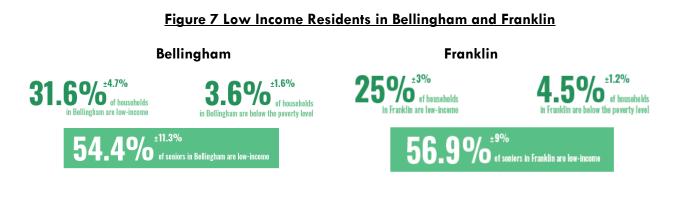


Figure 6 People Living Alone in Bellingham and Franklin





*A four-person household earning less than \$78,150 is considered low-income; a four-person household earning less than \$24,563 is below poverty level

Environmental

Among the two Towns' greatest strengths are their significant forest cover, which comprises nearly half of the land area of both towns (see Figure 8). Forest cover provides multiple benefits, including retaining rainwater and reducing runoff and flooding, as well as mitigating the heat impacts of climate change. However, forests may also be vulnerable to some climate impacts, including a shift in tree species composition as well as the proliferation of pests, diseases, and invasive species. A major concern for both towns is managing trees to reduce power outages.

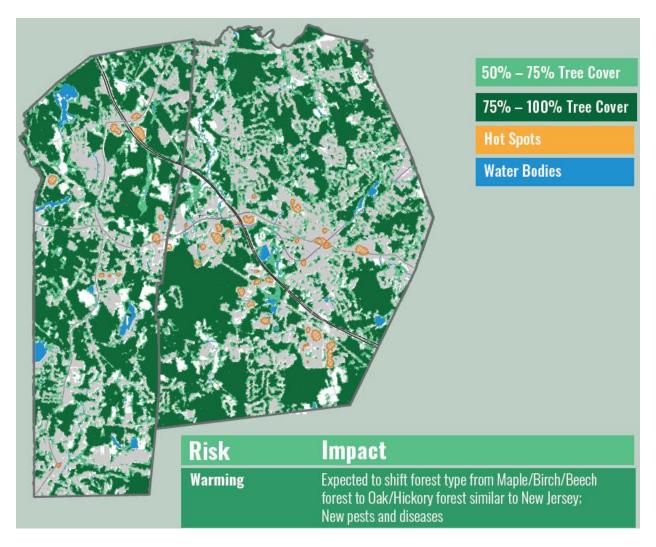


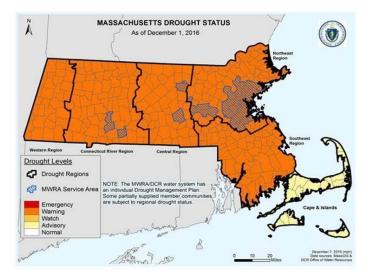
Figure 8: Bellingham and Franklin Forest Cover

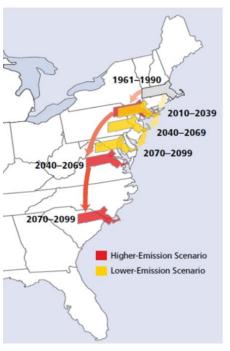
Another environmental priority for Bellingham and Franklin is managing and protecting the Towns' water resources, including managing stormwater with LID approaches, and protecting the Towns' local water supplies which are based on groundwater. Droughts are one of the climate impacts of concern, as they are projected to be more frequent and severe. Vulnerability to droughts may be addressed with measures to increase groundwater recharge using Green Infrastructure as well as water conservation programs to manage water demand. Figure 9 illustrates the Drought Warning

declaration of 2016, which covered all of the state except the Cape and Islands region, and was the worst drought in Massachusetts since the early 1980's. In July 2020, the state's Drought Management Task Force again declared drought conditions over most of the state.

Figure 9 MA Drought of 2016

Figure 10 Climate Heat Impacts





to

Impacts of Climate Change

Projected future climate trends pose a significant challenge the Towns of Bellingham and Franklin. Increasing temperatures will bring an increase in the annual number of

days over 90 degrees, from about 10 days currently to a range of 25 to 60 days by 2100, depending on the level of future Greenhouse Gas (GHG) emissions. The resulting temperature regime by the end of the 21st century could transform Massachusetts' climate to be similar to present day Maryland under a low GHG emissions scenario, and similar to South Carolina under a high GHG scenario (Figure 10).

Climate change also brings changes in precipitation patterns. The projections for the Charles River watershed are that average annual rainfall will increase by 10 percent, but more importantly, there will be an increase in the size and intensity of storms. The typical 10-year 24-hour storm, which historically yielded 4.5 inches of rainfall, increased to 5.23 inches by 2014, and could increase to 6.4 inches by the end of the century according to projections from the City of Cambridge (Figure 11). The 10-year 24-hour storm is considered to be the "design storm," or the benchmark to determine the design and size of many stormwater management facilities installed on development sites as well as public infrastructure. As rainfall intensity increases, more existing stormwater infrastructure will be unable to handle the increased flows, resulting in more flooding.

Figure 11: Projected 10-Year, 24 Hour Storms

Expected size of a 10-year, 24-hour storm

4.5 inches
1961 Observed
Rainfall
(NOAA) for
Eastern MA

5.23 inches 2014 Observed Rainfall (NOAA) in Franklin & Bellingham 5.6 inches

Cambridge
Rainfall
Projections,
2015 - 2044

6.4 inches

Cambridge
Rainfall
Projections,
2055 - 2084

Storm drains built for 1961 standards will be inadequate as rainfall increases

BELLINGHAM & FRANKLIN CRB WORKSHOP RESULTS

The Bellingham & Franklin Community Resilience Building (CRB) Workshop was attended by 41 participants representing various Town boards, commissions and staff, as well as community stakeholders from a wide range of interests. The participants worked in five smaller table groups of eight to nine each, to first identify the Towns' strengths and assets with respect to the impacts of climate change. In a second session, the table groups developed proposed actions to address the Town's vulnerabilities and strengthen the Towns' resilience.

CURRENT BELLINGHAM AND FRANKLIN STRENGTHS AND ASSETS

Workshop participants identified numerous strengths and assets that will provide resilience to future climate impacts. As shown below, identified Town strengths include protected open space and forest cover, strong local regulations, local service organizations (Council on Aging, food pantry, VFW, churches, etc.), generators at critical facilities, robust communications, and transportation access by roadway and transit. The full list of strengths and assets follows:

Strengths and Assets - Infrastructure

- Communications: Reverse 911, email, social media
- Emergency Management Committees
- Bellingham is working on new culverts and piping
- Flooding in Franklin is relatively minor
- Pearl Street Dam was removed, Franklin dams rebuilt
- Wastewater: building new treatment in Medway and Bellingham
- Pump Stations have generator backup
- Sewers-south end of Bellingham, flows to Woonsocket, RI treatment facility
- GATRA on-call at senior centers
- Franklin capital projects -- rain gardens, etc.
- Franklin Commuter Rail 2 stations
- New Police and Fire stations in Bellingham
- Good DPW yards in both towns
- Bellingham Emergency shelter located close to municipal services (police, fire) on Mechanic St.
- Good roadway access -- i-495, Rt 140, Hartford Avenue
- Tri-County shelter-generator, kitchen facilities
- Senior Centers in both towns

- Milford Urgent Care nearby
- Municipal buildings generators, contingency plans
- Emergency shelters at Dean College, YMCA, High School, and senior centers
- Shared radio system between Bellingham and Franklin
- Shrinking road sizes to reduce runoff and install rain gardens
- Franklin TV / WFRP-FM emergency communication
- Extensive culvert repair in Franklin
- Good water and wastewater treatment
- Generators for wastewater system

Strengths and Assets - Society

- Active and engaged Senior Centers located outside of the flood zone
- Churches can help in emergencies (languages)
- VFW, Elks, Lions, Freemasons
- Evergreen Day Care facility serves mentally challenged children
- Community food panties, St. Blaise, Franklin food pantry
- Bellingham Senior Center conducts home visits
- Franklin Homeless Summit: churches, service providers
- Potential hotel stays for unhoused people
- Animals: 200+ dogs & cats at Camp Bowwow
- Food vouchers for food trucks, restaurants, stores
- ReGroup, Blackboard Connect, Reverse 911,
- YMCA Kids, families, school partnerships, after school programs
- Condo Associations
- CERT Teams FEMA, Dean College
- Harvest Festival Open House at Fire Station
- Special Needs Communication System with schools, police, fire drills
- Bellingham warming and cooling center
- Library has good children's services, after school activities

Strengths and Assets - Environment

- Tree trimming programs
- Water conservation programs & incentives
- Franklin is designated a Green Community
- Bellingham submitting Green Community application
- Bellingham has several protected conservation restrictions and open spaces
- Franklin bylaws are stricter than state wetland protection regulation
- Bellingham has a protection area around the town's drinking water wells
- Beaver Pond and Silver Lake provide residents with water recreation opportunities
- Franklin DPW has Best Management Practices (BMP) guide and incorporates Green Infrastructure in projects
- Open Space, tree canopy in both towns--stormwater mitigation
- Charles River Natural Valley Storage, federal project flood mitigation and open space

- Good groundwater resources and gravelly soil drains well
- Wetlands bylaws: Bellingham's is well administered, jurisdiction will increase
- Pollingtory Pasture: native species and rain garden
- Education around environment and water bans
- Agriculture Commission reaches out to schools
- Clean Energy and Solar and LEDs at Dean College
- No clear cutting allowed in subdivisions--residential open space bylaws
- Franklin Rain Gardens
- Active Conservation Commission in Bellingham focus on water quality
- Franklin High School uses roof rainwater capture for toilets, very little water use
- Franklin State Forest
- Franklin Open Space Subdivision bylaw protects hundreds of acres
- Extensive solar arrays in both towns
- SNET through both towns
- · Two lakes in Bellingham, nice community resource; treated for algae

TOP RECOMMENDATIONS TO IMPROVE RESILIENCE

Each of five table groups prioritized their proposed actions as High, Medium, or Low and put forward their five highest priority actions, for a total of 25 actions across from all five tables. Several of the 25 actions from various table groups were the same or very similar, so these were grouped together for purposes of voting for the top priority actions. All workshop participants then selected their top three priorities from among these 25 actions. A review of the final participant voting reveals several actions or clusters of similar actions that garnered significantly more support than others. The actions identified as highest priorities are listed below in order of the number of votes they received, shown in parentheses. The full list of all actions is shown in the following section. Most of the actions pertained to both Bellingham and Franklin, but there were several that were specific to one of the towns, as noted below.

1. Emergency Sheltering and Evacuation/Transportation (27 votes)

- Work with senior facilities and housing on emergency sheltering and evacuation plans (10)
- Identify vulnerable populations, work with community and faith-based organizations to develop strategies to mitigate risks, provide shelters and transportation to shelters (6)
- Investigate emergency services and shelters and coordinate with Local Emergency Planning Committee; bring all stakeholders together; meet regionally (5)
- Increase number and quality of shelters collaborate with community resources, EMP, Red Cross, hospitals, hotels, restaurants, etc. (3)
- Investigate potential additional shelter facilities that can service multiple towns (2)
- Investigate emergency access and backup plans for Central Park Terrace senior housing in Franklin (1)
- Food Pantries: increase outreach to foster support and expand existing sites

2. Communications and Vulnerable Populations (19 votes)

- Communications infrastructure: identify ways to connect with people on EEE, extreme weather events (10)
- Plan to identify and leverage services for demographic groups that may slip between the cracks in social networks (6)
- Increase awareness and educate the towns on risks and mitigation through social media and town websites (EEE, etc.) (3)
- Develop a robust communication Plan for emergency events that includes other languages
- Strengthen communications with Non-Governmental Organizations related to language barriers and establish a Task Force to identify vulnerable populations

3. Water Resources (16)

- Study capacity of future water supply for Franklin (5)
- Water Quality, reliance on wells: Communication & education; wetland protection, control/manage water bodies. (5)
- Review and update stormwater regulations (3)
- Protect water supplies (3)

4. Environment / Sustainable Development (10 votes)

- Address growth management in a sustainable fashion; preserve open space (8)
- Identify key habitat areas for future protection measures and conservation (2)

5. Reliable Power & Tree Management (9)

- Tree maintenance; cut back; utilities and towns (8)
- Audit commercial generators in towns
- Future development underground power lines (1)

6. Public Safety Resources (9)

• Increase resources for Public Safety and Public Works in both towns (9)

7. Green Energy (6)

- Apply for Green Communities and other similar sources (6)
- Locate/site solar farms in areas that have been previously cleared; don't impact the natural landscape

8. Long-Term Infrastructure Planning (2)

Culverts and bridges, capital improvements and maintenance

 Continued improvement of infrastructure: design for a new future; long range impact requirements (1)

BELLINGHAM ACTIONS

9. Bellingham Schools (14)

• Town schools should get together to discuss emergency planning, document plans (14)

10. Bellingham DPW Building (8)

• Replace Bellingham DPW building (8(

11. Bellingham: Beaver Management (3)

 Develop Plan for beaver management to mitigate flooding at Stallbrook School and Hartford Avenue (3)

12. Bellingham: Senior Center (2)

- Renovations needed for Bellingham Senior Center (1)
- Improve infrastructure at Senior Center generator; kitchen (1)

13. Bellingham: Flooding on Wrentham Road (1)

Study culverts to mitigate flooding on Wrentham Road (1)

•

14. Bellingham: Transport of Hazardous Materials (1)

Create alternate truck routes or restrict transport of hazardous materials on Blackstone Street
 (1)

SUMMARY OF ALL ACTIONS BY PRIORITY AND CATEGORY

The highest priority actions from the table groups are shown in **bold text** below.

