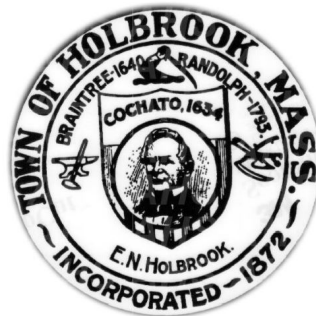


# MUNICIPAL VULNERABILITY PREPAREDNESS PROGRAM

## Community Resilience Building Workshop Summary of Findings Report

Town of Holbrook

April 2021



Prepared for the Town of Holbrook, MA by Environmental Partners Group, Inc. with a grant from the Massachusetts Executive Office of Energy & Environmental Affairs



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# SECTION 1 OVERVIEW

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 increased extreme heat days and heat waves, both increased flooding from large rain events, and a greater likelihood of drought, increased flooding due to sea level rise, and impacts from more intense storms.

The MVP program provides funding for cities and towns in Massachusetts to plan for climate change resilience and implement priority projects. The state provides communities with planning grants to complete vulnerability assessments and, develop action-oriented resilience plans, among other projects. Communities who complete the MVP program become certified as an MVP community and are eligible for action grant funding.

Driven by the desire to assess its vulnerabilities, build community resilience, and expand its potential to address hazards caused by climate change, the Town of Holbrook chose to pursue certification from the Massachusetts MVP program. In the fall of 2020, the Town received funds to start a town-wide conversation about climate change and its effects on the community. This Summary of Findings Report presents the results from the planning program for Holbrook.

The Town of Holbrook collaborated with Environmental Partners (EP) to design a process that would allow the Town to become an MVP Community. The MVP Core Planning Team regrouped and recruited community stakeholders to participate in a multi-day virtual CRB Workshop, hosted through Zoom meetings. Ten people representing Holbrook town staff and members of boards and commissions, and resident volunteers gathered virtually in April 2021 for the CRB Workshop (see Appendix A for list).

Throughout the MVP process, EP facilitated and encouraged discussion from the Town with the result being that the discussion and plans presented in this MVP Summary of Findings Report are the Town's own priorities from the community that is Holbrook. To complete the work outlined in this report, the Town worked with EP to:

- Prepare and host a website via ESRI StoryMap to share information on the program, and to present on the MVP Process, and CRB Maps.
- Prepare and distribute an online MVP Questionnaire to establish concern/understanding of climate change in Holbrook, and what concerns were relevant to the CRB participants regarding natural resources, infrastructure and vulnerable populations.
- Host three virtual MVP CRB workshop sessions in which:
  - the highest priority hazards were confirmed;
  - the impacts, strengths, and vulnerabilities to environmental, infrastructure, and socio-economic systems were identified;
  - adaptation actions were identified and discussed; and
  - a final set of high priority action items were collectively defined and agreed upon by workshop participants;



- Prepare for and host a virtual listening session after the workshop to prepare for and discuss the results from the workshop while soliciting feedback from the community.

This report provides detail about the MVP process that Holbrook followed, and the actions identified as high priorities to enhance local and regional resilience. The Town would like to thank the Massachusetts Executive Office of Energy and Environmental Affairs for their financial and technical support for this effort.

## SECTION 2 TOP HAZARDS AND VULNERABLE AREAS

### SECTION 2.1 TOP HAZARDS

The Core Planning Team identified the top natural hazards. Based on the review of workshop materials, the team identified heat waves, flooding, drought and intense storms (wind, snow, ice) as the climate hazards of greatest concern facing Holbrook. Observed and predicted changes to the climate in Holbrook were a large motivator for becoming an MVP certified town.



HEAT WAVES



FLOODING



DROUGHT



INTENSE STORMS

Combined, these hazards inspired the Town to begin identifying and implementing actions that will enhance local resilience to these existing conditions and projected changes. More detailed information on these hazards, including trends, projections, and impacts are presented in the following section.

Appendix B provides a summary of the historic trends and projected changes in weather and climate experienced in Holbrook, as well as the results from the Online Questionnaire issued before the CRB Workshops. This information was foundational to the MVP process as it helped to establish common ground for the stakeholders and discuss what types of changes and associated impacts to expect going forward.

### SECTION 2.2 VULNERABLE AREAS

At the MVP Workshop sessions, participants discussed the impacts of the four hazards and articulated features they saw as community strengths and vulnerabilities. These features were discussed as they relate to three community components: Environmental, Infrastructural, and Societal. The workshop attendees were tasked with reviewing the details of each feature identified under each of the components. Then, using a matrix to track each feature, whether it was a strength and/or a vulnerability, the hazard that affects it, and the priority and timeline associated with implementation.

Below are the features identified for the three community components:

## ENVIRONMENTAL FEATURES:

- Open Space
- Town Forest
- Lake Holbrook
- Baird & McGuire Superfund Site
- Wetlands
- Rivers / Streams
- Trees / Tree Canopy

## INFRASTRUCTURAL FEATURES:

- Culverts
- Bridges
- Town Roads
- State Roads
- Drainage System
- Sewer System / Pump Stations
- Water Distribution System
- Dams

## SOCIETAL FEATURES:

- K-12 School Campus
- Low-Income Housing
- Council on Aging Services
- Elderly Population
- Vulnerable Neighborhoods
- Environmental Justice Community
- Emergency Communication System
- Rotary Club / Sportsmans Club
- Faith Based Organizations

Most of these features were identified as both strengths and vulnerabilities. As such, workshop participants discussed the specific strengths as well as vulnerabilities before naming actions or plans that could boost strengths and mitigate vulnerabilities. The CRB Maps and completed matrices, from the group discussions, can be found in Appendices C and D, respectively.

## SECTION 3 CURRENT CONCERNS AND CHALLENGES PRESENTED BY HAZARDS

Holbrook residents are noticing changes to the climate. During the Workshops, the CRB participants raised their concerns about these impacts, specifically the increasing frequency and intensity of storms, including heavy rain events, the recent periods of drought, and intense storms (nor'easters/hurricanes) that have brought damaging high winds.

**HEAT WAVES** - The biggest challenges related to heat waves and higher temperatures were the ability to provide cooling centers for residents in need and to anticipate and control power needs for cooling. Also, during the warmer season, the risk of mosquito-borne illness is higher, and has been a prevalent issue for the Town, especially around Lake Holbrook, and other wet, low-lying neighborhoods.

**FLOODING** - There are many wetlands, streams, rivers and ponds across the Town, and large rain events result in major flooding throughout Town, and at multiple stream/river crossings, flooding issues are primarily due to insufficient storage capacity, aging drainage infrastructure and inadequate culvert size.

**DROUGHT** - Drought affects the Town's wetlands, streams/rivers and other natural features. The Town is reliant on neighboring municipalities for their source of drinking water, and needs to continue to collaborate with Joint Water board for protection of resource areas and infrastructure.

**MORE INTENSE STORMS** - The biggest challenges related to intense storms, including nor'easters and hurricanes are the prolonged power outages from falling trees and limbs, and the unanticipated damages to roads, buildings and other infrastructure.

## SECTION 4 CURRENT STRENGTHS AND ASSETS

One of the focal points of the MVP Workshops to identify the Town's strengths for the features impacted by the four climate hazards outlined above. Workshop participants identified numerous Holbrook strengths and assets that will support resilience to future climate impacts. Town strengths identified include Town Forest, Open Space, facilities and emergency management, and natural resources. Town-specific strengths identified include:

- Available Open Space for potential flood storage and conservation
- Town Forest – Recreation, Protected Land / Resource Area
- Recently reconstructed Dam at Lake Holbrook
- New K-12 School Buildings
- New Water Plant in Construction
- Active Food Pantries
- Active Clubs and Organizations
- Emergency services

# SECTION 5 TOP RECOMMENDATIONS AND STRATEGIES TO IMPROVE RESILIENCE

After identifying the Town's features, strengths and vulnerabilities, the MVP Workshop participants brainstormed a list of potential resilience actions Holbrook could take to combat the impacts from the four climate hazards. Actions were intended to build on the existing strengths of the Town, while addressing current or future vulnerabilities. This process was conducted, followed by a prioritization of the actions to identify and prioritize which actions the Town should take first.

MVP Workshop stakeholders generated a list of nearly 22 action items.

Each participant was asked to vote on their top three priorities across the three community components (Environmental, Infrastructural and Societal). The following projects are the top five action items that were collectively identified as top priorities for Holbrook, listed in order of the number of votes they received.

## TOP PROJECTS IDENTIFIED FOR ACTION

- Comprehensive Plan / Update of Master Plan
- Hazard Mitigation Plan
- Provide Resources / Educational Outreach to Reduce Risk in Vulnerable Neighborhoods
- Drainage System Evaluation
- Lake Holbrook Water Quality Study

Below is the list of additional action items identified and discussed under each community component, listed in the order of the number of votes they received:

### Environmental:

1. Comprehensive Plan / Update Master Plan – to evaluate open space, prioritize future development, and the need to protect/acquire Open Space for resiliency
2. Lake Holbrook Water Quality Assessment – identify sources of pollutants, protect neighboring community from air quality issues
3. Evaluation of Town-wide Culverts/Watershed Areas – identify opportunities for Ecological Restoration and/or daylighting of streams
4. Develop Tree Inventory to establish priority based tree planting/maintenance (with a goal of a TreeCity-USA designation)
5. Continued Engagement to monitor activities and opportunities for beneficial use at the Baird & McGuire Superfund Site
6. Encourage the extension of protected space that Town Forest has to offer (invaluable resource area)

Infrastructure:

1. Culvert Assessment – identify need for increased capacity and/or restoration
2. Hazard Mitigation Plan – needed for further planning and access to FEMA Funds
3. Drainage System Evaluation – identify areas for increased capacity, improve water quality, and/or green infrastructure opportunities
4. Collaboration with Joint Water Board for Protection of Resource Areas and Infrastructure
5. Evaluation of Generator needs at Sewer Pump Stations
6. Ongoing Maintenance of Holbrook Lake Dam
7. Communication with Eversource – for protection of infrastructure (in floodplain)

Societal:

1. Coordinate organizations in identifying and conducting best practices amongst members to reduce risk (faith based groups/community clubs/organizations)
2. Identify point of contact for Vulnerable Neighborhoods to provide resources/education to reduce exposure/risk
3. Continue Emergency Communication System and increase awareness/involvement in program for more use
4. Conduct analysis on Regional Shelter Plan or need for intermunicipal agreement for shelter needs
5. Evaluation of School buildings to accommodate cooling/heating centers or shelters as needed
6. Coordinate emergency planning efforts with Council on Aging

## SECTION 6 CONCLUSIONS AND NEXT STEPS

The MVP workshop process is only the first step in starting a dialogue about climate change hazards and impacts and developing programs to develop climate change resilience in Holbrook. The Town is eager to keep this process going. Both the actions identified in this plan and the application for additional funding from the State's MVP program will be fundamental to shifting the conversation into action.

