

Massachusetts State Hazard Mitigation and Climate Adaptation Plan

Chapter 9: Planning Process

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Prepared for:



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Acronyms and Abbreviations

EOEEA	Executive Office of Energy and Environmental Affairs
FEMA	Federal Emergency Management Agency
MEMA	Massachusetts Emergency Management Agency
PMT	Project Management Team
SHMCAP	State Hazard Mitigation and Climate Adaptation Plan



9. Planning Process

This chapter provides a summary of the process used to develop this State Hazard Mitigation and Climate Adaptation Plan (SHMCAP), including how it was prepared and who was involved. It also describes the stakeholder outreach and engagement strategy that was developed and implemented for the SHMCAP, and provides an overview of the state agency vulnerability assessment process that was integrated into the plan. Note that state agency program integration is more fully addressed in *Chapter 6: State Capability and Adaptive Capacity Analysis*.

9.1 Overview

The Massachusetts Emergency Management Agency (MEMA) of the Executive Office of Public Safety and Security, in partnership with the Executive Office of Energy and Environmental Affairs (EOEEA), issued a Request for Response in December 2016 to secure a vendor to support development of an integrated SHMCAP. A consulting team led by AECOM won the competitive procurement and was hired by the Commonwealth in March 2017. Although there have been efforts at the municipal level to embed climate adaptation considerations into local hazard mitigation plans, the Commonwealth is the first state to officially integrate these two types of plans at a statewide level. This new planning framework will allow the Commonwealth to address climate change and natural hazards together in a comprehensive way, while charting a course that municipalities and other states can follow.

The AECOM consulting team was tasked to work closely with MEMA and EOEEA in preparation of a plan that is in full compliance with current Federal Emergency Management Agency (FEMA) planning requirements, per the following rules, regulations, and guidance:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended by the Disaster Mitigation Act of 2000
- Code of Federal Regulations – Title 44, Part 201 (§201.4 Standard State Mitigation Plans)
- FEMA State Mitigation Plan Review Guide (FP 302-094-2, March 2016)

This plan was also developed to be compliant with Executive Order 569 *Establishing an Integrated Climate Change Strategy for the Commonwealth*, which was issued by Governor Charlie Baker in September 2016. One of the Executive Order 569 requirements is to develop and publish a statewide Climate Adaptation Plan, which this SHMCAP satisfies.

Furthermore, the SHMCAP was prepared to satisfy applicable Emergency Management Accreditation Program standards, including *Standard 4.1 Hazard Identification, Risk Assessment, and Consequence Analysis* and *Standard 4.2 Hazard Mitigation*.

The Commonwealth's planning process included the completion of seven key tasks over the course of approximately 18 months (March 2017 to September 2018), as illustrated on Figure 9-1. A detailed project schedule is included in Appendix E. The completion of each key task resulted in critical outcomes and products that collectively were incorporated into the SHMCAP. Several of these tasks are summarized and included as separate chapters of the plan, each of which is introduced and further described in *Chapter 1: Introduction and Assurances*.

Figure 9-1: State Hazard Mitigation and Climate Adaptation Planning Process



On March 30, 2017, the Commonwealth held a SHMCAP kickoff meeting with its consulting team to discuss the goals and objectives of the project; review roles and responsibilities of the Project Management Team (PMT) and other key stakeholders; and review the scope of work and overall project approach and schedule. Input received from this kickoff meeting was incorporated into the Final Project Work Plan, which served as a guide for the project and the overall planning process.



One of the earliest tasks completed in support of the planning process was the creation of a Project Management Team (PMT) to help guide and inform the plan throughout its development. A SHMCAP kickoff meeting with the PMT and consulting team was held on March 30, 2017.

9.2 Project Management Team

One of the earliest tasks completed in support of the planning process was the creation of a PMT to help guide and inform the plan throughout its development. The PMT was co-chaired by the MEMA State Hazard Mitigation Officer and Massachusetts EOEEA Assistant Secretary of Climate Change, and it included representatives from numerous state agencies to allow representation of a variety of State interests and perspectives on hazard mitigation and climate adaptation. Throughout the planning process, PMT members were asked to provide their input and expertise, including any information, ideas, or resources that would contribute to the quality and effectiveness of the plan. A complete listing of all SHMCAP members is provided in Table 9-1.