High Priority

INFRASTRUCTURE-HIGH PRIORITY

•	Study flooding on Wrentham Road and feasibility for replacing culvert, raising grade	В
•	Develop ling term infrastructure planning to prepare for future needs and impact of climate change (capital improvements and maintenance)	B & F
•	Develop a comprehensive plan for beaver management to mitigate flooding near the school and other areas (Hartford Ave)	В
•	Create alternative truck routes or restrict traffic of trucks carrying hazardous materials	В
•	Community Education/Outreach/Communication: conservation attention during peak demand times; start with rain barrels, kids. Improve recharge, wetland protection, berms, prevent runoff, LID. Monitor wells, PFAS, pump requirements and maintenance schedule. Water line replacement.	B&F
•	Infrastructure improvements and upgrades; review town regulations around proposals, site plans engineering, flood and rainfall data (e.g. culverts)	В
•	Investigate emergency shelter redundancy in FPS; check with LEPC, coordinate drills between the two towns	F
•	Both towns maintain growth management to keep track of options (Master Planning process)	B&F
•	The town and the schools should get together to coordinate emergency planning	В
•	Fund a replacement DPW building for Bellingham	В
•	Develop a plan to protect/fortify the Populatic Pump Station	F
•	New treatment plant will help with Franklin water supply; need to study capacity to provide future supply (growth)	F
•	Current Bellingham communications linkage is over the internet; consider air link. Find Bellingham location, conduct line-of-sight study, find resources	В
•	Educate residents about protection; regulation for future developments to protect basements	B & F
•	Consider use of Elks, VFW as shelters (need generators)	B & F

SOCIETAL-HIGH PRIORITY

•	Strengthen communications with NGO's, especially language barriers; establish a Task Force to identify vulnerable populations and how to assist and communicate with them	B & F
•	Identify vulnerable populations and work with community and faith-based organizations to develop strategies to help mitigate risks to those populations (including temporary shelters and transportation to facilities)	В
•	Increase outreach to foster support for volunteer efforts. Investigate opportunities to expand the existing pantry, including siting a new location	B&F
•	Develop a more robust communication system to inform the public of hazard/emergency events. Communications should include multilingual notification and enhanced translation services	B&F
•	Upgrades to Bellingham Senior Center	B&F
•	Research and confirm access to Central Park Terrace during weather events	F
•	Involve/engage need a plan that identifies the demographics of the community and the steps to address emergency services	В
•	Increase resources for fire, police, and public works	B & F
•	Work with facilities on their capacity to shelter in place	B & F
•	Engineering study for Bellingham Council on Aging is funded; need funding to build, would be over \$1 million	Bd
•	Study need of growing diversity in towns; consider targeted outreach; schools have experience	B & F
•	Make local and regional data interoperable (in cars); keep up with updates	B & F
ENVIRO	DNMENTAL-HIGH PRIORITY	
•	Apply for grant funding to implement Green Community strategies	F
•	Identify key habitat areas for future protection measures and conservation	В
•	Locate/site solar farms in areas that were previously cleared and do not negatively impact the natural landscape	B&F
•	Increase awareness and educate the community on risks and mitigation through social media/town web site	B&F
•	Monitor aquifers and drinking water; continue to be proactive for protection	q
•	Growth Management - Sustainable growth	B & F
•	Update development regulations - require tree cover	B & F
•	Encourage utilities to increase rotation and expedite hazardous tree process, and town Tree Warden tree management	B & F

Medium Priority

INFRASTRUCTURE-MEDIUM PRIORITY

•	Review and update stormwater regulations	B&F
•	Review zoning to ensure consistency between land use and infrastructure capacity	B&F
•	Look for ways to create a more extensive and reliable transit program	B&F
•	Incorporate Green Infrastructure into new and existing parking lots and construct solar canopies where feasible	B&F
•	Refresh and coordinate emergency plans, communications; Red Cross partnership, transportation (TMMA)	B&F
•	Establish partnership with Milford Urgent Care; shared plans for emergencies	B&F
•	Conduct a generator audit (town-wide?)	B&F
•	Transportation coordination between the two towns, state, and federal transportation agencies	B&F
•	Share plan and coordinate with LEPC; share ideas for tabletop exercises	F
•	Long term plan to identify grants and capital funding for building bridges	F
•	Fix leaks; preventative, knowledge of safety measures	F
•	Support double-track length of the Commuter Rail line	B&F
•	Prioritize development in non-flood prone areas	F
<u>SOCIETY</u>	Y—MEDIUM PRIORITY	
•	Mobilize in emergencies, include in emergency planning	B&F
•	Residential outreach and education on what it takes to be prepared	B & F
•	Study what capacity is needed, improve capacity; is there an evacuation plan for animals?	B & F
•	Encourage in-law apartments, encourage buddy programs	В
<u>ENVIRO</u>	NMENT—MEDIUM PRIORITY	
•	Continue to fund tree identification and pruning plans; coordinate with the utilities	B & F
•	Prepare a tree replacement plan and provide funding	B & F
•	Work toward s pushing solar options through municipal aggregation program	В
•	Evaluate funding sources for lake clean-ups, restoration	B & F
•	Work with property owners to plant more shade trees (look at zoning and project permit conditions)	B & F
•	Consider adopting CPA in Bellingham	В
•	Coordinate with the state to develop a forest management plan	F
•	Seek grant funding for remediation of hazardous wastes	F
•	Implement Forest Management in open space areas	B & F
•	Coordinate with Boards of Health on ticks and other insects/pests	B & F
•	Install "Beaver deceivers" for beaver control and management	В

Do not accept new streets if they are not up to par; uniform enforcement of FEMA flood Insurance maps	F
Implement Beaver management to reduce impacts on town facilities	В
 Monitor efforts for Superfund sites; recognize sites and get on list for clean up 	B & F
Low Priority	
INFRASTRUCTURELOW PRIORITY	
Map jurisdiction of Eversource vs. National Grid; also, Blackstone & Columbia	В
 Complete an assessment of the Assisted Living facility to determine the current flood risk and develop recommendations accordingly 	F
 Investigate alternative locations for a backup shelter 	F
 Partner with MBTA to devise an evacuation plan that addresses alternative transportation during extreme storm events 	F
 Community Outreach, set expectations; find more people to help 	B&F
 Provide Data backup, fiber optics for both towns 	B&F
Fire Departments in both towns working on shared radio system	B&F
Implement a Stormwater program	B&F
 Consider establishing a microgrid, network the facilities 	В
SOCIETAL—LOW PRIORITY	
 Public messaging: Team Rubicon; VNA; updated lists; door-to-door 	B&F
 Messaging/communications for "off the grid" folks sheltering Adopt Inclusionary Zoning 	
ENVIRONMENT—LOW PRIORITY	
Continue education/outreach for water conservation	F
 Continue to monitor and treat Delcarte Pond for invasive species 	F
Implement a Stormwater plan	B & F
Invest in childhood environmental education from schools	B & F
 Consider warming climate for tree planting plans 	B & F

CRB WORKSHOP PARTICIPANTS

Name	Affiliation	Position
Alan Mercer	Franklin Performing Arts Co.	Director of Advancement
Amy Love	Franklin	Town Planner
Ann Malley	National Grid	
Brian Kelly	Dean College, Assoc. V.P.	Capital Planning & Facilities
Bruce Wilson	Bellingham	Board of Health Agent
Bryan Taberner, AICP	Franklin	Planning & Comm. Devel. Director
Carly Fisher	Franklin	Agricultural Commission
Cathy Mooradd	Franklin	Dept. of Public Works
Chrissy Whelton	Franklin	Assistant to Town Administrator
, Darrell Kulesza	Dean College, V.P.	Information Technology & CIO
Denis Fraine	Bellingham	Town Administrator
Gary M Premo, ENP	Metacomet Emergency	
,	Comm. Center	Executive Director
Gino Carlucci, AICP	Sherborn, Municipal Planner	PGC Associates
Gus Brown	Franklin	Building Commissioner
Harry Takesian FMP MCPPO	Tri-County RVTHS	Director of Facilities Mangt.
Hillary B. King	MA EOEEA	MVP Central Reg Coordinator
James Klich	Franklin	Deputy Fire Chief
James Mclaughlin	Franklin	Fire Chief
James S. Kupfer	Bellingham	Town Planner/Zoning Compliance
Jamie Hellen	Franklin	Town Administrator
Jennifer Delmore	Franklin	Conservation Agent
Joanne Rebelo	Bellingham	Schools
Joseph Barbieri	Franklin	Deputy Fire Chief
Kelly Grant	Bellingham	Master Plan Committee
Lee Rolls	Bellingham	Police Dept.
Lucas Giguere	Franklin	Assistant Superintendent of Schools
Mark Poirier	Bellingham	Deputy Fire Chief
Mary Mackinnon	Bellingham	Bellingham CFO
Michael D'angelo	Franklin	Director of Public Facilities
Michael Maglio	Franklin	Town Engineer
Michael Roche	Bellingham	Schools
Paul Redmond	Bellingham	Treasurer
Pete Fasciano	Franklin	Franklin TV
Robert Moran	National Grid	Community Manager
Sara Ahern	Franklin	Franklin Public Schools Supt.
Stephen Dockray	Tri-County RVTSD	Superintendent-Director
Stephen Sherlock	Franklin Matters	Comm. Information Director
Susan Speers	Metacomet Land Trust	Board of Directors
Thomas Lynch	Franklin	Chief of Police
Tim Aicardi	Bellingham	Building Commissioner
Tom Degnan	Bellingham	Dept. of Public Works

CRB WORKSHOP PROJECT TEAM

Bellingham-Franklin Core Team

Amy Love Franklin Planning Dept.

Anne Matthews Bellingham Conservation Commission

Bill Blanchard Franklin Fire Dept.

Bruce Wilson Bellingham Board of Health

Brutus Cantoreggi Franklin Dept. of Public Works

Bryon Taberner, AICP Franklin Planning Dept.

Carlos Rebelo Franklin Dept. of Public Works

Cathy Liberty Franklin Health Dept.
Chrissy Whelton Franklin Administration
David McKearney Franklin Health Dept.

Deacon Perrotta Franklin Dept. of Public Works

Dennis Fraine Bellingham Town Administrator

Don DiMartino Bellingham Dept. of Public Works

Gerald Daigle Bellingham Police Dept.
Gus Brown Franklin Building Dept.
James P. Klich Franklin Fire Dept.
James West Franklin Police Dept.
Jennifer Delmore Franklin Conservation

Jesse Riedle Bellingham Dept. of Public Works

Jim KupferBellinghamPlanning Dept.Jim McLaughlinFranklinFire Dept.Joe BarbieriFranklinFire Dept.

Laurie Ruszala Franklin Water and Sewer Dept.

Lucas Giguere Franklin Franklin Public Schools

Mark Poirier Bellingham Fire Dept.
Mary MacKinnon Bellingham Finance

Michael D'Angelo Franklin Facilitates Dept.

Mike Maglio Franklin DPW-Engineering
Robert Larson Bellingham Planning Dept.

Thomas Lynch Franklin Police Dept.

Tim Aicardi Bellingham Building Dept.

Tim Inacio Bellingham Dept. of Public Works

MAPC Facilitation Team

Lizzie Grobbel Regional Planner II

Anne Herbst Senior Environmental Planner

Jennifer Kaplan

Courtney Lewis Regional Land Use Planner

Martin Pillsbury Environmental Planning Director, Lead Facilitator

Ralph Wilmer Principal Planner

CITATION

Metropolitan Area Planning Council. 2020. Towns of Bellingham and Franklin Municipal Vulnerability Preparedness Program. Community Resilience Building Workshop: Summary of Findings

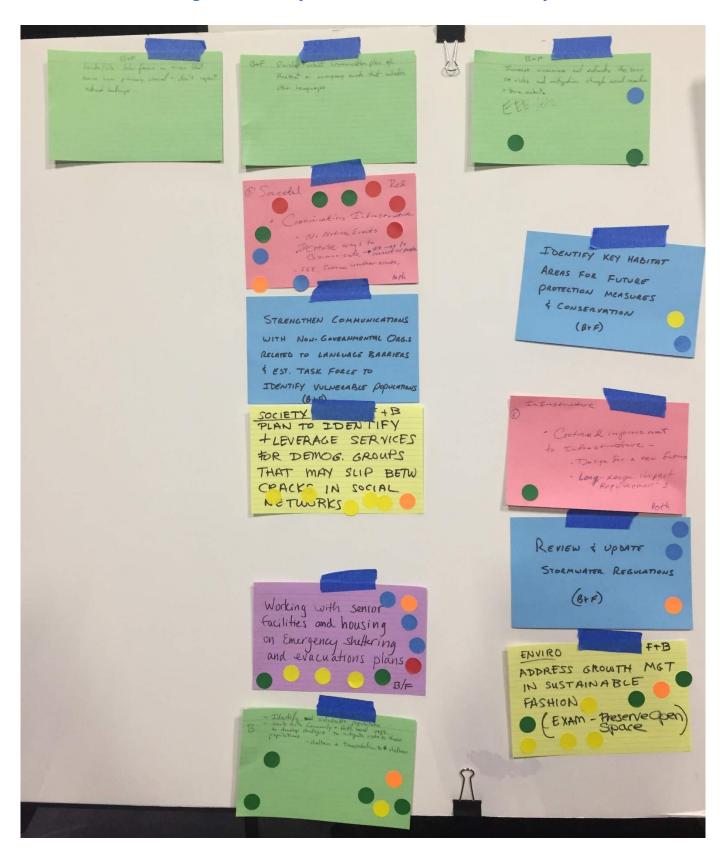
APPENDIX A -ACTION PRIORITIZATION

HIGHEST PRIORITY ACTIONS FROM THE CRB WORKSHOP	VOTES
 Work with senior facilities and housing on emergency sheltering and evacuation Identify vulnerable populations, work with community and faith-based organizations to develop strategies to mitigate risks, provide shelters and transportation to shelters Investigate emergency services and shelters and coordinate with Local Emergency Planning Committee; bring all stakeholders together; meet regionally Increase number and quality of shelters – collaborate with community resources, EMP, Red Cross, hospitals, hotels, restaurants, etc. Investigate emergency access and backup plans for Central Park Terrace senior housing Food Pantries: increase outreach to foster support and expand existing sites 	27
2. Communications and Vulnerable Populations	
 Communications infrastructure: identify ways to connect with people on EEE, extreme weather events Plan to identify and leverage services for demographic groups that may slip between the cracks in social networks Increase awareness and educate the towns on risks and mitigation through social media and town websites (EEE) Develop a robust communication plan for emergency events that includes other languages 	19

