



# Addressing Municipality Climate Preparedness

*In the Commonwealth of Massachusetts*

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**PRIMARY GOAL:** The concept of “climate preparedness” applies differently based on the natural location of the municipality. For example, to coastal municipalities climate preparedness may lean more heavily towards flood resilience and raising sea barriers while for more inland communities it may pertain more to being ready in case of power shortages and thunderstorms. Many other factors beyond location also contribute to the consideration of climate preparedness in a community, such as wealth and historic disasters. Beyond the differing conditions that each individual community faces, municipalities also experience varying levels of preparedness based on their specific involvement in federal programs, state programs and private agencies, as well as the design and state of their infrastructure. While a standard for preparedness that is applicable to all municipalities must be crafted according to the varying needs of each community, it is clear that all communities need adequate resources in order to prepare. The intent of this report is to help municipalities in Massachusetts by providing a review of some potential opportunities for climate preparedness and examples of the actions and considerations made by some fellow communities.

**INTRODUCTION:** The premise of our project began with the idea of researching how climate change has affected coastal communities and their preparations. The main motivation for researching our topic was to look at two specific effects of climate change: rising sea levels and increased chance and intensity of storms and floods. We eventually expanded our research premise to include riverine communities, and later began to do research on environmental policy and learned about the various opportunities and programs that a community take advantage of to improve their climate resilience. Despite the various phases that our paper underwent and changes in methodology, the ultimate objective remained the same: to increase awareness of the dangers of being unprepared for climate change and the opportunities to reduce them, especially in communities of lower income that may not have the resources to dedicate to the task. This paper includes information about the various programs, policies, and grants that are offered by the state and federal government for helping communities become more resilient. We hope that it provides insight concerning what municipalities considering climate preparedness efforts can be doing, useful information about what other communities have done that has worked for them, and how to approach the goal of resilience most efficiently.

**METHODOLOGY:** Our research began with looking into the Federal Emergency Management Agency (FEMA) and Massachusetts Environmental Management Agency (MEMA) programs that offer financial assistance for municipalities considering climate preparedness. We first focused on MEMA’s Municipal Vulnerability Preparedness (MVP) program. By using the Massachusetts’s EPA MVP community list, we were able to distinguish five coastal cities that

are not part of the MVP program. To identify our riverine communities, we used MassGIS's OLIVER mapping tool with the criteria of "FEMA National Flood Layer". We were able to identify cities that are at risk of flooding and identified six riverine communities not part of the MVP program. We also identified from the FEMA National Flood Insurance Program (NFIP) Community Status Book Report which communities were not in this program. Cross-referencing our lists we were able to determine an overlap of six communities not affiliated with either NFIP or MVP; this told us that communities in general may have different considerations for, or means of, being in one program or another, or both or none. From there we aimed to contact each individual community to better understand the limitations that they faced that may prohibit them from applying for federal and state aid. After having a better understanding of the challenges that communities faced, we shifted our focus to studying various other programs that could potentially help solve the issues like finance, manpower or expertise that communities may need. Then we compiled all of the programs together along with explanations of the benefits of being climate-ready and how to approach stormwater management on an efficient budget. We hope that communities will find the information about resources to be useful.

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### **Issues a Comprehensive Community Preparedness Effort Can Address**

As a result of the changing climate, globally we are expecting sea level rise, more turbulent weather, greater storm intensities, and flooding. While flooding may seem like simply a problem of coastal and riverine communities, due to the greater storm intensities flooding may occur inland where communities may not have the appropriate drainage systems to meet the changing conditions. Furthermore, another implication of climate change is more frequent lightning and high winds, as well as increased wildfire risks. A planning effort can help build up resilience concerning all increased threats, and speed recovery from damages that are not prevented. The following is a brief review of some aspects of planning that communities can usefully include in their preparedness efforts.

*Vulnerable populations.* A comprehensive community preparedness effort can identify vulnerable populations – the elderly, housebound or disabled, schools, daycare, and others who self-identify as needing help - and ensure that there are means for transporting them to safety in case of need. That includes having locations for shelter that are properly resourced and strategically located, based on foreknowledge of where the vulnerable are; the ability to communicate to and receive communications from those who may need help; the means of transporting them with needed equipment such as oxygen or wheelchairs, and a program of informing them ahead of time of how to make use of the systems set up to help them.