In addition to helping shape and guide the development of the plan, the PMT members were invited and asked to provide support to the planning process through the following key roles and responsibilities:

- Attend multiple PMT meetings (in-person meetings, as well as conference calls).
- Support stakeholder outreach and engagement efforts.
- Identify opportunities to increase awareness and integrate the SHMCAP into other State planning efforts.
- Provide supporting data and information.
- Assist in the evaluation and prioritization of hazard mitigation and climate adaptation actions.
- Review and comment on draft plan deliverables.
- Endorse final draft plan prior to submission to FEMA.

Table 9-1: Massachusetts State Hazard Mitigation and Climate Adaptation Project Management Team (PMT)

Name	Affiliation
Jeremy Caron	Division of Capital Asset Management and Maintenance
Brian Domoretzky	Executive Office of Public Safety and Security
Beth Dubrawski	Massachusetts Emergency Management Agency
Joy Duperault	Department of Conservation and Recreation (Flood Hazard Management)
Kurt Gaertner	Executive Office of Energy and Environmental Affairs
Marybeth Groff	Massachusetts Emergency Management Agency
Julia Knisel	Office of Coastal Zone Management
Will Lauwers	Department of Energy Resources
Thad Leugemors	Massachusetts Emergency Management Agency
Margot Mansfield	Office of Coastal Zone Management
Sally Miller	Division of Capital Asset Management and Maintenance
Steve Miller	Massachusetts Department of Transportation
Shelly O'Toole	Massachusetts Emergency Management Agency
Kristen Patneau	Department of Energy Resources
Marybeth Riley-Gilbert	Massachusetts Bay Transportation Authority
Margaret Round	Department of Public Health
Shannon Sullivan	Executive Office of Public Safety and Security
Katie Theoharides (Co-Chair)	Executive Office of Energy and Environmental Affairs
Sarah White (Co-Chair)	Massachusetts Emergency Management Agency

A secure SHMCAP SharePoint site was established for the project. All PMT members were provided access to this site, which was used as a clearinghouse to facilitate data sharing and coordinate review of key draft project deliverables. Over the course of the project, biweekly project management conference calls were conducted between the PMT Co-Chairs and the consulting team to track the project schedule and deliverables, and identify PMT support needs, and weekly project status reports were submitted to the PMT Co-Chairs to document project progress and identify information needs.

9.3 Secretariat Climate Change Coordinators

In addition to the PMT, Secretariat “Climate Change Coordinators” were established early in the planning process, in response to Executive Order 569, to further facilitate strong inter-agency coordination and contributions to the SHMCAP. A Climate Change Coordinator was identified for each Executive Office that oversees the programs and services offered by the state agencies. Table 9-2 lists the Executive Offices and the respective Climate Change Coordinators.

Table 9-2: Secretariat Climate Change Coordinators

Executive Office	Climate Change Coordinator
Executive Office of Administration and Finance	Jennifer Sullivan
Executive Office of Education	B. Kim
Executive Office of Energy and Environmental Affairs	Katie Theoharides
Executive Office of Health and Human Services	Michael Kelleher and Robert Jones
Executive Office of Housing and Economic Development	Genevieve McLaughlin
Executive Office of Labor and Workforce Development	William McKinney
Executive Office of Public Safety and Security	Brian Domoretzky and Shannon Sullivan
Massachusetts Department of Transportation	Katherine Fichter
Executive Office of Technology Services and Security	Laurie Pessah

The Climate Change Coordinators served as the primary conduits for information exchange with state agencies during the project, and aided in coordination of draft deliverable reviews and executive-level approvals for final plan content. They were also tasked with signing off on the state agency vulnerability assessments conducted as part of the SHMCAP (see Section 9.5 for additional information).

9.4 Stakeholder Outreach and Engagement

The SHMCAP planning process included a robust stakeholder outreach and engagement strategy that was designed to generate project interest and input from a variety of stakeholders, including and beyond State government (general public, local and regional government, nonprofit, private sector, academia, institutional, and others). These stakeholders represented various sectors across the Commonwealth, including emergency management, economic development, land use and development, housing, health and social services, infrastructure and utilities, and natural and cultural resources.