### SECTION 6.1 COMMUNITY OUTREACH AND INPUT

On April 20, 2021, the Town hosted a "Listening Session" to share climate information and the CRB workshop results. The Session was recorded, and broadcast via the Town's Public TV Station to allow for additional review and to solicit participation and feedback from the community.

Throughout the process, Holbrook has shared MVP resources with the community through hosting its MVP website. A copy of the website materials, questionnaire feedback and the presentation prepared for the Listening Session, are included in Appendix E.

### SECTION 6.2 ACKNOWLEDGEMENTS

#### THANK YOU

A special thanks to the MVP Core Team members, CRB Workshop participants (Appendix A) and to DPW Superintendent, Chris Pellitteri who served as the Town's Project Coordinator.

Core Team Members	Affiliation
Chris Pellitteri	DPW Superintendent
Chief William Smith	Police Department
Luke McFadden	Fire Department
Jim O'Mara	Interim Town Administrator
Emily Martin	Assistant to the Town Administrator
Abbey Myers	Health Agent
Alison Bowden	Resident/Nature Conservancy

#### Community Resilience Building Project Team

Name	Title	Affiliation
Chris Pellitteri	DPW Superintendent	Town of Holbrook
Emily Martin	Assistant to the Town Administrator	Town of Holbrook
Natalie Pommersheim	Lead Facilitator	Environmental Partners



## REPORT CITATION

Town of Holbrook (2021). Community Resilience Building Workshop Summary of Findings. Holbrook, Massachusetts.

## APPENDIX A

### MVP WORKSHOP ATTENDEES

## Holbrook MVP – CRB Participant List

### April 2021

<b>CRB Invitees / Affiliation</b>	<b>Monday 4/5/21 Environment</b>	<b>Tuesday 4/6/21 Infrastructure</b>	<b>Thursday 4/8/21 Socio-Economic</b>
Chris Pellitteri – DPW Superintendent	X	X	X
Jim O'Mara - Interim Town Administrator			
Emily Martin – Assistant to Town Administrator	X	X	X
Abbey Myers – Health Agent			X
William Smith – Police Department	X	X	
Luke McFadden – Fire Department	X	X	
Allison Bowden – Resident / NRC	X	X	X
Deborah Cabral – Resident Volunteer			X
Shen Chan – Resident Volunteer		X	
Avalon Hadley – Resident Volunteer			X
Anjenny Scoon – Resident Volunteer			
Eric Erskine – Building Department			
Pam Campanella – Select Board		X	
Dan Lee – Select Board			
Josh Reilly – Select Board			
Lindsay Vayda – Select Board			
Carolyn Meklenburg – MVP Regional Coordinator	X	X	X
Natalie Pommersheim, EP – Lead Facilitator	X	X	X

**APPENDIX B**  
**CLIMATE CHANGE SUMMARY**

## REGIONAL CLIMATE DISCUSSION

Assessment | Concerns

### REGIONAL CLIMATE DISCUSSION

#### Climate Change Hazards

- Precipitation Changes
  - Flooding
  - Drought
- Temperature Changes
- More Intense Storms



## PRECIPITATION CHANGES

### Flooding

A single intense downpour can cause serious flooding which can damage critical facilities and infrastructure, or can limit access to essential roads.

#### Vulnerabilities

Flooding | Transportation access

#### Action Items

Conduct improvements to culverts and/or bridges  
(reduce flooding areas)



## PRECIPITATION CHANGES

### Drought

Precipitation events will be concentrated in fewer storm events and can lead to water supply shortages, crop damage and habitat stress.

#### Vulnerabilities

Water supply/redundant sources

#### Action Items

Evaluation of Town's water supply

**The Patriot Ledger**

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COUNTY

**Tri-town considers easing water restrictions**

**Fred Hanson** (hanson@patriotledger.com)  
Published 10:52 a.m. ET, Jul. 9, 2020

**BRAINTREE** — Lawn sprinklers may be making a comeback in the towns of Braintree, Randolph and Holbrook.

During a remote meeting on Wednesday, the tri-town water board discussed the possibility of easing decade-long joint restrictions on outdoor water use.

Braintree Mayor Charles Kokoros said the increased capacity of the reservoir system shared by the three towns gives them the chance to make the change.

"The goal is to allow our residents to use the water when they need it," said Kokoros, who chairs the water board.

Lou Dutton, Braintree's water and sewer superintendent, said the capacity of the Richardi Reservoir has been increased. This gives the system a capacity of 1,763 billion gallons of water as opposed to the old capacity of 1.4 billion gallons. The reservoirs are also being managed differently, with water pumped from the Richardi Reservoir to the Upper Reservoir when the level drops a matter of inches, rather than a few feet.

Under the proposal, Phase 1 water restrictions would not be put into place until the capacity of the reservoirs drop below 85 percent. Currently, Phase 1 restrictions are always in effect, restricting outdoor water use to a hand-held hose and prohibiting the filling of swimming pools and organized car washes after July 1.

Phase 2 restrictions, when reservoir capacity goes below 80 percent, allows for outdoor watering from 7 to 10 a.m. and 6 to 9 p.m. Under Phase 3, below 70 percent capacity, the morning hours are eliminated. Under Phase 4, under 60 percent capacity, all outdoor water use is prohibited. And in Phase 5, under 50 percent capacity, all nonessential water use is banned.



## TEMPERATURE CHANGES

### Heat Wave

An increased # of days with high temperatures – particularly days over 90°F –will lead to heat-related illnesses and higher energy demands in the summer.

#### Vulnerabilities

Disease Spread/ Mosquitos | High Energy Demands

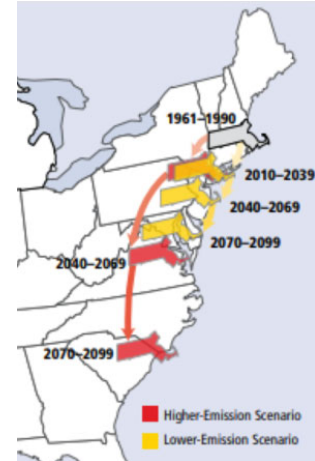
#### Action Items

Public Cooling Centers | Plant Trees (reduce heat island impacts)

Year	Days over 90°F
2010-2014	11.5 days*
By 2050	+ 10-35 days

\*Highest number recorded since 1950  
(NOAA National Centers for Environmental Information – State Climate Summaries)

MA could have the climate of South Carolina by the end of the century without emissions reductions driven by the reduced use of fossil fuels



## MORE INTENSE STORMS

### Storms

Nor'easters, ice storms, hurricanes, blizzards, and heavy rain events lead to downed trees, power outages, and property damage.

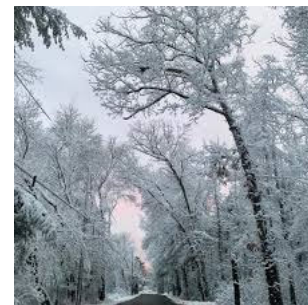
Projections show that these intense storms will become more frequent and more intense with rainfall concentrated in fewer, but heavier, events.