*Chemical storage and contaminated and waste sites.* A preparedness effort that identifies, ahead of time, locations where flooding, fire or high winds could cause dangerous releases, can include reaching out to owners and operators of such sites to institute measures to protect against the dispersion of hazardous substances. Environmental laws, in particular the federal Emergency

Planning and Community Right to Know Act and Chapter 21 of the Massachusetts General Laws have created repositories of information that can be used to identify sites of concern, and communities can use public health and fire authority to inspect and ask questions concerning readiness for climate change impacts.

*Power interruptions.* In the event of power loss, many homes switch on combustion generators that increase air pollution and noise. For the short duration of most power interruptions these may be bearable, but not if the emissions invade interior spaces, where they represent a serious danger of carbon monoxide poisoning. Communities can take action to prevent this harm with a pre-emergency education campaign that can include not just how to properly locate a generator but also to inform citizens of the availability of battery systems. These are currently more expensive than combustion-powered generators, but if used with intelligent monitors to reduce peak electrical charges (an option for entities that are assessed peak charges), and/or in conjunction with solar panels and/or electrical vehicles, such systems can pay for themselves over a reasonable time period. Communities can organize bulk purchasing of these items to lower their cost. Communities can also use the preparedness effort to begin consideration of using solar or other onsite power generation and battery storage in conjunction with microgrids, which would allow critical facilities, such as police, fire, shelters and hospitals to operate independently of the grid when it is down.

*Home resilience.* An effort to reduce the susceptibility of homes from wind, flood, fire and lightning can encompass education and recommendations for contractors to assess and improve roofing, drainage, landscaping, and install lightning rods. This is a low-or no-cost means of prompting action and can be accomplished by issuance of a Request for Information from service and product providers that includes pricing, relevant certifications, and other information that can help residents judge for themselves what services or products they might wish to use. Municipalities can go further and vet services and products for bulk purchasing by residents, and ask regional entities or the state to establish bulk purchasing programs or vetted contracts for municipalities. Homes that are better prepared for what might come may enjoy insurance reductions, (for example, if they address flood risk), and reduce the burden on the town's response efforts in case an emergency does happen.

### **Stormwater Management in Communities**

*Green Roofs.* Many facilities have demonstrated the benefits of a rooftop surface set aside where vegetation is grown in order to reduce rainfall runoff and increase building insulation. Green roofs not only provide a means of managing stormwater, but also help reduce atmospheric pollution and create aesthetic environments. Through evapotranspiration (the combined processes of evaporation from leaves and transpiration through plants) they decrease the urban heat island effect. The EPA, Environmental Protection Agency, has implemented green roofs at many of their branch offices, most notably Boston's EPA Regional Office.

*Rain Barrels and CISTERNs.* Rain barrels and CISTERNs generally function as a method of storing rainwater for later re-use. They are considered a “Best Management Practice” for managing stormwater, and thus help municipalities meet requirements under Clean Water Act municipal stormwater permits. .

*Permeable Pavements.* By creating porous asphalt rather than impermeable surfaces, rainwater is able to infiltrate into the surface and improve soil health and replenish groundwater, which will help sustain other bodies of water such as lakes or ponds.

*Bioretention Areas.* Areas of sloped, shallow depressions in the land where runoff is allowed to pond (congregate) and filter through the soil and the vegetation. Small bioretention areas are referred to as rain gardens. You can construct rain gardens with native grasses and flowers and increase the biodiversity in an environment, attract pollinators, and enhance natural habitat and aesthetics.

*Constructed Wetlands/Underground Reservoir System (for larger towns).* An area of land created to mimic real wetlands where stormwater is aggregated and either ponds on the surface or saturates below the surface. Chicago provides an example of an Underground Reservoir System: the city has constructed a huge underground labyrinth of pipes dedicated to regulating stormwater flow and the pipes lead to a reservoir to store stormwater, thus reducing flooding.

## **List of Available Community Resources**

### **Massachusetts Emergency Management Agency (MEMA)’s Municipal Vulnerability Preparedness (MVP) Program**

A program that provides support for communities planning and facing climate-related issues, and “awards communities with funding to complete vulnerability assessments and develop action-oriented resiliency plans”.<sup>1</sup>

#### *MVP Planning Grant*

Offers “funding to municipalities that wish to assess their vulnerability to and prepare for climate change impacts, build community resilience, and receive [MVP designation from the Executive Office of Energy and Environmental Affairs (EEA)]”.<sup>2</sup> The grant can be used towards creating/updating an official Hazard Mitigation Plan (HMP) that identifies areas of vulnerability and lessens the impact of disasters), which is required for entrance into the National Flood Insurance Program (NFIP, see below) and is a set of good practices for a prepared community.