The stakeholder outreach and engagement strategy was designed to solicit meaningful input and feedback during the plan development process; and ultimately, a broad and diverse audience was involved in the creation of the Commonwealth's first SHMCAP. A list of organizations, agencies, and other stakeholders involved and engaged in the planning process is provided in Appendix E. This strategy included specific opportunities and methods for stakeholders to participate at various points in the planning process. Table 9-3 summarizes several meetings, trainings, and workshops that were conducted as part of the stakeholder outreach and engagement strategy; and Figure 9-2 identifies the locations of these events across the Commonwealth. Appendix E provides additional supporting documentation, including a sample

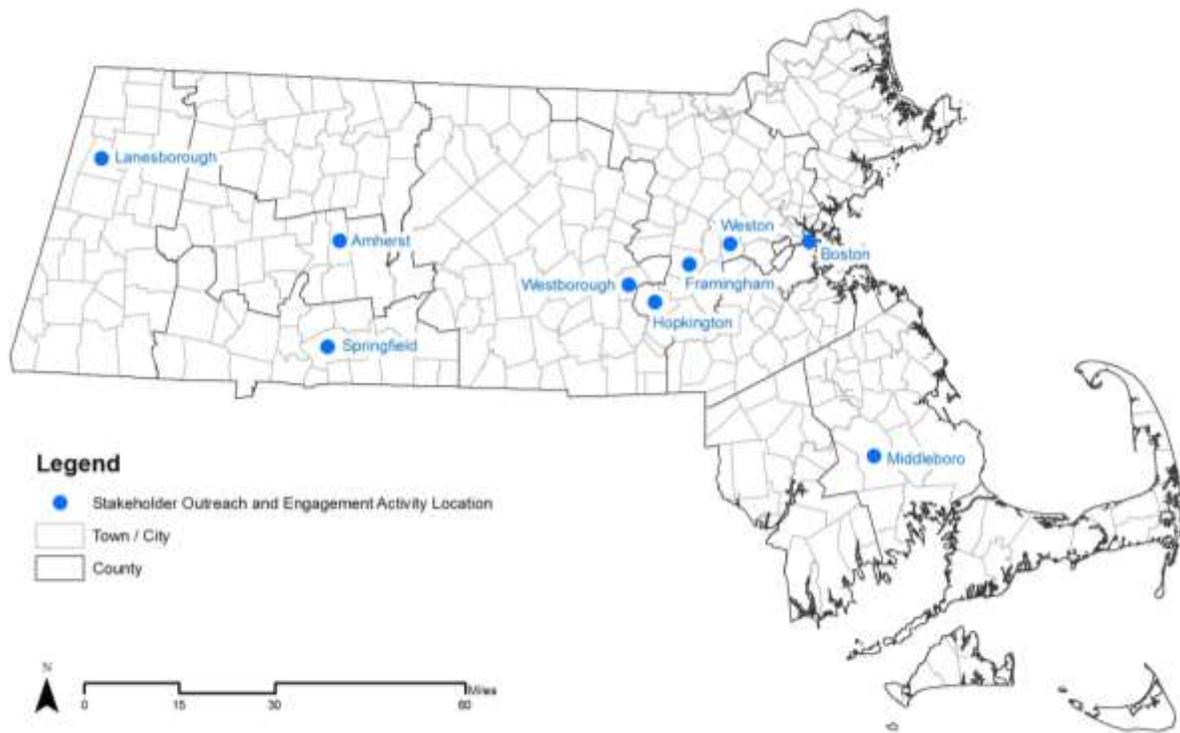
presentation and a detailed project schedule. The Commonwealth has retained supporting documentation of meeting sign-in sheets, notes, and other materials as a permanent record.

Table 9-3: Summary of Stakeholder Engagement Events

Activity	Date	Location	Description	Estimated Attendance
Stakeholder Workshop Series #1: SHMCAP Kickoff	August 2, 2017 August 25, 2017	Westborough, MA Amherst, MA	Engaged stakeholders from several disciplines to provide an overview of the plan and to describe the planning process. Included plenary sessions, as well as small group engagement sessions where facilitators encouraged participants to identify issues and objectives that should be considered in the planning process.	158
State Agency Vulnerability Assessment Training	October 25, 2017	Framingham, MA	Provided training to state agencies on completion of the vulnerability assessment survey that was prepared as part of the SHMCAP.	55
Earthquake Stakeholder Meeting	November 15, 2017	Weston, MA	Provided an overview of the SHMCAP earthquake risk assessment and discussion of possible mitigation actions.	11
Massachusetts Ecosystem Climate Adaptation Network (MassECAN) Conference	November 30, 2017	Westborough, MA	The MassECAN network was launched at this conference. Attendees participated in a module that provided natural resources feedback to be incorporated into the SHMCAP plan.	More than 100
Stakeholder Workshop Series #2: Summary of Draft Risk Assessment and Hazard Mitigation and Climate Adaptation Goal Development	January 9-11, 2018	Springfield, MA Framingham, MA Middleboro, MA	Presented results of the Draft Risk Assessment and solicited input for development of goal statements for the SHMCAP Hazard Mitigation and Climate Adaptation Strategy.	112
State Agency Action and Strategy Development Workshop	April 5, 2018	Boston, MA	Presented a summary of draft results from the State Agency Vulnerability Assessments and State Capacity and Adaptive Capacity Analysis. Also presented the draft goal statements and solicited input on state agency actions to include in the SHMCAP.	67
Stakeholder Workshop Series #3: Hazard Mitigation and Climate Adaptation Action Development	April 9, 2018 April 12-13, 2018	Boston, MA Hopkinton, MA Lanesborough, MA	Presented the draft goal statements and solicited input on state agency actions to include in the SHMCAP.	125