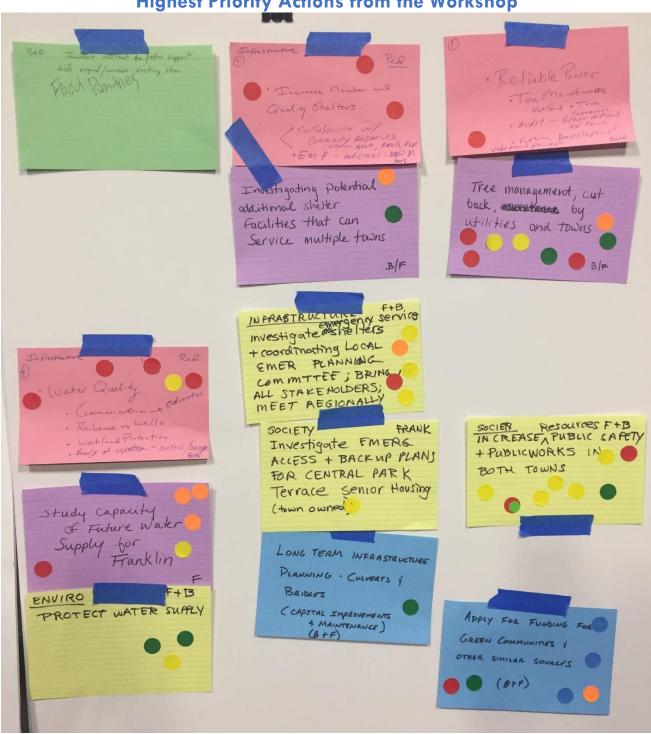
16
10
9
9

 7. Green Energy Apply for Green Communities and other similar sources Locate/site solar farms in areas that have been previously cleared; don't impact the natural landscape 	6
 8. Long-Term Infrastructure Planning Culverts and bridges, capital improvements/maintenance Continued improvement of infrastructure: design for a new future; long range impact requirements 	2
HIGHEST PRIORITY BELLINGHAM ACTIONS	
 Bellingham Schools Town schools should get together to discuss emergency planning, document plans (14) 	14
2. Bellingham DPW BuildingReplace Bellingham DPW building (8)	8
 Bellingham: Beaver Management Develop Plan for beaver management to mitigate flooding at Sallbrod School and Hartford Avenue (3) 	3
 4. Bellingham: Senior Center Renovations needed for Bellingham Senior Center (1) Improve infrastructure at Senior Center – generator; kitchen (1) 	2
5. Bellingham: Flooding on Wrentham Road	1
Study culverts to mitigate flooding on Wrentham Road (1) Rollingham, Transport of Hazardous Materials	
 6. Bellingham: Transport of Hazardous Materials Create alternate truck routes or restrict transport of hazardous materials on Blackstone Street (1) 	1

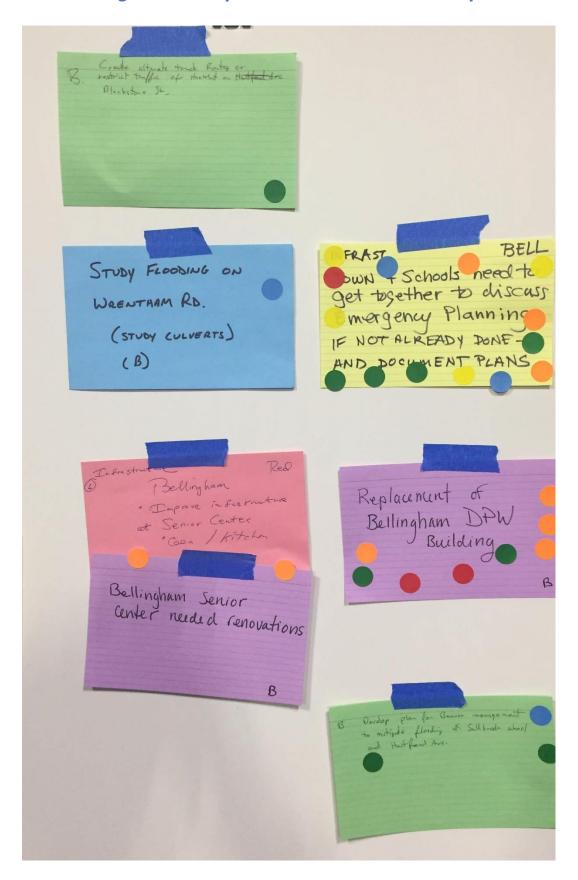
Action Prioritization Highest Priority Actions from the Workshop



Action Prioritization
Highest Priority Actions from the Workshop



Action Prioritization Highest Priority Actions from the Workshop



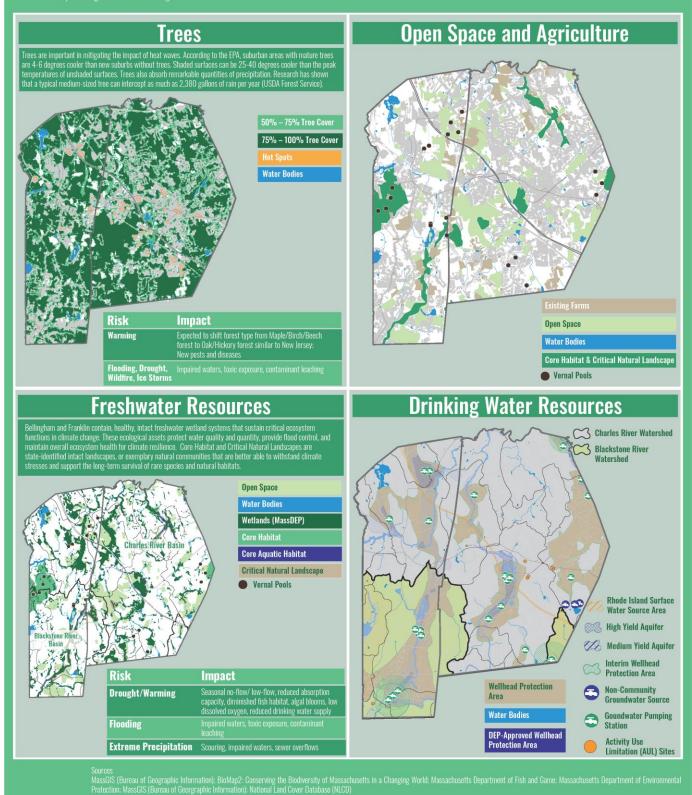
APPENDIX B -BELLINGHAM-FRANKLIN CRB WORKSHOP POSTERS AND MAPS

BELLINGHAM-FRANKLIN CRB WORKSHOP POSTERS AND MAPS

- Natural Resources Poster
- Climate Change Poster
- Social Vulnerability Poster
- Bellingham-Franklin Wall Map
- Bellingham-Franklin Table Map

Franklin & Bellingham Natural Resources

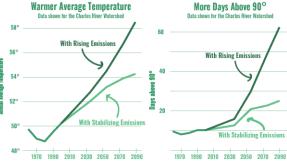
Natural Resources lessen climate impacts by absorbing and storing carbon dioxide and by serving vital protective functions. Forests, open space, wetlands, rivers, and streams protect drinking water quality and quantity, provide flood control, and give relief from extreme heat. Healthy ecosystems are more resistant to stresses from a changing climate and better able to protect against heat and flooding.



Climate Change

Bellingham, Franklin, and the Charles River Watershed Our climate is regulated by "greenhouse gases (GHGs)" that trap heat, including carbon dioxide, methane, and nitrous oxide. In the past century, the combustion of fossil fuels, our primary energy source in the age of industrialization, has increased the concentration of GHGs in the atmosphere, which has caused global temperatures to rise. If people stabilize GHG emissions, global temperatures may rise more slowly. If emissions continue increasing at the same rate, we can expect more extreme changes in the climate.

Higher Temperatures



Data shown for the Charles River Watershed 140 With Stabilizing Emissions 120

Fewer Days Below Freezing

As the climate changes, Bellingham and Franklin can expect...

More Large Storm Events

In addition to increasing annual precipitation, climate change will bring more large rain and snow events. This will lead to more stormwater flooding, as most stormwater drainage is not sized for larger rain events.

10-year, 24 hour storms refer to the 24-hour rainfall total for the biggest storm expected in a 10-year period.

Expected size of a 10-year, 24-hour storm

4.5 inches
1961 Observed
Rainfall
(NOAA) for
Eastern MA

5.23 inches 2014 Observed Rainfall (NOAA) in Franklin & Bellingham 5.6 inches

Cambridge Rainfall Projections, 2015 - 2044 6.4 inches

Cambridge Rainfall Projections, 2055 - 2084 Storm drains built for 1961 standards will be inadequate as rainfall increases

More Annual Precipitation

But less in the summer and fall...



While total annual rainfall and large rainfall events are projected to increase, summer and fall rain is projected to decrease slightly.

Due to the combined effects of earlier snowmelt, less rain, and higher temperatures, summer and fall droughts may become more frequent.

And more frequent droughts...

Due to the combined effects of earlier snowmelt, less rain, and higher temperatures, summer and fall droughts may become more frequent.





Sources:

Massachusetts Executive Office of Energy and Environmental Affairs: Northeast Climate Science Center; National Ocean and Atmospheric Administration TP 40: National Ocean and Atmospheric Administration Atlas 14: Cambridge CCVA as cited by Boston Research Advisory Group 2016: Massachusetts Office of Coastal Zone Management, "Sea Level Rise: Understanding and Applying Trends and Future Scenarios for Analysis and Planning 2013

Bellingham

Social Vulnerability

factors that may make groups of people less resilient to climate change impacts. Certain vulnerabilities tend to be correlated: for example, older adults are more likely to have a disability and live alone than younger adults.

Our strategies for adapting to a changing climate should protect these populations in addition to our natural and built environment.

Who is most at risk from climate change impacts?

People who may be more susceptible to negative health effects: These can include older adults, young children, pregnant women, people with disabilities, and people with pre-existing health conditions, as they are more likely to be physically vulnerable to the health impacts of extreme heat and poor air quality caused by climate change, individuals with physical mobility constraints, such as people with disabilities and seniors, may need additional assistance with emergency response.

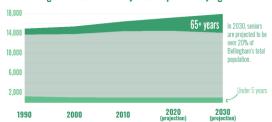
People who may have more difficulty adapting to, preparing for, or recovering from extreme weather events: Socioeconomic characteristics such as income and race can influence vulnerability to climate change. Low-income people are often more susceptible to financial shocks, which can occur after extreme weather and which can impact financial security and the ability to secure safe shelter and meet medical needs. Social isolation can also influence vulnerability, as it limits access to critical information, municipal resources, and social support systems. People at the most risk for social isolation include those living alone and people with limited English language proficiency.

People who live or work in vulnerable locations: Historic or predicted floodplain, urban flooding locations, areas prone to wildfire, heat islands, neighborhoods prone to power outages. Outdoor workers, first responders, those working in hot indoor environments.

Older Adults and Young Children

Adults over 65 and children under 5 are more likely to develop health problems on very hot days or during heat waves. Older adults are also more likely to have disabilities or mobility contraints and may need additional assistance during emergencies. They are also more likely to live alone than

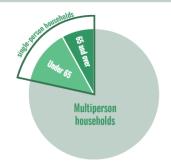
Bellingham Recent and Projected Population by Age



Low-Income Households

*A four-person household earning less than \$78,150 is considered low-income; a four-person household earning less than \$24,563 is below poverty level

People Living Alone



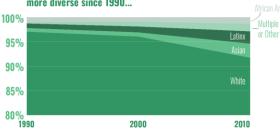
As of 2010, about 20% of Bellingham households consisted of someone living alone.

Over 35% of people living alone were over 65.

Communities of Color

Particular racial or ethnic groups may also be more likely to have certain social vulnerabilities than others. For example, Black and than other groups. Heat waves and poor air quality can trigger asthma

Bellingham is over 90% white, but has become slightly more diverse since 1990...



People Who Work Outside



Massachusetts Asthma Hospitalizations Hospitalizations per 100,000 reside Total White Asian or Latino Native Pacific American population Islander



Franklin

Social Vulnerability

Social vulnerability refers to social, economic, demographic, or health factors that may make groups of people less resilient to climate change impacts. Certain vulnerabilities tend to be correlated; for example, older adults are more likely to have a disability and live alone than younger adults.

Our strategies for adapting to a changing climate should protect these populations in addition to our natural and built environment

Who is most at risk from climate change impacts?