#### Vulnerabilities

Power Outages | Damage to roads, property & infrastructure

#### Action Items

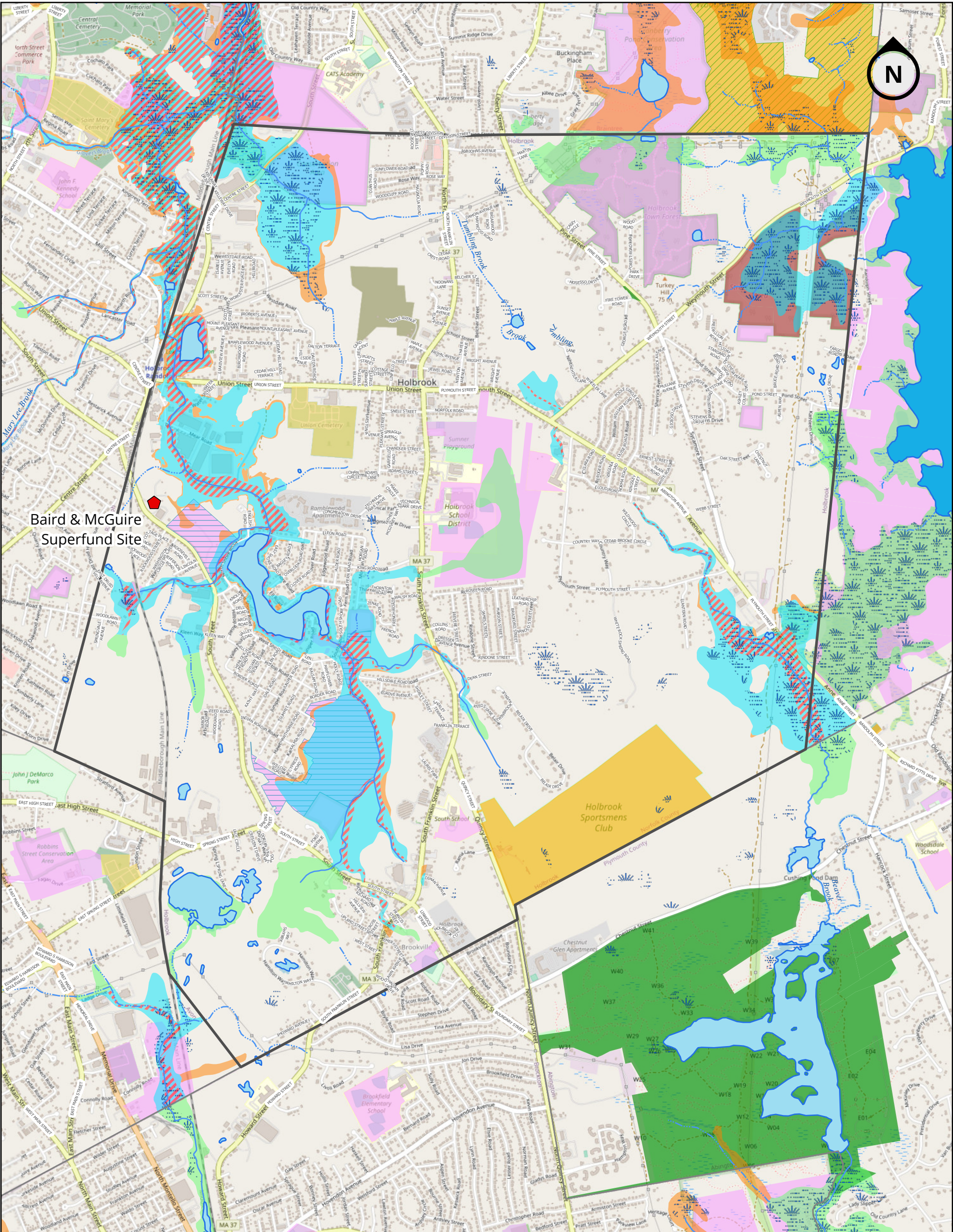
Provide Generators | Identify Additional Power Source



## APPENDIX C

### MAPS FOR MVP WORKSHOPS





OpenSpace: Interest Overlay

- Conservation Restriction
- Other Legal Interest

OpenSpace: Lands

- DCR-State Parks & Recreation
- County
- Municipal
- Non-Profit
- Private

Linear Features

- Perennial Stream
- Intermittent Stream
- Shoreline
- Ditch/Canal

Water Bodies

- Pond, Lake, Ocean
- Reservoir
- Wetland

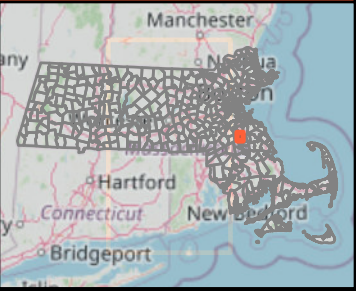
FEMA National Flood Hazard Layer

Flood Zone Designations

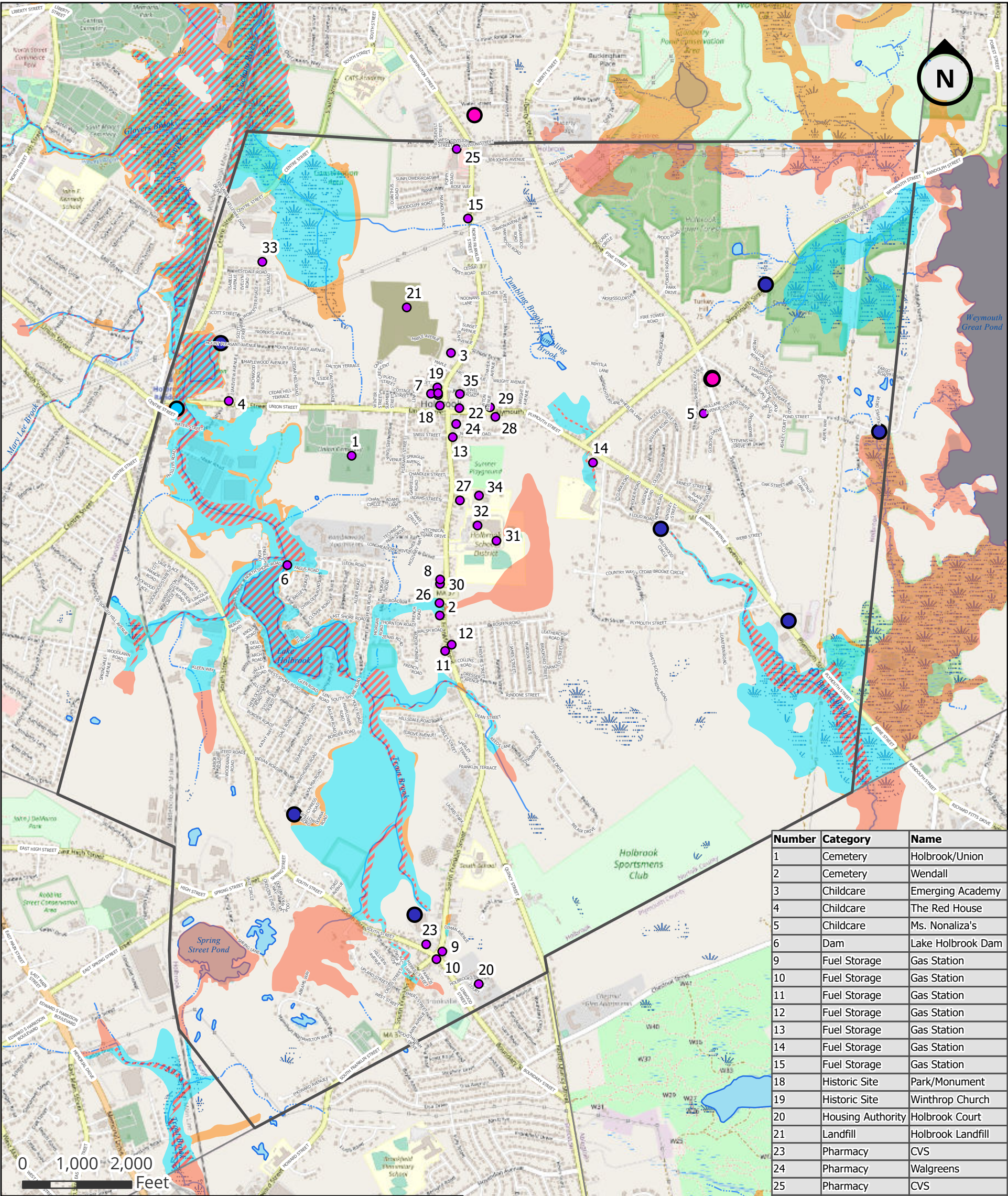
- A: 1% Annual Chance of Flooding, no BFE
- AE: 1% Annual Chance of Flooding, with BFE
- AE: Regulatory Floodway
- X: 0.2% Annual Chance of Flooding