Activity	Date	Location	Description	Estimated Attendance
State Agency Vulnerability Assessment Training	May 15, 2018	Boston, MA	Provided training to state agencies on completion of the vulnerability assessment survey that was prepared as part of the SHMCAP.	15
In-Person State Agency Vulnerability Assessment Support	May 16-17, 2018 May 22, 2018	Boston, MA	Offered in-person consultations with the SHMCAP consulting team to state agencies to answer questions and assist in completion of the online State Agency Vulnerability Assessment Survey and resulting report.	9

Figure 9-2: Geographic Locations of Key Stakeholder Outreach and Engagement Events



In addition to capturing input and feedback on the SHMCAP, the Commonwealth’s stakeholder outreach and engagement strategy also sought to increase general awareness of the plan development process, and integrate it with other State planning efforts. This was done by sharing regular updates on the process with the Governor’s Office, state agencies, and state legislators, in addition to providing informative reports or presentations as opportunities were identified by the PMT. Table 9-4 summarizes events where formal SHMCAP presentations were made at a variety of other meetings and conferences across the state.

Table 9-4: Summary of State Hazard Mitigation and Climate Adaptation Plan Presentations

Event	Date	Estimated Attendance
National Association for Industrial and Office Parks (NAIOP) Climate Change Panel	February 2017	More than 150
Endicott College Sustainability Conference	March 17, 2017	50
Cape Cod Climate Change Commission Meeting	March 22, 2017	10
Society of Civil Engineers Spring Meeting	March 25, 2017	More than 200
Woods Hole Research Institute Meeting	May 8, 2017	10
Northeast Climate Change Science Center Regional Meeting	May 16, 2017	More than 200
Massachusetts Silver Jackets Meeting	May 17, 2017	23
EOEEA Environmental Stakeholders Meeting	June 21, 2017	15
Using Green Infrastructure to Improve Drought Resilience Workshop	June 26, 2017	50
Climate Resiliency and Utilities Meeting (National Grid)	August 3, 2017	NA
Climate Week / Municipal Vulnerability Preparedness Announcement with Governor Baker	September 12, 2017	More than 150
EOEEA Environmental Stakeholders Meeting	October 12, 2017	NA
Massachusetts All Hazards Emergency Preparedness Conference	November 1, 2017	More than 100
Great Marsh Symposium	November 9, 2017	More than 150
Climate Change Council / City of Cambridge	November 28, 2017	NA
Environmental Business Council / University of Massachusetts Climate Change Adaptation Forum	January 17, 2018	More than 200
Massachusetts Bays Management Committee	January 24, 2018	25
Plymouth Southern Pine Barrens Meeting	March 19, 2018	25
Central Massachusetts Regional Planning Commission Spring Legislative Affairs Breakfast	May 18, 2018	NA
Martha’s Vineyard Coastal Conference	June 6, 2018	150
Mystic Watershed Steering Committee Meeting	June 14, 2018	30

The following sections provide detail on two key elements of the SHMCAP stakeholder outreach and engagement strategy: the project website, and the stakeholder workshop series.

9.4.1 Project Website

At the beginning of the planning process, the PMT worked closely with the consulting team to develop a project website, which was launched in May 2017 as <https://resilientma.com/>. The main objectives of the website included:

- Serve as the online home for all public-facing project-related materials.
- Communicate key project updates and important workshop dates to stakeholders.
- Broadcast draft deliverables available for public review and comment.
- Direct stakeholders to online surveys and worksheets developed to solicit input for the SHMCAP.
- Provide resources for state agencies completing a vulnerability assessment as part of the project.