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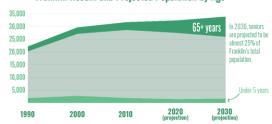
People who may have more difficulty adapting to, preparing for, or recovering from extreme weather events: Socioeconomic characteristics such as income and race can influence vulnerability to climate change. Low-income people are often more susceptible to financial shocks, which can occur after extreme weather and which can impact financial security and the ability to secure safe shelter and meet medical needs. Social isolation can also influence valentability, as it limits access to critical information, municipal resources, and social support systems. People at the most risk for social isolation include those living alone and people with limited English language proficiency.

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Franklin Recent and Projected Population by Age



Low-Income Households

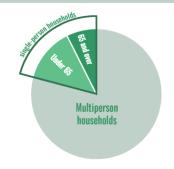
25% of households in Franklin are low-income

4.5% of households in Franklin are helow the poverty level

56.9% of seniors in Franklin are low-income

*A four-person household earning less than \$78,150 is considered low-income; a four-person household earning less than \$24,563 is below poverty level

People Living Alone



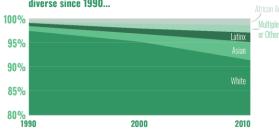
As of 2010, about 20% of Franklin households consisted of someone living alone.

About 35% of people living alone were over 65.

Communities of Color

Particular racial or ethnic groups may also be more likely to have certain social vulnerabilities than others. For example, Black and Latino populations have a much higher rate of asthma hospitalizations than other groups. Heat waves and poor air quality can trigger asthma

Franklin is over 90% white, but has become slightly more diverse since 1990...



People Who Work Outside



People wno primarily work outside, such as parcel delivery people, construction workers, fishermen, or landscapers, may be at added risk from extra exposure to high heat and poor air quality.

Massachusetts Asthma Hospitalizations 300 200 200 Total White Black Asian or Pacific Islander Total White Black Asian or Pacific Islander



nruss erican Community Survey (ACS) 2012-2016: United States Census 1990, 2000, 2010: MAPC Projections: Massachusetts Department of Public Health Asthma Data, 2008

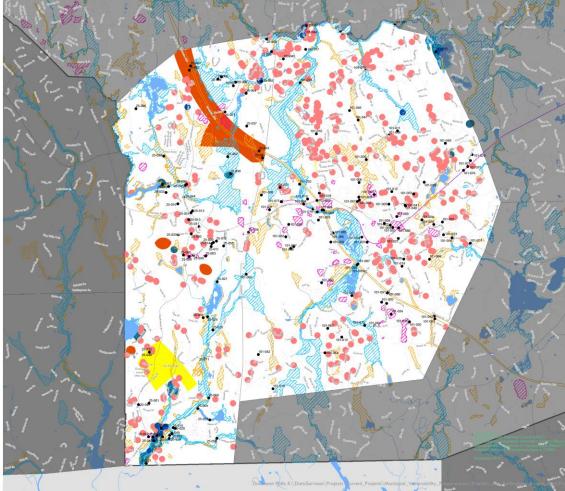
Bellingham-Franklin MVP Wall Map

FRANKLIN AND

roads, bridges, dams and buildings to more frequent or severe flooding. Areas that don't flood today may become vulnerable. FEMA flood zones reflect only current conditions, although the .2% (500-year) flood zones may indicate where future flooding will occur. FEMA flood zones also do not generally capture stormwater flooding. That is, flooding that exceeds the capacity of current stormdrains and culverts. We don't currently have models that project where future flooding from larger rain events will occur. Power outages affecting infrastructure and communications **BELLINGHAM** may become more frequent as result of high energy demand during heat waves. Winter outages could be caused by ice storms if warming results in temperatures hovering around freezing. The potential for more intense hurricanes could cause outages due to falling trees. Finally, buildings, roadways, and railways can be stressed by extreme heat. Heat can cause damage to expansion joints on bridges and highways, and may cause roadways to deteriorate more rapidly. Critical Infrastructure Other Features Hazards Critical Facilities



Flood Insurance Claims



Bellingham-Franklin MVP Table Map FRANKLIN & **BELLINGHAM** Critical Infrastructure Type of Critical Facility Schools (PK - High School) Assisted Living Facility A Nursing Home O Dams # Hospital with ER Airports Police Stations Fire Stations Town Halls Libraries Hazards Locally Identified Hazard Areas Brush Fire C Flooding Wind Hot Spots* A: 1% Annual Chance of Flooding X: 0.2% Annual Chance of Flooding Other Features --- Rivers and Streams Water Bodies



1.4 Miles

0 0.35 0.7

APPENDIX C -BELLINGHAM-FRANKLIN WORKSHOP POWERPOINT







Municipal Vulnerability Preparedness Workshop Towns of Bellingham and Franklin, Nov. 20, 2019







Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs

Municipal Vulnerability Preparedness Program State Service-Provide Training

Workshop Objectives

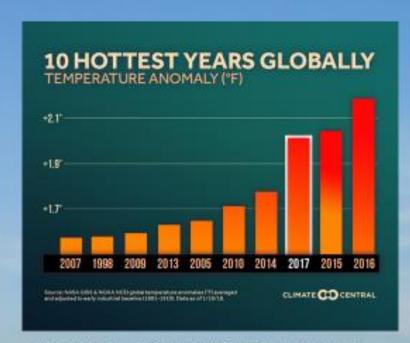
- Understand extreme weather and climate related hazards
- Identify existing and future vulnerabilities and strengths
- Develop and prioritize opportunities to take action to reduce risk and build resilience

Agenda For the Day

	ACTIVITIES and OBJECTIVES	WHO
9:00	Registration: Sign-in, get name tag & sticky dots, refreshments	All Attendees with MAPC Staff
9:30	Welcome	Towns of Bellinghan & Franklin
9:40	Introduction to Climate Change, MVP Workshop process	Martin Pillsbury, MAPC
10:00	Bellingham/Franklin Climate Vulnerability – Poster Review Participants rotate around the room to visit each poster, with narration by MAPC staff	All Attendees with MAPC Facilitators
10:30	Small Group Exercise #1 - Identify Vulnerabilities and Strengths Begin with introductions Identify vulnerabilities and strengths in each Town MAPC facilitator to record them on the large matrices Note location, mark on map, or note "Townwide" or "Both Towns" Designate a table spokesperson for the report-out to the large group later this afternoon.	Small Groups with MAPC Facilitators
12:00	MVP Workshap PawerPoint	
12:45	Small Group Exercise #2 - Identify Climate Actions and Priorities For each item listed in Exercise #1, develop one or more actions that can address a vulnerability or reinforce a strength For each Action, assign a priority, High, Medium, or Low	Small Groups with MAPC Facilitators
2:00	Chose the Table's Top Priority Actions Choose the top 6 actions—3 actions for each Town. Optional: add Tor 2 additional Actions that affect BOTH Towns. Write each Action on a note card provided	Small Groups with MAPC Facilitators
2:15	Report Out of each Table's Top Priority Actions Table spokespersons report out their group's top Actions	Small Group Spokespersons
2:45	Choose your top 4 Action priorities and Vote with Sticky Dots All tables' top priority Actions will be displayed on a board All participants use sticky dots to vote for their top 4 Actions	All attendees
3:15	Review Results, Next Steps, Fill out Survey (back of agenda)	Martin Pillsbury, MAPC
3:30	Adjourn - Please leave survey Thank you!	

Our Warming Planet Global Temperature and Carbon Dioxide The Greenhouse Effect Earth's surface is heated by the sun and radiates the heat back out 58.0 380 back out to space towards space 360 Concentration (ppm) Global Temperature (°F) Greenhouse gases in the atmosphere 340 Solar energy from the sun passes through the atmosphere trap some of the heat 57.0 320 300 56.5 280 8 CO, Concentration 56.0 260 1880 1900 1920 1940 1980 1980 2000 Year **US National Climate Assessment 2018**

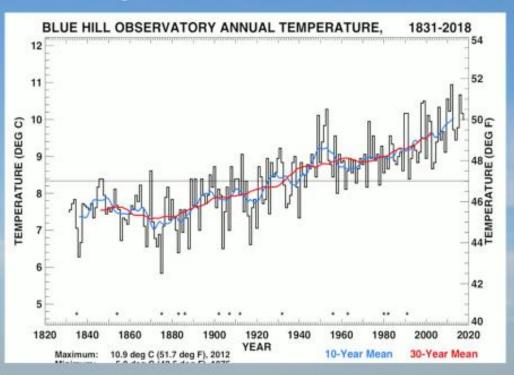
Climate Change: Temperature Observed



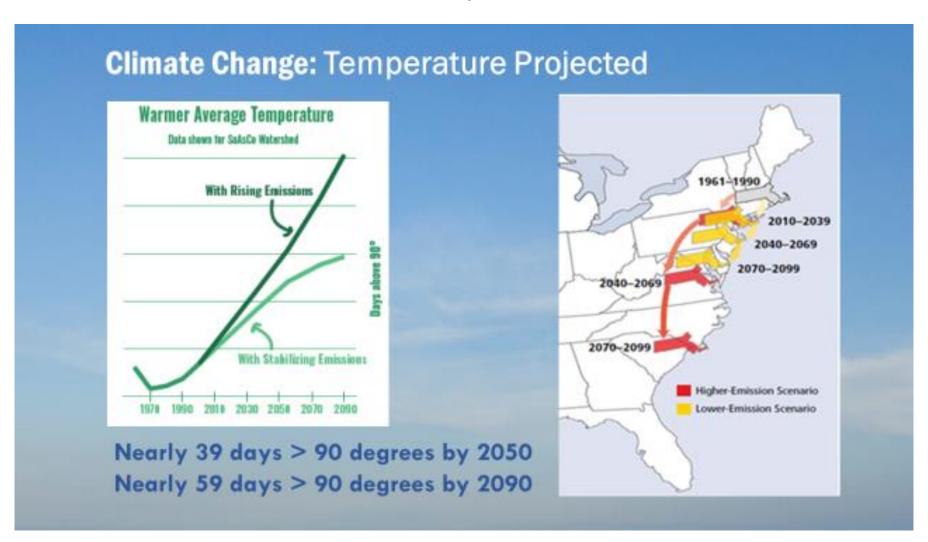
Source: Nasa GISS & NOAA NCEI global temperature anomalies adjust to early industrial baseline (1881-1910)



Rising Mean Temperatures – Observed Nearly 3°F increase since 1831



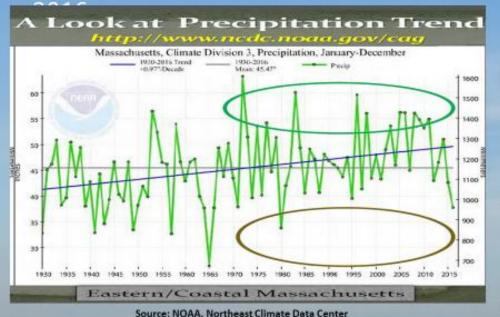
Blue Hill Observatory Annual Temperature, 1831-2018



Precipitation Change: Observed

For the northeast US: 55% increase in the amount

rain that falls in the top 1% events from 1958 -



 Boston area: 10% increase in annual precipitation over 50 years

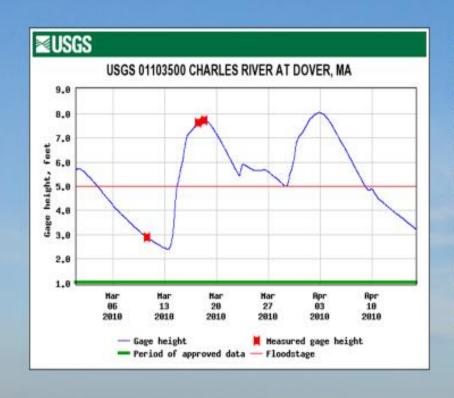
1958-2016

12

29

- More extreme high/heavy rain and more deficit/drought
- Runoff instead of

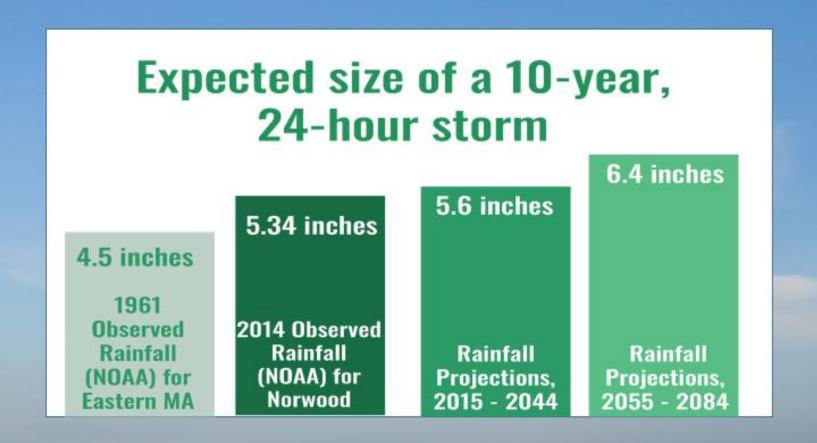
Precipitation Change: Intense Rainfall - Flooding



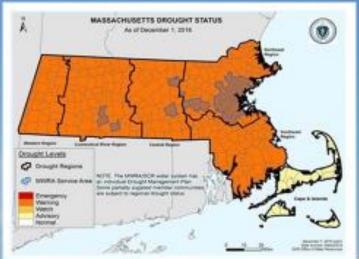


2010 Flooding, Charles R. at Mill St.

Precipitation Change: Projected Standard Design Storm



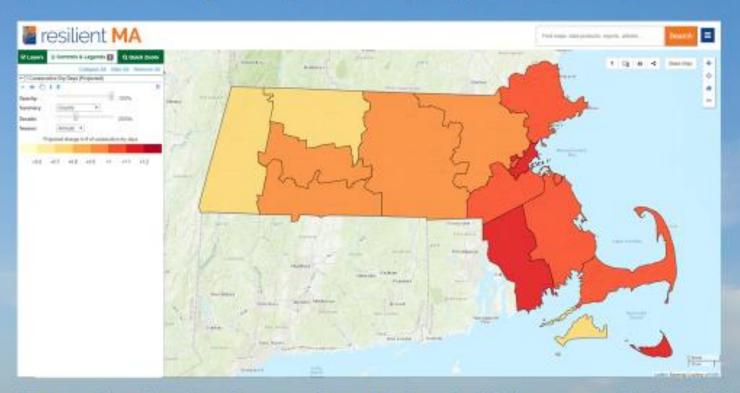
Precipitation Change: Drought Observed U.S. Drought Monitor October 4, 2016 (Reversor' Thursday, Oct 8, 2016) Massachusetts VMM8 a.m. BDT to man and see this an OR THE RES CO. SE EN MO WH NOT EN AM 28 715 204 08 10 18 Orought Levels DESTRUCTION OF SECURITION AND C Crought Regions One You Age 234 778 1101 000 130 FW DOS denni Svogili introduced regis (A Moseow Progra 10 Daving Stronger The Chaught Menter focuses on travel sopie conditions Lic al-opotitions into very. See accompanying Set some An forecast aluthownite. Author Shiep Factor National Choopir Mitigation Clinton http://droughtmenitor.unl.edu/



The drought of 2016 was the worst in 35 years.