#### *MVP Action Grant*

Offers “financial resources to municipalities that are seeking to advance priority climate adaptation actions to address climate change impacts resulting from extreme weather, sea

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<sup>1</sup> “MVP Program Information.” *Mass.gov*, <https://www.mass.gov/service-details/mvp-program-information>.

<sup>2</sup> “MVP Planning Grant.” *Mass.gov*, <https://www.mass.gov/service-details/mvp-planning-grant>.

level rise, inland and coastal flooding, severe heat, and other climate impact”.<sup>3</sup> The grant will cover 75% of the total project cost; the remaining 25% can be met in cash or in-kind contributions. Grant applications are currently closed and will reopen Spring 2020.

#### *MVP Certified Providers*

MEMA has trained vendors to be MVP certified in providing technical assistance for projects and planning. Many regional commissions, as well as other incorporations, are certified and can be contacted accordingly through the list on their information page.<sup>4</sup>

### **Federal Emergency Management Agency (FEMA)**

#### *National Flood Insurance Program (NFIP)*

This program aims to reduce “the socio-economic impact of disasters by promoting the purchase and retention of general risk insurance, but also of flood insurance, specifically”.<sup>5</sup> It does this by providing insurance to property owners and encouraging adoption of regulations. FEMA Region 1 representatives continue to reach out to communities not in the program.

#### *Flood Mitigation Assistance (FMA) Grant Program*

As a complement to the NFIP, the FMA program aims to provide funding “for projects and planning that reduces or eliminates long-term risk of flood damage to structures insured under the NFIP”. It also is available for management costs. On a point-based system, subapplication projects are ranked for priority to be selected by FEMA on competitive basis. Funding is available for up to 75% of project costs.<sup>6</sup>

#### *Community Rating System (CRS)*

A “voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements”.<sup>7</sup> If a community believes they are doing above and beyond in establishing management regulations, they may document all the areas in which they are performing at higher standards and they are awarded points. The point range designates a class rating from 10 (meets NFIP requirements) to 1 (most exceeds requirements). The lower the class, the higher percentage reduction on flood insurance premium rates. As of 05/01/19, current Massachusetts CRS eligible communities are in classes ranging from 9-5, receiving a range of 5-15% reductions for designated Special Flood Hazard Areas (SFHAs).<sup>8</sup> FEMA releases “What if” reports pertaining to each community that highlights the possible discounts a community can be rewarded with depending on which class they might be

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<sup>3</sup> “MVP Action Grant.” *Mass.gov*, <https://www.mass.gov/service-details/mvp-action-grant>.

<sup>4</sup> “Learn More about Becoming an MVP Certified Provider.” *Mass.gov*, <https://www.mass.gov/service-details/learn-more-about-becoming-an-mvp-certified-provider>.

<sup>5</sup> “The National Flood Insurance Program.” *FEMA*, <https://www.fema.gov/national-flood-insurance-program>.

<sup>6</sup> “FY 2019 Flood Mitigation Assistance (FMA) Grant Program.” *FEMA*, <https://www.fema.gov/media-library-data/1566838228911-f228284e94d43af0d6b16214dcf07f63/FMAFactSheetFY19Aug2019.pdf>.

<sup>7</sup> “National Flood Insurance Program Community Rating System.” *FEMA*, <https://www.fema.gov/national-flood-insurance-program-community-rating-system>.

<sup>8</sup> “Appendix F: Community Rating System.” *April 2019 NFIP Flood Insurance Manual*, [https://www.fema.gov/media-library-data/1559830308363-e690ed2aea6606fb81826904e4a7bd7f/app-f\\_crs\\_508\\_apr2019.pdf](https://www.fema.gov/media-library-data/1559830308363-e690ed2aea6606fb81826904e4a7bd7f/app-f_crs_508_apr2019.pdf).

placed in; these reports can be received by contacting FEMA Region 1. Class ratings can also be used to apply towards points in the FMA Grant Program.