The project website was publicized at all stakeholder events, and the web address was included in presentations and handout materials to enable easy access. It was well-received and frequently used by stakeholders to keep informed about the SHMCAP project progress. As of August 2018, the project website had received approximately 13,900 views from more than 3,900 visitors.

The project website will be closed at the end of the SHMCAP project in September 2018, and the final plan materials will be hosted on the Commonwealth's resilient MA Climate Change Clearinghouse (<http://www.resilientma.org/>), which serves as a gateway to data and information relevant to climate change adaptation and mitigation and natural hazard



The SHMCAP project website served as the main online presence for the project, and was an integral part of the stakeholder outreach and engagement program. As of August 2018, the project website received approximately **13,900 views** from more than **3,900 visitors**.



The Final SHMCAP and future updates of the plan will be hosted on the Commonwealth's resilient MA Climate Change Clearinghouse, which serves as a gateway to data and information relevant to climate change adaptation and mitigation across the state.

mitigation across the state. The resilient MA website will be the home for the online version of the 2018 SHMCAP, as well as future updates to the plan.

9.4.2 Stakeholder Workshop Series

A key component of the 2018 SHMCAP stakeholder outreach and engagement program was the development and implementation of three stakeholder workshop series to inform stakeholders about the project and to solicit input at key stages of the planning process to inform the plan development. The workshops were designed and facilitated by the PMT and the consulting team, and were conducted at multiple locations across the Commonwealth to engage stakeholders from a variety of geographic areas and interest groups (see Table 9-3 and Figure 9-2). Descriptions of the three workshop series are provided in the following sections.

Stakeholder Workshop Series #1: SHMCAP Kickoff

The first stakeholder workshop series was conducted in August 2017 in Westborough, Massachusetts, and Amherst, Massachusetts, and served as the official public kickoff for the plan. This workshop series was organized to accomplish two main objectives over the course of a 3-hour workshop: (1) introduce stakeholders to the SHMCAP project and related efforts, and (2) obtain early stakeholder feedback on important issues to address in the plan. Matthew Beaton, EOEEA Secretary, provided introductory remarks, and the following topics were presented:

- Executive Order 569 Overview and Status Update (Katie Theoharides, EOEEA)
- Overview of the SHMCAP (Sarah White, MEMA)
- Climate Change Projections for Massachusetts (Ambarish Karmalkar and Richard Palmer, Northeast Climate Adaptation Science Center – University of Massachusetts Amherst)

Small group engagement sessions were then conducted on the following topics to obtain feedback and suggestions from the stakeholders:

- Group 1: State Capabilities and Adaptive Capacity – Identify important policies, programs, regulations, and other issues to review for the state capability and adaptive capacity analysis portion of the SHMCAP.



The first stakeholder workshop series was attended by almost 160 diverse stakeholders and yielded key input early in the planning process to guide development of the SHMCAP.

- Group 2: Extreme Weather Events and Other Hazards – Identify the major issues, as well as the data and information that managers and decision-makers need, and how these hazards interact with climate change.
- Group 3: Man-made Hazards – Discuss how to best account for man-made hazards in the SHMCAP.
- Group 4: Climate Change Variables (Temperature and Precipitation) – Obtain feedback on these key climate variables and parameters.
- Group 5: Inland Flooding and Precipitation – Identify the major issues and what data and information managers and decision-makers need for these variables.
- Group 6: Coastal Flooding and Sea Level Rise – Identify the major issues and what data and information managers and decision-makers need for these variables.
- Group 7: Public Health Stressors – Obtain input on how to incorporate public health risks into the SHMCAP.
- Group 8: Environmental Stressors – Obtain input on how to incorporate environmental stressors, such as toxics, invasive species, and habitat loss, into the SHMCAP; and examine the intersecting role of environmental stressors and climate change.

