Town of Dover

Community Resilience Building Workshop Summary Report

Dry riverbed, Charles River downstream of Cochrane Dam (Nick King, CRWA)

June 10, 2021

ACKNOWLEDGEMENTS AND CREDITS

This project was conducted by the Metropolitan Area Planning Council (MAPC) with funding from the Executive Office of Energy and Environmental Affairs. Special thanks to Gerald Clarke for initiating and managing the project for the Town of Dover, to the Dover MVP Core Team (listed below), and to all the participants who enthusiastically and diligently worked to create a more resilient Dover.

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DOVER MVP CORE TEAM MEMBERS

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OVERVIEW

Recent years have seen notable weather extremes in Dover 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 Town and the region was 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 Town of Dover, in continuing its proactive efforts to address future climate threats, applied for a state grant to complete the Community Resilience Building (CRB) Workshop under the MVP program. Upon completion of the MVP program, Dover will be eligible to apply for state grants to address identified climate risks.

The Town of Dover partnered with the Metropolitan Area Planning Council (MAPC) to complete the MVP program. The Town also designated an MVP Core Planning Team, coordinated by Gerald Clarke, Board of Health Chairman, who identified and recruited community stakeholders to participate in the CRB Workshop. Forty people representing Dover Town staff, Town Boards and Commissions, Dover community organizations, and regional partners gathered for the CRB workshop in the Great Hall on October 30, 2019 (see Workshop Participants, page 19). 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 changes in temperature, precipitation, and sea level recorded to date, as well as future projections to the end of the century. Posters provided data and mapping specific to Dover's infrastructure, demographics, and natural resources (see Appendix A). The Workshop participants considered Dover's strengths and vulnerabilities, focusing on three categories: infrastructure, society, and the environment. Working in five small group and then together as a large group, the workshop participants identified and prioritized actions designed to increase Dover's resilience to future extreme weather events.

Top Hazards and Vulnerable Areas

The Dover Core Planning Team identified the top natural hazards for the Town. Based on the recent work on the Hazard Mitigation Plan and review of Workshop materials, the Team identified drought, vector-borne diseases, tree diseases and forest health, and severe storms (wind, snow, ice) as the climate hazards of greatest concern to Dover. As mentioned above, these hazards have all affected Dover in recent years. Considering the Town's demographics, the Team also included extreme heat as a top hazard.

Top Hazards

- Drought
- Vector-borne diseases
- Tree diseases and forest health
- Severe storms
- Extreme Heat

Current Concerns and Challenges

Workshop participants in Dover discussed the Town's principal climate-related hazards, highlighting drought, vector-borne diseases, tree diseases, and more intense storms.

Many participants expressed concern for water quality and quantity, as Dover relies on local groundwater resources for all of its water supply, through a combination of private wells and the Colonial Water Company. Due to the Town's reliance on local groundwater, changing rainfall patterns and increased droughts can lead to reduced recharge of aquifers. This in turn can worsen water quality as recharge areas around wells expand with lowered water tables, potentially drawing in contaminants not normally within the area of contribution to the wells. Droughts are also harmful to aquatic species and vegetation and local agriculture.

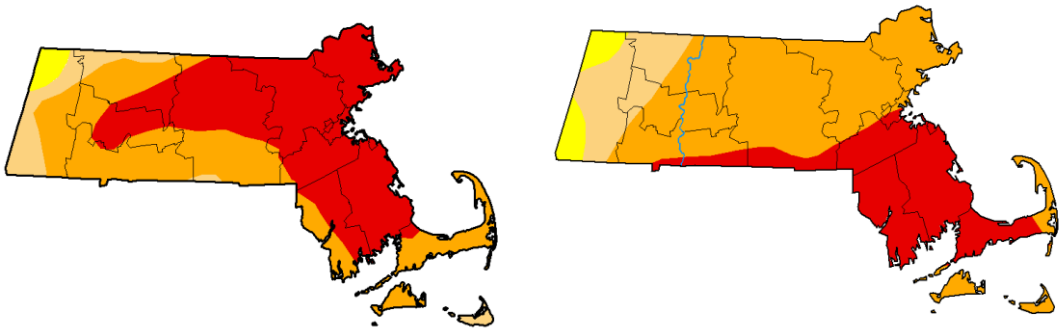


The Dover workshop highlighted drought, vector-borne diseases, and tree diseases

Dover and the region have experienced two droughts in the last five years, in 2016 and 2020, as illustrated by the US Drought Monitor below, with the areas in red experiencing extreme drought. Dover is located within these areas in both the 2016 and 2020 droughts. The spring of 2021 began with lower-than-normal precipitation as well. Droughts also impact surface waters,

from the Charles River (Figure 2) to several tributaries that were formerly perennial and now flow intermittently, including Powisset Brook, Trout Brook, and Rocky Brook.

Figure 1: US Drought Monitor



October 4, 2016 September 29, 2020

On the other end of the spectrum from drought, workshop also discussed the increasing frequency of intense of storms, including nor'easters that bring damaging winds, snowfall and heavy rain events. The principal challenges of the nor'easters are the threat of power outages from falling trees and limbs, as well as travel restrictions due to heavy snow. Large rain events can result in flooding in several locations.

The most significant recent intense precipitation event occurred in March 2010, when 17 inches of rain fell in two sequential storm events during that month. The Charles River exceeded flood stage for a sustained period of 25 days.

Figure 2: A Tale of Two Rivers – the Charles in Drought and Flood

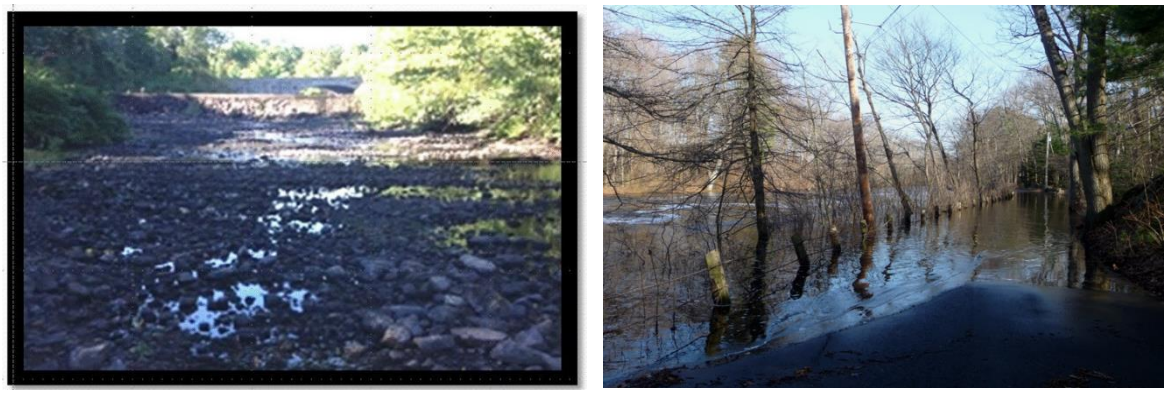


Photo: Nick King, CRWA Photo: Martin Pillsbury, MAPC

As these issues are not new, the Town of Dover has taken steps to prepare for extreme weather and prevent harm to people and property through its emergency management activities and its FEMA Hazard Mitigation Plan, which was completed in 2016, and will be updated in 2021. Workshop participants shared concerns that climate projections will heighten current challenges and elevate new concerns, particularly power outages, water supply, and public health issues related to high heat and drought.

AREAS OF CONCERN

Infrastructure

The Town of Dover straddles two watersheds: most of the Town is in the Charles River watershed, while a section of the southeastern corner of Dover is in the Neponset River watershed. The Town's major water supply wells are within the Charles River watershed (Figure 3), while private wells are distributed throughout the town.

Figure 3 Dover Water Resources

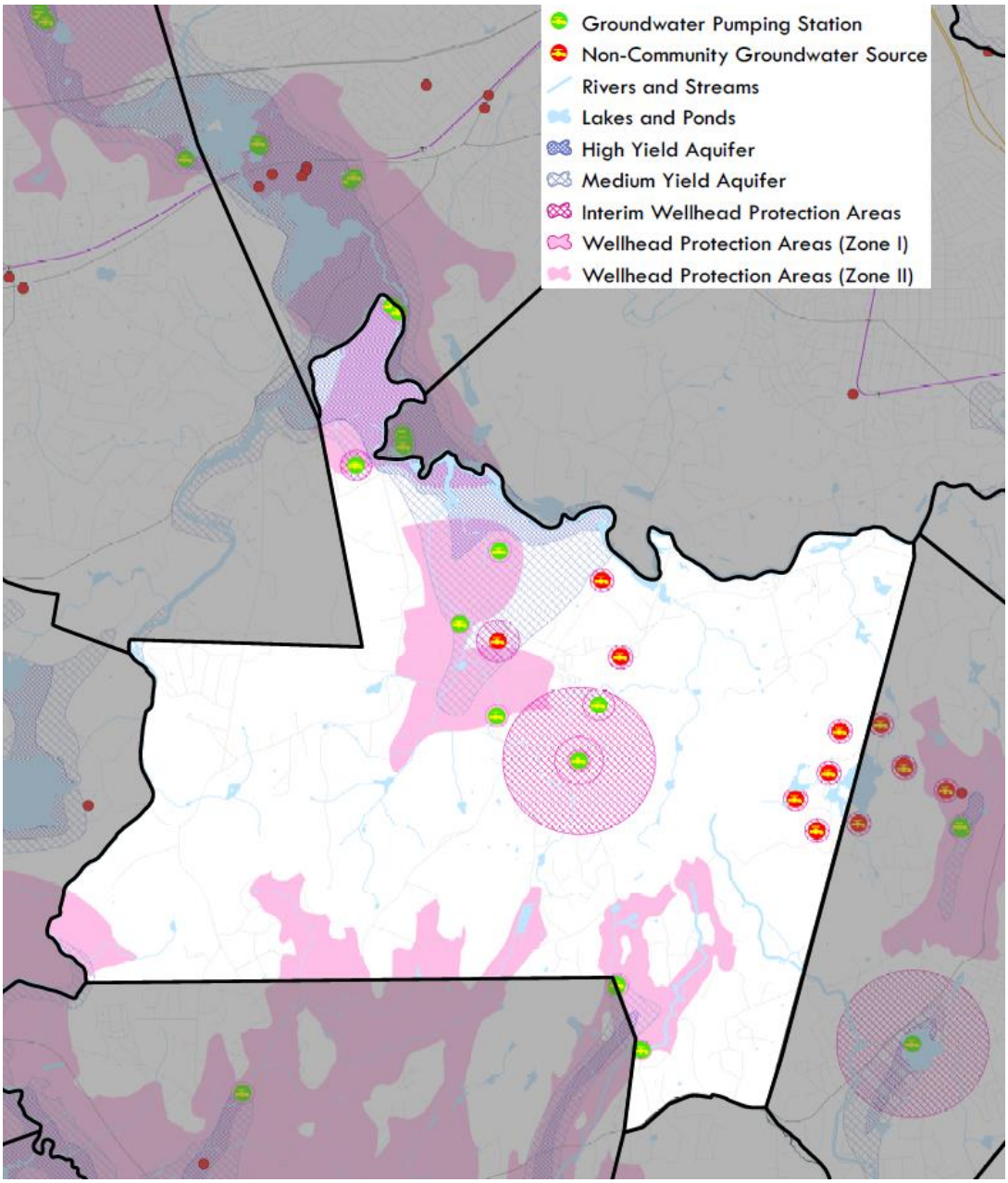
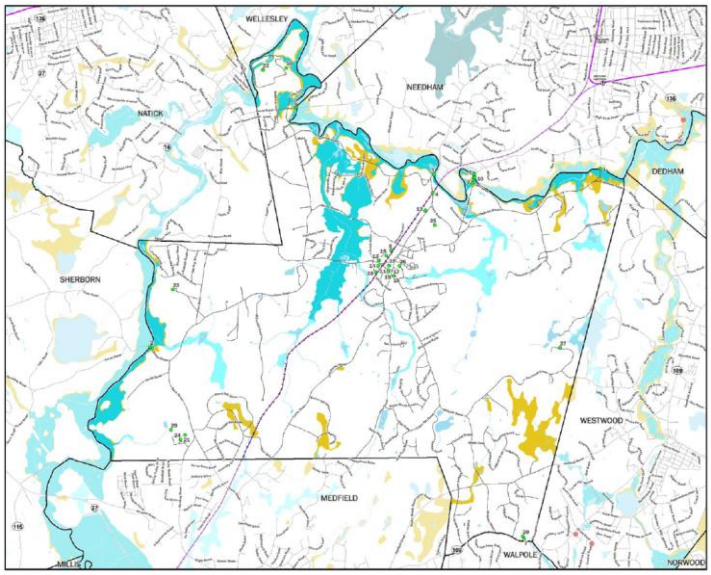


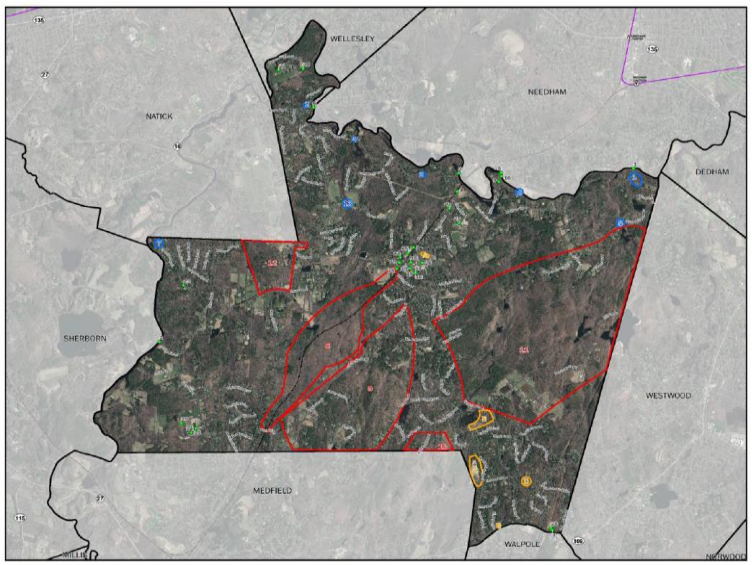
Figure 4: FEMA Flood Hazard Areas



Compared to other nearby Towns, Dover has a relatively small number of floodplains (Figure 4), which have limited development due to the Town's land use regulations and large amount of protected open space .

However, the Town identified several areas of concern for localized roadway flooding and drainage in its Hazard Mitigation Plan, listed below and shown as the blue sites in Figure 5.

Figure 5 Dover Local Hazard Areas



- Dedham St. at Needham line
- Turtle Lane near Dover Rd.
- Clay Brook Rd. near Cullen Rd.
- Clay Brook Rd.at Trout Brook
- Wilsondale St. at Powissett Bk.
- USGS gaging station, Charles R.
- 544 Yorkshire Rd.
- USGS gaging station, Trout Bk.

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 Dover (Figure 6). About 12 percent of Dover residents live alone, and over half of these are over age 65 (Figure 7(. Many of these are more susceptible to extreme heat than the general population, which will occur more frequently in the future due to climate change.

Figure 7 illustrates the projected future climate of Massachusetts to the end of the century under both a lower and higher Greenhouse Gas-emission scenario and a higher GHG scenario.

Figure 6: Dover Population by Age

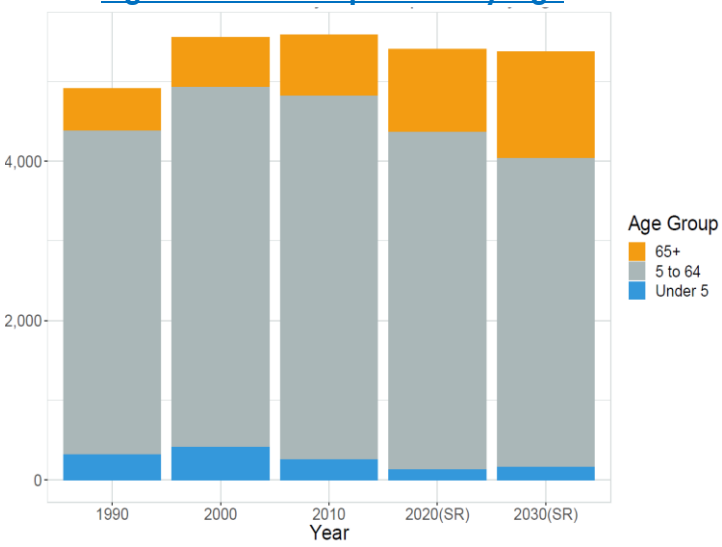
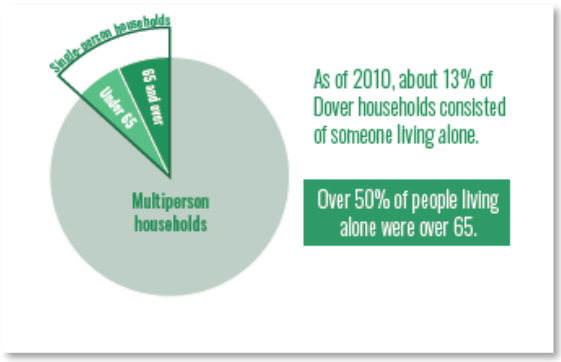


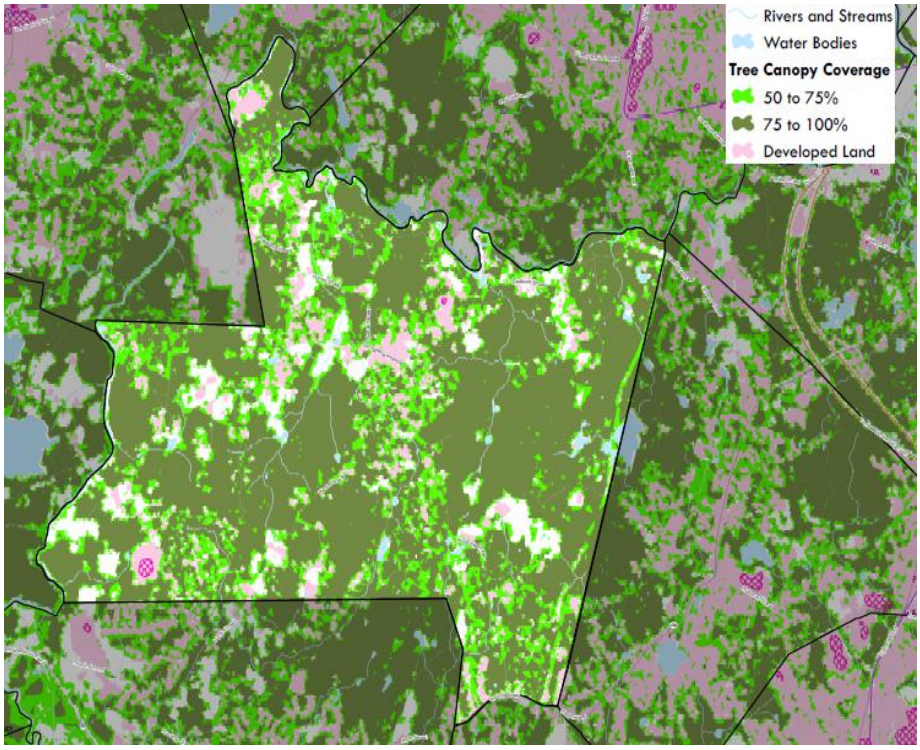
Figure 7: People Living Alone in Dover



Environmental

Among the Town's greatest strengths are its protected open space and wetlands, and its significant forest cover (see Figure 8), which at about 66 percent, is one of the highest in the MAPC region.