#### *User Groups*

Informal organizations of people sharing a common interest in the CRS program and/or are affiliated with it. According to Joe Rossi, head of the CRS program in the town of Marshfield and director at the Massachusetts Coastal Coalition (MCC), CRS User Groups have goals to “get communities, in CRS or not, together to receive training on floodplain management related issues,” to “get communities not in CRS interested to join,” and to “get best practices from other CRS communities to be communicated to communities that are working on CRS so that we can all learn and grow”. They are inter-community support groups that work towards a more resilient Massachusetts. Currently the MCC is working on putting together CRS User Groups for both the North Shore and the South Shore. There is a special focus on involving more North Shore communities in the CRS program since there is significantly less membership from this region. A first series of User Groups will be meeting March 11th, with training on Substantial Damage/Substantial Improvement.

#### *Pre-Disaster Mitigation (PDM) Grant Program*

To assist “efforts to implement a sustained pre-disaster natural hazard mitigation program”, FEMA puts aside \$250 million (for FY 2019) to be distributed to applicants. Project applications are evaluated on a competitive basis and funding can be used towards various initiatives such as mitigation projects that reduce risk from natural hazards, mitigation plan updates, and information dissemination activities.<sup>9</sup>

#### *Hazard Mitigation Grant Program (HMGP)*

The goal of the HMGP is to “help communities implement hazard mitigation measures following a Presidential Major Disaster Declaration” by providing funding that can be used towards measures that reduce risk of loss of life and property in the case of a natural disaster. Individuals, businesses and private nonprofits via local governments (individuals not directly, but sponsored through an appropriate subapplicant, and the grant can help improve resiliency against repetitive damages.<sup>10</sup>

## **Considerations When Adopting a Climate Preparedness Strategy**

### **Reasons why a community should have a policy**

*Pre-disaster preparation is a good practice.* With the changing climate situation, it is becoming more and more urgent for communities to identify their risks and have plans in place for unexpected future occurrences.

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<sup>9</sup> “FY 2019 Pre-Disaster Mitigation (PDM) Grant Program.” FEMA, <https://www.fema.gov/media-library-data/1566838030892-2ce88be44262b32999aecba3e383aa05/PDMFactSheetFY19Aug2019.pdf>.

<sup>10</sup> “Hazard Mitigation Grant Program.” FEMA, <https://www.fema.gov/hazard-mitigation-grant-program>.

*Being in a policy pre-disaster can result in more payout.* If a community has identified their risk and vulnerability and adopted a policy before a disaster strikes, programs are able to help more efficiently and with greater effectiveness. For example, the average claim for NFIP policyholders in Texas after Hurricane Harvey was \$120 thousand in that year; for non-policy holders, it was only \$6-10 thousand. According to NFIP Region 1 director Joy Duperrault, it is critical to have a policy, especially in at-risk areas before a disaster, because in order to rely on federal funding after a disaster there is first need for a presidential declaration of the disaster, which may still only result in less payout than can be obtained through prior membership in programs like NFIP.

*Participation in a Community Rating System can reduce insurance costs for residents.* Rising insurance costs are a significant problem for many residents, and municipalities have an opportunity to help. The better score the community receives, the more the premium reductions homeowners with NFIP insurance can enjoy.<sup>11</sup>

### **Reasons why a community might opt against a policy**

*Low-risk location.* A community that has identified a low risk of flooding and other hazards, such as non-riverine, non-coastal, and/or high elevation communities, might feel less urgent about going through the process of entering a program, especially weighing the difficulties of going forth (see Obstacles below).

*Already feel prepared.* The mandated Massachusetts State Building Code's regulations are already up to par with the building regulations required by the NFIP.

*Limitations of programs.* The NFIP and MVP program grants offer limited funding. For example, homeowners with homes valued at numbers higher than the coverage offered by programs like the NFIP (building coverage only up to \$250,000) may opt to use private flood insurance with more coverage instead. For example, the coastal town of Chilmark on Martha's Vineyard has opted out of the NFIP, possibly for this reason.

### **Obstacles for adopting policies**

*Bandwidth.* Many communities struggle with delegating available staff to complete time-consuming tasks necessary of applications and documentations. Towns are on a tight budget for time and often more urgent matters are prioritized over applications that can take over a year to complete.

Applying to be rated by the CRS, for example, requires an extensive documentation process of mapping new developments of higher standards for credit; without an effective and informed coordinator this process can be laborious and slow. However, Joy Duperrault, director of FEMA's Flood Hazard Management Program (FHMP) overseeing Region 1, comments that all Massachusetts communities might easily be eligible for at least a 9 on the CRS if they were to all go through with the process.

