RESILIENTMASS ACTION TEAM (RMAT)

CLIMATE RESILIENCE DESIGN STANDARDS & GUIDANCE

SECTION 1: INTRODUCTION

DATE: JULY 2026

VERSION 1.5

CONTRACT NUMBER:
ENV 19 CC 02
OWNER:
Massachusetts Executive Office of Energy and Environmental Affairs (EEA)
IN PARTNERSHIP WITH:
Massachusetts Emergency Management Agency (MEMA)
CONSULTANT TEAM:
Weston & Sampson, Woods Hole Group, Dr. Jennifer Jacobs (through Version 1.2)
BSC Group (EEA IT Vendor & Tool Developer, through Version 1.5)

TABLE OF CONTENTS

1. INTRODUCTION 1
1.1 OVERALL GOALS/OBJECTIVES 2
1.2 OVERVIEW 3
1.2.1 USER-PROVIDED INFORMATION 3
1.2.2 PROJECT OUTPUTS OVERVIEW 4
1.2.3 WHEN TO USE THE TOOL 5
1.3 INTENDED USERS 7
1.4 LIMITATIONS 8

SECTION 1 ATTACHMENTS 9
Attachment 1-A. Acknowledgements and Stakeholder Engagement History 10
Attachment 1-B. Versioning History 17

LIST OF TABLES AND FIGURES

Table 1.1 Intended User Roles 7

Figure 1.1. Climate Resilience Design Standards Tool Reporting Workflow – Completed 3
Figure 1.2. Typical Design Process and where Tool is recommended to benefit users 5
Figure 1.3. Expanded Typical Design Process and where Tool is recommended to benefit users 6

1. INTRODUCTION



The Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) was released in September of 2018. This FEMA-recognized plan provided a national model of integrating hazard mitigation priorities with forward-looking climate change data and solutions. The SHMCAP was the first in the nation to fully integrate federal hazard mitigation planning requirements, with a proactive approach to addressing the impacts from climate change.

In 2019, the ResilientMass Action Team (RMAT) was launched to be responsible for the plan's implementation, monitoring, and maintenance. Led by the Executive Office of Energy and Environmental Affairs (EEA) and the Massachusetts Emergency Management Agency (MEMA), the RMAT is an inter-agency team comprised of representatives from each Secretariat, called Climate Change Coordinators, who are supported by agency staff, stakeholders, and subject matter experts. The RMAT is tasked with monitoring and tracking the 2018 SHMCAP implementation process (and subsequent iterations, e.g., 2023 ResilientMass Plan), making recommendations, and supporting agencies on plan updates, and facilitating coordination across State government and with stakeholders, including businesses, cities, and towns.

Over 100+ Agency Action items were identified to implement, including several priority interagency action items this project advances:

- Incorporating climate change vulnerability, resilience and adaptation standards into budgeting, coordination, capital planning.
- Review and update design standards using MA climate change projections that will support best management and construction practices.
- Incorporate climate vulnerability, resilience, and adaptation standards into capital planning for new projects.

1.1 OVERALL GOALS/OBJECTIVES

The ***Climate Resilience Design Standards and Guidance*** project is advancing prioritized global (or cross-agency) actions from the SHMCAP. This effort has developed climate resilience design standards and guidance for State agencies in order to incorporate climate resilience into the State's capital planning process and grant-making for local capital projects, which includes:

- **Climate Resilience Design Standards Tool (the Tool)**: an interactive web-tool that provides a preliminary climate risk screening and recommended climate resilience design standards for projects with physical assets; and,
- **Climate Resilience Design Guidance:** downloadable document with guidance, best practices, and forms to implement recommended climate resilience design standards. For additional information please refer to the ***Climate Resilience Design Guidance (Guidance Document)***.

OVERALL OBJECTIVE

Provide climate resilience design standards and guidance, and a project screening tool grounded in scientific methodology using the best available climate science data in Massachusetts, which can predictably and regularly improve over time to incorporate new science, additional or changing climate hazards, and stakeholder feedback.