Figure 8: Dover Forest Cover



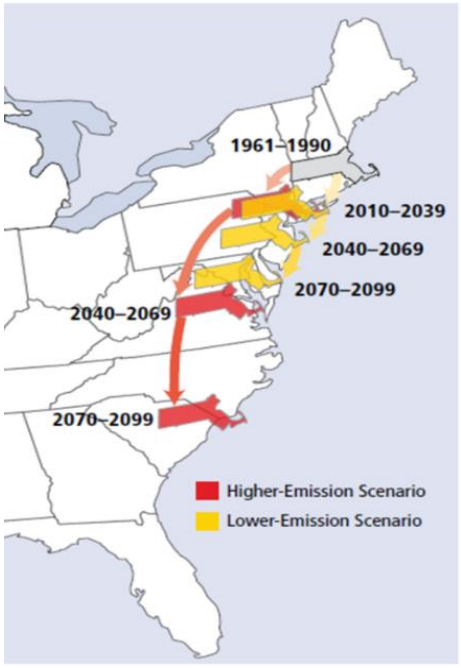
A major concern is managing the town's trees to reduce power outages, and mitigating the impacts of climate change on the health and composition of the Town's forests.

Other priorities are managing the Town's water resources, including managing stormwater with LID approaches, and protecting the Town's local water supply. Vulnerability to droughts may be addressed with more robust water conservation requirements.

Impacts of Climate Change

Projected future climate trends pose a significant challenge to the Town of Dover. 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 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 9).

Figure 9: MA Climate Projections



Climate change also brings changes in precipitation patterns. From 1958 to 2016, the northeast and mid-west regions have experienced a 55% increase in the amount of rain that falls in the top 1% events. 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, could increase to 6.4 inches by the end of the century (Figure 11). This is considered to be the "design storm," or the bench-mark storm used to determine the design and size of stormwater management facilities.

Figure 10: MA Climate Projections

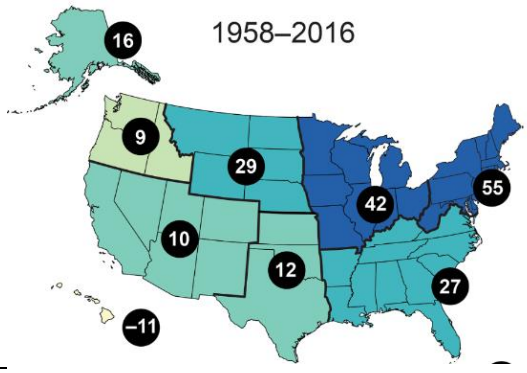
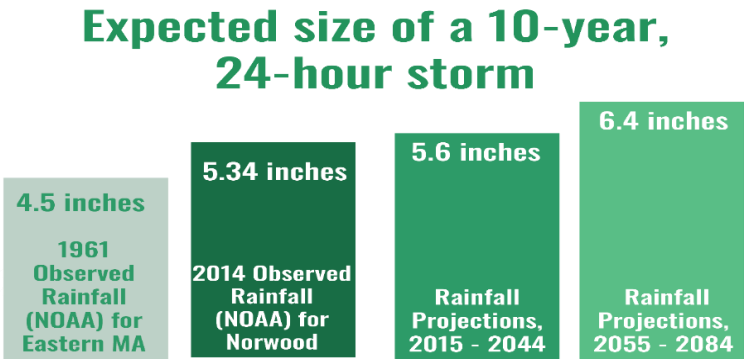


Figure 11: Projected 10-Year, 24 Hour Storms



DOVER CRB WORKSHOP RESULTS

The Dover CRB Workshop was attended by 40 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 about eight each, to first identify the town's 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 Town's resilience.

CURRENT DOVER STRENGTHS AND ASSETS

Workshop participants identified numerous Dover strengths and assets that will provide resilience to future climate impacts. As shown below, identified Town strengths include its large amount of forest cover, wetlands, and open space, strong local organizations (Council on Aging, churches, PTA, Dover Mothers, etc.), Land Trusts, generators at critical facilities, solar installations, and the Towns recycling, waste reduction, and composting programs. The full list of identified strengths and assets follow:

Infrastructure

- Solar on buildings/churches (but no power backup battery)
- Generators/power backup - Police & Fire, High School , Town Hall
- Cell phone charging at Police station for extended outages
- Green Infrastructure / Low Impact Development (Rain barrels)
- Highway Dept - good care of roads and snow removal, salt
- Stormwater management, MS4
- Recycling, waste reduction, composting
- Town Hall serves as emergency shelter; also has backup generator
- Four Day Care centers in Dover
- Fallout shelter and backup generator at Grace Church
- Very few heat issues in Dover
- Good library - gathering place
- Many homes have generators

Society

- The COA offers Life Alert lifeline monitors to seniors
- Strong community response - Haven Street/Terrace/informal network
- Churches - caring networks, involved in community
- Three hospitals within 5 miles, emergency ambulance
- Mutual aid agreements throughout county
- Pedestrian access / walkability
- Great communication and working relationship between Council on Aging and Town seniors
- Code Red - Reverse 911 program
- Very active Next Door online group

- Strong reserve police force
- Strong PTA, Dover Mothers, Hunt Club
- Dover Land Trust, Trustees of Reservations, Hale Reservation
- Well-educated population
- Interest in local food & environment
- Town outreach to elders; volunteer help
- Water storage along Charles River - not built up

Environmental

- Town's high percentage of forested land (air quality and flood reduction benefits)
- Recreation opportunities - parkland
- Agriculture - CSA, Chapter 61; (concern for pesticides, herbicides)
- Town bylaw outlines 3 Groundwater Protection Districts
- Open Space and Recreation Plan Update
- Very active Conservation Commission
- Town-wide waste management service that converts food/compost to energy
- High percentage of wetlands--flood control
- The only cold water stream tributary to the Charles River
- Zoning bylaw for development within 150 feet of the Charles River / 50 feet from wetlands
- 2 property management plans in place
- Strong trails network

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 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.

1. **Issue Area: Forest Management and Natural Resources Management: 22 votes total**

- **Four of the table groups put forward similar actions related to the Town's forests (18):**
    a) Conduct a town-wide assessment of existing tree cover that focuses on potential drought and fire hazards and accessibility
    b) Forest Management Plan to include:
        - Maintenance plan
        - Invasive species plan
        - Address soil erosion
        - Fire roads and equipment
        - Education on tree species and maintenance

- Coordination across all properties (Town, DLCT, TTOR, private)

c) Develop a Forest Management and Resilience Plan with stakeholders
d) Forest management for
    - Resilience to insects and disease
    - Fire prevention

- **The fifth table group proposed a related but somewhat broader action (4):**
  Prepare an Integrated Natural Resources Management Plan to address:
    - Protect Open Space (Public and Private)
    - Wetlands protection (Bylaw/Regulation)
    - Forest and Tree management
    - Land management plan for development
    - Biodiversity, Invasive Species
    - Town-wide environmental bylaw/regulation review

2. <u>Issue Area: Water Supply Protection (18):</u>

Two of the table groups focused on actions to protect the Town's water supply:

a) Assess and protect water supply—water quality and quantity
b) DEP enforcement of Drinking Water withdrawals and restrictions
c) Educate the public and limit use of pesticides, fertilizers, deicers
d) Regulate private wells
e) Regulate herbicides, pesticides, and fertilizers (Cons. Comm.)

3. Issue Area: Energy Resiliency (12):

Participants at three tables developed similar actions related to energy resilience:

- Protect the electric grid
    - Underground cables
    - Solar-independent backup power
    - Work with/push utilities to implement
- Add solar, LED, and generators – public and private
- Develop long term electric reliability program, including short-term tree management and long-term burial of power lines.

4. <u>Issue Area: Emergency Preparedness and Response (11):</u>

a) Assure capacity to respond to severe events
    - Training and tools for staff
    - Education for residents
b) Develop Emergency Preparedness plan, to include identifying emergency shelters and resources
c) Emergency shelter, transportation, and Communication for seniors (priority) and all residents, such as the Community Center, and education about procedures
d) Establish best evacuation routes for emergencies; conduct engineering study to raise roads

5. **<u>Issue Area: Communications and Social Resiliency (7):</u>**

Participants at three tables developed similar actions related to communications:

a) Develop a Communications Plan for resident communications"
    - Reverse 911
    - Website
    - Next Door
    - Welcome package
    - Community engagement
b) Create and distribute a plan to communicate with residents in general, and about emergencies
c) Organize a Neighbor-to-Neighbor program with Police, Town, COA, and residents and establish a database of willing participants

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

1. **Adopt a Bylaw on lawn irrigation systems; summer water ban; DEP enforcement of water permit; Elm Bank well**
2. Identify places for town generators and shelter space; investigate mini-grids
3. Develop a long-term plan to bury power lines
4. **Establish/identify best evacuation routes for the town during major storm/emergency events**
5. **Map and document all public and private dams in the town and work with state agencies to determine existing conditions**
6. **Inspect and address culverts and storm drains**
7. Research with cross-Charles towns to identify roadway and bridge egress priorities during flooding
8. **Develop a Forestry Management Plan - Education & planning**
9. Assess integrity of dams and options for removal
10. Complete & implement water study and investigate regulations on private wells
11. **Require new development to bury power lines; encourage solar batter backup; town center solar**
12. **Assess and Identify needs for Police and Fire Dept. capacity to handle large-scale storms**
13. **Implement aquifer study to monitor usage; move towards regulation of private wells**
14. **Increase Public Awareness of shelter options and emergency response**
15. **Elevate roads subject to flooding** to stabilize roadways threatened by climate change and increased flood vulnerability (Claybrook Road is a priority for the Town)

SOCIETAL-HIGH PRIORITY

1. **Address tick-borne diseases: EEE: Education/communication; expand deer hunting;**
2. **Address tick-borne diseases: Study vector populations - understand risk; identify standing water hot spots; tick checks**
3. **Organize a Neighbor-to-Neighbor program in partnership with Police, the Town, COA, and residents; establish a database of willing participants**
4. **Apply for housing production plan technical assistance from MAPC**
5. Address emergency shelter needs and options for locations in C.C.C. Plan
6. **Complete town welcome package/update website**
7. Protect outdoor workers: public health education via B.O.H, risk of EEE, ticks, etc.
8. **Work through Council on Aging; provide air conditioning for activities in heat waves**

9. Provide affordable elder housing
10. Enhance the capabilities of town to communicate about emergencies and other issues
11. New COA facility: siting and programming are being addressed, but needs to be folded into emergency management and preparedness
12. **Address needs of seniors, isolation: central place to shelter; house generators; heat/cooling; social media; COA van access --contract service, town vehicles; better communications and education; COA funding; collaboration between churches, COA serves as information hub**

ENVIRONMENTAL-HIGH PRIORITY

1. **Reduce contaminants (pesticides, fertilizers, deicers) through an education campaign for individuals and landscapers; Conservation Comm. guidelines/restrictions on chemical use**
2. **Forest and Tree management**
    - **Work with stakeholders on d forest management study/resilience plan--forest lands, trees along roadways, aging forest, tree maintenance and replacement**
    - **Conduct a town-wide assessment of existing tree cover that focuses on potential drought/fire hazards and accessibility**
    - **Address invasive species, diseases, insects as part of Forestry Plan**
    - **Increase resources for tree management**
    - **Conduct tree trimming to minimize outages**
    - **Communicate about tree health, care and maintenance**
3. Improve hydrogeologic mapping / map water recharge areas and assess protection measures
4. Groundwater withdrawals: better enforcement of water withdrawal regulations/permit
5. Septic Systems: need for enforcement of maintenance and replacement requirements
6. Develop outreach to orient new residents to maintenance of wells and septic systems
7. Determine the Conservation Commission Jurisdiction over intermittent streams
8. Move towards regulation of private wells
9. Food supply: promote CSA's; investigate transition to heat tolerant species
10. Resources for forest maintenance, planning and management
11. **Update conservation regulations / enforcement to protect Vernal Pools and streams**
12. **Review and revise bylaws to identify any gaps in development regulations to reduce tree loss**
13. Prioritize protection for private open space parcels

Medium Priority

INFRASTRUCTURE - MEDIUM PRIORITY

1. Continue to add more solar installations
2. Assess adequacy and identify priorities for storm drainage and culvers

3. Replace and upgrade Center Street bridge; consider river flow
4. Conduct assessment of Dedham Street culvert
5. Town engineer to research private dams within and adjacent to Dover
6. Investigate adequacy of shelter system; add new community center as a shelter
7. Expand water district, run main to Dover center; enforce/limit cul-de-sacs
8. Utilities should conduct more aggressive pruning in power rights-of-way
9. Maintain proper, annual inspections of backup power; add generator at elementary school
10. Address traffic with Complete Streets, street diets, traffic calming
11. Prioritize Investments in renewable energy
12. Install underground wires for new development; encourage solar generation
13. Promote battery backup at solar installations: standalone solar houses, new battery technology
14. Conduct outreach; communication on available cooling centers, especially seniors without A/C
15. Education and promotion of Green Infrastructure (rain barrels, bylaw review)
16. Increase recycling rate (pay as you throw); continue to support recycling committee
17. Address aging infrastructure: continue building updates, underground pipe upgrades study
18. Continue capacity for tankers for water for fire fighting
19. Investigate creating a solar canopy over existing school parking areas to mitigate heat island and generate energy
20. Continued coordination with Eversource on maintenance of aging infrastructure
21. Research school facilities backup power needs
22. For new or renovated municipal buildings, install cistern / fire suppression

SOCIETY—MEDIUM PRIORITY

1. Provide an emergency preparedness workshop and materials; continued planning/updates
2. Provide multi-lingual access for emergencies - digital/telephone/printed materials
3. Town administration and school administration should work together to develop an emergency response plan that lays out explicit protocols for students, parents, and the general public in the event of an emergency
4. Work with COA to help address senior housing maintenance
5. Enforcement of existing Bylaws: review of bylaws, hold an annual all-boards meeting to review
6. Senior assistance: Police Department to work with COA to research senior assistance needs
7. COA to help improve seniors' access to public health communications

8. Seniors/low income at risk; continue updating needs list by police and COA
9. Bike and Pedestrian plan--MAPC technical assistance

ENVIRONMENT—MEDIUM PRIORITY

1. Address bylaws/zoning for tree protection, OSRD/cluster development, subdivision
2. Improve Wetlands regulations/protection
3. Organize town-wide invasive species inventory and volunteer removal event
4. Adopt State drinking water standards for PFA's

Low Priority

INFRASTRUCTURE - LOW PRIORITY

1. Install town water tower (lower insurance rates)
2. Develop Ride sharing app; vanpool Rt.128 - downtown
3. Consider Composting toilets; MWRA study
4. Continue roadway maintenance Best Management Practices; minimize sand/runoff dust
5. Communicate to public availability of cell charging at Police Station
6. Conduct a long-term bridge capacity assessment for flooding
7. Consider change scenic road bylaw for changing cell technology (micro towers)
8. Invest in a Town GIS system
9. Seek grant funding to hire additional or full time emergency service staff, fire/rescue; Strengthen partnerships with neighboring communities to augment fire/rescue services
10. Work with power utility to ensure that lines are repaired and maintained
11. Work with gas utility to ensure that gas lines are repaired and maintained
12. Assess adequacy of power backup for Charles River School, High School, Dover Meadows
13. Conduct study to evaluate condition and location of culverts

SOCIETAL—LOW PRIORITY

1. Centralized communications system to reach diverse segments of the population: continue outreach efforts and conduct routine testing of existing Reverse 911 system

CRB Workshop Participants

Name	Affiliation	Position
Laurie Allen	Dover Republican Comm	Member
Rob Andrews	Dover Democratic Comm	Co-Chair
Mike Angieri	Town - Engineering	Town Engineer & Septic
Eric Arnold	Hale Reservation	Executive Director
Walter Avallone	Town - Building Dept.	Town Building Inspector
Chris Boland	Town - Park & Recreation	Town P&R Member
Janet Hartke Bowser	Town - Conservation	Town Conservation Agent
Maureen Callahan	State Legislature	Legislature District Aide
Gino Carlucci	Town - Planning	Town Planner
Carol Chirico	Town Bd/Comm - Planning	Chairperson
Gerald Clarke	Town Bd/Comm - Health	Chairperson
Janet Claypoole	Town - COA	Town COA Director
Peter DiSanto	Grace Church	Minister
Christopher Dwelley	Town - Administration	Town Administrator
Mike Francis	Trustees of Reservations	Stewardship Mgr CRV
John Gilbert	Town - Trees	Warden
Barry Goldman	Town - Capital Budget	Chairperson
Janit Greenwood	Town Bd/Comm - Recycling	Member
DA Hayden	Trustees of Reservations	Gen'l Mgr Chas. River Valley
Felicia Hoffman	Town - Town Clerk	Town Clerk
Craig Hughes	Town - Highway Dept	Town - Highway Supt.
John Jeffries	Town Bd/Comm - Selectmen	Member
Greg Kahoun	Town Bd/Comm - Technology Adv.	Chairperson
Mary Kalamaras	Charles River School	Trustee
Ralph Kelly	Dover/Sherborn Region	Plant & Facilities Director
Justine Kent-Uritam	Town Bd/Comm - Open Space	Member
Sean Leonard	St. Dunstan's Episcopal	Rector / Minister
Lisa Lewis	Norfolk Hunt Club	President
Carol Lisbon	Town Bd/Comm - Planning	Member
Peter McGowan	Town - Police Dept.	Town Police - Chief
Carolyn Mecklenburg	MA EOEEA MVP	Regional Coordinator
Sarah Monaco	Town Bd/Comm - Conservation	Member
Amey Moot	Town Bd/Comm - Open Space	Chairperson
Tara Nolan		
Maxwell Olmstead	The Dover Church (UCC)	Senior Pastor
Elaine Rosenburg	Dover Democratic Comm	Co-Chair
Ford Spalding	Town Bd/Comm - Caryl Community Ctr	Chairperson
Christy Violin	Town Bd/Comm - Conservation	Member
Karl Warnick	Town - Buildings	Superintendent of Bldgs.
Felix Zemel	Town - Health	Town Well Inspector

CRB Workshop Project Team

Dover Core Team

Michael Angieri	Town Engineer & Board of Health Agent
Walter Avallone	Building Inspector
Gerald Clarke	Board of Health Chair; Water Resource Comm. Chair; Tech Advisory Board member; MVP Core Team Coordinator
Janet Claypoole	Director, Council on Aging
Christopher Dwelley	Town Administrator
Mark Ghiloni	Director, Park & Recreation
Felicia Hoffman	Town Clerk
Craig Hughes	Highway Dept. Superintendent & Fire Chief
Carol Lisbon	Planning Board member, former Selectperson
Peter McGowan	Police Dept., Chief
Amey Moot	Open Space Comm. Chair; Cons. Comm. Member
John Sullivan	Conservation Commission Chair

MAPC Facilitation Team

Sam Cleaves	Principal Regional Planner
Lizzie Grobbel	Regional Planner II
Anne Herbst	Senior Environmental Planner
Courtney Lewis	Regional Land Use Planner
Martin Pillsbury	Environmental Planning Director, Lead Facilitator
Ralph Wilmer	Principal Planner