Red hatched area: Baird & McGuire Superfund Site

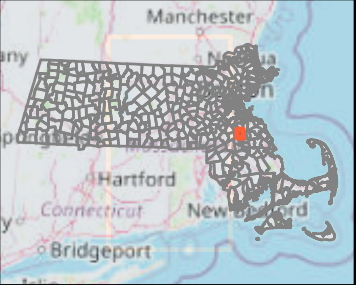
0 1,000 2,000 Feet



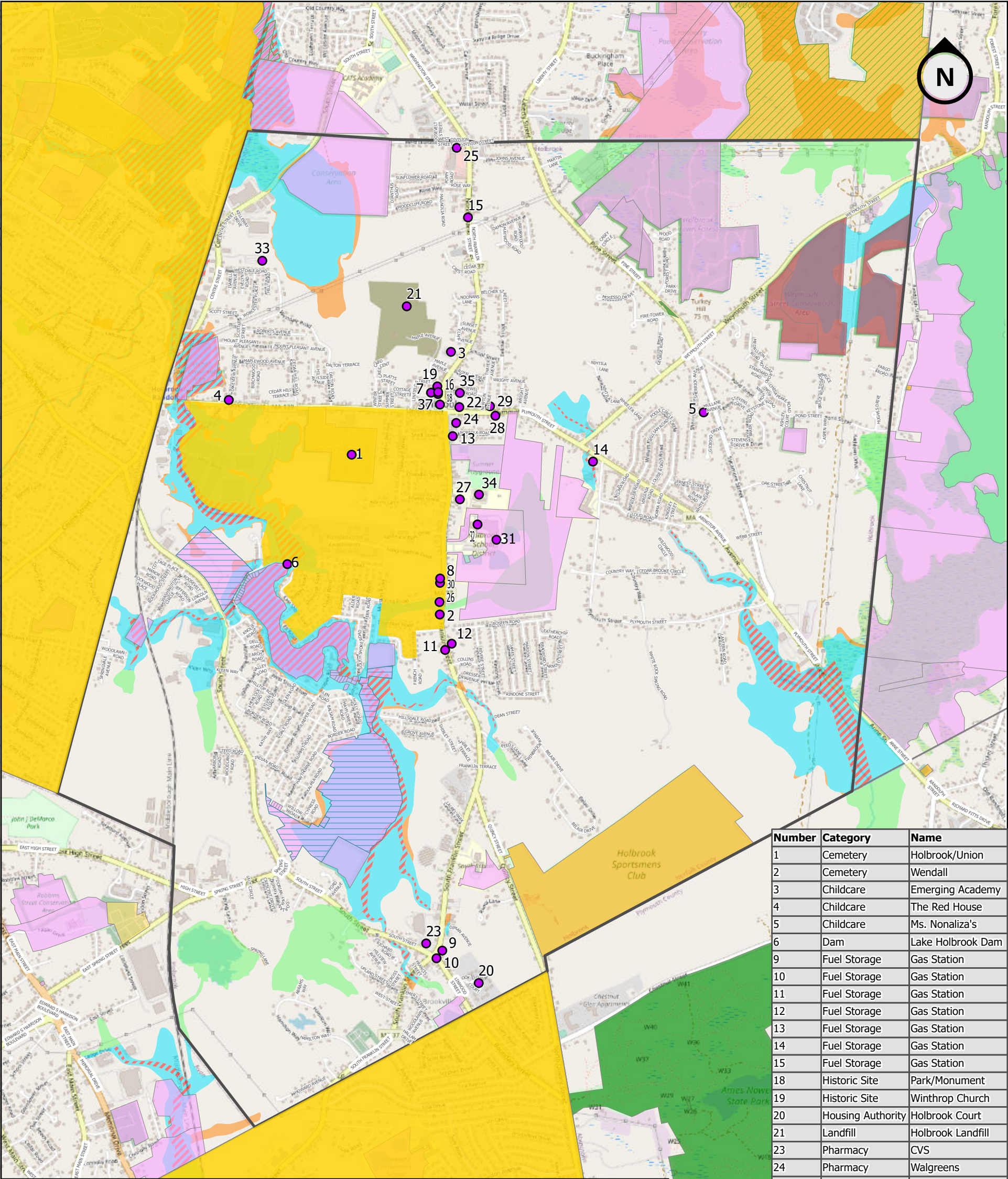




Number	Category	Name
1	Cemetery	Holbrook/Union
2	Cemetery	Wendall
3	Childcare	Emerging Academy
4	Childcare	The Red House
5	Childcare	Ms. Nonaliza's
6	Dam	Lake Holbrook Dam
9	Fuel Storage	Gas Station
10	Fuel Storage	Gas Station
11	Fuel Storage	Gas Station
12	Fuel Storage	Gas Station
13	Fuel Storage	Gas Station
14	Fuel Storage	Gas Station
15	Fuel Storage	Gas Station
18	Historic Site	Park/Monument
19	Historic Site	Winthrop Church
20	Housing Authority	Holbrook Court
21	Landfill	Holbrook Landfill
23	Pharmacy	CVS
24	Pharmacy	Walgreens
25	Pharmacy	CVS
26	Places of Worship	Saint John's
27	Places of Worship	Saint Joseph's
28	Places of Worship	Beth Shalom
29	Places of Worship	United Methodist
31	School	John F Kennedy
32	School	Junior Senior High
33	School	Lighthouse
34	School	Saint Joseph
35	Town Building	Council on Aging
22	Town Building	Holbrook Public
37	Town Building	Town Hall
30	Town Building	Police Department
8	Town Building	Fire Department
7	Town Building	Public Works
16	Town Building	Board of Health







Number	Category	Name
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8	Town Building	Fire Department
7	Town Building	Public Works
16	Town Building	Board of Health

Environmental Justice 2010 Populations

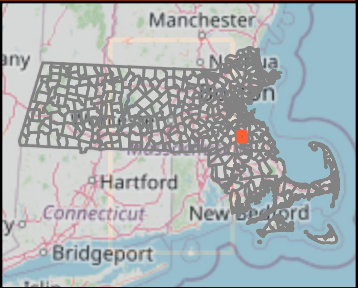
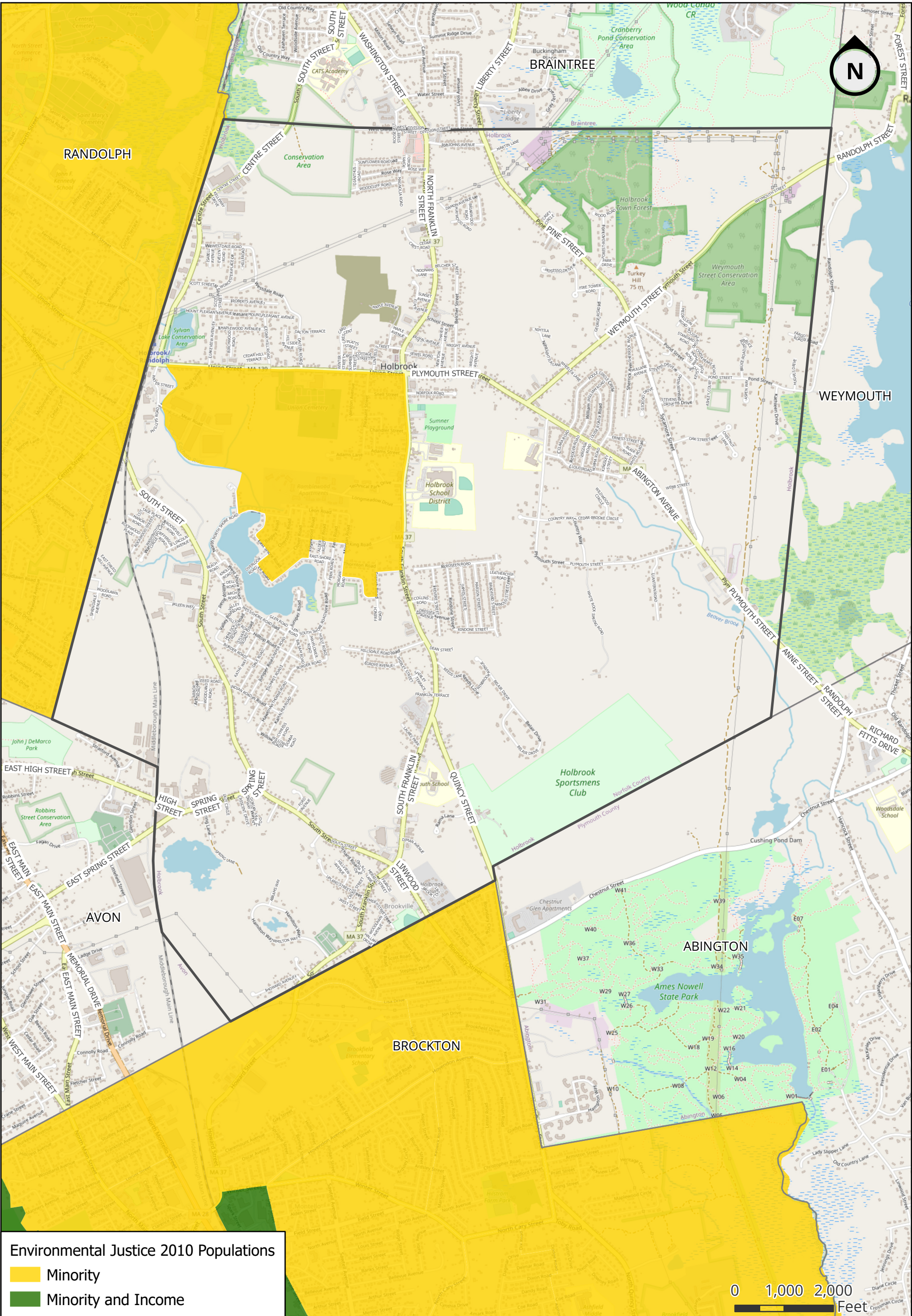
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- Other Legal Interest
- OpenSpace: Lands
- DCR-State Parks & Recreation
- County
- Municipal
- Non-Profit
- Private

FEMA National Flood Hazard Layer

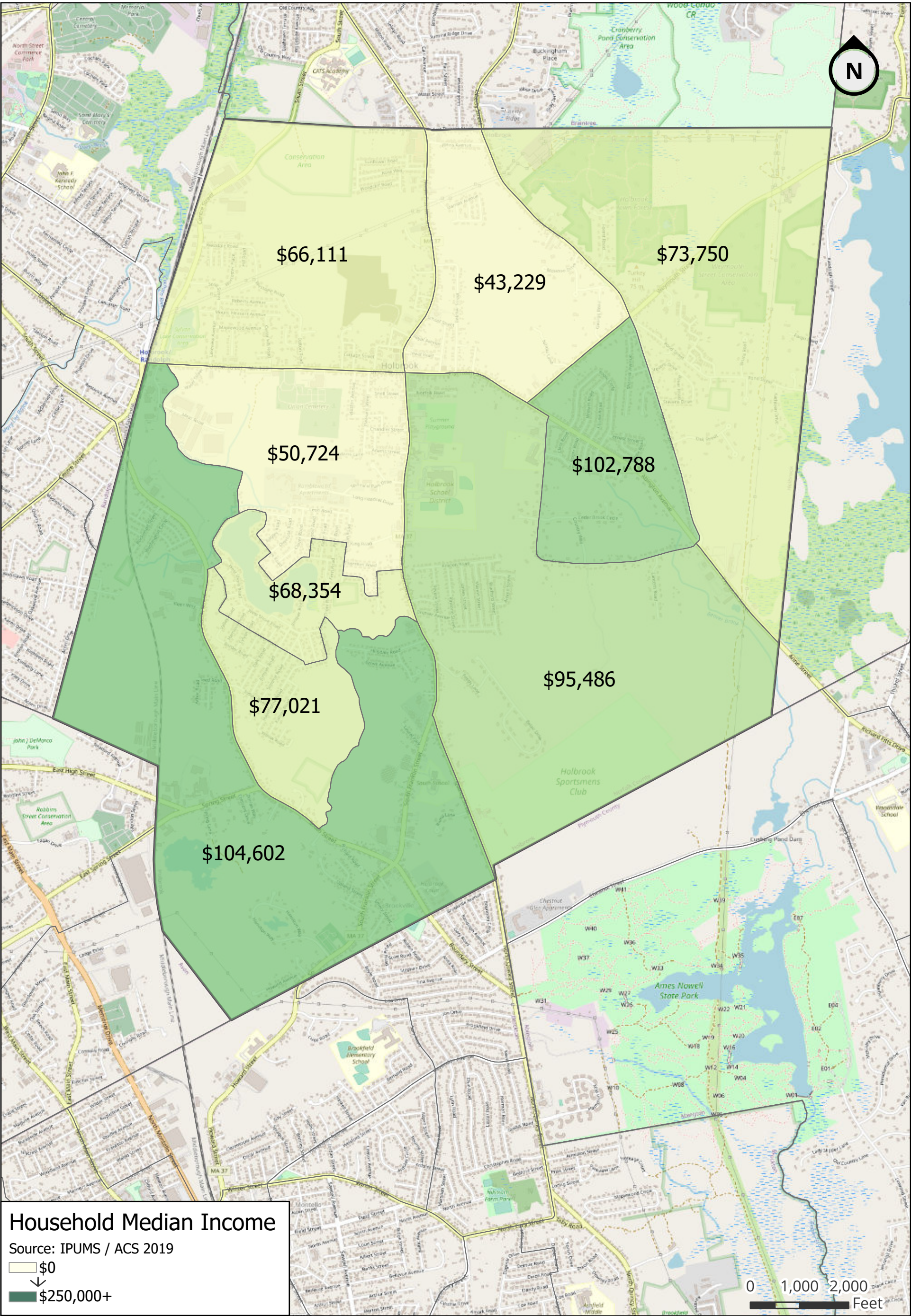
- Flood Zone Designations
- A: 1% Annual Chance of Flooding, no BFE
- AE: 1% Annual Chance of Flooding, with BFE
- AE: Regulatory Floodway
- X: 0.2% Annual Chance of Flooding
- Critical Infrastructure