The focus of the Climate Resilience Design Standards and Guidance project is to integrate best available statewide climate change projections and hazards data to inform early/conceptual planning and design of infrastructure, buildings, and natural resource assets in Massachusetts in conjunction with traditional engineering assessments, feasibility analyses, and cost-benefit analyses. The Tool relies on limited user-provided information to supplement statewide datasets. The Tool and associated supporting documents are accessible at https://www.mass.gov/info-details/climate-resilience-design-standards-guidance.

The goals/objectives of the Tool include the following:

- Make preliminary climate resilience analysis at the project level **more broadly accessible**;
- Provide recommendations based on **consistent use of state's climate and hazards data** hosted on https://resilient.mass.gov/;
- Inform **"climate resilient" capital planning** and procurement; and
- Provide a **unified and automated planning and design support tool that state agencies and municipalities** can use for grant applications and evaluation of projects.

1.2 OVERVIEW

Based on the information provided by users, the Tool provides the following Project Outputs:

- Preliminary Climate Hazard Exposure and Risk Screening
- Recommended Climate Resilience Design Standards

The Guidance Document provides additional supporting guidance, examples of best practices, and forms related to considerations of:

- Site Suitability
- Regional Coordination
- Flexible Adaptive Pathways

The Tool inputs and outputs are provided in a downloadable report for users. The report may be submitted and/or downloaded for inclusion in grant applications and/or project documents.



Figure 1.1. Climate Resilience Design Standards Tool Reporting Workflow – Completed

1.2.1 USER-PROVIDED INFORMATION

The Tool is free and available to the public with access to the internet, a computer, and a valid email address. Please refer to the User Guide Version 1.5 for additional information on using the Tool.

Users will provide basic information pertaining to a project with proposed physical assets and the following preliminary information:

- ❑ Name of the project
- ❑ Project location and approximate extent of project limits
- ❑ General details, including estimated capital costs and contact information
- ❑ Planned or possible ecosystem service benefits gained through the project, if any
- ❑ Past climate hazard exposure, if any, for example history of flooding
- ❑ Proposed asset information—type, construction start year, useful life
- ❑ Criticality of the asset (time, scope and severity)

The Tool is not recommended for the following types of projects:

- Projects with no physical assets
- Projects without discrete locations (e.g., statewide/regionwide)
- Projects outside of Massachusetts
- Demolition projects (note: dam removal is a construction type for natural resource assets)
- Regular maintenance projects

Refer to **Section 2** for more information related to Project Inputs.

1.2.2 PROJECT OUTPUTS OVERVIEW

Based on the user-provided information, the Tool will provide the following Project Outputs. Refer to **Section 3** (Preliminary Climate Hazard Exposure and Risk Screening) and **Section 4** (Climate Resilience Design Standards) for more information.

Evaluation of whether project is within a mapped Environmental Justice population

Preliminary indication of potential impact to Environmental Justice neighborhoods, which typically include climate vulnerable populations, who may have lower adaptive capacity or higher sensitivity to climate hazards like flooding or heat stress due to factors such as access to transportation, income level, disability, racial inequity, health status, or age.

Ecosystem Service Benefits Score

Preliminary indication of the overall Ecosystem Service Benefits provided by a proposed project, through protection or enhancement of natural resources and implementation of nature-based solutions.

Preliminary Climate Hazard Exposure Score

Preliminary screening of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change for the following climate parameters: sea level rise/ storm surge, extreme precipitation (stormwater and riverine), and extreme heat.

*This **does not** substitute a formal vulnerability assessment*.

Preliminary Climate Risk Ratings

Initial screening to identify building and infrastructure assets with a “High Risk” designation, which may warrant additional review and/or design considerations. Assets will receive a preliminary climate risk rating that is derived from how a user answered the criticality questions along with the overall project site's climate hazard exposure to sea level rise/ storm surge, extreme precipitation (stormwater and riverine), and extreme heat.

*This **does not** substitute for a formal risk assessment*.

Recommended Climate Resilience Design Standards

Basis-of-discussion for planning, early design, and evaluation that is standardized across the Commonwealth based on asset type, location, criticality, construction type, and useful life of physical assets.

Assets will receive recommended design standards for two climate parameters (extreme precipitation and extreme heat), and a third for sea level rise/storm surge if applicable.

Standards include recommended intermediate and/or target planning horizons, return period or percentile, and applicable design criteria that may be affected by climate change. Projected values and/or methodologies to calculate projected values are also provided for each asset entered.