Citation

Metropolitan Area Planning Council. 2020. Town of Dover Municipal Vulnerability Preparedness Program. *Community Resilience Building Workshop: Summary of Findings*. Dover, Massachusetts

APPENDIX A –ACTION PRIORITIZATION

HIGHEST PRIORITY ACTIONS FROM THE WORKSHOP	VOTES

1. **Forest and Natural Resources Management:**
 	
• Conduct a town-wide assessment of existing tree cover that focuses on potential drought and fire hazards and accessibility
• Develop a Forest Management and Resilience Plan with stakeholders to include:
  ○ Forest Maintenance plan
  ○ Invasive species plan
  ○ Address soil erosion
  ○ Fire roads and equipment
  ○ Education on tree species and maintenance
  ○ Coordination across all properties (Town, DLCT, TTOR, private)
  ○ Resilience to insects and disease
  ○ Fire prevention
 	
• Prepare an Integrated Natural Resources Management Plan to address:
  ○ Protect Open Space (Public and Private)
  ○ Wetlands protection (Bylaw/Regulation)
  ○ Forest and Tree management
  ○ Land management plan for development
  ○ Biodiversity, Invasive Species
  ○ Town-wide environmental bylaw/regulation review
	22

2. **Water Supply Protection:** • Assess and protect water supply, water quality and quantity • DEP enforcement of Drinking Water withdrawals and restrictions • Educate the public and limit use of pesticides, fertilizers, deicers • Regulate private wells • Regulate herbicides, pesticides, and fertilizers (Cons. Comm.)	**18**

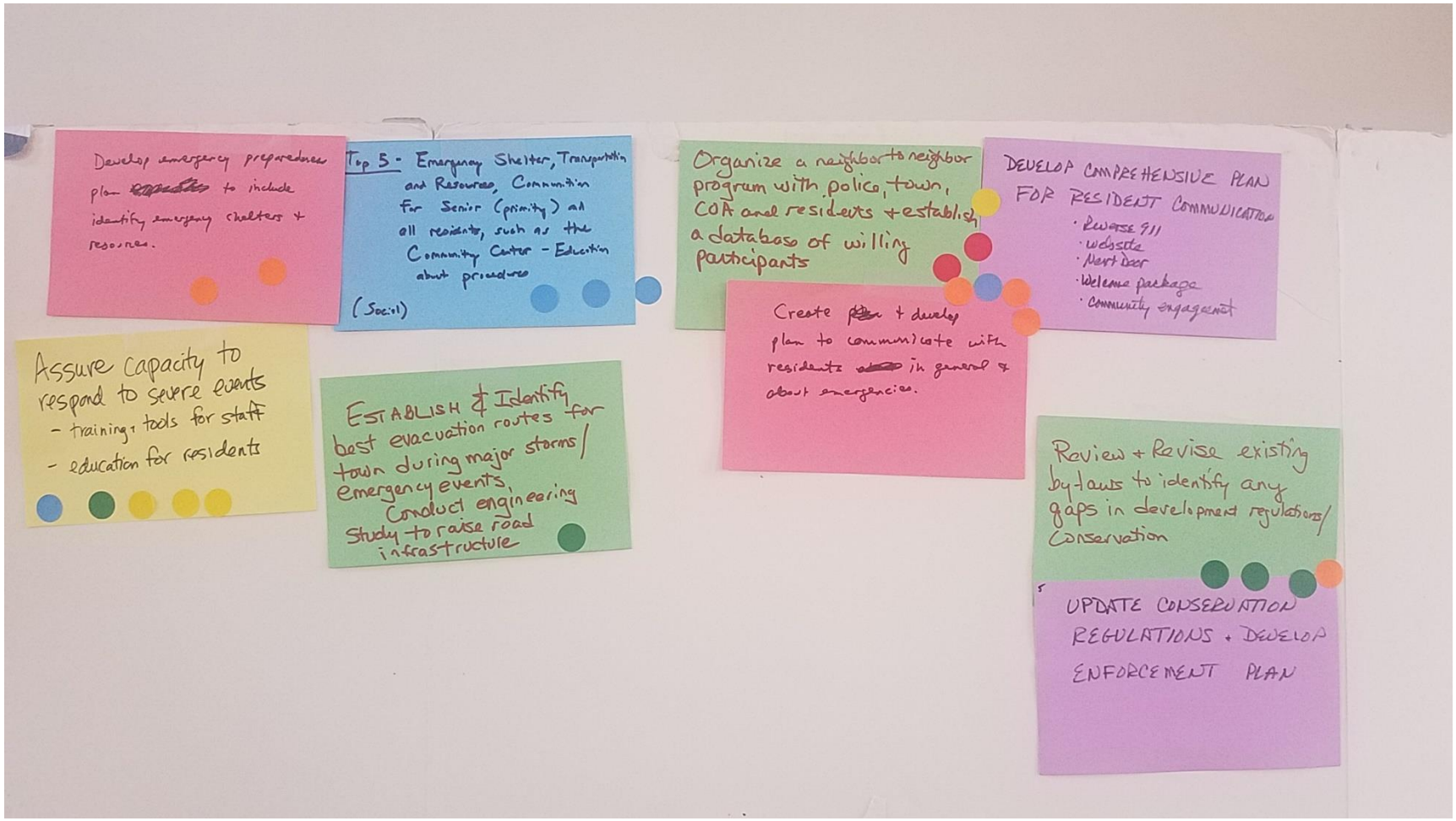
3. **Energy Resilience:**
• Protect the electric grid
  ○ Underground cables
  ○ Solar-independent backup power
  ○ Work with/push utilities to implement
• Add solar, LED, and generators – public and private
• Develop long term electric reliability program, including short-term tree management and long-term burial of power lines.
	12

4. **Emergency Preparedness and Response** • Assure capacity to respond to severe events • Training and tools for staff • Education for residents • Develop Emergency Preparedness plan, to include identifying emergency shelters and resources • Emergency shelter, transportation, and Communication for seniors (priority) and all residents, such as the Community Center, and education about procedures • Establish best evacuation routes for emergencies; conduct engineering study to raise roads	**11**

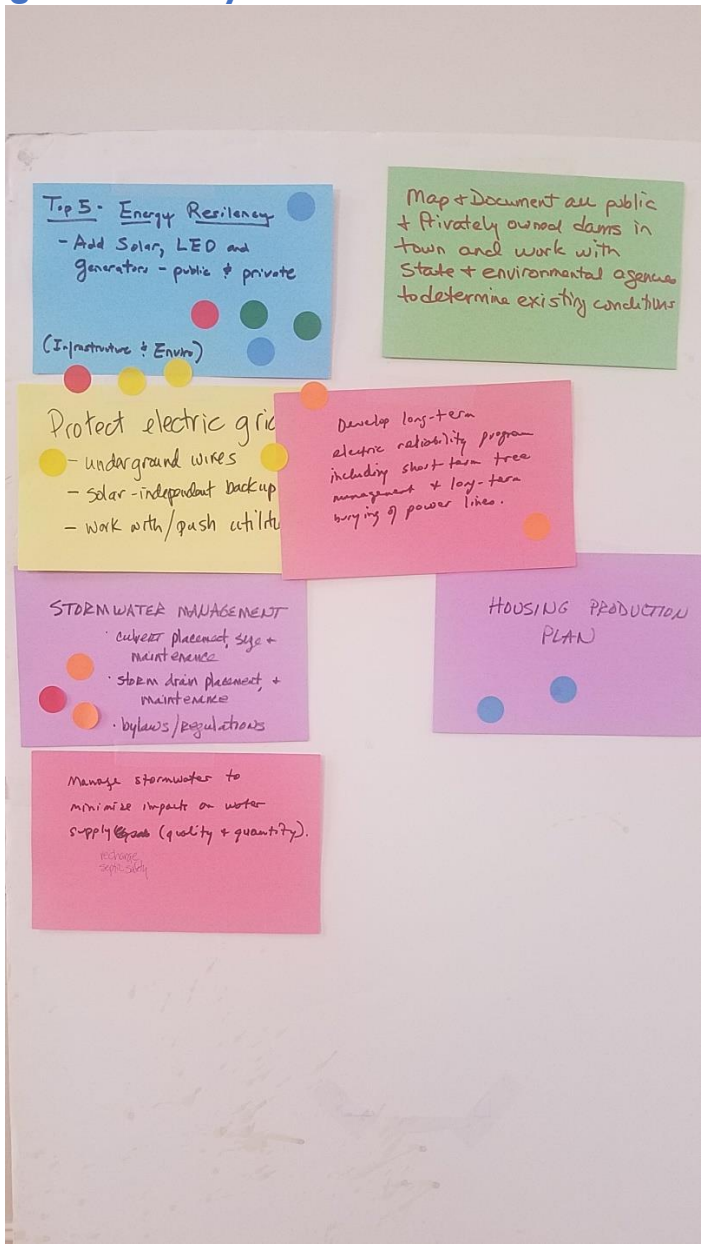
5. **Communications and Social Resiliency:**
• Develop a Communications Plan for resident communications"
  ○ Reverse 911
  ○ Website
  ○ Next Door
  ○ Welcome package
  ○ Community engagement
• Create and distribute a plan to communicate with residents in general, and about emergencies
• Organize a Neighbor-to-Neighbor program with Police, Town, COA, and residents and establish a database of willing participants
	7

Dover CRB Workshop, Great Hall, October 30,2019

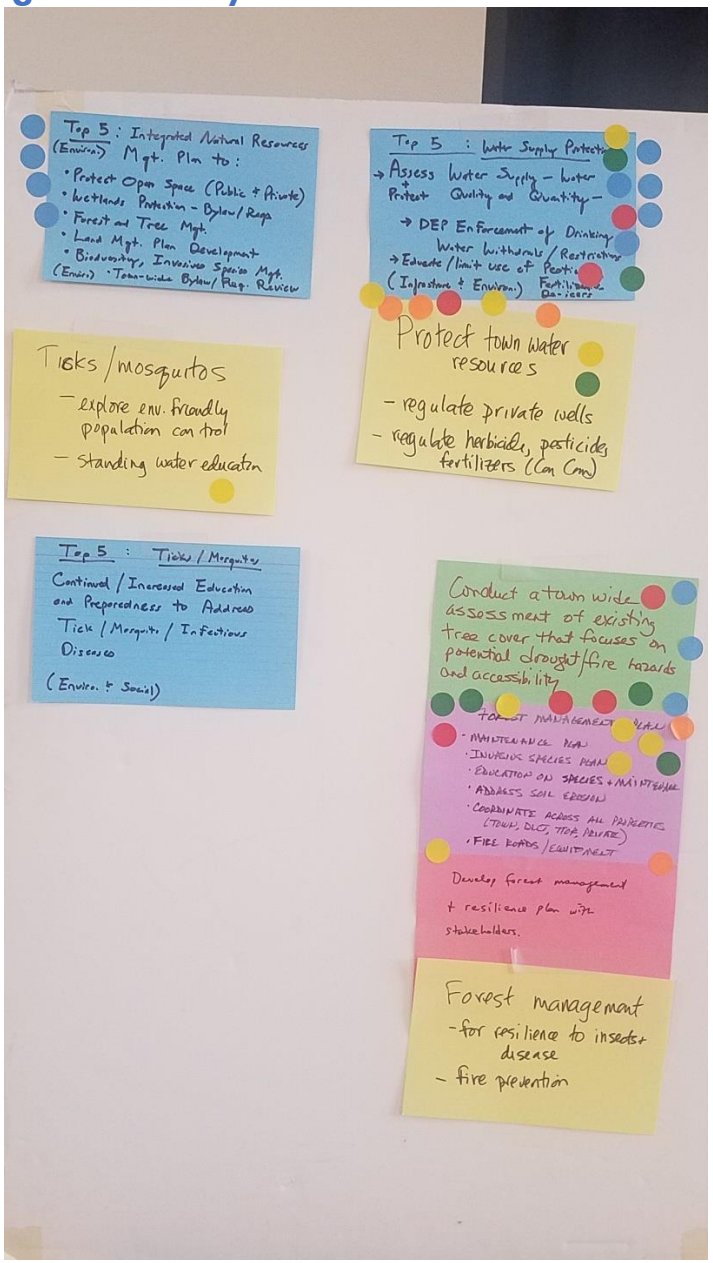
Action Prioritization
Highest Priority Actions from the Workshop



Action Prioritization
Highest Priority Actions from the Workshop



Action Prioritization
Highest Priority Actions from the Workshop



DOVER MVP WORKSHOP POSTERS AND MAPS

- Natural Resources Poster
- Climate Change Poster
- Social Vulnerability Poster
- Dover Wall Map
- Dover Table Map

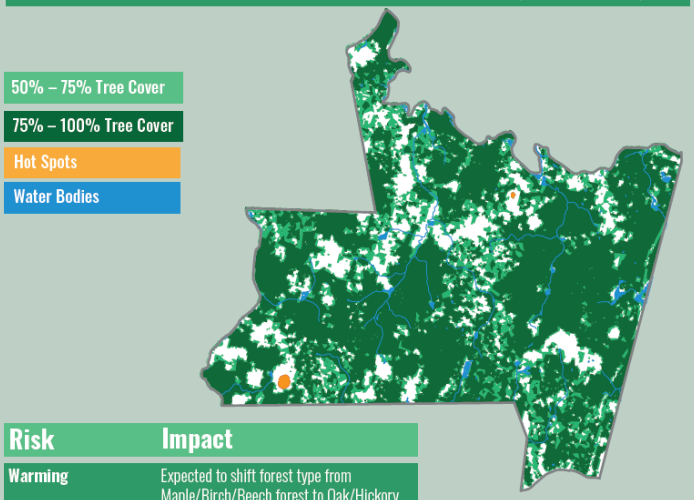
Dover

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.

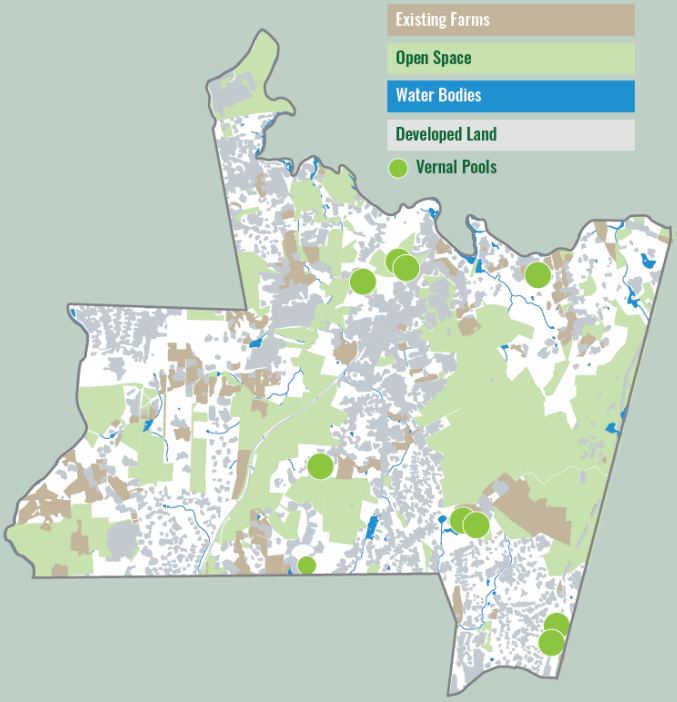
Trees

Trees are important in mitigating the impact of heat waves. According to the EPA, suburban areas with mature trees are 4-6 degrees cooler than new suburbs without trees. Shaded surfaces can be 25-40 degrees cooler than the peak temperatures of unshaded surfaces. Trees also absorb remarkable quantities of precipitation. Research has shown that a typical medium-sized tree can intercept as much as 2,380 gallons of rain per year (USDA Forest Service).



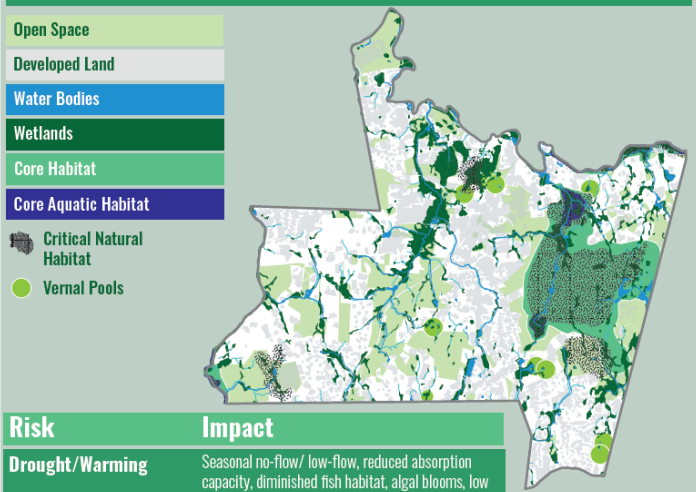
Risk	Impact
Warming	Expected to shift forest type from Maple/Birch/Beech forest to Oak/Hickory forest similar to New Jersey. New pests and diseases
Flooding, Drought, Wildfire, Ice Storms	Impaired waters, toxic exposure, contaminant leaching

Open Space and Agriculture



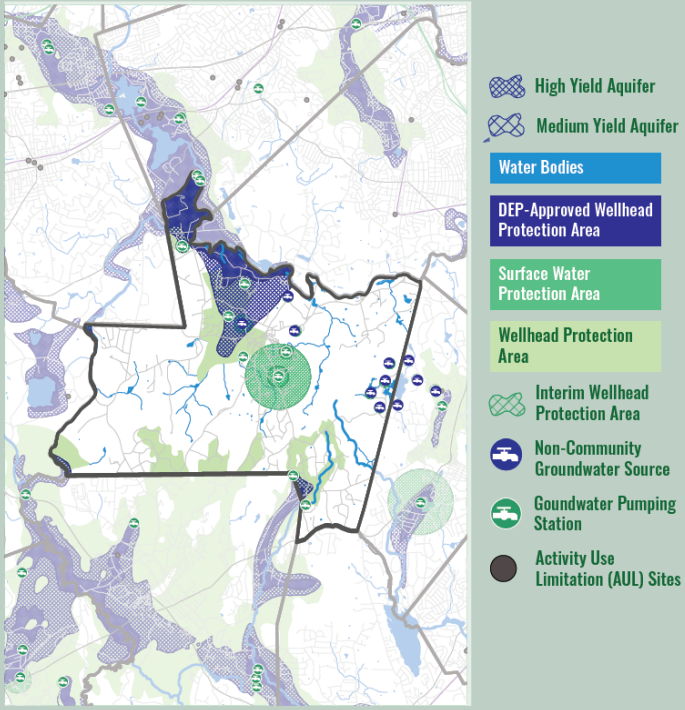
Habitat and Wetlands

Dover contains, healthy, intact freshwater wetland systems that sustain critical ecosystem functions in climate change. These ecological assets protect water quality and quantity, provide flood control, and maintain overall ecosystem health for climate resilience. Core Habitat and Critical Natural Landscapes are state-identified intact landscapes, or exemplary natural communities that are better able to withstand climate stresses and support the long-term survival of rare species and natural habitats.