*Outdated reference material.* The Flood Insurance Rate Maps (FIRMs) used for determining NFIP finances are in many municipalities based on data from the 1970's-1980's (see

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<sup>11</sup> FEMA Community Rating System Fact Sheet: [https://www.fema.gov/media-library-data/1507029324530-082938e6607d4d9eba4004890dbad39c/NFIP\\_CRS\\_Fact\\_Sheet\\_2017\\_508OK.pdf](https://www.fema.gov/media-library-data/1507029324530-082938e6607d4d9eba4004890dbad39c/NFIP_CRS_Fact_Sheet_2017_508OK.pdf)

FEMA Community Status Book Report). This may mean a community lacks recognition of the actual hazard it faces. FEMA is in the process of updating them but the extent of the outdated material suggests this may be a long term endeavour.

### **Resources in Action**

Out of the 351 total municipalities in Massachusetts:

341 are in the NFIP.<sup>12</sup>

21 of these have CRS status.<sup>8</sup>

252 are affiliated with the MVP (as of September 2019, but inclusive of Lowell).<sup>13</sup>

158 of these are designated MVP communities.

93 of these are known to be currently applying for the MVP planning grant.

There is an overlap of 6 communities not known to be affiliated with either the NFIP or the MVP; all are in areas not considered urgently at risk of flooding, but have hazards identified according to FEMA Flood Hazard Mapping (except Mount Washington, which has not yet been mapped for hazards).

The table below lists all of the currently identified communities that are not in both the NFIP and MVP program. Status for MVP participation is as of 09/11/19; NFIP membership is as of 09/24/19; Westfield status is as of 11/04/19 and Lowell status is as of 11/14/19.

Massachusetts Municipality Affiliation with NFIP and MVP Program

| <b>Community of Interest</b> | <b>Type/ Location</b> | <b>In One Program?</b> | <b>In None?</b> | <b>Notes</b>                 |
|------------------------------|-----------------------|------------------------|-----------------|------------------------------|
| Berkley                      | Coastal               | NFIP                   |                 |                              |
| Acushnet                     | Coastal               | NFIP                   |                 |                              |
| Pembroke                     | Coastal               | NFIP                   |                 |                              |
| Hanover                      | Coastal               | NFIP                   |                 |                              |
| Rowley                       | Coastal               | NFIP                   |                 |                              |
| Westfield*                   | Riverine              | NFIP                   |                 | Considering applying for MVP |
| Townsend                     | Riverine              | NFIP                   |                 |                              |
| West Bridgewater             | Riverine              | NFIP                   |                 |                              |
| Lowell                       | Riverine              | NFIP                   |                 | Currently applying for MVP   |

<sup>12</sup> “Community Status Book Report.” *FEMA*, 12 Dec. 2019, <https://www.fema.gov/cis/MA.html>.

<sup>13</sup> “Municipal Designation Status.” *Mass.gov*, 11 Sept. 2019, <https://www.mass.gov/files/documents/2019/09/12/municipal-designation-status-september-2019.pdf>.



|                  |          |      |   |   |
|------------------|----------|------|---|---|
| Boylston         | Riverine | NFIP |   |   |
| Raynham          | Riverine | NFIP |   |   |
| Chilmark         | Coastal  | MVP  |   |   |
| Pelham           | Highland | MVP  |   |   |
| Plainfield       | Highland | MVP  |   |   |
| Windsor          | Highland |      | ✓ | Currently completing MVP planning grant |
| Savoy            | Highland |      | ✓ |   |
| Rowe             | Highland |      | ✓ |   |
| Peru             | Highland |      | ✓ |   |
| Montgomery       | Highland |      | ✓ |   |
| Florida          | Highland |      | ✓ |   |
| Mount Washington | Highland |      | ✓ | No Community ID in FEMA records         |

Lowell, an inland city along the Merrimack River at a higher risk for flood hazard than other non-riverine communities, is an example of a community already taking part in the NFIP and therefore meeting their set standard of regulations. They are in the process of also applying for the MVP Planning Grant with the primary goal of using the grant towards updating their expiring Hazard Mitigation Plan, the 2015 Regional Northern Middlesex Plan. Katherine Moses, the Energy Manager at Lowell and part of the team working on the MVP application process, sees the application as pretty comparable to other grant applications. Lowell is looking forward to submitting it, and to implementing the process once part of the grant program to better understand how to utilize MEMA’s resources. As she describes, one does not know what one doesn’t know; she anticipates building a deeper relationship with MEMA for better understanding specifics of the grant uses post-acceptance.