**APPENDIX D**  
**COMBINED MATRICES FROM WORKSHOPS**

# Community Resilience Building Risk Matrix





www.CommunityResilienceBuilding.org

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

**V** = Vulnerability **S** = Strength

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

H-M-L priority for action over the Short or Long term (and Ongoing) V = Vulnerability S = Strength					Drought	Flooding	Heat Waves	Intense Storms	Priority	Time
									H · M · L	Short Long Ongoing
Features	Location	Ownership	V or S	Impacts						
Environmental										
Wetlands	Multiple	Town/Private	V/S	Habitat impacts, flooding	1. Evaluation of Town-wide culverts/watershed areas - looking to identify opportunities for Ecological Restoration and/or daylighting of streams				H	L
Rivers/Streams	Multiple	Town/Private	V/S	Flooding						
Cochato River	Specific	Town/Private	V/S	Flooding						
Lake Holbrook	Specific / EJ Community	Mostly Private	V/S	Poor Water quality, and air quality due to condition of the Lake	2. Assessment of Water Quality Issues, identify sources of pollutants (could be tied in to MS4 program) - historic algal blooms, cyanobacteria. There is Aquatic vegetation/reed removal program - through BOH?				H	L
Open Space	Town-Wide	Town/Private	V/S	Need plan to acquire and protect land for flood storage/natural habitat protection	3. Town had a Master Plan from late 80's - could be good to develop or Update Master Plan or Comprehensive Plan for future development or acquisition of Open Space (including Town Forest)				H	L
Trees	Town-Wide	Town/Private	V/S	Downed Trees result in widespread clearing	4. Develop Tree Inventory to develop priority-based tree planting/maintenance (TreeCity-USA Goal?)				M	O
Baird & McGuire Superfund Site	Specific	Private	V	contamination in the groundwater and onsite property	Arsenic contamination in groundwater; currently looking at treatment for binding the Arsenic (ongoing program/remediation); is there at beneficial use the Town could get from the Property? (i.e. solar panels?)				L	O
Town Forest	Specific (NE section of Town)	Town	S	Protected Area for northern resources; should build upon and protect this natural space	Valuable resource that the Town should protect, and encourage extension of protected lands (flood risk protection/water supply resource area) - will be covered under the Comprehensive Plan for Open Space Management				L	O

Community Resilience Building Risk Matrix					www.CommunityResilienceBuilding.org					
<div></div> <div><b>H-M-L</b> priority for action over the <b>S</b>hort or <b>L</b>ong term (and <b>O</b>ngoing) <b>V</b> = Vulnerability <b>S</b> = Strength</div>					Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)				Priority	Time
					Drought	Flooding	Heat Waves	Intense Storms	H - M - L	Short Long Ongoing
Features	Location	Ownership	V or S	Impacts						
Infrastructural										
Drainage Infrastructure	Town-Wide	Town	V/S	Areas of Sink holes; drainage backup; raised manholes	Drainage system Evaluation - increase capacity, improve water quality (needs to be evaluated/O&M as needed through DPW)				L	O
Culverts / Bridges	Multiple	Town/State	V/S	Road flooding, aging infrastructure	Culvert assessment for identification of areas that need increased capacity and/or restoration to protect natural resources, some locations not adequate for future flood/rain predictions				M/H	L
Dam at Lake Holbrook	Specific	Town/MassDOT	V/S	flood risk	Ongoing maintance - recently reconstructed to handle the 100-year storm event, project through MassDOT				L	O
Sewer System/Pump Stations	Multiple	Town/MWRA	V	power outages, pump station shut down	Evaluation of Generator needs at Sewer Pump Stations (4 stations that do not have backup generators currently)				L	O
Water System/Tanks/Treatment Plant	Multiple	Town/Randolph	V	Source and treatment in neighboring Towns	Collaboration with Joint water board for new plant in Braintree for protection of resource areas and infrastructure				M / L	O
Power Stations	Multiple	Eversource/NatGrid	V/S	Supplies power to region	Communication with Eversource as their facility is within floodplain area; for protection of their infrastructure				L	O
Hazard Mitigation Plan	Town-Wide	Town	V/S	Without a active Hazard Mitigation Plan the Town cannot apply for certain funding/grant oportunities through FEMA	Town needs a Hazard Mitigation Plan (to qualify for FEMA funding opportunities) Town is currently updating Emergency Management Hazard Plan through Police Department (MEMA) - different program				H	O



**Community Resilience Building Risk Matrix**

[www.CommunityResilienceBuilding.org](http://www.CommunityResilienceBuilding.org)

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

**V** = Vulnerability **S** = Strength

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

H-M-L priority for action over the Short or Long term (and Ongoing)					Drought	Flooding	Heat Waves	Intense Storms	Priority	Time
V = Vulnerability S = Strength									H - M - L	Short Long Ongoing
Features	Location	Ownership	V or S	Impacts						
Socio-Economic										
Holbrook K-12 School - Sheltering Facility	Specific	Town	V / S	New school has air conditioning, but there are existing issues restricting the use of the space as a Shelter	Evaluation of School Buildings to accommodate cooling/heat centers and shelter space, when needed				H	L
Low-Income Housing	Specific	Town/Private	V	Concentrated housing/neighborhoods that are impacted by climate hazards	Coordinate Emergency Planning Efforts, education and outreach on available resources				M	O
Elderly Citizens / Council on Aging	Town-Wide	Town/Private	V / S	Vulnerable populations impacted by all hazards	Coordinate Emergency Planning Efforts, education and outreach on available resources				M	O
Vulnerable Neighborhoods	Specific	Private	V/S	Areas impacted by EEE/West Nile; air born pollutants, and Superfund Site	Identify point of contacts for these neighborhoods/communities to provide resources/educational materials to reduce exposure and spread of mosquito-borne illnesses and other climate change or health related impacts				M	O
Emergency Communication System	Town-Wide	Town	S	Resource to alert residents of emergency, or shut down	Continue Emergency Communication program; and increase education and outreach to encourage more widespread use				L	O
Public Safety Training Room - Cool/Heat Center	Specific	Town	V/S	Only space in Town, very small (40 people capacity)	Continue offering space as a resource, able to provide cooling/warming center, and device charging facility when needed (but Town needs other options for larger capacity)				L	O
Holbrook Rotary Club / Sportsmans Club	Specific	Private	S	Groups can act as resource and assist in emergency	Coordinate organizations in identifying and conducting best practices amongst members to reduce risk, and provide education and outreach of other resources				M	O
Faith-based Organizations	Specific	Private	S							
Intermunicipal Agreements/Regional Area for Sheltering Needs	Town-Wide	Other Municipality	V	Town needs to identify their capacity of providing shelter space	Conduct analysis or feasibility on regional shelter plan or need for intermunicipal agreement				M	O

**APPENDIX E**  
**COMMUNITY OUTREACH AND INPUT**



# Holbrook

## MASSACHUSETTS



Select Language



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## Volunteers Needed

### Municipal Vulnerability Preparedness Core Team

POSTED ON: MARCH 11, 2021 - 2:57PM

The Town of Holbrook has been chosen to engage in the Municipal Vulnerability Preparedness (MVP) grant program. The MVP grant program created in 2017 as part of Governor Baker's Executive Order 569 provides support for cities and towns in Massachusetts to identify climate hazards, assess vulnerabilities, and develop action plans to improve resilience to climate change. Communities that complete the MVP Planning Grant process become designated as an MVP Community and are eligible for MVP Action Grant funding to implement the priority actions identified through the planning process (from <https://resilientma.org/>)

At its March 10, 2021 meeting, the Board of Selectmen held a conference with Public Works Superintendent Chris Pellitteri, at which time Mr. Pellitteri advised the Board that there are vacancies on the MVP Core Team. The MVP Core Principals are linked below, if any resident is interested in participating on the Core Team are encouraged to contact the Public Works Department at 781-767-1800, or Emily R Martin, Assistant to the Town Administrator at 781-767-4312 or [emartin@holbrookmassachusetts.us](mailto:emartin@holbrookmassachusetts.us).