Risk	Impact
Drought/Warming	Seasonal no-flow/ low-flow, reduced absorption capacity, diminished fish habitat, algal blooms, low dissolved oxygen, reduced drinking water supply
Flooding	Impaired waters, toxic exposure, contaminant leaching
Extreme Precipitation	Scouring, impaired waters, sewer overflows

Drinking Water Resources



Sources
MassGIS (Bureau of Geographic Information); BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World; Massachusetts Department of Fish and Game; Massachusetts Department of Environmental Protection; MassGIS (Bureau of Georgraphic Information); National Land Cover Database (NLCD)

Dover
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?

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.

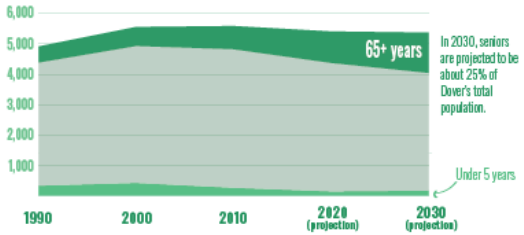
People who may have more difficulty adapting to, preparing for, or recovering from extreme weather events: Socioeconomic characteristics such as income and race can influence vulnerability to climate change. Low-income people are often more susceptible to financial shocks, which can occur after extreme 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 younger adults.

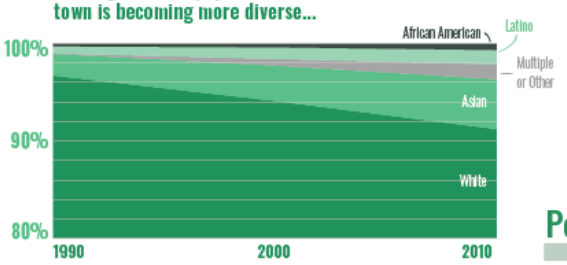
Dover Recent and Projected Population by Age



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.

Although Dover's population is over 90% white, the town is becoming more diverse...



People Living Alone

As of 2010, about 13% of Dover households consisted of someone living alone.

Over 50% of people living alone were over 65.

Low-Income Households

16.5% ±6%
of households in Dover are low-income

26.7% ±12%
of seniors in Dover are low-income

*A four-person household earning less than $78,150 is considered low-income.

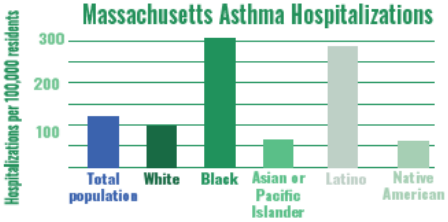
People Who Work Outside

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

People with Health Conditions

People who are already in poor health are more likely to be harmed by hot weather and resulting poor air quality.

Massachusetts Asthma Hospitalizations



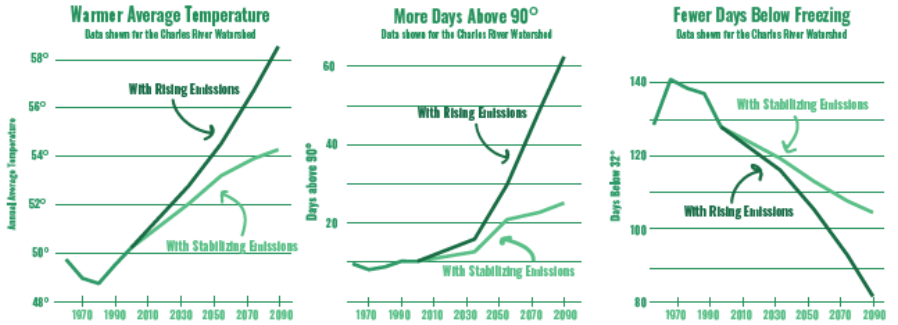
Sources:
American Community Survey (ACS) 2012-2016; United States Census 1990, 2000, 2010; MAPC Projections; Massachusetts Department of Public Health Asthma Data, 2008-2012

Climate Change

Dover 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



As the climate changes, Dover 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
- **5.26 inches** — 2014 Observed Rainfall (NOAA) for Dover
- **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.

MAPC

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

Dover MVP Wall Map

DOVER

Critical Infrastructure

Infrastructure will be at risk to damage from flooding, and loss of function due to power outages. Increasing large rainfall events may subject 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 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.

Type of Critical Facility

- Power Substation
- Bridge
- Emergency Operations Center
- Water Infrastructure
- Public Safety
- Schools, Child Care
- Elder Housing
- Municipal
- Communications
- Dam
- Hazardous Material Site

Other Features

- Rivers and Streams
- Water Bodies

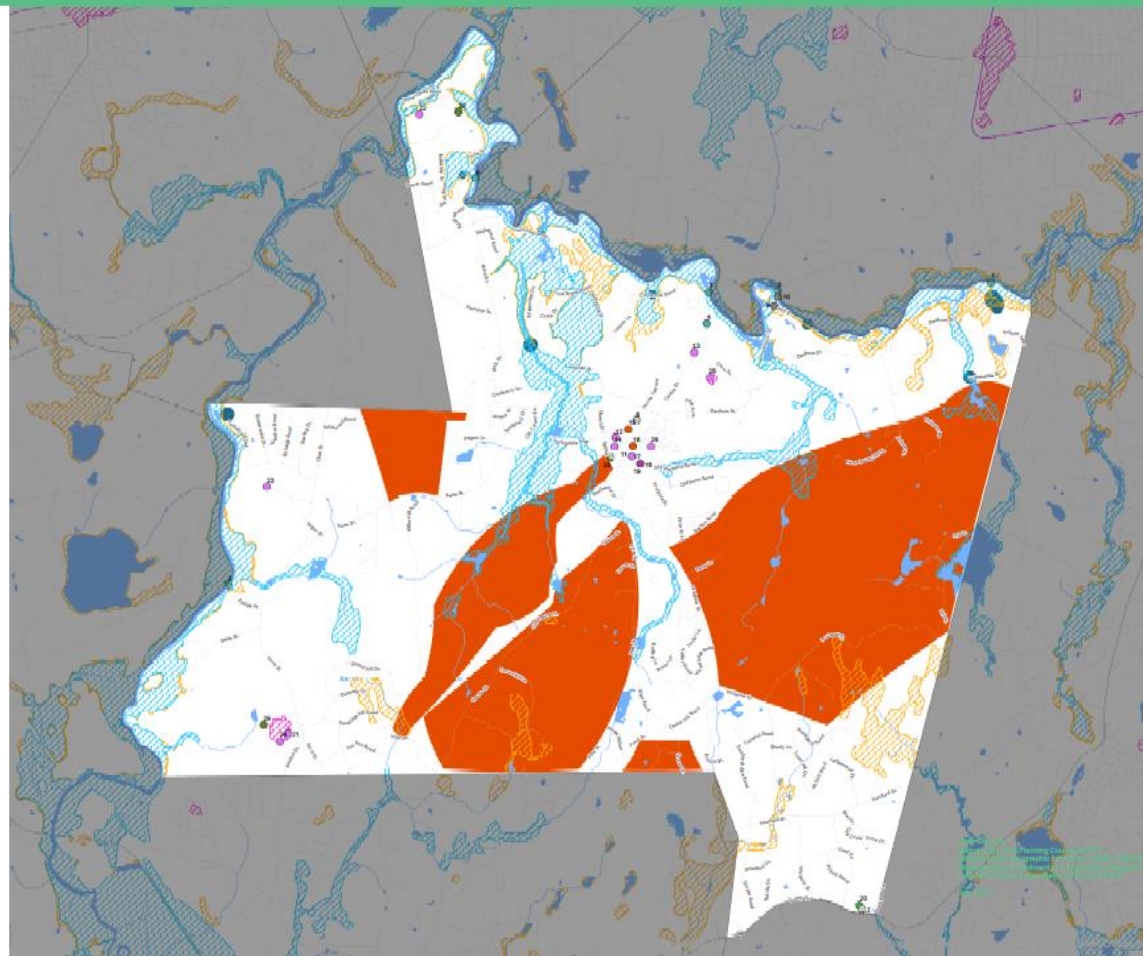
Hazards

- Hot Spots*
- A: 1% Annual Chance of Flooding
- X: 0.2% Annual Chance of Flooding

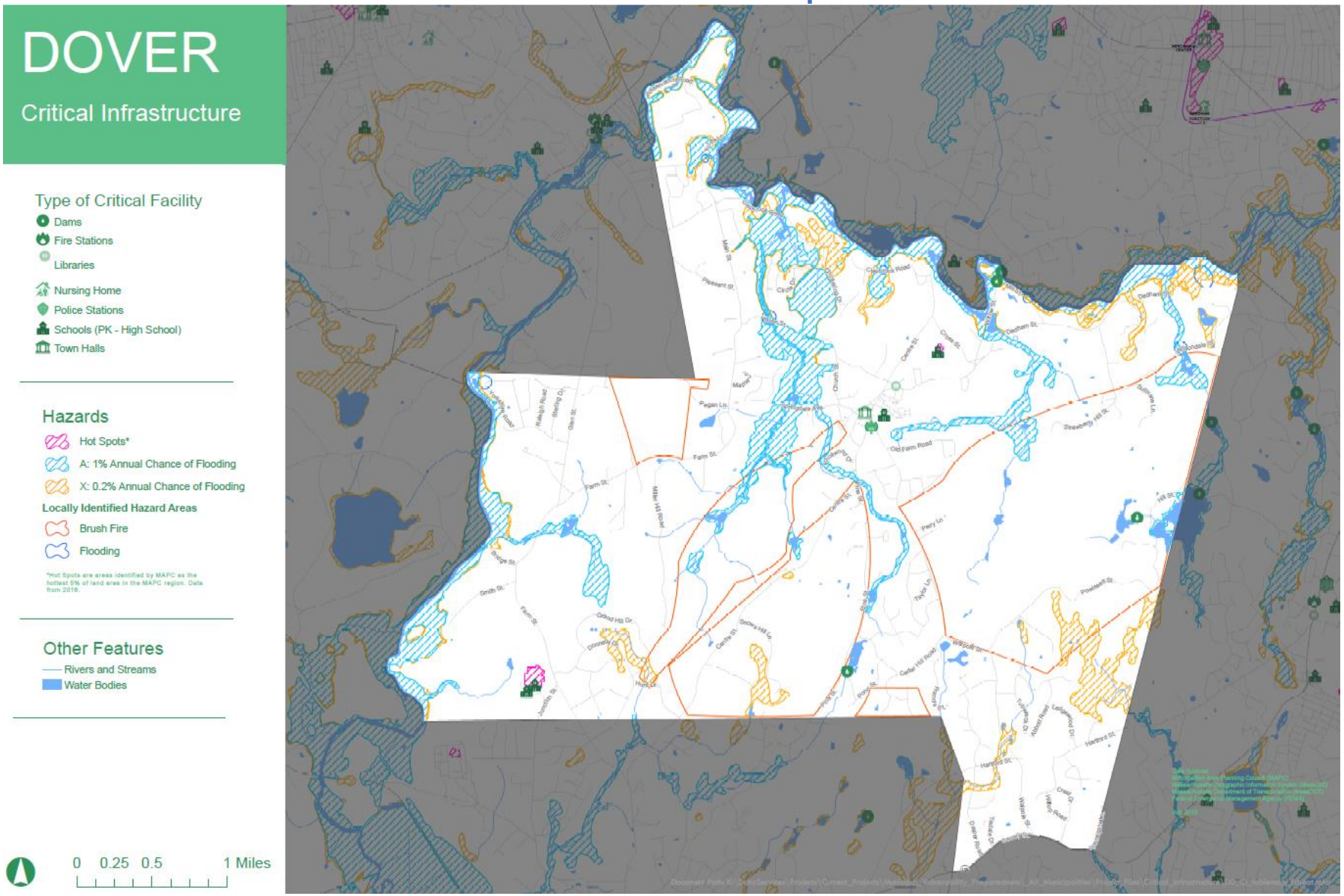
Locally Identified Hazard Areas

- Brush Fire
- Flooding

0 0.275 0.55 1.1 Miles



Dover MVP Table Map



APPENDIX C –DOVER WORKSHOP POWERPOINT

Municipal Vulnerability Preparedness Workshop
Town of Dover
October 30, 2019

MAPC
METROPOLITAN AREA PLANNING COUNCIL

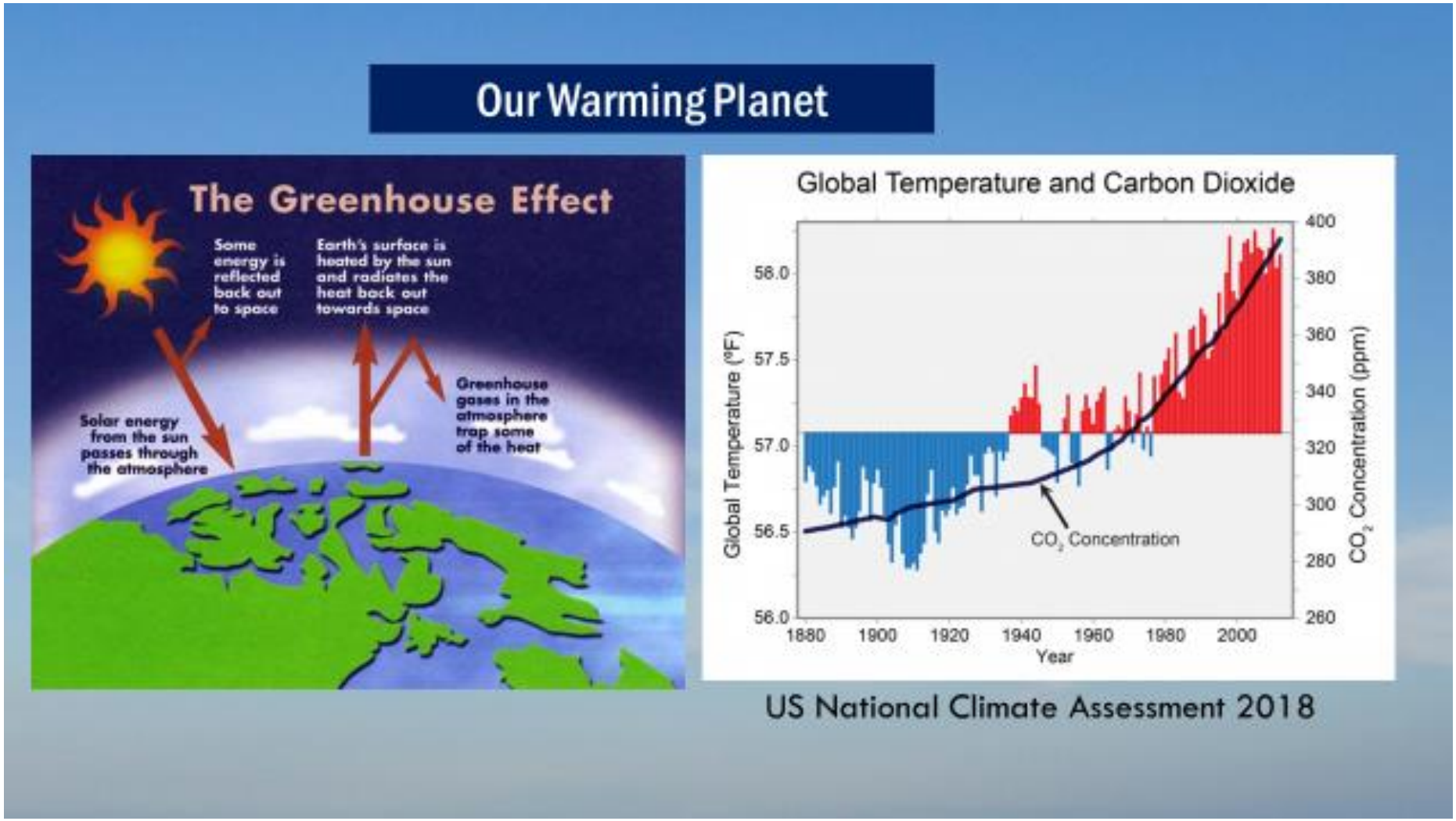
MVP Workshop PowerPoint


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

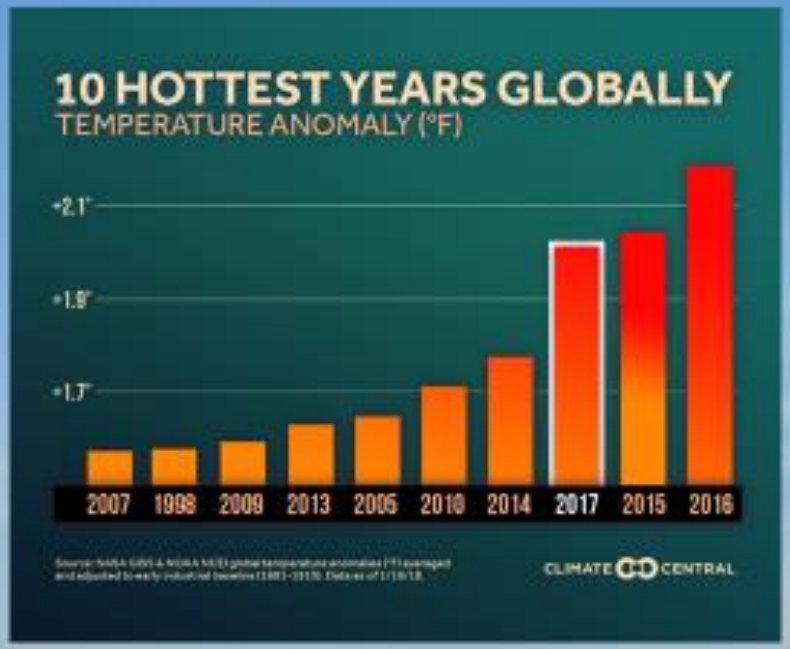
MVP Workshop PowerPoint

9:30	**Registration:** Sign-in, get name tag and sticky dots, refreshments, find table	All Attendees with MAPC Staff
10:00	**Welcome, Introductions**	Town of Dover Martin Pillsbury
10:15	**Introduction to Climate Change, MVP Workshop process**	Martin Pillsbury
10:30	**Dover Climate Change Vulnerability – Poster Review** *Participants rotate around the room to visit each poster, with narration by MAPC staff*	All Attendees with MAPC Facilitators
11:00	**Small Group Exercise #1 - Identify Vulnerabilities and Strengths** *(first 4 columns of matrix, one sheet per category)*	Small Groups with MAPC Facilitators
12:15	**Lunch Break**	
1:00 2:15	**Small Group Exercise #2 - Identify Climate Actions and Set Priorities** *(Right side of matrix,~20 min per category)* **Chose Top 5 Priority Climate Actions** *Each table selects its top 5 priority actions*	Small Groups with MAPC Facilitators
2:30	**Large Group Report Out-Top Priority Actions** *Table spokespersons report out their group's top 5 Actions*	Small Group Spokespersons
2:50	**Choose your top 3 Action priorities and Vote with Sticky Dots** *All participants use sticky dots to vote for their top 3 Actions*	All attendees
3:15	**Review Results, Next Steps, Fill out Survey** (back of agenda)	Town of Dover Martin Pillsbury
3:30	**Adjourn – Please leave survey – Thank you!**	Town of Dover Martin Pillsbury