In Barnstable County, a FEMA grant was received and used to hire hazard mitigation expert and floodplain specialist Shannon Hulst as a CRS Coordinator, who successfully oversaw the application process for multiple Cape Cod communities. Of the current 21 CRS communities, 9 are now from Barnstable County. Hiring a regional coordinator can be an effective option for other Massachusetts areas as well; this was reportedly considered in northern Massachusetts around the Essex community region. Westfield, along the Westfield River that flows into the Connecticut, is in the NFIP and not in the MVP. According to City Engineer Mark Cressotti, the city is seriously considering the MVP application for this year. They have identified their

material needs for infrastructure projects, especially severe flood-related needs; he highlights the city dams as a concern, which are currently being evaluated. He notes that while FEMA is doing a hydraulics study on their flood levee capacity, it is unclear whether they are considering hydrograph projections for increased flooding. It is the hope that through future involvement in the MVP, more attention may be paid to the locally-owned dams not under federal jurisdiction.

## **Conclusion**

Consolidating our research on the different vulnerabilities a community can face in the context of climate change, ways to improve their level of preparedness, state and federal resources available, and examples of how communities have acted, we have identified a few basic recommendations for a well-prepared community. A community that has reached a high level of preparedness can be defined as one that:

- has an updated Hazard Mitigation Plan (meaning, they have identified their risks and vulnerabilities associated with natural hazards),
- has recent map records of their potential hazards,
- is taking advantage of MVP grants, is enrolled in some form of flood insurance program (NFIP or private),
- is considering or applying for fringe benefits such as the FEMA grants and participation in the CRS (if in NFIP).

For communities not in the NFIP, they should identify whether it makes sense for them and if not, have an alternative method for controlling insurance costs and reducing potential losses. We recommend that communities who are interested in expanding their preparedness toolkit to include any one of these resources look into methods of integration—for instance, seeing how the MVP Planning Grant can contribute to the creation or improvement of their Hazard Mitigation Plan, or seeing how MVP-approved vendors can help implement some of the structures that can be used as documentation for a CRS appeal.

It appears that Massachusetts overall is in decent shape regarding preparedness. The majority of communities are taking advantage of the listed state and federal programs, and the few that are not appear to be in low-risk regions. While there does not seem to be any current major call for concern about these communities, it is our belief that with climate change projections and the resulting uncertainty of natural disasters that may occur in the near future—as well as the certainty that these will increase steadily—it is prudent to take steps now to become as well-prepared as possible. The goal should be climate preparedness not only in the present, but for future changes as well.

## **Further Steps**

The difficulties of utilizing available resources still need to be addressed; our impression is that the bandwidth issue is the most major obstacle against adopting policies, and a solution is needed. Future research to be done can involve looking into this solution and into how it can be implemented, especially in communities where this may be the most critical concern. In that

same vein, it is important to continue to contact communities we have not been able to reach, mainly communities not involved in the programs listed, to better understand their reasonings, which may help other communities going through similar considerations. For communities interested in joining the CRS, more can be understood by contacting regional coordinators to learn about the process. We can also benefit from learning more about CRS user groups, what their benefits are, and how communities can get involved in them. We can also look further into the ways for integrating programs, especially the MVP program and the NFIP. Finally, if there are additional programs we have missed, it would be useful to identify and research them in an effort to make a more comprehensive review of resources available for communities.

## **Publicly Available Tools and Information**

### [Massachusetts Climate Change Projections](#)

#### [EPA's Regional Resilience Toolkit](#)

- Offers a tested five-step guide for building resilience against large-scale disasters

#### [EPA's Flood Resilience Checklist](#)

- Assesses how prepared an individual community might be against possible flooding

#### [EPA's Resilience and Adaptation in New England \(RAINE\) Database](#)

- View Hazard Mitigation Plans for New England communities

#### [MVP Approved Vendors](#)

#### [Massachusetts Sea Level Rise and Coastal Flooding Viewer](#)

- Map viewer that assesses sea level rise, FEMA coastal flood zones, hurricane surge

#### [FEMA National Flood Hazard Layer: MassGIS's OLIVER Mapping Tool](#)

- Examine outline of areas susceptible to hazardous flooding

#### [FEMA Flood Map Service Center](#)

- Identify flood hazard risk by location

#### [Code of Federal Regulations, Title 44 Part 60.3](#)

- NFIP requirements for flood-prone areas

#### [NFIP Community Rating System \(CRS\) Coordinator's Manual](#)

- A reference guide for building resilience in the context of CRS and understanding the system

#### [Answers to Questions About the NFIP](#)

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