US Drought Monitor

Precipitation Change: Projected Dry Days 2050



Consecutive dry days increase from 17 days to 18 days annually by 2050.

Precipitation Change Observed: Low Flow



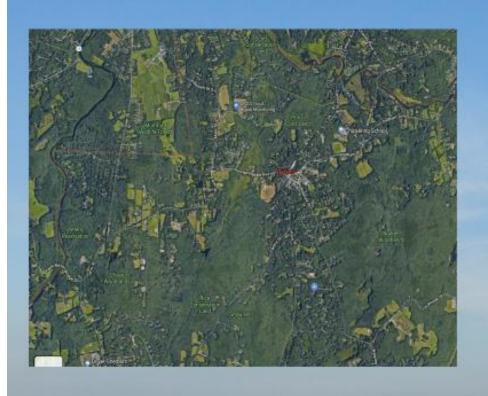
Dry riverbed, Charles River downstream of Cochrane Dam, Needham-Dover line.

Photo by Nick King - CRWA

What was perennial has become intermittent:

- Powisset Brook
- Trout Brook
- "Rocky Brook"

Concern for Impacts of Changing Environment



Tree decline – Eastern White Pine

- Pine Needle Disease and Insects
- Yellowing/browning needles,
- Thinning canopies,
- Resinosis, branch dieback

Attributable to multiple fungal pathogens, insect pests, changing climate

Concern for Impacts of Changing Environment

Insects - invasive & higher incidence

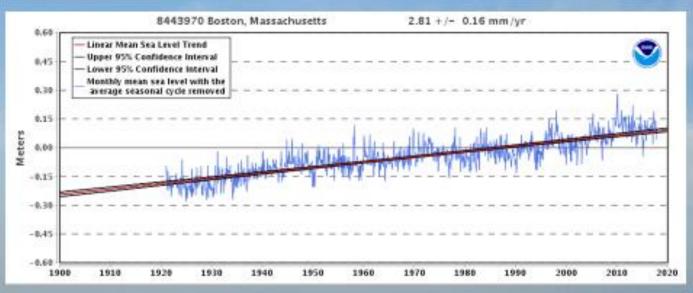
With rising temperatures, insects are a factor for more days.

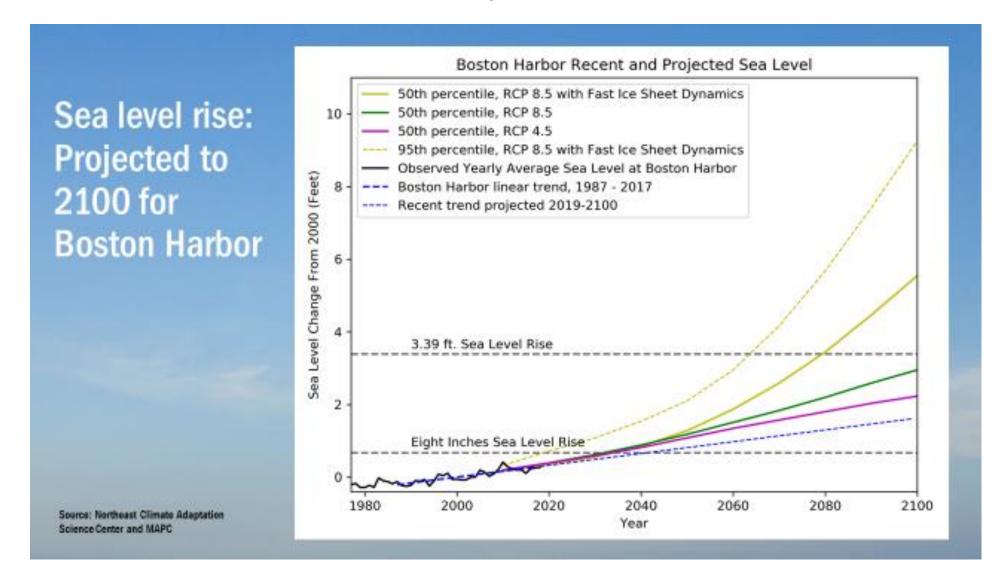
- Disease in 2019 Mosquitoes
 - *1938 1st incidence; 1938-2010 total cases under 100, or av. 1% per year
 - *2012 EEE 9 cases / 4 fatalities
 - *2019 EEE 12 cases / 3 fatalities
- Disease 2019 Ticks not previously common in MA
 - Powassan virus
 - *Rocky Mountain Spotted fever

Sea Level Rise: Observed

- · Boston tide station
- Record from 1921-2016
- · Equivalent to 11 inches in 100 years









Step 1: Identify Community Vulnerabilities and Strengths

Lincoln Community Resilience Building Risk Matrix		P 44	ļ (ģ				TABLE	
X = Valnerobility S = Strength			[Top Priority	Howards		Priority
H M Lim.Priority for action	Location denotes been in		v	Extreme Heat/ Heat Waves	Inland and Riverine Flooding	Extreme Cold/ Winter Sterms/Snew	Drought/Fire	M. M. L
Matrix 3: Environmental Features	wands or courte fil on map		and/for S		ACTIONS - Est below			
1								
2								
3								
				<u>'</u>				

Identify Important Community Features on Left Four Columns

- What features in your community are most vulnerable to weather-related impacts?
- What features are your community's <u>strengths</u> relative to climate impacts?
- Note Location on map, Ownership, and Vulnerability and/or Strength
- 3 Separate Matrix Pages for: 1. Infrastructure: e.g., buildings, roads, bridges, wells
 - 2. Society/people: e.g., elderly citizens living in flood zones
 - 3. Environment: e.g., wetlands, protected land in flood zonesbbb

Step 2: Develop Actions & Prioritize Actions

Lincoln Community Resilience Building Risk Matrix		٦ŧ	ß 65)			TABLE	
V = Vulnerability S = Strength					Top Priority I	formers's		Priority
H - M - L = Priority for action				Extreme Heat/	Inland and Rivering	Extreme Cold/ Winter	Drought/Fire	
		Sterms/Snew		H - M - L				
Matrix 3: Environmental Features	words ar much I un map	and I as public, etc. and/or		ACTIONS - list helew				
1								
2								
3								
				\				

COMPLETE right side of matrix: Develop Actions & Priorities

- 1. Develop Actions How to reduce vulnerability and/or reinforce strengths?
- 2. Prioritize Are actions high, medium, or low priority?
- Each table select your group's overall <u>TOP 5 Actions</u> (write on cards)

Infrastructure

Strength: Critical town facilities have back-up generators

Vulnerability: The DPW is in a flood zone and has flooded in the past

Potential Actions: Relocate the DPW

Flood proof the DPW

Move equipment when flooding is predicted

Society

Strength: The town keeps a list of older adults in need of support during emergencies

Vulnerability: Some residents are not fluent in English and may not understand emergency notices

Potential Actions: Translate emergency materials

Partner with community organizations
that can help provide services

Environment

Strength: The town has extensive protected lands that provide a buffer to wetland resources

Vulnerability: The town relies on aquifers for drinking water and had to restrict water use during the last drought

Potential Actions: Provide incentives for water conservation

Encourage rain gardens to infiltrate stormwater

Restrict use of paved surfaces

MVP Guidelines

- Everyone has an equal opportunity to contribute.
- Everyone is an expert; respect others' points of view.
- · Respect limited time.
- Please work to complete the worksheet. Your input is important!



Thank you for your participation!

APPENDIX D - BELLINGHAM-FRANKLIN CRB WORKSHOP TABLE MATRIX RESULTS

CRB Workshop participants were divided into five table groups identified as Blue, Green, Yellow, Red, and Orange. Vulnerabilities and strengths were categorized as Infrastructure, Societal, or Environmental. Participants identified climate-related strengths and vulnerabilities for Bellingham and Franklin in each of the three categories. Potential actions were proposed to address the vulnerabilities, and in some cases to augment a strength. Actions were then prioritized as High, Medium, or Low, and each table was asked to identify their top five priorities. The information was recorded on charts for each table and is summarized in the matrix below. **Actions in bold text** were selected the highest priority by the entire workshop.

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
		BLUE TABLE -	INFR/	ASTRUCTURE		
1	Infrastructure	Franklin Communications, Reverse 911, Emergency Management Committees	S	Prioritize development in non-flood prone areas	М	F
2	Infrastructure	Bellingham communications, Reverse 911, email, social media, Emergency Management Committee	S			В
3	Infrastructure	Flooding on Wrentham Road in Bellingham, near well and senior housing	٧	Study flooding on Wrentham Road and feasibility for replacing culvert, raising grade	н	В
4	Infrastructure	Bellingham is working on new culverts and piping	S	Develop ling term infrastructure planning to prepare for future needs and impact of	н	B&F
5	Infrastructure	Flooding in Franklin is relatively minor	S	climate change (capital improvements and maintenance)		
6	Infrastructure	Bellingham has 2 utilities (gas and electric)	S/V	Map jurisdiction of Eversource vs. National Grid; also, Blackstone & Columbia	L	В
7	Infrastructure	Power outages due to tree fall	٧			B & F
8	Infrastructure	Pearl Street Dam removed; Franklin dams rebuilt	S			B & F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
9	Infrastructure	Town Hall water supply and wastewater (building new treatment in Medway and Bellingham)	S			B & F
10	Infrastructure	Pump Stations have generator backup	S/V	Review and update stormwater regulations (B&F)	M	B & F
11	Infrastructure	Sewers-south end of Bellingham, flows to Woonsocket, RI treatment facility	S			В
12	Infrastructure	Groundwater wells in both towns				B & F
13	Infrastructure	Limited funding for infrastructure	٧	Review zoning to ensure consistency between land use and infrastructure capacity	М	B & F
14	Infrastructure	Power plants in Bellingham, Maple St. and Depot Stvulnerability in drought	v			В
15	Infrastructure	Gas transmission line through both towns	S/V			B & F
16	Infrastructure	Impervious surfaces in both towns	٧			B & F
17	Infrastructure	GATRA on-call at senior centers	S/V	Look for ways to create a more extensive and reliable transit program	М	B & F
18	Infrastructure	Franklin capital projects rain gardens, etc.	S			F
19	Infrastructure	Franklin Commuter Rail - 2 stations	S			F
20	Infrastructure	Difficulty in getting snow removal done	٧			B & F
21	Infrastructure	New Police and Fire stations in Bellingham	S			В
22	Infrastructure	Capacity issue for Police Dept. in Franklin	٧			F
23	Infrastructure	Good DPW yards in both towns	S			B & F
		BLUE TA	BLE - S	OCIETY		
1	Society	Bellingham shelters for emergencies Senior Center, High/Middle Schools; well equipped with generators, showers, food	S	Strengthen communications with NGO's, especially language barriers; establish a Task	н	B & F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
2	Society	Franklin YMCA shelter, gym holds 900+ people on high ground, rarely looses power	S	Force to identify vulnerable populations and how to assist and communicate with them		
3	Society	Milford Regional Hospital is close by	S			B & F
4	Society	Medical/Urgent Care facilities in both towns	S			B & F
5	Society	Senior Centers in both towns, good size; new one in design for Bellingham	S			F
6	Society	People may not know about GATRA service	٧			B & F
7	Society	High number of shut-ins	٧			B & F
8	Society	Some language barrier issues at Franklin Y	٧			B & F
9	Society	Vocational School not a shelter	٧			B & F
10	Society	Limited housing for seniors	٧			В
11	Society	Senior housing affordability	٧			B & F
	Society	Churches can help in emergencies (languages)	S/V			B & F
13	Society	VFW (both towns), Elks	S			B & F
14	Society	Cable TV/Radio - some communications	S			B & F
15	Society	Four-town dispatch (new)	S			F
16	Society	Six major food stores	S			B & F
		BLUE TABLE	- ENV	IRONMENT		
1	Environment	Peter's Brook flooding	٧			
2	Environment	Beaver dams, both towns (Spring St, Franklin)	٧			B & F
3	Environment	Tree trimming programs	S	Continue to fund tree identification and pruning plans; coordinate with the utilities	М	B & F