MVP Workshop PowerPoint



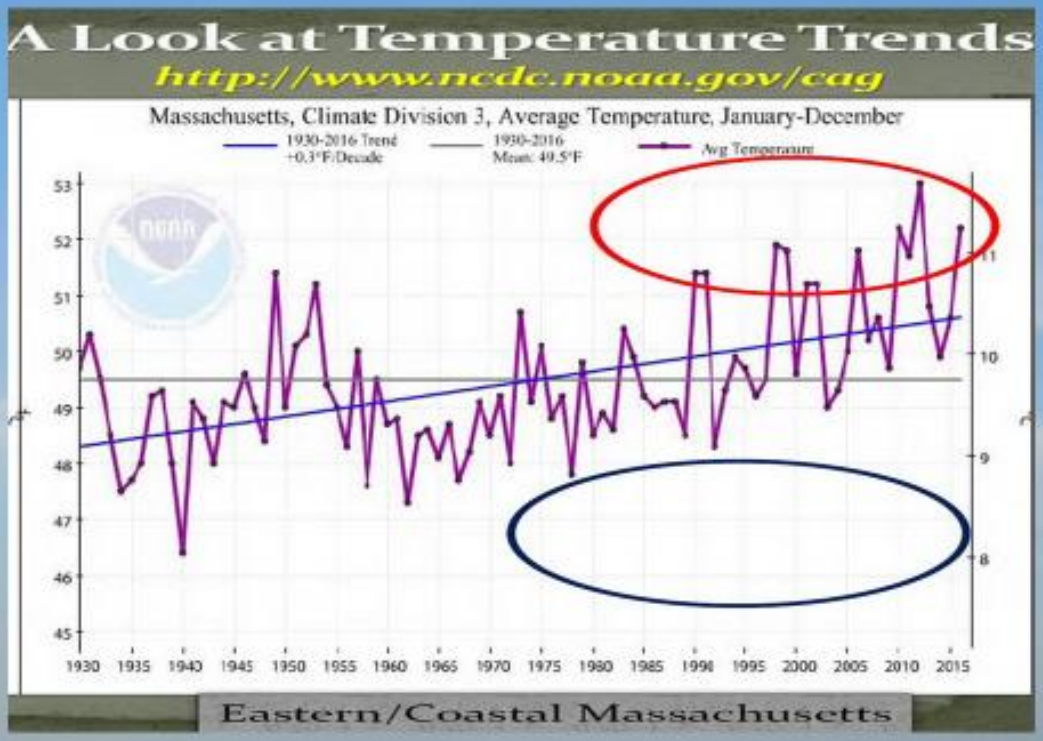
Climate Change: Temperature Observed



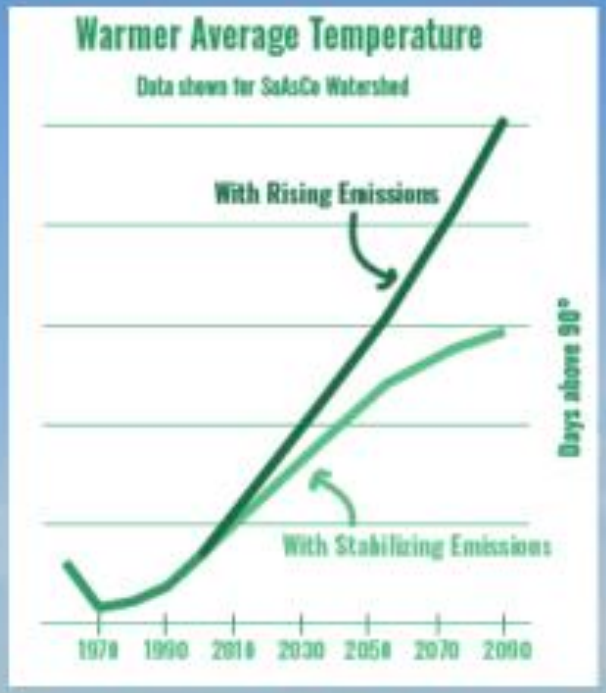
Source: Nasa GISS & NOAA NCEI global temperature anomalies adjust to early industrial baseline (1881-1910)

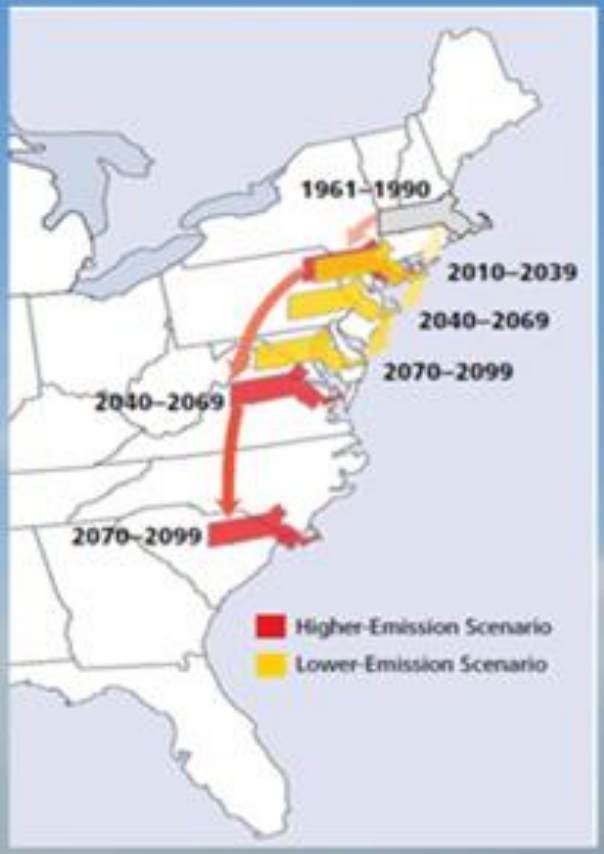
Rising Mean Temperatures – Observed

- More extreme Highs –and duration
- Shorter cycles in high to/from low temperatures



Climate Change: Temperature Projected



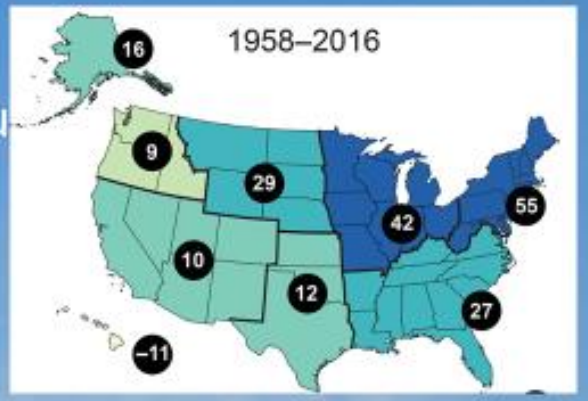


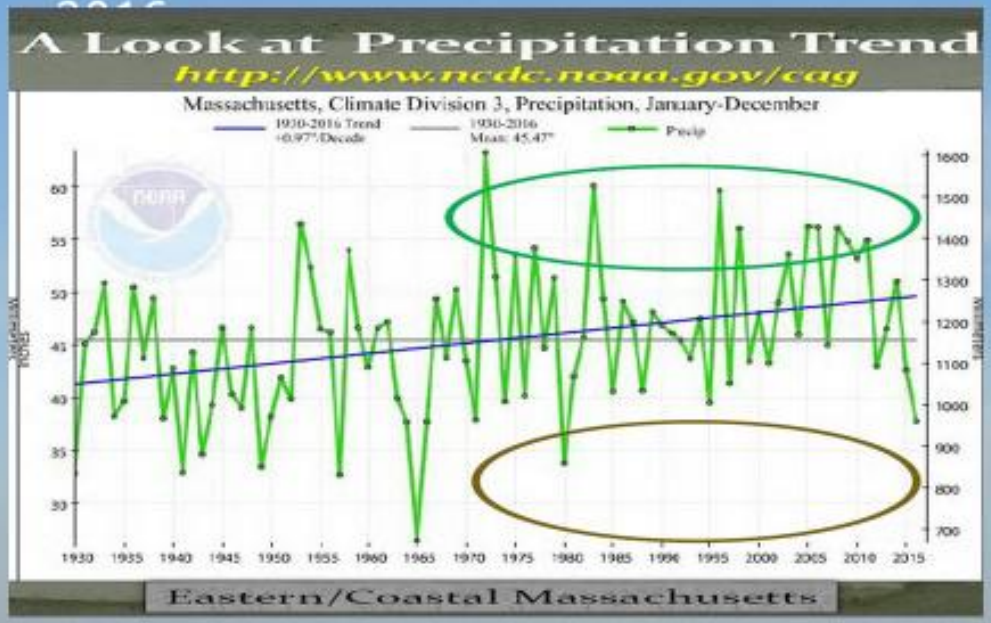
Nearly 39 days > 90 degrees by 2050

Nearly 59 days > 90 degrees by 2090

Precipitation Change: Observed

For the northeast US: 55% increase in the amou
of
rain that falls in the top 1% events from 1958 –





Source: NOAA, Northeast Climate Data Center

- Boston area: 10% increase in annual precipitation over 50 years
- More extreme high/heavy rain and more deficit/drought
- Runoff instead of

Precipitation Change Observed: Impaired Water Bodies – Low Flow

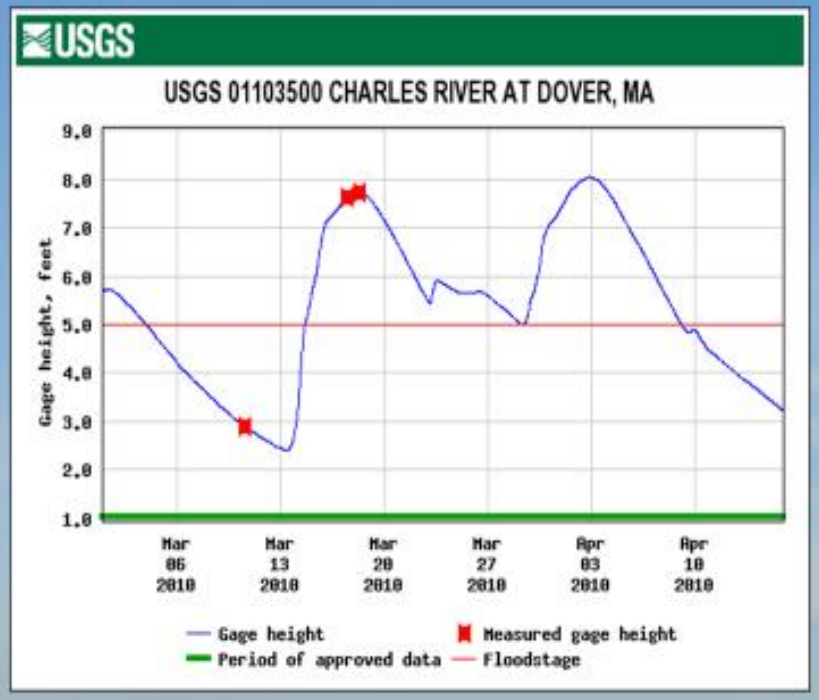
Dry riverbed, Charles River downstream of Cochrane Dam, Needham-Dover line.

Photo by Nick King - CRWA

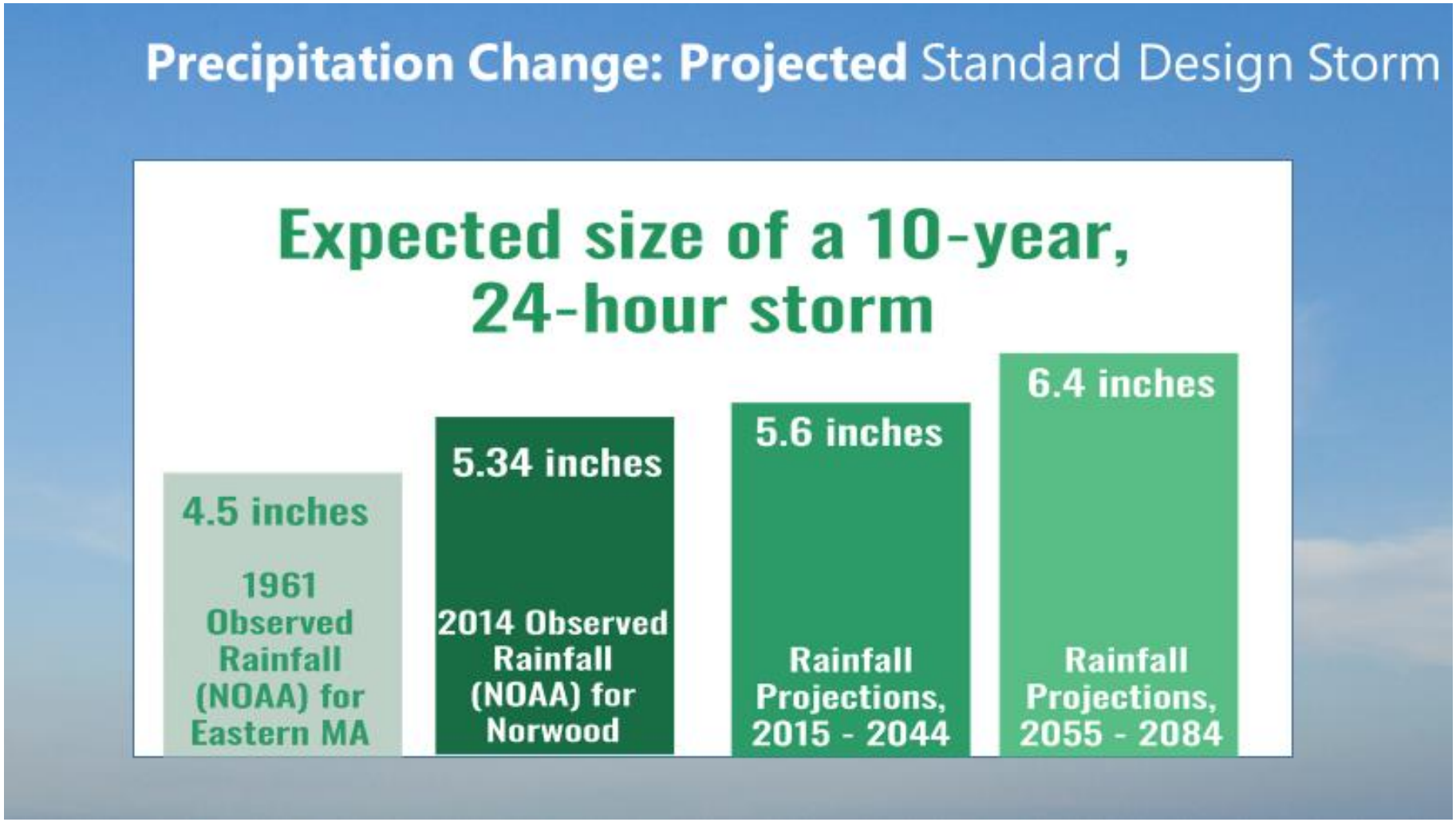
What was perennial has become intermittent:

- Powisset Brook
- Trout Brook
- "Rocky Brook"

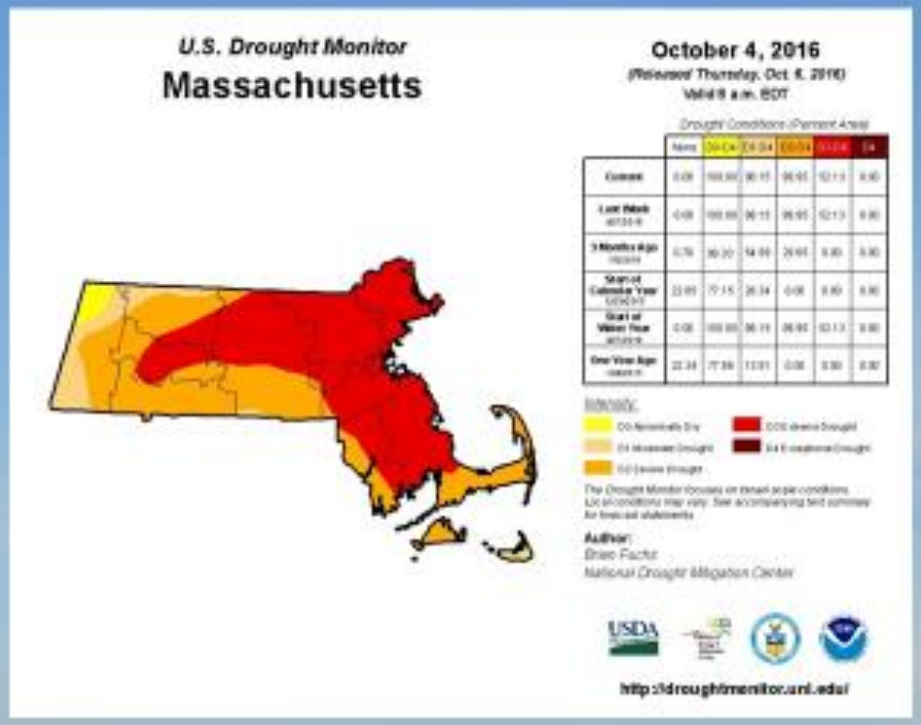
Precipitation Change: Intense Rainfall - Flooding



2010 Flooding, Charles R. at Mill St.


Precipitation Change: Projected Standard Design Storm
Expected size of a 10-year, 24-hour storm
4.5 inches
1961 Observed Rainfall (NOAA) for Eastern MA
5.34 inches
2014 Observed Rainfall (NOAA) for Norwood
5.6 inches
Rainfall Projections, 2015 - 2044
6.4 inches
Rainfall Projections, 2055 - 2084