Attachment	Size
<a href="#">mvp_core_principles.pdf</a>	196.3 KB

Town of Holbrook

50 North Franklin Street

Holbrook, MA 02343

Employee Intranet

[Website Disclaimer](#)

Government Websites by CivicPlus®

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# Holbrook MVP

## Municipal Vulnerability Preparedness

### MVP Program

#### What is the MVP Program?

In 2020, Holbrook was awarded a Municipal Vulnerability Preparedness (MVP) Program Planning Grant by the Commonwealth of Massachusetts.

The Commonwealth's MVP program is designed to:

- Help municipalities define climate related hazards they may face;
- Understand how communities may be impacted by climate change;
- Help towns identify present and future vulnerabilities to climate change hazards and identify strengths they have against those hazards; and
- Identify opportunities to take priority actions identified through the planning process.

There are two types of MVP Grants: MVP Planning Grants and MVP Action Grants.

**MVP Planning Grants** award funding to help towns assess their vulnerability to climate change impacts and to help build community resilience against the effects of climate change. Communities that receive the grants will

also receive the MVP Program Municipality designation from the Executive Office of Energy and Environmental Affairs once their Planning program is complete.

**MVP Action Grants** are designed to help municipalities act against the effects of climate change. The grants give funding to municipalities so they can take important climate adaptation actions. The grant money is awarded to projects that are designed to protect towns against extreme weather, inland flooding, coastal flooding, severe heat, or increased pest populations like ticks and mosquitoes.

### Why is the MVP Grant important to Holbrook?

In Holbrook, Climate Change resilience is a high priority for our Town, and it is important to engage in the MVP Process to help create a more prepared and resilient community. Our greatest weaknesses to climate change is our natural environment, our built infrastructure and utilities, as well as our residents and vulnerable populations.

### What climate change hazards do we face?



**Precipitation Changes** - Floods can damage private property, town infrastructure, and potentially contaminate municipal water supplies and private wells. Severe floods can destroy property and cause human injury and death. While on the other hand, Drought can lead to water supply shortages, crop damage and habitat stress.

**Temperature Changes** - Heat waves can severely impact energy demands needed for cooling and generate a rise in heat-related illnesses in the summer.

**More Intense Storms** - Nor'easters, ice storms and hurricanes lead to downed trees, prolonged power outages and property damage.

### How do we take Action?

The MVP Planning Grant will allow Holbrook to become an MVP Designated Community and will then be eligible to apply for MVP Action Grants to design and implement improvements identified throughout the Planning Process to make our community more resilient to these challenges we face.

### Additional Information:

[ResilientMA.org](http://ResilientMA.org)

[MVP Program Information](#)

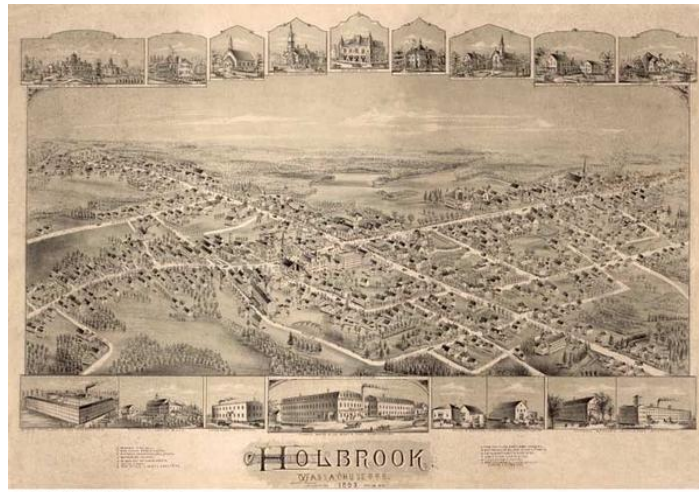


## MVP in Holbrook



### MVP Core Team Members

- Chris Pellitteri, DPW Superintendent
- Chief William Smith, Police Department
- Luke McFadden, Fire Department
- Jim O'Mara, Interim Town Administrator
- Emily Martin, Assistant to the Town Administrator
- Abbey Myers, Health Agent
- Alison Bowden, Resident/Nature Conservancy



## Climate Change in Holbrook Questionnaire

As part of the planning process, Holbrook is gathering information to help develop a plan that includes community feedback.

Please share your thoughts with us through this link below!

### **Link to MVP Questionnaire**



## Community Resilience Building (CRB) Workshops

Due to ongoing COVID related gathering restrictions, the Community Resilience Building (CRB) Workshop will be split up and held on three different days, covering three separate topics.

- Environmental Session on April 5th from 1-3:30 PM
- Infrastructural Session on April 6th from 1-3:30 PM



- Socio-Economic Session on April 8th from 1-3:30 PM

Meetings will be held via Zoom

Please RSVP to **Emily Martin** by April 2nd by phone 781-767-4312 or email [EMartin@holbrookmassachusetts.us](mailto:EMartin@holbrookmassachusetts.us) to participate and the meeting information will be shared with all CRB Participants.



## Program Maps

Click the following links to view interactive MVP maps.

You can download these, along with additional materials in the Downloads section below.

### Holbrook MVP - Critical Infrastructure ...

Critical Infrastructure found in Holbrook can be found in the map provided here.

<https://envpartners.maps.arcgis.com/apps/webappviewer/index.html?id=eb7c282c28f04a028a3db3e81c1dcd11>

### Holbrook MVP - Socio-Economic Map

Social and Economic mapping layers can be found in the map provided here.

<https://envpartners.maps.arcgis.com/apps/webappviewer/index.html?id=11c7f147e05544d0820b20af2f671fcd>

### Holbrook MVP - Environmental Map

Environmentally sensitive areas found in Holbrook can be seen in the map provided here.

<https://envpartners.maps.arcgis.com/apps/webappviewer/index.html?id=f6f6236395a948d0a95f07c48a7ad06f>



## Contact Us

Chris Pellitteri, Public Works Superintendent

[CPellitteri@holbrookmassachusetts.us](mailto:CPellitteri@holbrookmassachusetts.us) / 781-767-1800



Emily Martin, Assistant to the Town  
Administrator

EMartin@holbrookmassachusetts.us / 781-767-4312



## Downloads

To download CRB maps and handouts please click link  
below.

### **MVP Download Folder**

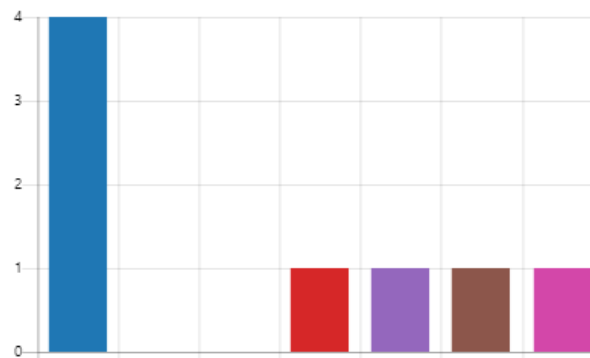
Powered by ArcGIS StoryMaps

## Holbrook MVP Questionnaire Results

1. Which options below best define your role(s) in Holbrook? (please select all that apply)

[More Details](#)

Resident	4
Business Operator/Owner	0
Employee of a local business	0
Landowner	1
Local Official	1
Institutional / Organizational P...	1
Other	1



2. How important is the issue of climate change to you, personally? (choose 1)

[More Details](#)

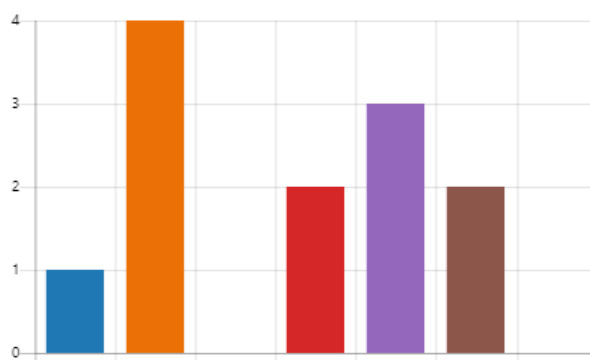
Very important	6
Quite important	0
Not very important	0
Not at all important	0



3. What issues are of most concern to you related to climate change? (choose 2)

[More Details](#)

Disease & illness (lyme diseas...	1
Natural disasters	4
Economic security	0
Resources shortages	2
Air & water quality	3
Loss of biodiversity	2
Other	0



4. How concerned are you about the impacts of climate change for Holbrook as a whole?

[More Details](#)

Extremely concerned	3
Somewhat concerned	3
Not concerned	0



## Holbrook MVP Questionnaire Results

5. How prepared do you feel that you and/or your family are for the impacts of climate change?

[More Details](#)

Very prepared	0
Somewhat prepared	3
Not prepared	3
No need to prepare	0



6. How prepared do you think the Town of Holbrook is to address the impacts of climate change?

[More Details](#)

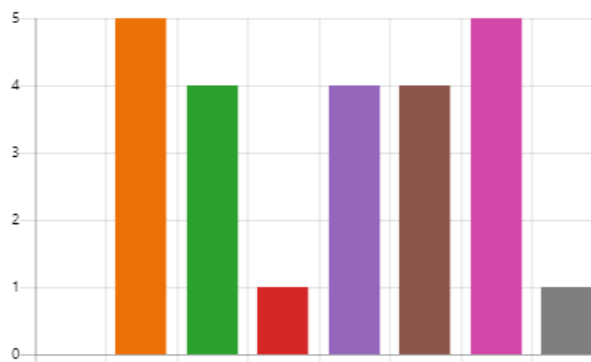
Very prepared	0
Somewhat prepared	2
Not as prepared as we should ...	4
I do not know	0