ltem#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
4	Environment	No tree replacement pan	٧	Prepare a tree replacement plan and provide funding	М	B & F
5	Environment	Annual water bans	٧			B & F
6	Environment	Water conservation programs & incentives	S	Continue education/outreach for water conservation	L	F
7	Environment	Franklin is designated a Green Community	S	Apply for grant funding to implement Green Community strategies	н	F
8	Environment	Bellingham submitting Green Community application	S	Work toward s pushing solar options through municipal aggregation program	М	В
9	Environment	Lincoln Street bridge and Elm Street in Franklin need improvements	٧			F
10	Environment	Wrentham Road culvert in Bellingham needs replacement	٧			В
11	Environment	Private development impact on habitat	٧	Identify key habitat areas for future protection measures and conservation	н	В
12	Environment	Town is getting deed restrictions to protect habitat	s			В
13	Environment	Silver Lake, swimming areaalgae blooms, getting treated	٧	Evaluate funding sources for lake clean-ups, restoration	М	B & F
14	Environment	Scenic Roads	S/V			B & F
15	Environment	Insects/tree pests issues	٧			B & F
16	Environment	Parking lot hot spots	٧	Work with property owners to plant more shade trees (look at zoning and project permit conditions)	М	B & F
17	Environment	Community Preservation Act	٧	Consider adopting CPA in Bellingham	М	В
		GREEN TABLE	- INFR	ASTRUCTURE		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
1	Infrastructure	Large parking lots (hot spots)	٧	Incorporate Green Infrastructure into new and existing parking lots and construct solar canopies where feasible	М	B&F
2	Infrastructure	Schools located in flood zoneStallbrook School, North Building	٧	Develop a comprehensive plan for beaver management to mitigate flooding near the school and other areas (Hartford Ave)	н	В
3	Infrastructure	Assisted Living facility in close proximity to flood zone	٧	Complete an assessment of the Assisted Living facility to determine the current flood risk and develop recommendations accordingly	L	F
4	Infrastructure	Emergency shelter located in close proximity to other municipal services (police, fire) Mechanic Street	S/V	Create alternative truck routes or restrict traffic of trucks carrying hazardous materials	н	В
5	Infrastructure	Emergency shelter centrally located to other municipal services but is in the flood zone.	S/V	Investigate alternative locations for a backup shelter	L	F
6	Infrastructure	Dean College has transfer switches and service agreements in place for back-up generators during extreme weather events	S			F
7	Infrastructure	Franklin has two Commuter Rail stations, but a portion of the rail bed is in the flood zone	S/V	Partner with MBTA to devise an evacuation plan that addresses alternative transportation during extreme storm events	L	F
8	Infrastructure	Good access to 495	S			F
9	Infrastructure	Flooding on Hartford Ave because of a beaver dam	٧	See item #3 above		F
10	Infrastructure	Bellingham has good access points Rt 140, Hartford Avenue	S			В

Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
Infrastructure	Delcart Pond Dam assessment and reconstruction project	S			F
	GREEN T	ABLE -	SOCIETY		
Society	Active and engaged Senior Centers located outside of the flood zone	S			B&F
Society	Reverse 911 systems, residents can be added online or by phone	S			B&F
Society	GATRA senior transportation	S			B&F
Society	Evergreen Day Care facility serves mentally challenged children	S			В
Society	Cooks Corner (homeless encampment); dense low-income population in South Bellingham	٧	Identify vulnerable populations and work with community and faith-based organizations to develop strategies to help mitigate risks to those populations (including temporary shelters and transportation to facilities)	н	В
Society	Community food panties, St. Blaise, Franklin food pantry	S/V	Increase outreach to foster support for volunteer efforts. Investigate opportunities to expand the existing pantry, including siting a new location	н	B&F
Society	Emergency Alerts are in English only and documentation is not translated for the growing immigrant population	٧	Develop a more robust communication system to inform the public of hazard/emergency events. Communications should include multilingual notification and enhanced translation services	н	B&F
Society	Bellingham Senior Center conducts home visit, however, there aren't measures in place to check in during emergencies	S/V			В
	Infrastructure Society Society Society Society Society Society Society	Infrastructure Delcart Pond Dam assessment and reconstruction project GREEN T Society Active and engaged Senior Centers located outside of the flood zone Reverse 911 systems, residents can be added online or by phone Society GATRA senior transportation Evergreen Day Care facility serves mentally challenged children Cooks Corner (homeless encampment); dense low-income population in South Bellingham Community food panties, St. Blaise, Franklin food pantry Emergency Alerts are in English only and documentation is not translated for the growing immigrant population Bellingham Senior Center conducts home visit, however, there aren't measures in	Infrastructure Delcart Pond Dam assessment and reconstruction project GREEN TABLE - Society Active and engaged Senior Centers located outside of the flood zone Society Reverse 911 systems, residents can be added online or by phone Society GATRA senior transportation Society Evergreen Day Care facility serves mentally challenged children Society Cooks Corner (homeless encampment); dense low-income population in South Bellingham Community food panties, St. Blaise, Franklin food pantry Emergency Alerts are in English only and documentation is not translated for the growing immigrant population Bellingham Senior Center conducts home visit, however, there aren't measures in S/V	Infrastructure Delcart Pond Dam assessment and reconstruction project GREEN TABLE - SOCIETY Society Active and engaged Senior Centers located outside of the flood zone Society Reverse 911 systems, residents can be added online or by phone Society GATRA senior transportation Society Society Cooks Corner (homeless encampment); dense low-income population in South Bellingham Society Community food panties, St. Blaise, Franklin food pantry Society Community food panties, St. Blaise, Franklin food pantry Society Bellingham Senior Center conducts home yisit, however, there aren't measures in Society Bellingham Senior Center conducts home visit, however, there aren't measures in Society Society Bellingham Senior Center conducts home visit, however, there aren't measures in Society Society Contact Pond Dam assessment and reconstruction Society S	Infrastructure Delcart Pond Dam assessment and reconstruction project Society Society Active and engaged Senior Centers located outside of the flood zone Society Reverse 911 systems, residents can be added online or by phone Society GATRA senior transportation Society Society Cooks Corner (homeless encampment); dense low-income population in South Bellingham Society Community food panties, St. Blaise, Franklin food pantry Society Community food panties, St. Blaise, Franklin food pantry Society Bellingham Senior Center conducts home growing immigrant population Society Bellingham Senior Center conducts home visit, however, there aren't measures in Soliety Strengths & Vulnerable populations and work with community and faith-based organizations to develop strategies to help mitigate risks to those populations (including temporary shelters and transportation to facilities) Increase outreach to foster support for volunteer efforts. Investigate opportunities to expand the existing pantry, including siting a new location Develop a more robust communication system to inform the public of hazard/emergency events. Communications should include multilingual notification and enhanced translation services Society Society

ltem#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
1	Environment	Safety tree trimming along major roads	S			B&F
2	Environment	Franklin State forest fire hazard during droughts	S/V	Coordinate with the state to develop a forest management plan	М	F
3	Environment	Bellingham has several protected conservation restrictions and open spaces	S			В
4	Environment	Franklin bylaws are stricter than state wetland protection regulation	S			F
5	Environment	Bellingham has a protection area around the town's drinking water wells	S			В
6	Environment	Solar farms are located or will be located in both towns	S/V	Locate/site solar farms in areas that were previously cleared and do not negatively impact the natural landscape	н	B&F
7	Environment	Beaver Pond and Silver Lake provide residents with water recreation opportunities	S			B&F
8	Environment	There are five Activity Use Limitation (AUL) sites in Franklin (hazardous waste sites)	٧	Seek grant funding for remediation of hazardous wastes	М	F
9	Environment	DPW has Best Management Practices (BMP) guidebook and incorporates Green Infrastructure in projects	S			F
10	Environment	Invasive species in Delcarte Pond; the Town has done a study to identify and treat Milfoil and Water chestnut	S/V	Continue to monitor and treat the pond and water quality	L	F
11	Environment	Invasive speciesGypsy Moth	٧			B&F
12	Environment	EEE, Ticks and mosquito bourne viruses	٧	Increase awareness and educate the community on risks and mitigation through social media/town web site	н	B&F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
13	Environment	Franklin is designated a Green Community	S			F
14	Environment	Bellingham has applied to be a Green Community (reduction of energy cost and increased efficiency)	S			В
		RED TABLE -	INFRA	STRUCTURE		
1	Infrastructure	Wells: water bans; low pressure, vulnerable siting; lack of protection	V/S	Community Education/Outreach/Communication: conservation attention during peak demand times; start with rain barrels, kids. Improve recharge, wetland protection, berms, prevent runoff, LID. Monitor wells, PFAS, pump requirements and maintenance schedule. Water line replacement.	н	B&F
2	Infrastructure	Middle school emergency shelternot long term, provides warming and charging	S			B&F
3	Infrastructure	YMCA Shelter 0 showers, restrooms	S	Refresh and coordinate emergency plans, communications; Red Cross partnership, transportation (TMMA)	М	B&F
4	Infrastructure	Tri-County shelter-generator, kitchen facilities	S			B&F
5	Infrastructure	Franklin High School shelter, 1MW generator	S			F
6	Infrastructure	Box Pond, 1st Avenue flooding, bridges (High Street)	٧	Infrastructure improvements and upgrades; review town regulations around proposals, site plans engineering, flood and rainfall data (e.g. culverts)	н	В
7	Infrastructure	Roadways in good shape, minimal flooding	S			B&F
8	Infrastructure	Populatic Pond flooding	V			F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
9	Infrastructure	Snow removal, access for fire and police	٧	Community Outreach, set expectations; find more people to help	L	B&F
10	Infrastructure	Power loss at Senior Housing on Wrentham Road	٧	Tree maintenance/removal with National Grid; communicate to citizens; underground line regulations		B&F
11	Infrastructure	Lack of IT shelter	٧	Generators		B&F
12	Infrastructure	Senior Centers	S	Add generator to Bellingham center		B&F
13	Infrastructure	Overhead electric lines-National Grid and Eversource; two power plants	٧			B&F
14	Infrastructure	Wastewater system vulnerability, Wrentham and Hartford Ave.	٧			B&F
15	Infrastructure	Milford Urgent Care	S	Establish partnership; shared plans for emergencies	М	B&F
16	Infrastructure	Municipal buildings generators, contingency plans	V/S			
1 <i>7</i>	Infrastructure	Five to six grocery stores	V/S	Generator audit (town-wide?)	М	B&F
18	Infrastructure	Gas stations - power loss	V/S			B&F
19	Infrastructure	Train - commuter rail	V/S		М	F
19	Infrastructure	Commercial building-fire risk-hydrants.				F
21	Infrastructure	Highways - I-495	٧			B&F
		RED TAI	BLE - S	OCIETY		
1	Society	Seniors-Senior centers; elderly housing, bus	V/S	Upgrades to Bellingham Senior Center	н	B&F
2	Society	Social isolation - unknown needs/disabilities	٧	Public messaging, Team Rubicon; VNA; updated lists; door-to-door	L	B&F
3	Society	Senior Services and outreach coordinator	S			B&F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
4	Society	Homeless population shelters in woods	٧	Messaging/communications; "off the grid" folks sheltering	L	
5	Society	Framingham homeless shelter	S			
6	Society	Students reporting homeless	٧			
7	Society	Franklin Homeless Summit: churches, service providers	V/S			F
8	Society	Affordability of housing; shortage of rental housing	٧	Inclusionary Zoning	L	
9	Society	Potential hotel stays for unhoused people	S			
10	Society	Animals: 200+ dogs & cats at Camp Bowwow	S	Include in emergency planning	М	
11	Society	Food vouchers for food trucks, restaurants, stores	S	Include in emergency planning	L	
12	Society	ReGroup, Blackboard Connect, Reverse 911,	S			
13	Society	Translation services - Catholic charities	V/S	Mobilize in emergencies, include in emergency planning	М	B&F
14	Society	YMCA - Kids, families, school partnerships, after school programs	S	Mobilize in emergencies, include in emergency planning	Н	B&F
15	Society	Elks, VFW, Lions, Freemasons, Food Pantry	S			B&F
16	Society	Condo Associations	S			B&F
1 <i>7</i>	Society	CERT Teams - FEMA, Dean College	S			B&F
18	Society	Dean College	S			F
19	Society	Fire - Mutual Aid - ALS, Franklin Fire EMS transport	S			B&F
20	Society	Two bus companies	S			B&F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town				
21	Society	Harvest Festival Open House at Fire Station	S			B&F				
22	Society	Special Needs Communication System with schools, police, fire drills	S			B&F				
	RED TABLE - ENVIRONMENT									
1	Environment	No issues with dams	S			В				
2	Environment	Franklin Forest brushfire truck	S			B&F				
3	Environment	Rebuilt culverts, bridges, dams	V/S			F				
4	Environment	Open Space, tree canopystormwater mitigation	S			B&F				
5	Environment	Federal land (Army Corps) flood storage	S			B&F				
6	Environment	Gravelly soil good drainage	S			В				
7	Environment	Good groundwater resources	S			B&F				
8	Environment	Pilgrim Village swamphigh water on Maple Street	٧			В				
9	Environment	Reliance on municipal wells	٧			B&F				
10	Environment	Wildlife habitat: deer, fisher cats, coyotes; Animal Control services	٧			F				
11	Environment	Insect cycles, tree maintenance, power line and roadway impacts	٧			B&F				
12	Environment	EEE-outdoor activity risk. Holliston has moderate risk; County sprayed fields	V/S	Safety practices, JIT communications	н	B&F				
13	Environment	Beekeepers/habitat-spray impacts	V/S	Better notifications; tablet drops		B&F				
14	Environment	Farms -spray	V/S			B&F				
15	Environment	Ticks/pests/Lyme disease; species change	٧			B&F				