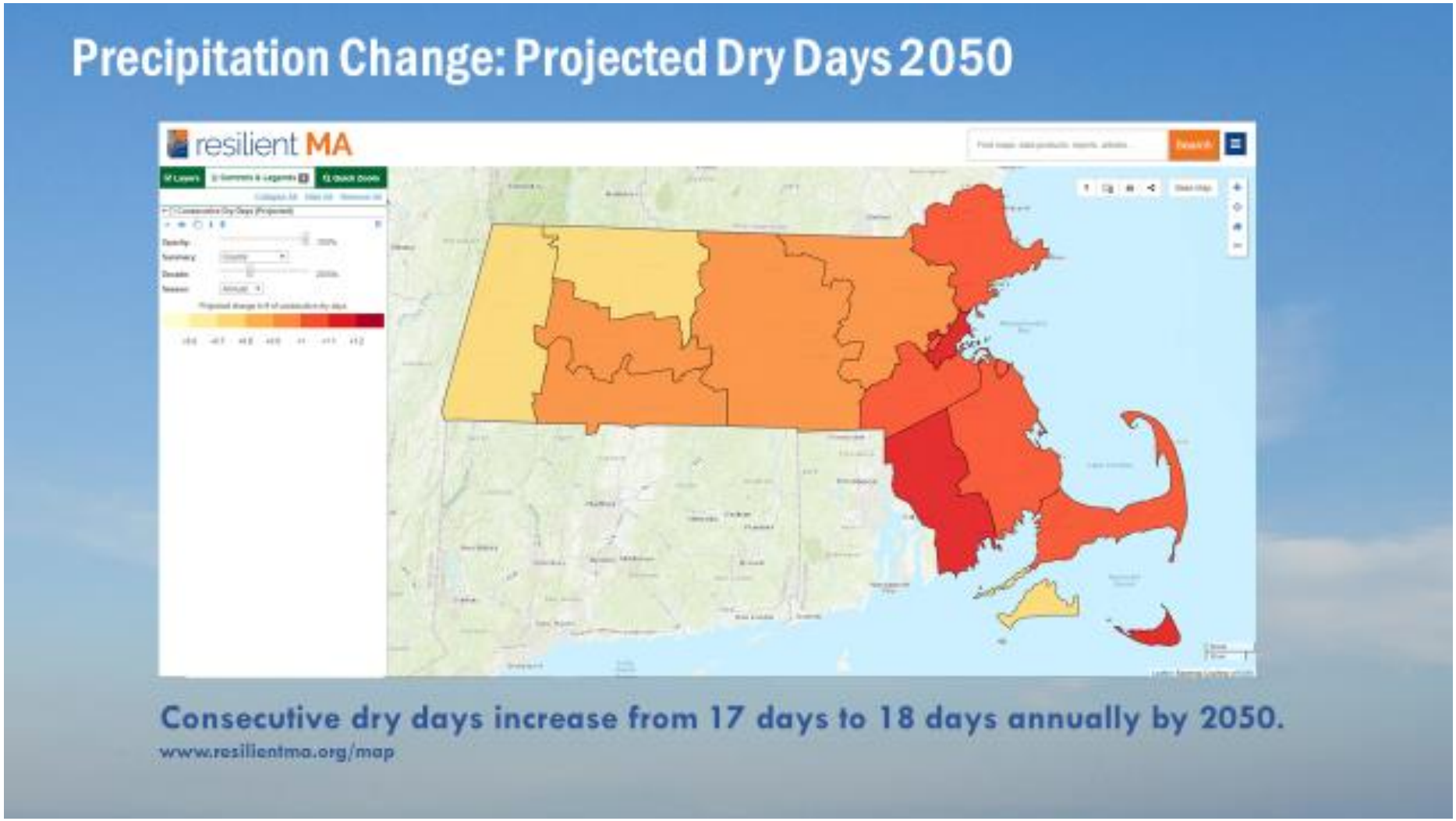
Precipitation Change: Drought Observed

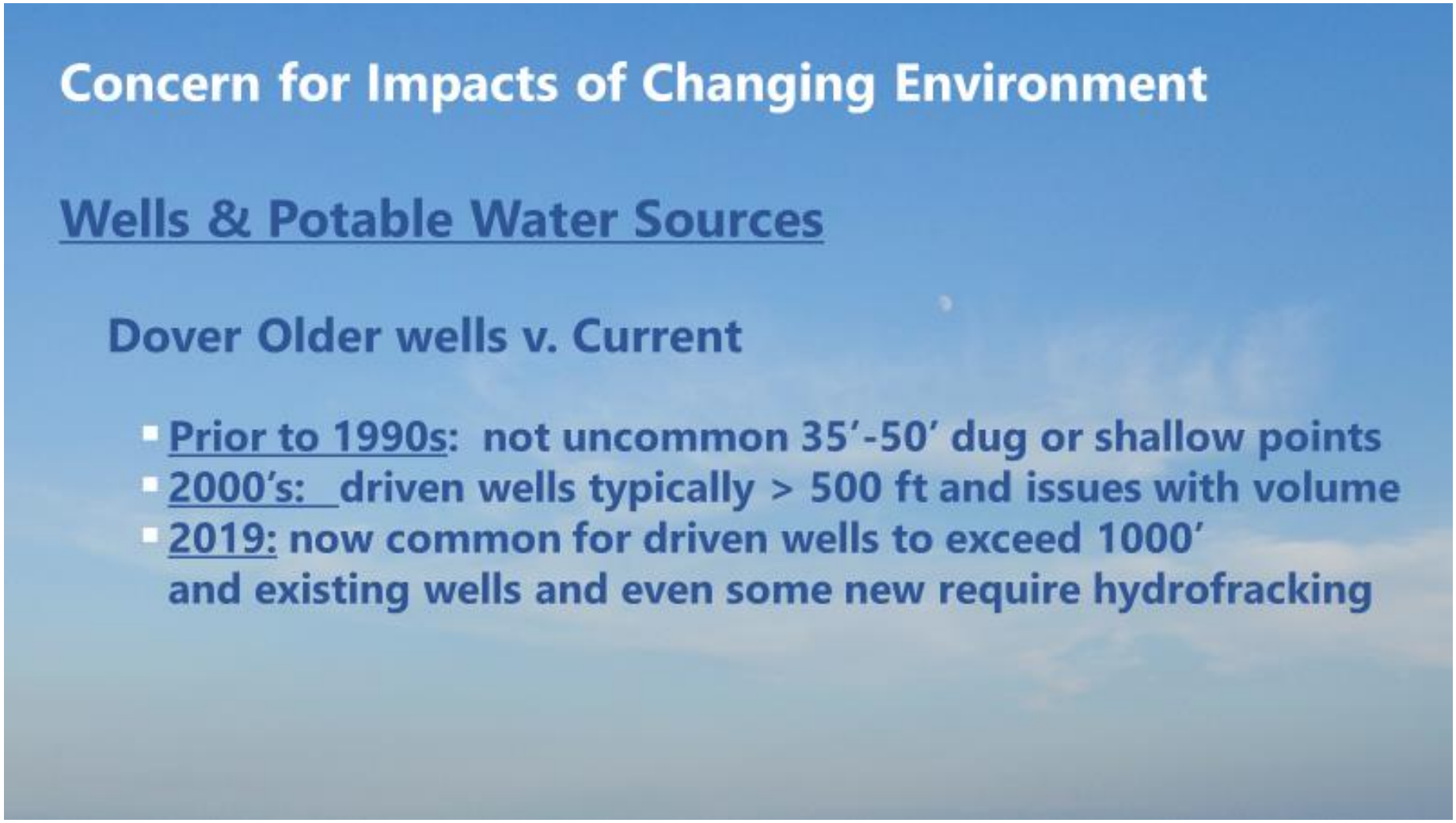


The drought of 2016 was the worst in 35 years.

US Drought Monitor

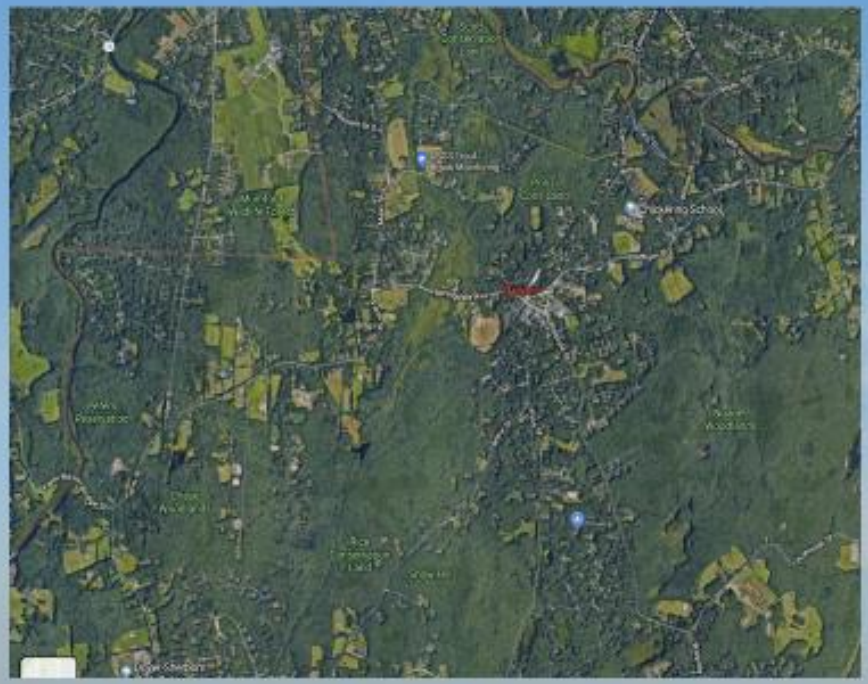
MVP Workshop PowerPoint




Concern for Impacts of Changing Environment
Wells & Potable Water Sources
Dover Older wells v. Current
Prior to 1990s: not uncommon 35'-50' dug or shallow points
2000's: driven wells typically > 500 ft and issues with volume
2019: now common for driven wells to exceed 1000'
and existing wells and even some new require hydrofracking

Concern for Impacts of Changing Environment

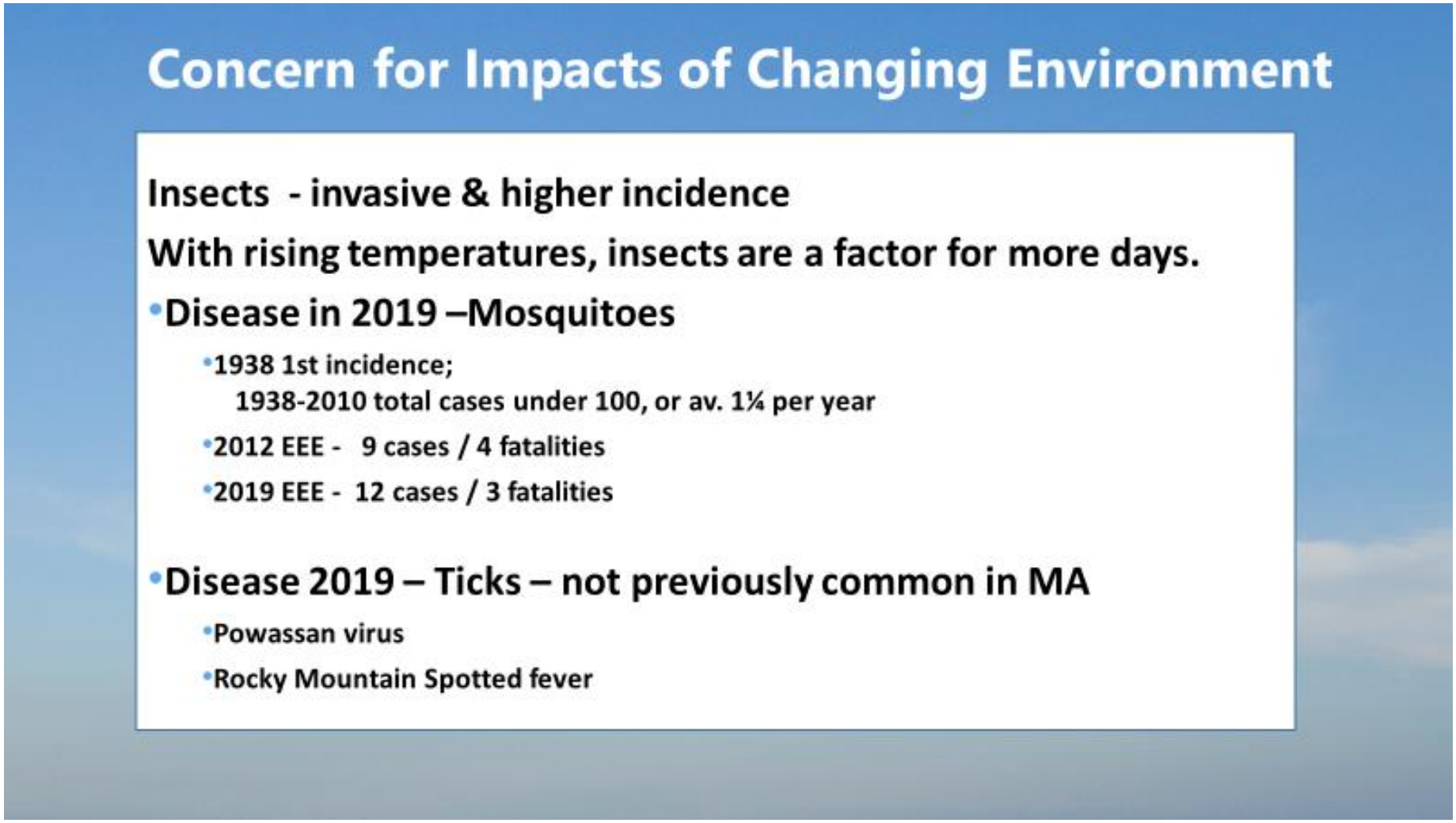
Dover is 70% forested or tree-canopy



Tree decline – Eastern White Pine

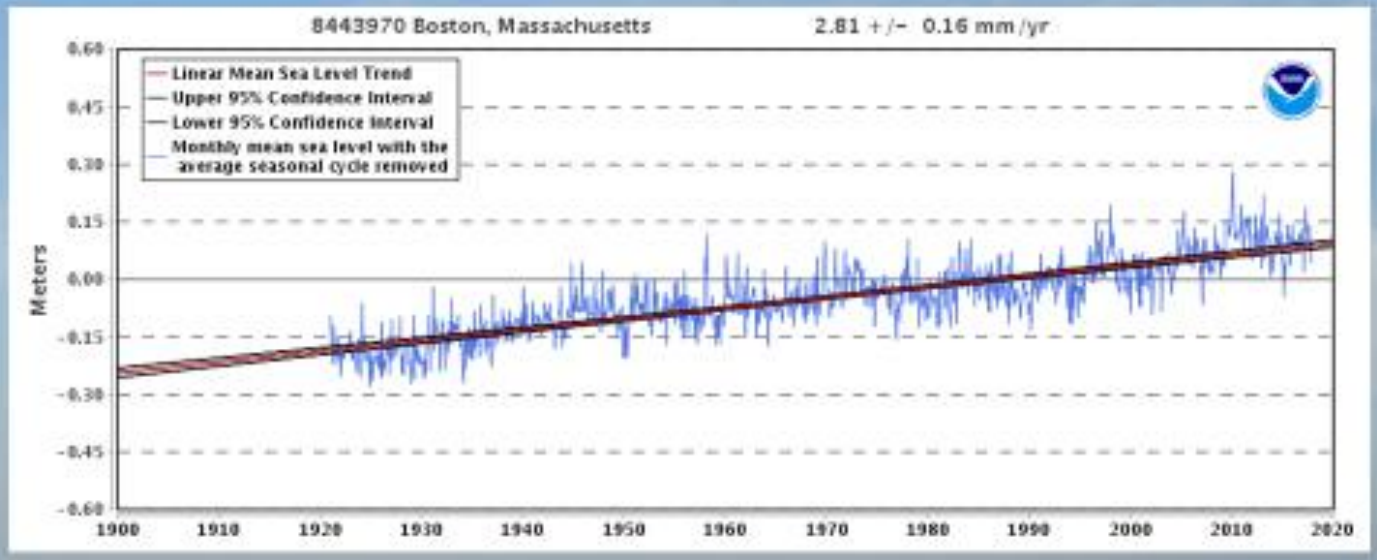
- Pine Needle Disease and Insects
- Yellowing/browning needles,
- Premature needle shedding,
- Thinning canopies,
- Undersized shoots and needles,
- Resinosis, branch dieback

Attributable to multiple fungal pathogens, insect pests; changing climate responsible.


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. 1¼ 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

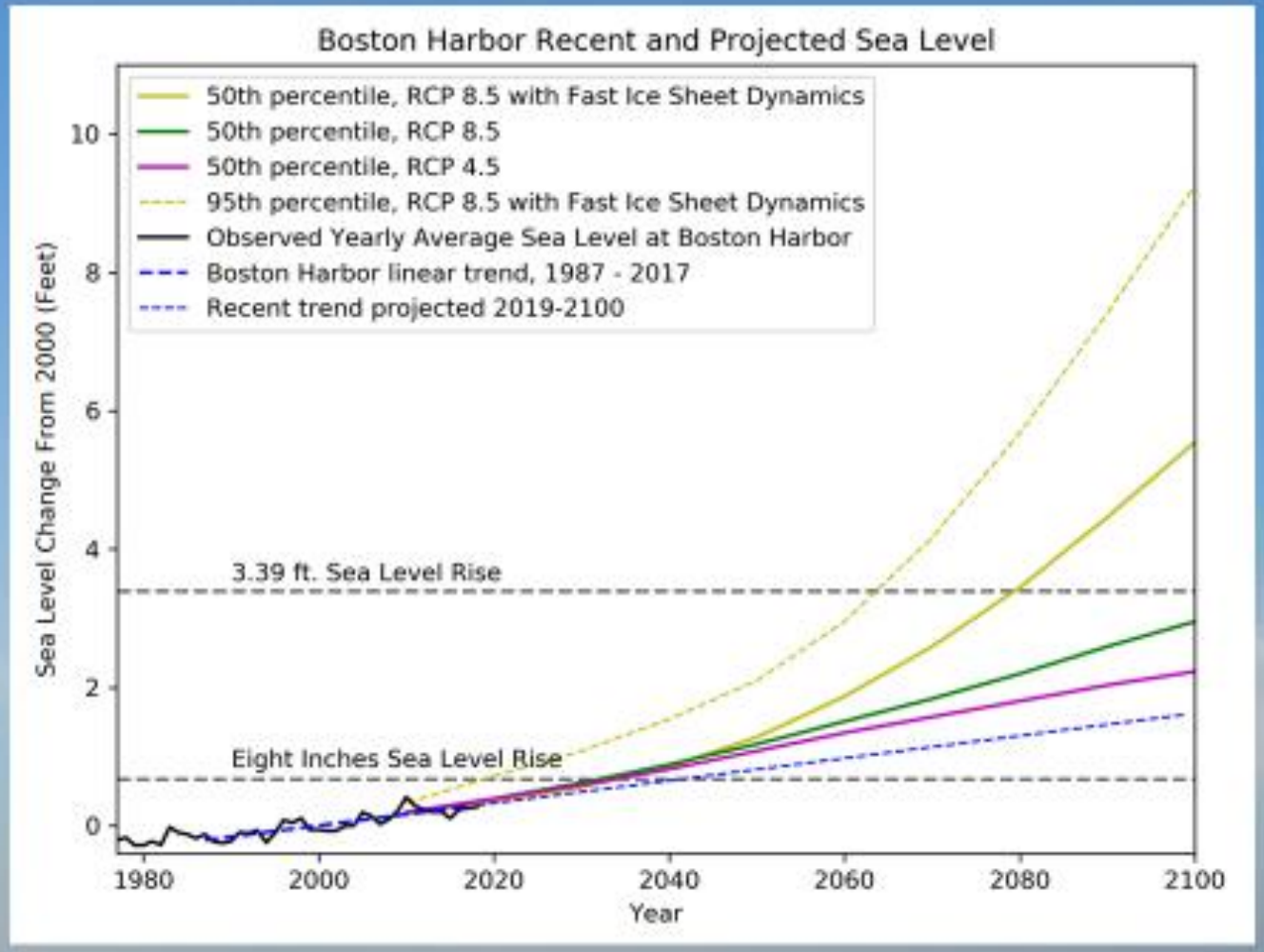
Sea Level Rise: Observed

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



MVP Workshop PowerPoint

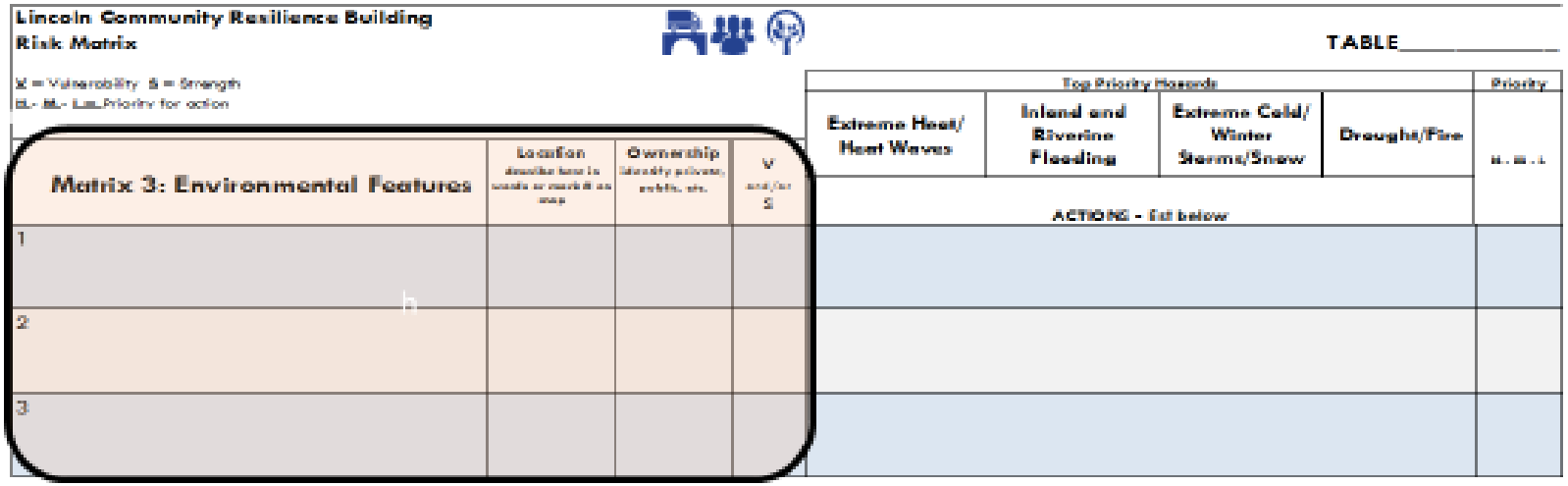
Sea level rise: Projected to 2100 for Boston Harbor