7. What climate hazards have affected you or your community in the past? (Choose 4)

[More Details](#)

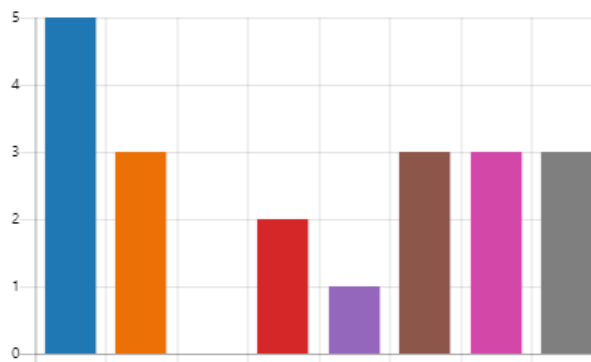
Tornadoes	0
Ice / Wind Storms	5
Drought	4
Landslides	1
Flooding	4
Extreme Heat	4
Extreme Cold	5
Other	1



8. What infrastructure / facilities are most at risk to climate related hazards in Holbrook?

[More Details](#)

Local Roads	5
State Roads (Rt. 37, Rt. 139)	3
Municipal Buildings (Schools/T...	0
Community Facilities (Open S...	2
Emergency Facilities (Fire & P...	1
Culverts	3
Dams	3
Bridges	3



## Holbrook MVP Questionnaire Results

9. What can Holbrook do to protect its infrastructure? (e.g. feasibility studies, culvert replacement, facility relocation, bridge design improvements, etc.)

6 Responses

ID ↑	Name	Responses
1	anonymous	I would say design improvements
2	anonymous	Infrastructure upkeep and improvements, education to home/land owners to how they can be prepared and maintain their properties.
3	anonymous	Green infrastructure to restore hydrology and improve water quality
4	anonymous	I don't have specific suggestions, but I think that keeping up with infrastructure repairs in a timely manner will help maintain the quality of the roads, dams, etc., and will also save Holbrook money by being proactive as opposed to reactive.
5	anonymous	Ongoing rebuild and upkeep of the Town's infrastructure also educational resources for homeowners on how to do their part.
6	anonymous	Feasibility studies and sustainable energy source implementation

10. Who are the vulnerable groups in the community? Who requires additional assistance during emergency events?

6 Responses

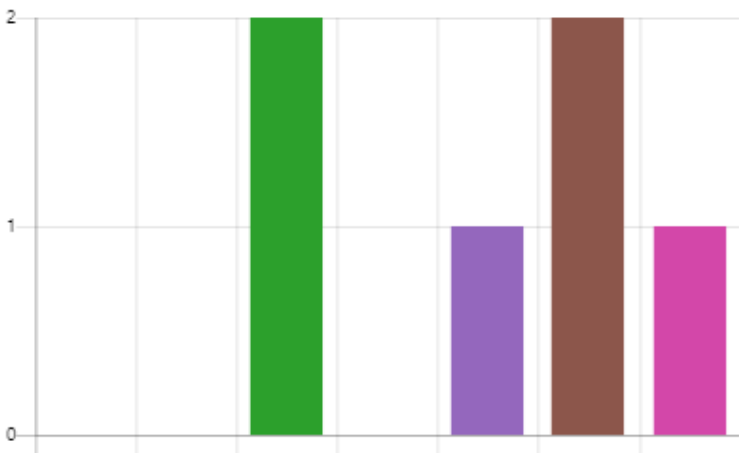
ID ↑	Name	Responses
1	anonymous	The Elderly,
2	anonymous	The elderly, those with mobility issues, those with limited disposable income (not prepared to pay for say, a night at a hotel, or an emergency repair on a home)
3	anonymous	People living near Baird and Maguire superfund site, elderly, low income. EJ populations in neighboring Brockton and Randolph
4	anonymous	Individuals with functional diversities that have mobility issues, elderly individuals living alone, low income individuals and families
5	anonymous	Everyone
6	anonymous	Children and elderly citizens are the most vulnerable if energy sources are cut off in an emergency. Those who are financially insecure are also a high risk during an emergency event.

# Holbrook MVP Questionnaire Results

## 11. Which natural resources in Holbrook are important to you?

[More Details](#)

Wetlands	0
Rivers	0
Open Spaces (Active Recreation...)	2
Open Spaces (Passive Recreation...)	0
Land in Agricultural Use (crop...)	1
Green Infrastructure (rain gard...	2
Other	1



## 12. How can we better protect Holbrook's natural resources?

6 Responses

ID ↑	Name	Responses
1	anonymous	We must have a plan and be better prepared for the unknown circumstances we will face.
2	anonymous	Take a good look at what we are developing and where
3	anonymous	Prioritize protection and restoration in plans; emphasize redevelopment and clustering over loss of currently forested land; strengthen and enforce wetland and floodplain protections
4	anonymous	Again, being proactive instead of reactive. Connecting with the community and getting them involved, potential public-private partnerships to help fund projects and raise awareness.
5	anonymous	Education and investing time and money, protecting by using other renewable resources for example solar.
6	anonymous	Managing stormflow and any run off pollution that can effect the aquifers. Better biodiversity in community green spaces will help reduce the effect of droughts and floods.

## Holbrook MVP Questionnaire Results

### 13. When it comes to climate change, what efforts should be prioritized?

#### 6 Responses

ID ↑	Name	Responses
1	anonymous	Protection of critical infrastructure and residents
2	anonymous	Recycling education and campaigns, pushing reusable bags/products
3	anonymous	Protection of floodplains and large remaining undeveloped areas, e.g. expand and secure Town Forest; protection and restoration of lands contributing to our water supply,
4	anonymous	Unfortunately in order to make great strides in mitigating climate change, there needs to be a lot of accountability coming from the top to regulate corporations who are the major cause of these issues. Individual changes and efforts are important, but it is the large scale pollution by companies that are not held responsible for their actions that is the biggest problem. As an overall effort, I believe in using hemp as a sustainable source for clothing, paper products, and biodegradable plastics, as that would help diminish the impact of product waste.
5	anonymous	Making solar available.
6	anonymous	Sustainable energy and efficiency is important to help reduce pollution. Resources management and biodiversity are also necessary in fighting climate change.

You're watching Channel 9/39



Currently: 66°F



2:44 PM

***Municipal Vulnerability Preparedness  
Program Public Listening Session***

**April 20, 2021 | 4:30pm**

This program helps cities and towns prepare for the impacts of climate change.

Citizen participation in this meeting is encouraged to provide input.

The Town's MVP Planning Team will integrate your comments and ideas into the MVP Plan Report.

Page 1/2

You're watching Channel 9/39



Currently: 66°F



2:45 PM

***Municipal Vulnerability Preparedness  
Program Public Listening Session***

**April 20, 2021 | 4:30pm**

Completion of the MVP planning project will make the Town eligible to apply for MVP action project grants from the state to address the Town's key priorities.

Questions and written comments may be directed to the Assistant to the Town Administrator, Emily Martin at [EMartin@holbrookmassachusetts.us](mailto:EMartin@holbrookmassachusetts.us)

Page 2/2



Town of Holbrook, MA

# MUNICIPAL VULNERABILITY PREPAREDNESS (MVP) PUBLIC LISTENING SESSION

April 20, 2021



ENVIRONMENTAL  
 PARTNERS

## AGENDA

- Welcome
- Presentation on
  - MVP Process
  - Regional Climate Change Hazards
  - Community Resilience Building (CRB) Workshops Results
- Questions & Answers





# WELCOME

What | Who

## MVP IN HOLBROOK

### Core Team Members

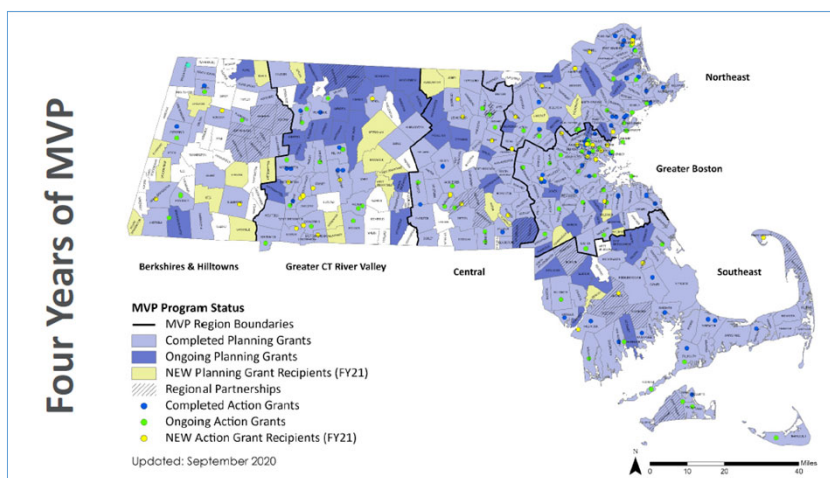
- Chris Pellitteri, DPW Superintendent
- Chief William Smith, Police Department
- Luke McFadden, Fire Department
- Jim O'Mara, Interim Town Administrator
- Emily Martin, Assistant to the Town Administrator
- Abbey Myers, Health Agent
- Alison Bowden, Resident/Nature Conservancy



# MVP PROGRAM OVERVIEW

What | Who

## MUNICIPAL VULNERABILITY PREPAREDNESS (MVP)



## MVP PRINCIPLES

- A community-led, accessible process that
  - Employs **local knowledge**
  - Utilizes **partnerships**
  - Based on **best available climate projections**
  - Incorporates **nature-based solutions**
  - Reaches **Environmental Justice communities and vulnerable populations**