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town				
16	Environment	Declining water quality in public lakes; phosphorus, effluent, chemicals	V/S			B&F				
17	Environment	Beaver pond, dammed Silver Lake	V/S	Beaver control; recreation management		B&F				
	YELLOW TABLE - INFRASTRUCTURE									
1	Infrastructure	Number and spread of schools	V/S	Investigate emergency shelter redundancy in FPS; check with LEPC, coordinate drills between the two towns	н	F				
2	Infrastructure	Number of transportation choices	S	Both towns maintain growth management to keep track of options (Master Planning process)	Н	B&F				
3	Infrastructure	School/Police/Fire all on one street	V/S	The town and the schools need to get together to coordinate emergency planning	н	В				
4	Infrastructure	Intersection at Bellingham Town Hall (Rt. 140 and 126)	v	Grant has been awarded	L	В				
5	Infrastructure	Route 140 - bottlenecks in both towns	٧	Transportation coordination between the two towns, state, and federal transportation agencies	М	B&F				
6	Infrastructure	Disaster Recovery Plan for Dean College	S	Share plan and coordinate with LEPC; share ideas for tabletop exercises	М	F				
7	Infrastructure	Emergency shelters at Dean College, YMCA, High School, and senior centers	S	Line placement not near trees, old buildings; National Grid is working on this		B&F				
8	Infrastructure	Data backup (Dean College, Bell. Fire)	٧	Data backup, fiber optic for both towns	L	B&F				
9	Infrastructure	Utilities above ground	٧		L	F				
10	Environment	Shared radio system	V/S	Fire Departments are working on shared radio system	L	B&F				
11	Environment	Green Communities	S		L	B&F				
12	Environment	Rainwater capturing on Dean campus	S	Stormwater program, TBD	L	F				
13	Environment	Runoff from main roads	٧	Stormwater program, TBD	L	B&F				

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
14	Environment	Shrinking road sizes to reduce runoff and install rain gardens	S			F
15	Environment	Green Campus at Dean College	S			F
16	Environment	Roads crossing wetlands and streams: need bridges to accommodate flow (Lincoln St.)	٧	Long term plan to identify grants and capital funding for building bridges	М	F
		YELLOW T	ABLE -	SOCIETY		
1	Society	Central Park Terrace: flooding restricts access	٧	Research and confirm access during weather events	Н	F
2	Society	Greater percentage of lower income in Bellingham	٧	Involve/engage need a plan that identifies		В
3	Society	Large elderly population	٧	the demographics of the community and the	н	В
4	Society	Increased support to assisted living facilities; aging in place	٧	steps to address emergency services		B & F
5	Society	Housing affordability	٧			B & F
6	Society	Mutual aid to both towns keeps them busy	V/S	Increase resources for fire, police, and public works	н	B&F
7	Society	Franklin food pantry is the biggest in region	S			F
8	Society	Franklin senior center and Bellingham warming and cooling center	S			B & F
9	Society	Three assisted living facilities, but other seniors spread out across the towns	٧			F
10	Society	Code Red and Reverse 911	S			В
11	Society	Everyone has transport	V/S	Address in Growth Management	М	B & F
12	Society	Limited English proficiency in schools	٧			B & F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
13	Society	DPW and Dean Facilities/campus safety: heat can be an issue for workers	٧	Safety training, enclosed golf carts, enough rest	М	B & F
14	Society	Encourage shelter in place	S			В
15	Society	Homeless population: no shelter	٧			B & F
16	Society	Gaps in school systems: DI with no kids; disabilities	٧			F
1 <i>7</i>	Society	Mistrust between minority populations and authorities	٧			F
18	Society	Supporting disabled community				B & F
		YELLOW TAB	LE - EN	VIRONMENT		
1	Environment	Aquifersdrinking water and wastewater	٧	Continue to be proactive, monitor	Н	B&F
2	Environment	Older buildings impacted by weathering at Dean College	٧	Dean College mitigation actions	L	B & F
3	Environment	Tree cover: lots of trees, but they need management. (Town Forest has no plan)	V/S	Forest Management in open space areas	М	B & F
4	Environment	New pests that will kill trees	٧	Forest Management in open space areas	М	B & F
5	Environment	Damage from trees if they come down	٧			B & F
6	Environment	Ticks and other insects/pests	٧	Coordinate with Board of Health	М	B & F
7	Environment	Beavers displaced on Lincoln Street and moved downstream, building dams;	v	Growth Management - Sustainable growth	н	B&F
		wildlife impacting farming		"Beaver deceivers" for beaver control and management	М	В
8	Environment	Development on former wetlands, impact in extreme events	٧	Do not accept new streets if they are not up to par; uniform enforcement of FEMA flood Insurance maps	М	F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
9	Environment	Flood vulnerability in many areas (map showing 2010 flood claims)	٧			B & F
10	Environment	Wetlands bylaws: Bellingham's is well administered, jurisdiction will increase	S			B & F
11	Environment	Water conservation	V/S	Continue to be proactive, monitor		B & F
12	Environment	Stallbrook - increasing school but lack of space due to changes in environment	٧	Beaver management to reduce impacts on town facilities	М	В
13	Environment	Pollingtory Pasture: native species and rain garden	S			F
14	Environment	Grants for rain gardens in DPW	S			F
15	Environment	Fire took down water treatment plant	٧	Experience being used as education	L	F
16	Environment	Runoff from highly manicured spaces	٧	Stormwater plan	L	B & F
17	Environment	Education around environment and water bans	S	Invest in childhood education from schools	L	B & F
18	Environment	Agriculture Commission reaches out to schools	S	Invest in childhood education from schools	L	F
19	Environment	Clean Energy and Solar and LEDs at Dean College	S		;	B & F
		ORANGE TABL	E - INF	RASTRUCTURE		
1	Infrastructure	Franklin TV / WFRP-FM emergency communication	S			B & F
2	Infrastructure	Bellingham DPW building in poor condition	٧	Fund a replacement DPW building	Н	В
3	Infrastructure	Extensive culvert repair in Franklin	S	Continue to maintain culverts		F
4	Infrastructure	Good water and wastewater treatment	S			B & F
5	Infrastructure	Populatic Pump Station	٧	Develop a plan to protect/fortify	Н	F

ltem#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
6	Infrastructure	Water supply bans - water one day/week	٧	New treatment plant will help; need to study capacity to provide future supply (growth)	н	F
7	Infrastructure	Water supply strength	S	Maintain Infrastructure		В
8	Infrastructure	Generators for wastewater system	S			F
9	Infrastructure	Class 6 Emergency-highly protected facility	S			B & F
10	Infrastructure	Bellingham not connected for emergencies	٧	Current linkage is over internet; consider air link. Find Bellingham location, line-of-sight study, find resources	Н	В
11	Infrastructure	Gas supply	S/V	Fix leaks; preventative, knowledge of safety measures	М	F
12	Infrastructure	High water table - flooding	٧	Educate residents about protection; regulation for future developments to protect basements	н	B & F
13	Infrastructure	Most Franklin town facilities are relatively new	S			F
14	Infrastructure	High School has shelter, generator	S			F
15	Infrastructure	Close proximity of municipal services in Bellingham	S/V	Consider a microgrid, network the facilities	L	В
16	Infrastructure	MBTA adding a parallel track on Commuter Rail line	S	Support double-track length of the Commuter Rail line	М	B & F
1 <i>7</i>	Infrastructure	Extension of Commuter Rail track to Milford	S	Support extension of Commuter Rail to Milford to address traffic and energy use		В
18	Infrastructure	Investigate adding additional shelter space	٧	Consider use of Elks, VFW as shelters (need generators)	н	B & F
		ORANGE 1	TABLE	- SOCIETY		
1	Society	Capacity to educate vulnerable populationsnursing homes, elderly, assisted living	٧	Work with facilities on their capacity to shelter in place	н	B&F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
2	Society	Lack of awareness of need to prepare and evacuate	٧	Residential outreach and education on what it takes to be prepared	М	B & F
3	Society	Capacity for animals in emergencies (some exists-Camp Bow Wow)	S/V	Study what capacity is needed, improve capacity; is there an evacuation plan for animals?	М	B & F
4	Society	Bellingham Council on Aging at capacity; no institutional kitchen	٧	Engineering study is funded; need funding to build, would be over \$1 million	н	В
5	Society	Franklin COA has good building, serves breakfast and lunch	S			F
6	Society	Bellingham COA has great staff	S			В
7	Society	Both towns COAs do good outreach, know their people	S			B & F
8	Society	No assisted living or nursing homes in Bellingham; more seniors, vulnerable people at home	٧	Encourage in-law apartments, encourage buddy programs	М	В
9	Society	Reverse 911 systems	S			B & F
10	Society	Library has good children's services, after school activities	S			B & F
11	Society	Growing diversity in towns, need communication	٧	Study needconsider targeted outreach; schools have experience	Н	B & F
12	Society	People with need for power for medical devices	S/V	Make local and regional data interoperable (in cars); keep up with updates	Н	B & F
13	Society	Food pantries in both towns	S			B & F
		ORANGE TAB	LE - EN	IVIRONMENT		
1	Environment	Charles River Natural Valley Storage area - flood mitigation and open space	S			B & F
2	Environment	Lack of tree cover in industrial areas	٧	Update regulations - require tree cover	Н	B & F

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
3	Environment	No clear cutting in subdivisionsresidential open space bylaws	S			B & F
4	Environment	No regulations to support Planning Board for trees in commercial areas (see also #2)	٧			B&F
5	Environment	Franklin Rain Gardens	S			F
6	Environment	New federally required stormwater regulations (MS4) will improve water quality, but are also costly	S/V	Bellingham has adopted an Enterprise Fund		B & F
7	Environment	Active Conservation Commission in Bellingham focus on water quality	S			В
8	Environment	Franklin High School uses roof rainwater capture for toilets; very little water use	S			F
9	Environment	Schools in Franklin have all water conservation utilities	S			F
10	Environment	National Grid 5-year tree trimming schedule; not enough	S/V	Encourage utilities to increase rotation and expedite hazardous public tree process, and town Tree Warden tree management	Н	B & F
11	Environment	Trees weakened by Gypsy Moths, other pests	٧	Consider warming climate for tree planting plans	L	B&F
12	Environment	Franklin State Forest	S			F
13	Environment	Franklin Open Space Subdivision bylaw protects hundreds of acres	S			F
14	Environment	Extensive solar arrays in both towns	S			B & F
15	Environment	SNET through both towns	S			B & F
16	Environment	Open Space preservation	S			В

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority	Town
17	Environment	Two lakes in Bellingham, nice community resource; treated for algae	S			В
18	Environment	Beaver Pond in Franklinsource flows through a Superfund site	S/V	Monitoring and clean-up process		F
19	Environment	Super Fund sites in both towns	٧	Monitor efforts: recognize sites and get on list for clean up	М	B & F

APPENDIX E — COMMUNITY FORUM (LISTENING SESSIONS)

HAZARD MITIGATION PLANNING, & PREPARING FOR CLIMATE CHANGE IN THE TOWN OF FRANKLIN

WHEN: Monday, March 2, 2020 | 6:00 – 7:30 pm
WHERE: Franklin Municipal Building | 355 E. Central

On March 2, 2020 the Town of Franklin will host a Community Forum to discuss the potential impacts of climate change on Franklin, and actions the Town can take to prepare for those impacts. All Franklin residents, businesses, and civic organizations are invited and encouraged to participate.

The Community Forum will present the results of a Municipal Vulnerability Preparedness (MVP) Workshop that was held on November 20th jointly by the Towns of Franklin and Bellingham. The MVP Workshop brought together municipal officials, local businesses, institutions, and civic organizations to identify how the Town's are vulnerable to the impacts of climate change, as well as actions the municipalities can take to increase their resilience. The forum will also summarize the 2020 Update of the Town of Franklin's Hazard Mitigation Plan which is currently being prepared by the Metropolitan Area Planning Council.

Given recent events like the 2018 Nor'easters, the 2016 drought, and the record 110 inches of snow in 2015, we now find ourselves in an era of more unpredictable and severe weather with the potential to cause more damage to our residents, infrastructure, businesses, and institutions.

Your input is important to the Town of Franklin's community resilience building process.

This Project is funded through the
Executive Office of Energy and Environmental Affairs'
Municipal Vulnerability Preparedness Grant Program.
Technical Assistance provided by
Metropolitan Area Planning Council (MAPC).

CONTACT

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Town of Franklin
Department of
Planning & Community
Development

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Town of Franklin

Public Forum on Municipal Vulnerability Preparedness and Hazard Mitigation Plan Update 2020

TIME	ACTIVITIES	
6:00	Arrive, sign in and review climate posters	All attendees
6:15	Welcome and Introductions	Jamie Hellen, Town Manager
6:20	Summary of Climate Trends and Impacts	Martin Pillsbury, MAPC
6:30	Overview of MVP workshop and top priority actions	Bryan Taberner, Director of Planning and Community Development
6:45	Questions and discussion on MVP Actions	All attendees
7:00	Overview of the Hazard Mitigation Plan Update 2020	Martin Pillsbury, MAPC
7:15	Questions and discussion on Hazard Mitigation Plan	All attendees
7:30	Next steps: finalize draft plan, 2 nd public meeting	Bryan Taberner, Director of Planning and Community Development
7:45	Adjourn	

CALENDAR LISTING / MEDIA ADVISORY

MARCH 2 FRAKLIN COMMUNITY FORUM WILL ADDRESS PREPAREDNESS FOR CLIMATE IMPACTS AND HAZARD MITIGATION PLAN

What:

On March 2, 2020 the Town of Franklin will host a Community Forum to discuss the impacts of climate change on Franklin and actions the town can take to prepare for those impacts. The community forum will be held at 6:00 p.m. at the Franklin Municipal Building. All Franklin residents, businesses, and civic organizations are invited and encouraged to participate.