Source: Northeast Climate Adaptation Science Center and MAPC

MVP Workshop PowerPoint

Step 1: Identify Community Vulnerabilities and Strengths



Lincoln Community Resilience Building
Risk Matrix

V = Vulnerability S = Strength
H - M - L Priority for action

TABLE_____

Matrix 3: Environmental Features	Location describe here to locate or mark it on map	Ownership identify private, public, etc.	V and/or S	Top Priority Hazards: Extreme Heat/ Heat Waves	Inland and Riverine Flooding	Extreme Cold/ Winter Storms/Snow	Drought/Fire	Priority H - M - L
				ACTIONS - list below				
1								
2								
3								

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 **strengths** 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

TABLE_____

V = Vulnerability S = Strength
H - M - L = Priority for action

Matrix 3: Environmental Features	Location describe here in words or mark # on map	Ownership identify private, public, etc.	V and/or S	Top Priority Hazards: Extreme Heat/ Heat Waves	Inland and Riverine Flooding	Extreme Cold/ Winter Storms/Snow	Drought/Fire	Priority H - M - L
				ACTIONS - list below				
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?
3. Each table select your group's overall **TOP 5 Actions** (write on cards)

MVP Workshop PowerPoint

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 – DOVER 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 Dover 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 four 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
BLUE TABLE - INFRASTRUCTURE					
1	Infrastructure	Lack of reliable water supplies; 1/3 of town is commercial; E. Coli; private water running out.	V	Bylaw on lawn irrigation systems; summer water ban; DEP enforcement of water permit; Elm Bank well	H
2	Infrastructure	Fire protection - hydrant lack of water; cul-de-sacs	V	Expand water district, run main to Dover center; enforce/limit cul-de-sacs	M
3	Infrastructure	Flammable brush and fallen trees, unable to pass 5-year tree pan	V/S	Utilities more aggressive pruning;	M
4	Infrastructure	Bridge flooding	V	Long-term bridge capacity assessment	L
5	Infrastructure	Road flooding: Upper Claybrook Road along Charles River; Meadowbrook Area Springdale, beavers	V	Elevate roads; relocate	L
6	Infrastructure	Erratic cell tower coverage - pockets	V	Changing technology-micro towers; change scenic road bylaw?	L
7	Infrastructure	Traffic - Walpole, Farm, Center, Dedham	V	Complete Streets, street diets, traffic calming	M
8	Infrastructure	Woodlands	V/S		M

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
9	Infrastructure	No natural gas pipelines - town has oil, propane, solar	V/S	Investments in renewable energy	M
10	Infrastructure	Electrical service--power loss; connection to water shortage	V	Underground wires for new development; encourage solar generation	M
11	Infrastructure	Solar on buildings/churches, but no power backup battery	V/S	New development - standalone solar houses, new battery technology	M
12	Infrastructure	Extreme heat, extreme weather -- elderly, no A/C	V	Places to go - cooling centers, community outreach; communication and education	M
13	Infrastructure	CCC - A/C just added; power loss shelter/accessibility	V/S	In process of studying upgrades - small fixes	H
14	Infrastructure	Generators/power backup - one old generator - Police & Fire, High School , Town Hall	V/S	Maintain proper, annual inspections; add generator at elementary school	M
15	Infrastructure	Cell phone charging at Police station for extended outages	V/S	Establish where it is and communicate to public	L
16	Infrastructure	Green Infrastructure / Low Impact Development (Rain barrels)	V/S	Education and promotion - bylaw review	M
17	Infrastructure	No big highways, same people	S		
18	Infrastructure	Highway Dept - good care of roads and snow removal, salt	V/S	Continue BMP; minimize sand/runoff dust	L
19	Infrastructure	Stormwater management, MS4	V/S	Grants, education	M
20	Infrastructure	Recycling, waste reduction, composting	S	Increase recycling rate (pay as you throw); continue to support recycling committee	M

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
21	Infrastructure	No sewer; Title 5	V/S	Composting toilets; MWRA study	L
22	Infrastructure	Aging infrastructure	V	Continue building updates, underground pipe upgrades study	M
23	Infrastructure	Adding solar /LED	S	Continue	M/H
24	Infrastructure	Tankers - Water, fire	S	Continue capacity	M
BLUE TABLE - SOCIETY					
1	Society	Seniors - isolation, lack of heat/power, transport, housing, communications, oxygen	V	Central place to shelter; house generators; heat/cooling; social media; COA van access -- contract service, town vehicles; funding help for seniors--better communications and education; COA funding; collaboration between churches, COA - info hub	M/H
2	Society	Cyclists -groups dangerous	V/S		L
3	Society	Single family housing - expensive --Town employees, teachers, police, fire, emergency response can't live in town	V	More affordable housing, change sigma, education	L
4	Society	Public Health - tick-borne diseases, EEE	V	Continue education/communication; expand deer hunting	H
5	Society	Emergency preparedness-communication (targeted), training/education; don't use Reverse 911, no home phones	V	Emergency preparedness workshop and materials; continued planning/updates	M

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
6	Society	English as a second language / language barrier / family members as interpreters	V/S	Multi-lingual access in emergencies - digital/telephone/printed materials	M
7	Society	Lack of downtown meeting place; limited commercial/retail	V/S		
8	Society	Schools, churches, other spaces, grocery store	S		
9	Society	Pedestrian access / walkability	V		
10	Society	Strong community response - Haven Street/Terrace/informal network helps with everything	S		
11	Society	Youth			
12	Society	Churches - caring networks, involved in community, declining enrollment	S/V		
13	Society	COA lets Police Dept. know who to check on; what about people not known about?	S/V		
14	Society	Three hospitals within 5 miles, emergency ambulance works well; geographical support and contracts with neighboring towns	S		
15	Society	Mutual aid agreements throughout county	S		
16	Society	Older population, more affluent, then leave. COA young volunteers, parent volunteers during the day	S/V		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
BLUE TABLE - ENVIRONMENT					
1	Environment	Water quality/quantity - NIMBY	V		
2	Environment	Wetland degradation/protection -- 50% trees	V/S	Improve regulations	M
3	Environment	Wildlife and habitat	V/S		
4	Environment	Tree protection - storms, disease (air quality and flood reduction)	S/V		
5	Environment	Forest management & communication	V	More forest and land management	H
6	Environment	Open space - protected land, lack of management	V/S		
7	Environment	Open Space - private land potential for development - Hale Reservation	V	Prioritize private parcel protection	H
8	Environment	EEE and vector-borne diseases	V		
9	Environment	Zoning - no tree protection; no cluster, OSRD; ANR/subdivision	V	Address all bylaws/zoning	M
10	Environment	Invasive Species Management	V		
11	Environment	Recreation opportunities - parkland	S	More accessed	
12	Environment	Integrated natural resource management --plan for future, risks, bylaws	V	GIS	
13	Environment	Sedimentation off roads	V		
14	Environment	Air quality-good. Traffic worsens AQ.	S/V		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
15	Environment	Flooding risks / capacity	V		
16	Environment	Contaminants - pesticides, fertilizers, de-icers--lack of communication and education	V	Highway Dept. education campaign - individuals and landscapers; rules, regulations	H
17	Environment	PFA's - no standard	V	State regulation	M
18	Environment	Biodiversity	V/S		
19	Environment	Agriculture - CSA, Chapter 61; pesticides, herbicides	V/S		L
GREEN TABLE - INFRASTRUCTURE					
1	Infrastructure	On-call Fire Dept, no full-time emergency service	S/V	Seek grant funding to hire additional or full time emergency service staff, fire/rescue; Strengthen partnerships with neighboring communities to augment fire/rescue services	L
2	Infrastructure	Middle/High School hot spot	V	Investigate creating a solar canopy over existing school parking areas to mitigate heat island and generate energy	M
3	Infrastructure	High School has backup generator	S	Ensure that preventative maintenance is done; investigate possibility of the High School serving as a temporary shelter during emergency events	
4	Infrastructure	Town Hall serves as emergency shelter; also has backup generator	S	Increase community outreach that highlights services and programs available at town hall during storm events	

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
5	Infrastructure	Conners Center as possible emergency shelter	S	Investigate a potential partnership with Boston College (Conners Center) to serve as a temporary shelter	
6	Infrastructure	**Major roads flood during major storm events: Dedham Road, Willow Street culvert, Claybrook Road, Center Street**	V	**Establish/identify best evacuation routes for the town during major storm/emergency events**	**H**
7	Infrastructure	High Tension Power Lines	V	Work with power utility to ensure that lines are repaired and maintained	L
8	Infrastructure	Gas lines	V	Work with gas utility to ensure that gas lines are repaired and maintained	L
9	Infrastructure	**Dams in neighboring town to the east; privately owned dams in Dover**	**V**	**Map and document all public and private dams in the town and work with state agencies to determine existing conditions**	**H**
10	Infrastructure	4 Day Care centers in Dover	S		
11	Infrastructure	Fallout shelter and backup generator at Grace Church	S		
12	Infrastructure	Fire Tower	S		
GREEN TABLE - SOCIETY					
1	Society	Great communication and working relationship between Council on Aging and Town seniors	S/V	**Organize Neighbor-to-Neighbor program in partnership with Police, the Town, COA, and residents; establish a database of willing participants**	**H**
2	Society	Good communication via social media but often excludes senior population (emails, texts, robo-calls)	S/V	Enhance existing forms of communication with a neighbor to neighbor program	M
3	Society	Reverse 911 program	S		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
4	Society	Lack of centralized communications system that reaches diverse segments of the community	V	Continue outreach efforts and conduct routine testing of existing Reverse 911 system	L
5	Society	The COA offers Life Alert lifeline monitors to seniors	S		
6	Society	Lack of communication between the town, schools, and public on safety procedures during emergency events	V	Town administration and school administration should work together to develop an emergency response plan that lays out explicit protocols for students, parents, and the general public in the event of an emergency	M
GREEN TABLE - ENVIRONMENT					
1	Environment	Town bylaw outlines 3 Groundwater Protection Districts	S		
2	Environment	**Town's forested land and tree cover**	**S/V**	**Conduct a town-wide assessment of existing tree cover that focuses on potential drought/fire hazards and accessibility**	**H**
3	Environment	Open Space and Recreation Plan Update	S		
4	Environment	Very active Conservation Commission	S		
5	Environment	**Development pressures/loss of tree cover and vegetation**	**V**	**Review and revise exiting bylaws to identify any gaps in development regulations**	**H**
6	Environment	Water Utility does not actively regulate and monitor water use for the Town	V		
7	Environment	Town-wide wate management service that converts food/compost to energy	S		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
8	Environment	Invasive Plants	V	Organize tonw-wide invasive species inventory and volunteer removal event	M
9	Environment	Tick infestations / Lyme Disease prevention, EEE, and the risk of spraying hazardous chemicals	V		
10	Environment	Yard debris burning	S/V		
RED TABLE - INFRASTRUCTURE					
1	Infrastructure	**Culverts, storm drains - placement, maintenance, size**	**V**	**Inspect and address culverts and storm drains**	**H**
2	Infrastructure	Roadways, bridges-S. Natick, Charles River--egress during flooding	V	Research with cross-Charles town to identify priorities	H
3	Infrastructure	No State roads-all local responsibility for evacuation	V/S	Address in CEMP update	
4	Infrastructure	Roads are well maintained/plowed	S		
5	Infrastructure	**Tree maintenance--lack of public forestry management/budget; private property; fire road access; forest fire planning**	**S/V**	**Forestry Management Plan - Education & planning**	**H**
6	Infrastructure	Power grid--inadequate maintenance, aging infrastructure	V	Continued coordination with Eversource	M
7	Infrastructure	Regional Sherborn/Dover school power outage	V	Research school facilities backup power needs	M
8	Infrastructure	Building codes - need faster updates	V		
9	Infrastructure	Lack of fire fighting infrastructure - draw water from ponds, no water mains	V	New or renovated municipal buildings - get cistern / fire suppression	M
10	Infrastructure	Fire Department	S		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
11	Infrastructure	Private wells - 70% if water supply	V	complete & implement water study and investigate regulations on private wells	H
12	Infrastructure	Lack of traffic management	V		
13	Infrastructure	Solar array at schools	S		
14	Infrastructure	Hale Dam (Westwood) and other private dams	V	Town engineer to research private dams within and adjacent to Dover	M
15	Infrastructure	State fire tower	S		
16	Infrastructure	Power outage leaves 70% of town without water, heat		Investigate adequacy of shelter system; add new community center as a shelter	M
17	Infrastructure	Large houses-fires put stress on Fire Dept.	V		
RED TABLE - SOCIETY					
1	Society	Very active Next Door online group	S		
2	Society	Strong reserve police force	S		
3	Society	**Lack of housing options-senior, affordable**	**V**	**Apply for housing production plan technical assistance from MAPC**	**H**
4	Society	Aging households - lack of maintenance of homes poses risk	V	Work with COA to help address senior housing maintenance	M
5	Society	Lack of enforcement of existing bylaws	V	Review of bylaws, hold annual all-boards meeting to review	M
6	Society	Increase in seniors assistance calls to Public Safety	V	Police work with COA to research senior assistance needs	M
7	Society	Insufficient emergency center	V	Address needs in C.C.C. Plan	H
8	Society	Lack of easy access to public/comm. Health	V	Use the COA to address	M

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
9	Society	Low population density-lower fire impact risk	S		
10	Society	Lower income/elderly population at risk in higher income area	V	Keep updating needs list with police and COA	M
11	Society	Code Red - Reverse 911	S		
12	Society	**Lack of access to town info/website**	**V**	**Complete town welcome package/update website**	**H**
13	Society	Strong PTA, Dover Mothers, Hunt Club	S		
14	Society	Lots of outdoor workers - health risk	V	Continue public health education via B.O.H, EEE, ticks	H
15	Society	Increased development in surrounding towns	V		
16	Society	Increased bike riders, pass through on town roads	V	Bike and Pedestrian plan--MAPC technical assistance	M
17	Society	Excellent schools	S		
18	Society	Dover Land Trust, Trustees of Reservations, Hale Reservation	S		
19	Society	High percentage of open space	S		
RED TABLE - ENVIRONMENT					
1	Environment	High percentage of open space	S		
2	Environment	High percentage of wetlands--flood control	S		
3	Environment	The only cold water stream tributary to the Charles River	S		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
4	Environment	Zoning byalw for development within 150 feet of the Charles River / 50 feet from wetlands	S		
5	Environment	Strong conservation bylaw			
6	**Environment**	**Soil erosion--drying, tree loss**	**V**	**Forestry Management Plan / Stormwater management--Town Engineer**	**H**
7	Environment	High forest cover	V/S		
8	Environment	Aging forest - maintenance, replace	V	Part of Forestry Plan above	
9	Environment	Invasive species, disease, insect, botanical	V	Part of Forestry Plan above	
10	Environment	Open Space Plan is being updated	S		
11	Environment	2 property management plans in place	S		
12	Environment	**Loss of Vernal Pools, streams, more development**	**V**	**Update conservation regulations / enforcement**	**H**
13	Environment	Strong trails network	S		
YELLOW TABLE - INFRASTRUCTURE					
1	Infrastructure	Dam integrity; candidates for removal	V	Assess integrity of dams and options for removal	H
2	Infrastructure	Hale Reservation (outside Dover)	V	Assess integrity of dams and options for removal	
3	Infrastructure	Charles River School, High School, Dover Meadows	V	Assess adequacy of power backup	L
4	Infrastructure	**Electric Grid-power loss (storms, future capacity)**	**V**	**Require new development to bury power lines; encourage solar batter backup; town center solar**	**H**
5	Infrastructure	Inadequate fire hydrants in town center; insufficient water pressure	V	Install town water tower (lower insurance rates)	L

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
6	Infrastructure	**Emergency services capacity to handle large-scale storms**	**V**	**Assess and Identify needs for Police and Fire Dept's.**	**H**
7	Infrastructure	Roads unable to handle traffic; no train	V	Ride sharing app; vanpool Rt.128 - downtown	L
8	Infrastructure	Storm drainage system; culvers	V	Assess adequacy and identify priorities	M
9	Infrastructure	Center St. Bridge - low flooding; destruction	V	Replace and upgrade bridge; consider river flow	M
10	Environment	**Health of aquifer; water quantity**	**V**	**Use aquifer study to monitor usage; move towards regulation of private wells**	**H**
11	Environment	Dedham St. culvert at risk	V	Conduct assessment	M
12	Environment	Dover has great roads	S		
13	Environment	Great snow removal	S		
14	Environment	Very few heat issues in Dover	S		
15	Environment	Some facilities have solar	S		
16	Environment	Great transfer station	S		
17	Environment	Good library - gathering place	S		
18	Infrastructure	**Shelter - does town have a plan?**	**V**	**Public Awareness - what are shelter options and emergency response?**	**H**
19	Infrastructure	Drought could affect town's playing fields	V		L
20	Infrastructure	No town GIS	V	Invest in GIS system	L
21	Infrastructure	Many homes have generators	S		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
YELLOW TABLE - SOCIETY					
1	Society	Mosquito risk - public health	V	Study vector populations - understand risk; identify standing water hot spots; education and outreach	H
2	Society	Tick risk - public health	V	Protection-tick checks education and outreach	H
3	Society	**Elder population - heat, power outages**	**V**	**Work through Council on Aging; air conditioning for activities in heat waves**	**H**
4	Society	Children's health, restricted from outdoor activities due to mosquito and tick risks	V	Projection-tick checks; public education	H
5	Society	Well-educated population	S		
6	Society	Interest in local food & environment	S		
7	Society	Town outreach to elders; volunteer help	S		
8	Society	Schools - long term investment; but not so involved in town issues	S/V		
9	Society	Low income populations, especially seniors	V		
10	Society	Seniors living alone - no elder housing	V	Provide affordable elder housing	H
YELLOW TABLE - ENVIRONMENT					
1	Environment	Private wells - unregulated water supply	V	Move towards regulation of private wells (#10 above)	H
2	Environment	Water supply - quantity -no easy supply	V	Aquifer study (#10 above)	H
3	Environment	Food supply - drought, temperature, pests	V	Promote CSA's; investigate transition to heat tolerant species	H
4	Environment	Open Space/Forests (Strength-water storage & treatment; Vulnerability-diseases)	V/S	Resources for forest maintenance, planning and management	H