[Stakeholder Workshop Series #2: Summary of Draft Risk Assessment and Hazard Mitigation and Climate Adaptation Goal Development](#)

The second workshop series was held in three locations in January 2018: Springfield, Framingham, and Middleborough. The primary purpose of this workshop series was to seek input from stakeholders to aid in the development of goal statements for the SHMCAP’s hazard mitigation and climate adaptation strategy. Preliminary results of the risk assessment conducted for the plan were also presented to provide context for goal development. The workshop format included two breakout group sessions: the first identifying key concepts for goal statements; and the second developing the goal statements. For the first breakout group session, key concepts for goal statements were gathered in the following four categories (these categories represent FEMA’s hazard mitigation action categories):

1. Institutional Capacity, Plans and Regulations
2. Structure and Infrastructure
3. Natural Systems Protection
4. Education and Awareness Programs

Participants were organized into five stakeholder groups (aligning with the five main sectors evaluated in the SHMCAP’s risk assessment) according to their expertise:

1. Government
2. Built Environment
3. Natural Systems/Environment
4. Vulnerable Populations
5. Economy

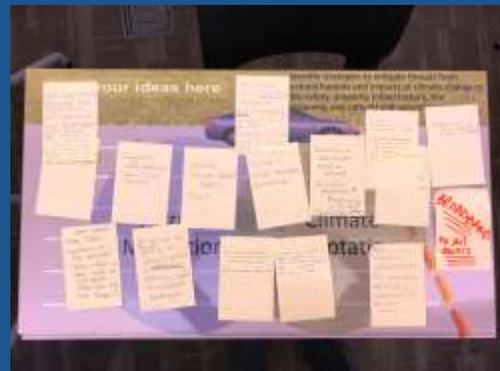
Each stakeholder group developed key concepts for goal statements for the four action categories.

The second breakout group session mixed participants from the different stakeholder groups, which led to the development of goal statements in each of FEMA’s hazard mitigation action categories. In addition, “Parking Lot Bulletin Boards” were used, where participants could leave their ideas for specific strategies for mitigating threats from natural hazards and impacts of climate change to life safety, property, infrastructure, the economy, and cultural and natural resources.

Following the workshops, the consulting team and the PMT evaluated the proposed goal statements; and over several weeks, consolidated them into the five goal statements presented in this plan. Ideas were gathered from diverse geographic locations and from a diverse group of stakeholders.

[Stakeholder Workshop Series #3: Hazard Mitigation and Climate Adaptation Action Development](#)

The third workshop series was held in April 2018 in Boston, Hopkinton, and Lanesborough. The purpose of this series was to present updated findings on the risk assessment that was conducted as part of the SHMCAP, and to gather actions to meet the vision of the goal statements that were previously developed based on input from Stakeholder Workshop Series #2 and the PMT. Actions were developed in one breakout group session at each workshop using Action Proposal Worksheets and risk assessment conclusions to guide conversation. Information requested on the Action Proposal Worksheet included title and description of action, hazards addressed, potential cost and funding source, and lead state agency.



The second stakeholder workshop series resulted in feedback that was crafted into the SHMCAP goal statements, as well as early ideas for strategies and actions to respond to identified risks and vulnerabilities.

The Action Proposal Worksheet was also provided as a Google Form. The link to the online version of the worksheet was advertised with the workshops and made available on the project website as another method for stakeholders to contribute action ideas, even if they could not attend the workshops. Following this workshop series, content from the hard copies of completed worksheets was entered into the Google Form and downloaded to a master SHMCAP Proposed Actions Google Sheet. Ultimately, several hundred Action Proposal Worksheets were completed by state agencies and stakeholders across the Commonwealth.

A version of this workshop was conducted for state agencies in Boston on April 5, 2018, which was attended by almost 70 representatives from a variety of state agencies from different Executive Offices. In addition to the hazard mitigation and climate adaptation action development activity, findings from the state agency vulnerability assessment survey (Section 9.5) and an overview of the state capability and adaptive capacity analysis (Chapter 6) were presented.



The third stakeholder workshop series was focused on development of proposed hazard mitigation and climate adaptation actions to be considered for inclusion in the SHMCAP. Several hundred actions were proposed by state agencies and stakeholders across the Commonwealth.

9.5 State Agency Vulnerability Assessment Survey

Executive Order 569 directs the Executive Branch to lead by example to combat and prepare for the impacts of climate change. A key requirement of Executive Order 569 is completing state agency vulnerability assessments that will identify vulnerabilities to climate change and natural hazards. The assessments are intended to provide the basis for the development of agency-specific priority actions so that the Commonwealth can lead by example in strengthening its resiliency and preparedness to climate change and extreme events.