## MVP PRINCIPLES

### Why nature based?

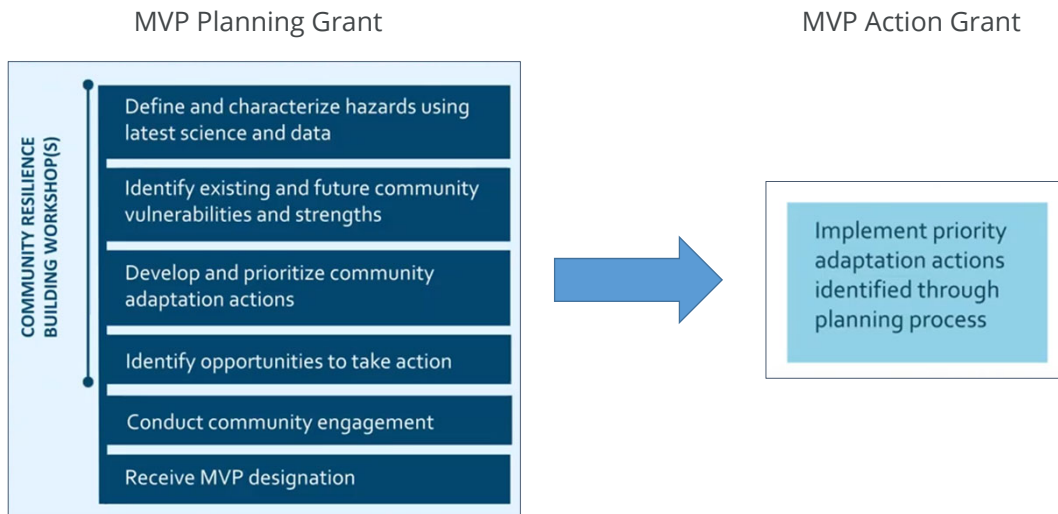
Where appropriate, nature-based solutions can be more cost-effective, protect water quality and quantity, sustain lands that provide food and recreation opportunities, reduce erosion, and minimize temperature increases associated with developed areas and climate change.

### Examples

- Wetlands Conservation
- Rain Gardens and Bioswales
- Tree Planting
- Land Acquisition
- Dam Removal



## MVP PROCESS



## REGIONAL CLIMATE DISCUSSION

Assessment | Concerns

## REGIONAL CLIMATE DISCUSSION

### Climate Change Hazards

- Temperature Changes
- Precipitation Changes
  - Flooding
  - Drought
- More Intense Storms



## TEMPERATURE CHANGES



### Heat Wave

An increased # of days with high temperatures – particularly days over 90°F – will lead to heat-related illnesses and higher energy demands in the summer.

#### Vulnerabilities

High Energy Demands

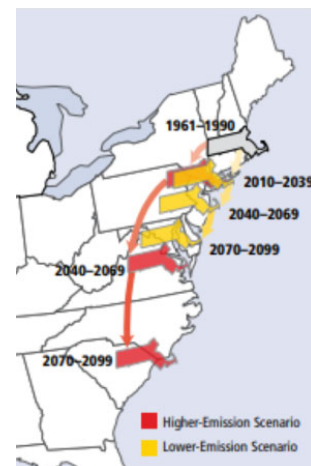
#### Action Items

Public Cooling Centers | Plant Trees (reduce heat island impacts)

Year	Days over 90°F
2010-2014	11.5 days*
By 2050	+ 10-35 days

\*Highest number recorded since 1950  
(NOAA National Centers for Environmental Information – State Climate Summaries)

MA could have the climate of South Carolina by the end of the century without emissions reductions driven by the reduced use of fossil fuels



## PRECIPITATION CHANGES



### Flooding

A single intense downpour can cause serious flooding which can damage critical facilities and infrastructure, or can limit access to essential roads.

#### Vulnerabilities

Flooding | Transportation access

#### Action Items

Conduct improvements to culverts and/or bridges  
(reduce flooding areas)



## PRECIPITATION CHANGES



### Drought

Precipitation events will be concentrated in fewer storm events and can lead to water supply shortages, crop damage and habitat stress.

#### Vulnerabilities

Water supply/redundant sources

#### Action Items

Evaluation of Town's water supply

#### The Patriot Ledger

COUNTY

#### Tri-town considers easing water restrictions

Fred Hanson [fhanson@patriotledger.com](mailto:fhanson@patriotledger.com)  
Published 10:52 a.m. ET, Jul. 9, 2020

BRAINTREE — Lawn sprinklers may be making a comeback in the towns of Braintree, Randolph and Holbrook.

During a remote meeting on Wednesday, the tri-town water board discussed the possibility of easing decade-long joint restrictions on outdoor water use.

Braintree Mayor Charles Kokoros said the increased capacity of the reservoir system shared by the three towns gives them the chance to make the change.

"The goal is to allow our residents to use the water when they need it," said Kokoros, who chairs the water board.

Lou Dutton, Braintree's water and sewer superintendent, said the capacity of the Richardi Reservoir has been increased. This gives the system a capacity of 1.765 billion gallons of water as opposed to the old capacity of 1.4 billion gallons. The reservoirs are also being managed differently, with water pumped from the Richardi Reservoir to the Upper Reservoir when the level drops a matter of inches, rather than a few feet.

Under the proposal, Phase 1 water restrictions would not be put into place until the capacity of the reservoirs drop below 85 percent. Currently, Phase 1 restrictions are always in effect, restricting outdoor water use to a hand-held hose and prohibiting the filling of swimming pools and organized car washes after July 1.

Phase 2 restrictions, when reservoir capacity goes below 80 percent, allows for outdoor watering from 7 to 10 a.m. and 6 to 9 p.m. Under Phase 3, below 70 percent capacity, the morning hours are eliminated. Under Phase 4, under 60 percent capacity, all outdoor water use is prohibited. And in Phase 5, under 50 percent capacity, all nonessential water use is banned.



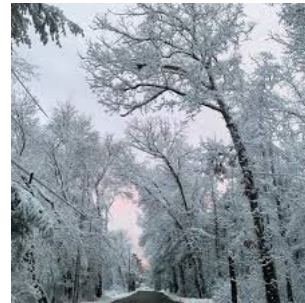
## MORE INTENSE STORMS



### Storms

Nor'easters, ice storms, hurricanes, blizzards, and heavy rain events lead to downed trees, power outages, and property damage.

Projections show that these intense storms will become more frequent and more intense with rainfall concentrated in fewer, but heavier, events.



#### Vulnerabilities

Power Outages | Damage to roads, property & infrastructure

#### Action Items

Provide Generators | Identify Additional Power Source



## COMMUNITY RESILIENCE BUILDING (CRB) WORKSHOP RESULTS

Virtual Sessions

## CRB WORKSHOPS

### Multi Session Online ZOOM Meetings

**April 5<sup>th</sup>** - Session 1: Environmental

**April 6<sup>th</sup>** - Session 2: Infrastructural

**April 8<sup>th</sup>** - Session 3: Socio-Economic



## TAKEAWAYS FROM THE MVP WORKSHOPS

- Residents are noticing changes to the local climate
- CRB Participants raised concerns about these impacts, specifically in regards to:
  - Increasing frequency of heavy rain events
  - Recent periods of drought
  - More frequent heat waves
  - Intense storms bring damaging high winds



HEAT WAVES



FLOODING



DROUGHT



INTENSE STORMS





## TAKEAWAYS FROM THE MVP WORKSHOPS

### Discipline Themes

#### Environmental Themes:

Protecting Town Forest and open space, water quality of Lake Holbrook, tree health and strategic planting, looking to daylight streams, and the Baird & McGuire Superfund Site

#### Infrastructural Themes:

Aging infrastructure, road conditions, maintenance of dams, culverts and bridges; sewer pump stations, water supply, and the need for a Hazard Mitigation Plan

#### Socio-Economic Themes:

Impacts on the elderly and low-income, Environmental Justice & vulnerable neighborhoods, back up power capacity, cooling centers, communication systems, public education and emergency management



## TOP ACTIONS FROM THE MVP WORKSHOPS

### Environmental

- Open Space Comprehensive Plan
- Lake Holbrook Water Quality Assessment
- Evaluation of Town-wide Culverts / Watershed Areas

### Infrastructural

- Culvert Assessment
- Hazard Mitigation Plan
- Drainage System Evaluation

### Socio-economic

- Coordinate best practices amongst members to reduce risk (faith based groups, clubs)
- Conduct Analysis on Regional Shelter Plan
- Provide Education and Resources to Vulnerable Neighborhoods
- Continue Emergency Communication System & Increase Awareness



## TOP ACTIONS FROM THE MVP WORKSHOPS

### Environmental

- **Open Space Comprehensive Plan**
- Lake Holbrook Water Quality Assessment
- Evaluation of Town-wide Culverts / Watershed Areas

### Infrastructural

- Culvert Assessment
- **Hazard Mitigation Plan**
- Drainage System Evaluation

### Socio-economic

- Coordinate best practices amongst members to reduce risk (faith based groups, clubs)
- Conduct Analysis on Regional Shelter Plan
- **Provide Education and Resources to Vulnerable Neighborhoods**
- Continue Emergency Communication System & Increase Awareness



## QUESTIONS & ANSWERS

Thoughts | Concerns

# THANK YOU

Emily Martin  
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781.767.1800  
EMartin@holbrookmassachusetts.us

Chris Pellitteri  
DPW Superintendent  
781.767.1800  
CPellitteri@holbrookmassachusetts.us

Natalie Pommersheim  
Project Manager  
781.626.0358  
nmp@envpartners.com



## RESOURCES

### Holbrook MVP Site

<https://www.envpartners.com/holbrooks-mvp/>

### Additional Links

<https://resilientma.org/>

<https://www.mass.gov/service-details/mvp-program-information>





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[envpartners.com](http://envpartners.com)