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
5	Environment	Surface water quality in big storms - overland flow; pesticides, manure	V	Conservation Comm.- guidelines/restrictions on pesticide/herbicide use, fertilizers	H
6	Environment	Open space - public health benefits	S		
7	Environment	Pride in open space - recreational opportunities	S		
8	Environment	Hale Reservation - possible development	V		
9	Environment	Water storage along Charles River - not built up	S		
10	Environment	Recycling transfer station	S		
11	Environment	Forest fire threat	V	Specific training for wildfires; access; equipment	
ORANGE TABLE - INFRASTRUCTURE					
1	Infrastructure	No transportation infrastructure	V		
2	Infrastructure	Culverts in roadways	V	Conduct study to evaluate condition and location of culverts	
3	Infrastructure	Septic systems - flooding and maintenance	V	Provide "how to" information on septic maintenance to property owners	
4	Infrastructure	Wells - drought management	V		
5	Infrastructure	Fire hydrants not serviceable	V		
6	Infrastructure	Forests - Strengths: Town has equipment for forest fires; Norfolk County response team; Vulnerability: No forest management efforts	S/V		
7	Infrastructure	Two sources of power, no backup	V	Identify places for town generators and shelter space; mini-grids	H

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
8	Infrastructure	Four municipal buildings with emergency generators	S		
9	Infrastructure	Power outage can cripple communications network	V	Develop long-term plan to bury power lines	H
ORANGE TABLE - SOCIETY					
1	Society	Very limited emergency outreach - Reverse 911 only for landlines	V	Develop communications plan	
2	Society	No communications infrastructure; no email or social media outreach	V	Enhance push capabilities of town to communicate about emergencies and other issues	H
4	Society	No emergency shelters for winter or summer; no emergency power; limited air conditioning (schools)	V	Assess options for emergency shelter locations	H
5	Society	Communications issue with public health emergencies; EEE; different counties communicate differently	V		
6	Society	No COA facility	V	Siting and programming is being addressed, but needs to be folded into emergency management and preparedness	H
7	Society	No health facilities - closest are in Needham, Norwood, and Wellesley	V		
8	Society	Rural nature of town limits ways to check on neighbors	V		
9	Society	Faith-based organizations - no network, but resource for outreach (and private schools)	V/S		
10	Society	Powasset Farm	S		

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
ORANGE TABLE - ENVIRONMENT					
1	Environment	Trees - strong canopy, but overlays roads	V/S	Increase resources for tree management	H
2	Environment	Trees - take down power lines in storms	V	Tree trimming to minimize outages	H
3	Environment	Aging of forests - succession		Work with stakeholders for forest management study/resilience plan--forest lands, trees along roadways	**H**
4	Environment	Forests -Environmental Stress, insects	V	Communicate about tree health, care and maintenance	
5	Environment	Budget constraints for pruning/thinning forests	V		
6	Environment	Trees-utility responsibility limited			
7	Environment	Water Supply / Private wells -		Improve hydrogeologic mapping / map water recharge areas and assess protection measures	H
8	Environment	-Dry wells in drought	V		
9	Environment	-Runoff	V		
10	Environment	-Private water co overdraws permit	V	Enforcement of regulations / permit	
11	Environment	-construction impacts on private wells			
12	Environment	-Northwest part of town suitable for larger wells	S		
13	Environment	Septic systems - maintenance	V	Need for enforcement of maintenance and replacement	H
14	Environment	Septic systems - vulnerabilities in storms	V		
15	Environment	No outreach to orient new residents to wells and septic systems	V		H

Item#	Category	Strengths & Vulnerabilities	V/S	Actions	Table Priority
16	Environment	No back-up water supply in event of contamination	V		
17	Environment	Intermittent steams		Determine Conservation Comm. Jurisdiction over intermittent streams	H

APPENDIX E –DOVER COMMUNITY FORUM (LISTENING SESSION)

The Town of Dover held its MVP Public Listening Session on May 4, 2021, as a remote public meeting via Zoom. An overview presentation was given on climate trends and vulnerabilities facing Dover, highlights of the town's strengths, and a summary of the highest priority actions identified by the Community Resilience Building workshop. Since an in-person meeting could not be held during the COVID-19 pandemic, the town offered participants an opportunity to provide feedback and choose their priorities for action through an online survey using MAPC's Qualtrics survey platform. The survey and its results are presented below.

The Town of Dover invites you to a

Community Listening Session

Preparing for Climate Change in Dover

Tuesday, May 4, 2021, 7:00 PM

Online Meeting via Zoom

Dover's MVP workshop identified climate risks such as drought, vector-borne diseases, and tree diseases as a threat to the Town

The Town of Dover is participating in the Municipal Vulnerability Preparedness (MVP) program to identify the Town's strengths and risks related to climate change as well as actions that will make Dover more resilient to climate impacts. Please join us for a virtual public listening session for an opportunity to learn about the MVP program and comment on the Town's efforts to strengthen its climate resilience.

Please RSVP and the link to the Zoom meeting will be sent by email:

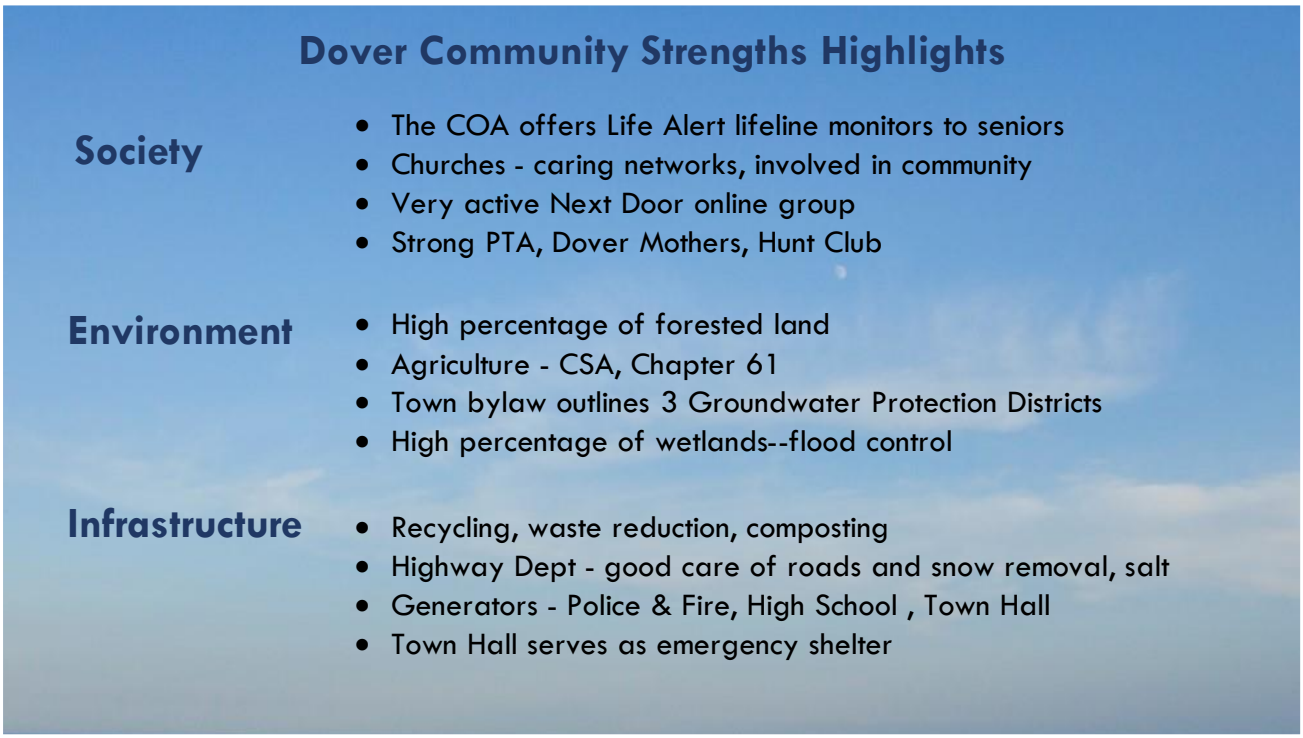
Gerald Clarke, Chairman, Board of Health: gclarke@doverma.org

Town of Dover
Municipal Vulnerability Preparedness
Public Listening Session

May 4, 2021, 7:30 PM

AGENDA

Welcome
MVP Program Overview
Climate Change Observations and Projections
Climate Impacts on Dover
Dover Strengths and Action Priorities
Feedback: Share your questions, observations, and priorities



HIGH PRIORITY ACTIONS FROM THE DOVER CRB WORKSHOP

Issue Area: Forest Management and Natural Resources Management

1. Conduct a town-wide **assessment of existing tree cover** that focuses on potential drought and fire hazards and accessibility

2. Develop a **Forest Management Plan** to address: Invasive species, resilience, soil erosion, fire roads and fire equipment, education on tree species and maintenance, coordination across all property owners (Town, DLCT, Trustees)

3. Prepare an **Integrated Natural Resources Management Plan**, including: protection of Open Space , wetlands protection (bylaw/regulation), land management plan for development, biodiversity, invasive species, town-wide environmental bylaw/regulation review

Issue Area: Water Supply Protection:

4. Assess and protect the water supply—address both water quality and quantity

5. DEP enforcement of Drinking Water withdrawals and restrictions

6. Regulate herbicides, pesticides, and fertilizers and educate the public about their use

7. Regulate private wells

Issue Area: Energy Resilience

8. Develop a long term electric reliability program, including short-term tree management and long-term burial of power lines

9. Add solar, LED, and generators to public and private facilities

Issue Area: Emergency Preparedness and Response

10. Assure capacity to respond to severe events: training for town staff; education for residents

11. Develop an Emergency Preparedness plan: emergency shelters, transportation, and communication for seniors (priority) and all residents, and education about procedures

12. Establish best evacuation routes for emergencies; conduct engineering study to raise roads if needed

Issue Area: Communications and Social Resiliency

13. Organize a Neighbor-to-Neighbor program with Police, Town, Council On Aging, and residents, and establish a database of willing participants

14. Develop a Communications Plan for resident communications, including reverse 911, website, Next Door, welcome package, community engagement

DOVER MVP PUBLIC LISTENING SESSION SURVEY

MAPC Qualtrics Survey

May 4 – June 10, 2021

Dover Climate Preparedness: We Want to Hear From You!

The Town of Dover is working to prepare for the impacts of climate change through participation in the Municipal Vulnerability Preparedness (MVP) program. The Town held an MVP workshop in October 2019 to identify actions to build resilience to climate change. A summary of the workshop's recommendations was presented at a Public Listening Session on June 30, held online via Zoom. The survey below is part of that Public Listening Session, to provide an opportunity for residents to give their feedback on the recommendations of the MVP program.

An overview of the MVP program was presented at the Public Listening Session on June 30. If you did not attend the meeting, you may view the presentation here. The MVP report is also available for viewing here.

After the attending the June 30 Public Listening Session or viewing these MVP materials online, please take the following brief survey to provide your input to the Town on this important project.

Q1: (Logon info)

Q2: In Dover's MVP workshop held last October, participants identified the following top priorities for climate resilience actions. Please identify up to three that you feel are most important for the Town of Dover to pursue.

Q3 - Would you like to recommend any additional strategies? Please describe them here.

Q4 - Please share any further observations, concerns, or questions

Q5 - If you would like to receive updates on this project and the Town's future climate resilience efforts, please provide your name and email address:

Dover MVP Survey Results: Priorities for Action (% and # of votes)

1 Forest Resources Management: Conduct a town-wide assessment of existing tree cover that focuses on potential drought and fire hazards and accessibility
4.41% 3

2 Forest Resources Management: Develop a Forest Management Plan to address: Invasive species, resilience, soil erosion, fire roads and fire equipment, education on tree species and maintenance, coordination across all property owners (Town, DLCT, TTOR, private).
8.82% 6

3 Natural Resources Management: Prepare an Integrated Natural Resources Management Plan, including: protection of Open Space, protection of wetlands (bylaw/regulation), land management plan for development, biodiversity, invasive species, town-wide environmental bylaw/regulation review.
17.65% 12

4 Water Supply Protection: Assess and protect the water supply; address both water quality and quantity
19.12% 13

5 Water Supply Protection: DEP enforcement of Drinking Water withdrawals and restrictions.
7.35% 5

6 Water Supply Protection: Regulate herbicides, pesticides, and fertilizers and educate the public about their use
7.35% 5

7 Water Supply Protection: Regulate private wells
2.94% 2

8 Energy Resilience: Develop a long-term electric reliability program, including short-term tree management and long-term burial of power lines.
8.82% 6

9 Energy Resilience: Add solar, LEDs, and generators to public and private facilities.
8.82% 6

10 Emergency Preparedness and Response: Assure capacity to respond to severe events with training and tools for Town staff and education for residents
1.47% 1

11 Emergency Preparedness and Response: Develop an Emergency Preparedness Plan that includes identifying emergency shelters, transportation and communication for seniors (priority) and all residents, and education about procedures.

5.88% **4**

12 Emergency Preparedness and Response: Establish best evacuation routes for emergencies and conduct engineering study to raise
roads.

0.00% **0**

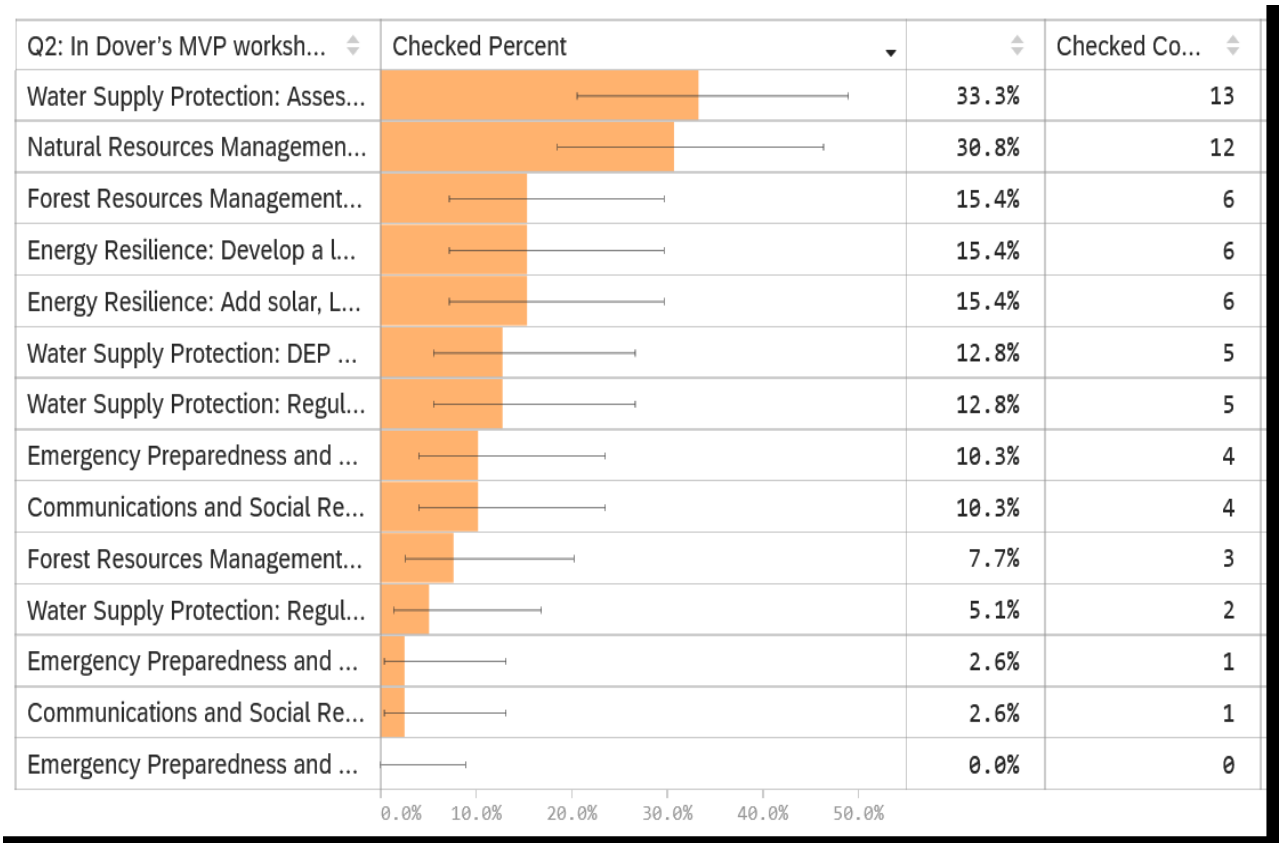
14 Communications and Social Resiliency: Develop a Communications Plan for resident communications, including reverse 911, emergencies, a website, Next Door, welcome package, and community engagement

5.88% **4**

15 Communications and Social Resiliency: Organize a Neighbor-to-Neighbor program with Police, Town, Council on Aging, and residents and establish a database of willing participants.

1.47% **1**

Graphic Summary of Responses to Prioritizing Climate Actions



Q3 - Would you like to recommend any additional strategies? Please describe them here.

1. As people remove trees either due to storm damage or fear of them falling on homes, recommend safer replacements to help conserve the ecosystem. Perhaps incentivize efforts to replace trees with a small tax deduction.

2. Those living alone - especially seniors - need assistance and check-ins during emergency times.

3. Smart development. We need to be proactive in protecting our resources and encouraging smart development that is mindful of the environment but does our part with both affordable and senior housing.

4. Require public water supplies to conform to current DEP standards

5. Dover has become the new Flint, Michigan. Why have a big recycling effort if you are forcing people to buy bottled water.

Q4 - Please share any further observations, concerns, or questions

1. Dover has high levels of copper in the water and when we moved in we noticed all of our basins turning blue and tested only to find copper levels that were well beyond healthful. We installed a filtration system but were shocked that the family who lived in this house for over 30 years were never informed of the potential danger.

2. Tree fire hazard and quality and quantity of well water are top priorities.

3. Traffic assessment. It's impact. Increased parking on Walpole St. to access TTOR properties is increasing and hazardous - esp at Cedar Hill.

4. We have to be creative with zoning to encourage open space that doesn't take land off the tax rolls. The more private taxable land that becomes conservation land - although nice in so many ways - reduces the tax base. Eventually we will have to decrease services if we don't have enough revenue. Zoning bylaw changes that encourage conservation on private lands could be helpful in sustaining the tax base and encouraging open space. To gather support for public land, we have to let citizens know it exist. I walk to the Springdale purchase but there are no signs and people don't know how to get there. There is resentment that we spent so much $$ on space that no one knows how to access...if we want to ever purchase more open space and can't just be for citizens "in the know."