To aid in satisfying this requirement, a State Agency Vulnerability Assessment Survey Tool was developed as part of the SHMCAP project. The tool was designed by the consulting team in coordination with the PMT to help state agencies identify vulnerabilities to climate change and natural hazards, and it includes five key sections:

1. An overview of the agency's mission, along with a summary of its critical assets, functions (i.e., programs or services), and population groups served;

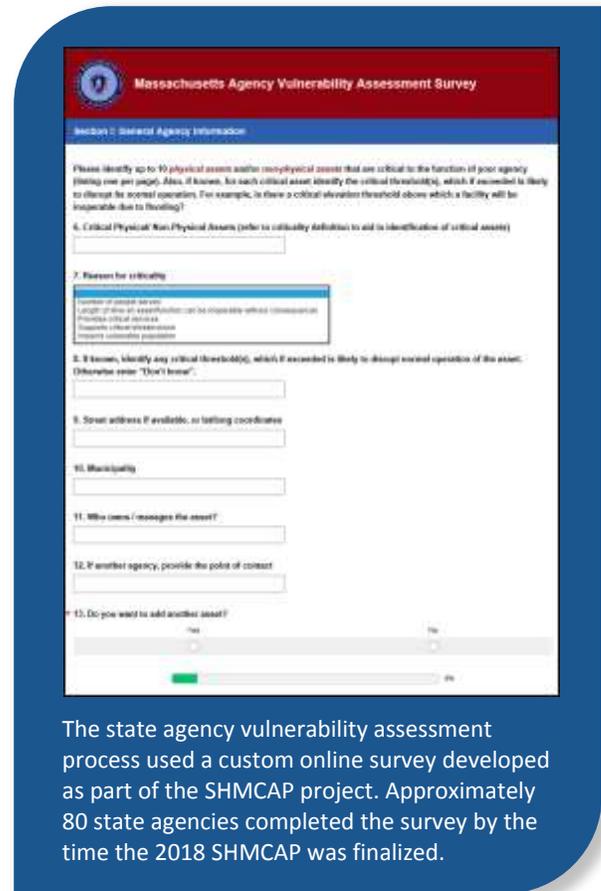
2. Identification and agency confirmation of natural hazards and climate change impacts that will affect its critical items;
3. Assessment of the agency's sensitivity to anticipated future climate conditions;
4. Assessment of the agency's adaptive capacity to natural hazards and climate change; and
5. Assessment of the agency's vulnerability to climate change and natural hazards.

The tool was in the form of an online survey, and incorporated a login function for security purposes.

In-person state agency vulnerability assessment survey training sessions were conducted by the PMT and consulting team on October 25, 2017 and May 15, 2018 in Framingham and Boston, respectively, to provide detailed instructions and a demonstration of how to use the survey tool. The training was recorded and shared online for subsequent use by state agencies. Additional opportunities for in-person and remote consultations with the consulting team were also offered to aid agencies in completion of their survey. Some agencies conducted their own internal workshops and trainings for staff as part of the process. Resources such as maps, climate change data, and a Microsoft Word version of the survey were provided to agencies to facilitate their assessments, and made available on the project website. The Microsoft Word version of the survey is provided in Appendix E.

The survey process required the Secretariat Climate Change Coordinators to identify and work with agency points-of-contact to facilitate survey distribution and to obtain a broad representation of answers from various divisions/offices. Each agency was also asked to review natural hazard and climate change primer material provided by the PMT and consulting team to become familiar with current/future climate change impacts, and to consider how these may impact their assets and mission. Following completion of each agency assessment, the respective Secretariat Climate Change Coordinators were asked to review the assessment for quality and completeness prior to submittal of the survey.

A predefined vulnerability assessment report was generated for each state agency that completed the online survey, using the responses that were submitted by the agency. These reports



The state agency vulnerability assessment process used a custom online survey developed as part of the SHMCAP project. Approximately 80 state agencies completed the survey by the time the 2018 SHMCAP was finalized.

summarize an agency's mission; priority concerns regarding natural hazards and climate change; critical assets, functions, and population groups for an agency; capability and adaptive capacity related to hazard mitigation and climate change adaptation; and vulnerability scores for each critical item that was self-assessed to aid in prioritization of agency initiatives going forward.

Aligning the state agency vulnerability assessment requirement with development of the SHMCAP resulted in extensive coordination with most of the Commonwealth's state agencies, and direct integration of the assessment results into several elements of the plan, including the government sector of the risk assessment, state capability and adaptive capacity analysis, and hazard mitigation and climate adaptation strategy.