The Community Forum will present the results of a Municipal Vulnerability Preparedness (MVP) Workshop that was held on November 20 jointly by the Towns of Franklin and Bellingham and. The MVP Workshop brought together Town Board and Committee members, municipal staff, local businesses, institutions, and civic organizations to identify how Franklin and Bellingham may be vulnerable to the impacts of climate change, as well as the towns' strengths and actions they may take to increase their resilience.

The forum will also summarize the 2020 Update of the town's Hazard Mitigation Plan which is currently being prepared by Franklin with the assistance of the Metropolitan Area Planning Council (MAPC).

Who:

Franklin residents, business owners, civic organizations and institutions are invited to attend the forum and provide their input as part of this on-going effort to plan for the Town's future.

When: Monday, March 2, 2020, 6:00 PM

Where: Franklin Municipal Building

Council Chambers 355 East Central Street

Franklin, MA

##

Community Forum:

Preparing for Climate Change and Hazard Mitigation Planning in the Town of Bellingham

Natural hazards can have serious impacts on the Town of Bellingham and its residents and businesses







This Community Forum will summarize the results of a Municipal Vulnerability

Preparedness (MVP) Workshop that was held on November 20 jointly by the Towns of
Bellingham and Franklin. The MVP Workshop brought together Town officials and staff,
local businesses, institutions, and civic organizations to identify how Bellingham and
Franklin may be vulnerable to the impacts of climate change, as well as the towns'
strengths and actions they may take to increase their resilience. The forum will also
summarize the 2020 Update of the town's Hazard Mitigation Plan which is currently
being prepared by Bellingham with the assistance of the Metropolitan Area Planning
Council (MAPC).

Date: Thursday, March 12, 2020

Time: 6:00 pm

Location: Bellingham Municipal Center

Arcand Meeting Room

10 Mechanic Street, Bellingham

For more information, please contact James Kupfer at ikupfer@bellinghamma.org



Town of Bellingham

Public Forum on Municipal Vulnerability Preparedness and Hazard Mitigation Plan Update 2020 March 12, 2020

TIME	ACTIVITIES	
6:00	Arrive, sign in and review climate posters	All attendees
6:10	Overview of MVP workshop and top priority actions	Jim Kupfer Town Planner
6:25	Questions and discussion on MVP Actions	All attendees
6:35	Overview of the Hazard Mitigation Plan Update 2020	Jim Kupfer
6:45	Questions and discussion on Hazard Mitigation Plan	All attendees
6:55	Next steps: finalize draft plan, 2 nd public meeting	Jim Kupfer
7:00	Adjourn Public Forum	

CALENDAR LISTING / MEDIA ADVISORY

MARCH 12 BELLINGHAM COMMUNITY FORUM WILL ADDRESS PREPAREDNESS FOR CLIMATE IMPACTS AND HAZARD MITIGATION PLAN

What:

On March 12, 2020 the Town of Bellingham will host a Community Forum to discuss the impacts of climate change on Bellingham and actions the town can take to prepare for those impacts. The community forum will be held at 6:00 p.m.. at the Bellingham Municipal Center. All Bellingham residents, businesses, and civic organizations are invited and encouraged to participate.

The Community Forum will present the results of a Municipal Vulnerability Preparedness (MVP) Workshop that was held on November 20 jointly by the Towns of Bellingham and Franklin. The MVP Workshop brought together Town Board and Committee members, municipal staff, local businesses, institutions, and civic organizations to identify how Bellingham and Franklin may be vulnerable to the impacts of climate change, as well as the towns' strengths and actions they may take to increase their resilience.

The forum will also summarize the 2020 Update of the town's Hazard Mitigation Plan which is currently being prepared by Bellingham with the assistance of the Metropolitan Area Planning Council (MAPC).

Who:

Bellingham residents, business owners, civic organizations and institutions are invited to attend the forum and provide their input as part of this on-going effort to plan for the Town's future.

When: Thursday, March 12, 2020, 6:00 PM

Where: Bellingham Municipal Center

Arcand Meeting Room 10 Mechanic Street Bellingham, MA

Listening Session Presentation

Bellingham and Franklin MVP and HMP Project:

Presentation Outline

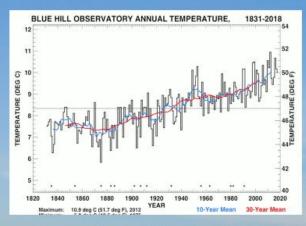
- Climate Change Overview
- 2. Municipal Vulnerability Preparedness Program
- 3. Hazard Mitigation Plan
- 4. Next Steps

Hazard Mitigation Plan:
Historic Weather Events and Hazards
+

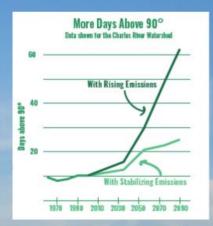
Municipal Vulnerability Preparedness:
Future Climate Change Projections
=
Community Resilience

Climate Change Overview: Our Warming Planet The Greenhouse Effect Some Some Some Source of the Lung Sold o









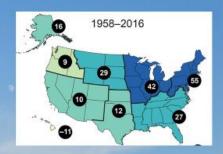
Projected Days Above 90, Charles River

Climate Change Overview: Precipitation Change

Northeast: 55% increase in rain that falls in the top 1% events from 1958 – 2016

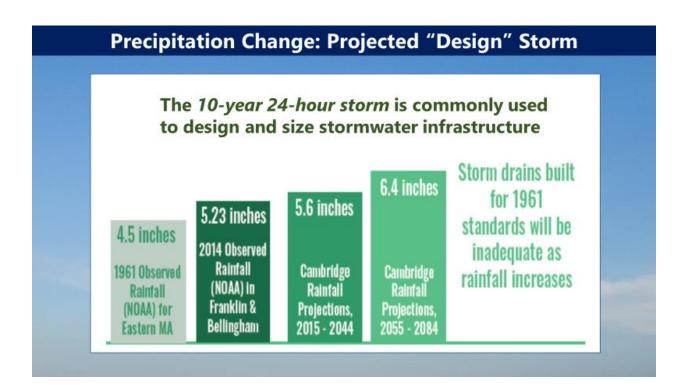


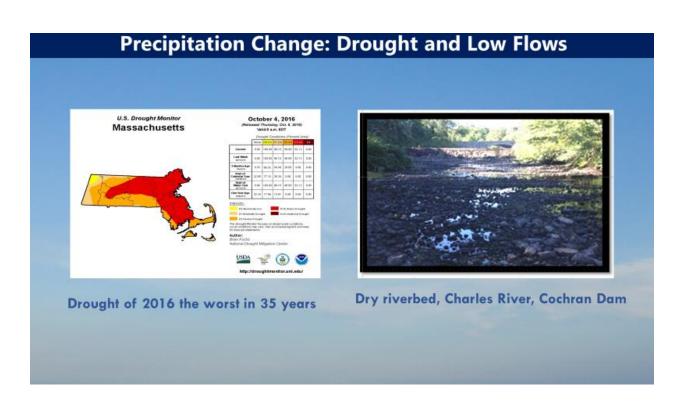
Source: NOAA, Northeast Climate Data Center



10% increase in annual precipitation over 50 years + More intense rainfall events =

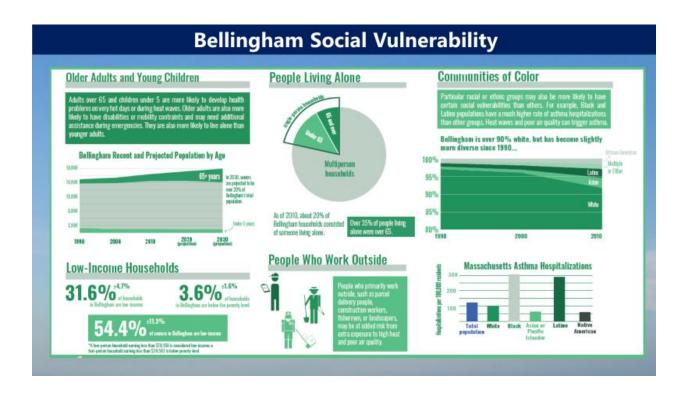
More runoff instead of recharge of groundwater + more flooding











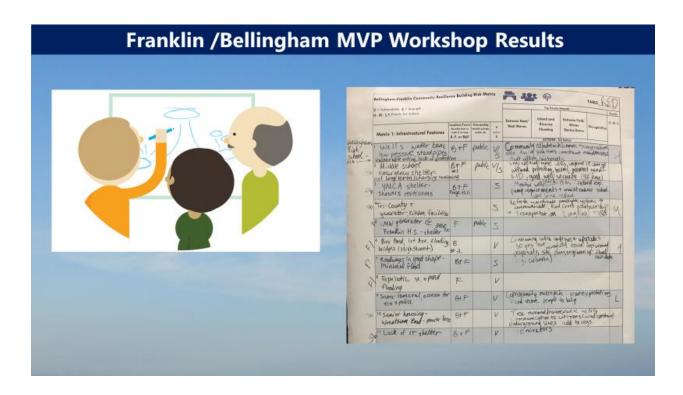
Franklin/Bellingham MVP Workshop

MVP Workshop Addressed Franklin and Bellingham's Climate Hazards:

- Inland flooding
- Extreme Heat
- Extreme cold/winter storms, snow/ice
- Drought

From the perspectives of:

- Infrastructure
- Environment
- Society



Franklin /Bellingham MVP Overview: Action Categories

Emergency Sheltering and Evacuation	27
2. Communications and Vulnerable Populations	19
3. Water Resources	16
4. Environment/Sustainable Development	10
5. Reliable Power & Tree Management	9
6. Public Safety Resources	9
7. Green Energy	6
8. Long-Term Infrastructure Planning	2

Franklin /Bellingham MVP High Priority Actions

- 1. Emergency Sheltering and Evacuation (27)
- Work with senior facilities and housing on emergency sheltering and evacuation
- Identify vulnerable populations, work with community and faith-based organizations to develop strategies to mitigate risks, provide shelters and transportation to shelters
- Investigate emergency services and shelters and coordinate with Local Emergency
 Planning Committee; bring all stakeholders together; meet regionally
- Increase number and quality of shelters collaborate with community resources,
 EMP, Red Cross, hospitals, hotels, restaurants, etc.
- Food Pantries: increase outreach to foster support and expand existing site

Franklin /Bellingham MVP High Priority Actions

- 2. Communications and Vulnerable Populations (19)
- Communications infrastructure: identify ways to connect with people on extreme weather events, EEE, etc.
- Plan to identify and leverage services for demographic groups that may slip between the cracks in social networks
- Increase awareness and educate the towns on risks and mitigation through social media and town websites (EEE, etc)
- Develop a robust communication plan for emergency events that includes other languages
- Strengthen communications with Non-Governmental Organizations related to language barriers and establish a Task Force to identify vulnerable populations

Franklin /Bellingham MVP High Priority Actions

3. Water Resources (16)

- Study capacity of future water supply
- Water Quality: reliance on wells: Communication & education; wetland protection, control/manage water bodies.
- Review and update stormwater regulations
- Protect water supplies

4. Environment / Sustainable Development (10)

- Address growth management in a sustainable fashion; preserve open space
- Identify key habitat areas for future protection measures and conservation

Franklin /Bellingham MVP High Priority Actions

5. Reliable Power & Tree Management (9)

- Tree maintenance; cut back; utilities and towns
- Audit commercial generators in towns
- Future development underground power lines

6. Public Safety Resources (9)

• Increase resources for Public Safety and Public Works in both towns

7. Green Energy (6)

- Apply for Green Communities and other similar sources
- · Site solar farms in areas that have been previously cleared; don't impact the landscape

8. Long-Term Infrastructure Planning (2)

- Culverts and bridges, capital improvements and maintenance
- · Continued improvement of infrastructure: design for a new future; long range impacts

Bellingham MVP High Priority Actions

HIGHEST PRIORITY BELLINGHAM ACTIONS

- 1. Bellingham Schools (14)
- Town schools should get together to discuss emergency planning, document
- 2. Bellingham DPW Building (8)
- Replace Bellingham DPW building (8)
- 3. Bellingham: Beaver Management (4)
- Plan for beaver management to mitigate flooding at Sallbrod School & Hartford Ave (3)
- 4. Bellingham: Senior Center(2)
- Renovations/improve infrastructure at Senior Center- generator; kitchen (2)
- 5. Bellingham: Flooding on Wrentham Road (1)
- Study culverts to mitigate flooding on Wrentham Road (1)
- 6. Bellingham: Transport of Hazardous Materials (1)
- Create alternate truck routes/restrict transport of hazardous materials on Blackstone Street (1)

Questions and Feedback on the MVP Workshop

QUESTIONS AND COMMENTS WELCOME

- What climate hazards are you most concerned about?
- Do you have any feedback on the actions developed by the MVP workshop?
- Other suggestions, or questions?