1.2.3 WHEN TO USE THE TOOL

The Climate Resilience Design Standards & Guidance are intended to be applied to capital projects with physical assets and incorporated into the process from preliminary planning to project review. It is anticipated that the users of the Climate Resilience Design Standards Tool may apply the Project Outputs to inform, develop, support, and consult on project planning and early design. The Project Outputs are summarized in a downloadable report through the Tool that can be attached to Requests for Proposals (RFPs), basis of design reports, and/or grant applications. The Tool is intended to support planning, but outputs may be used as a basis for discussion for project reviews and permitting.

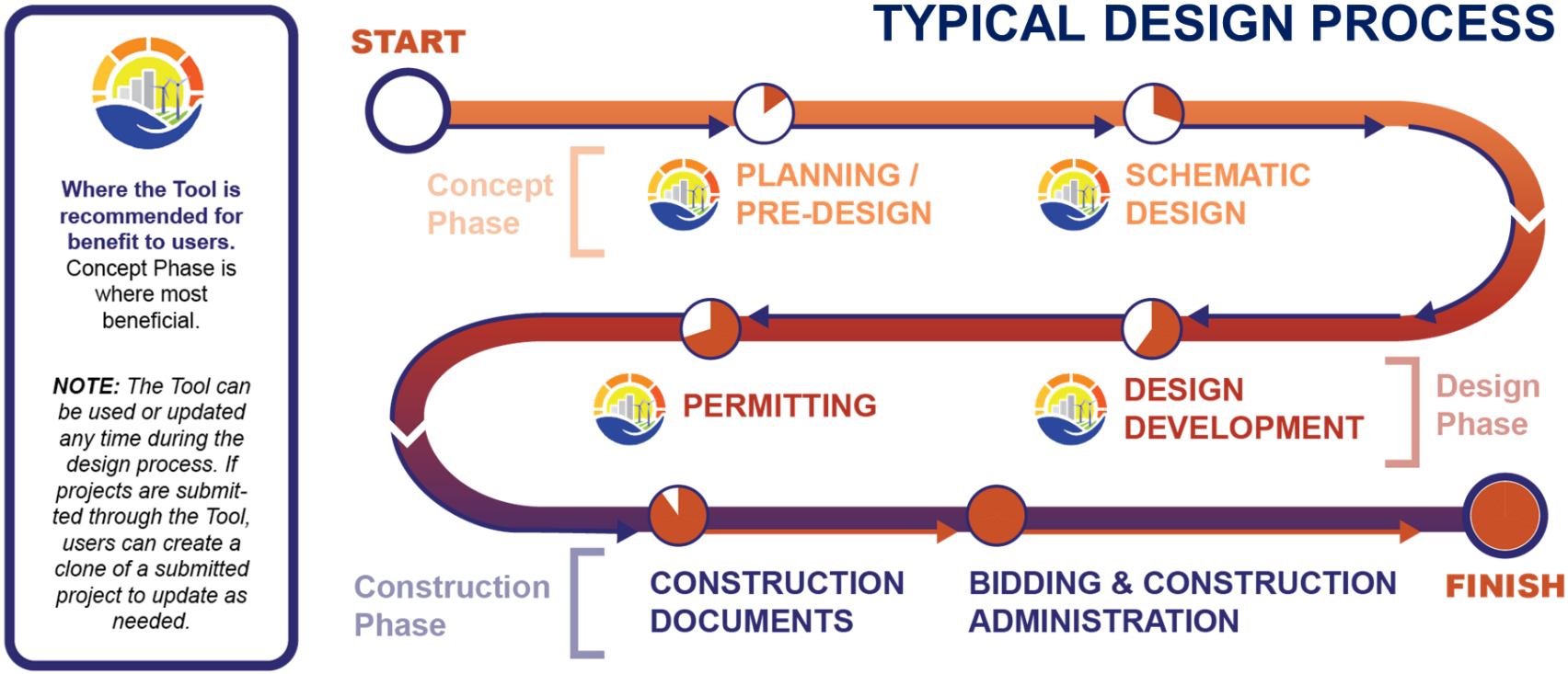


Figure 1.2. Typical Design Process and where Tool is recommended to benefit users

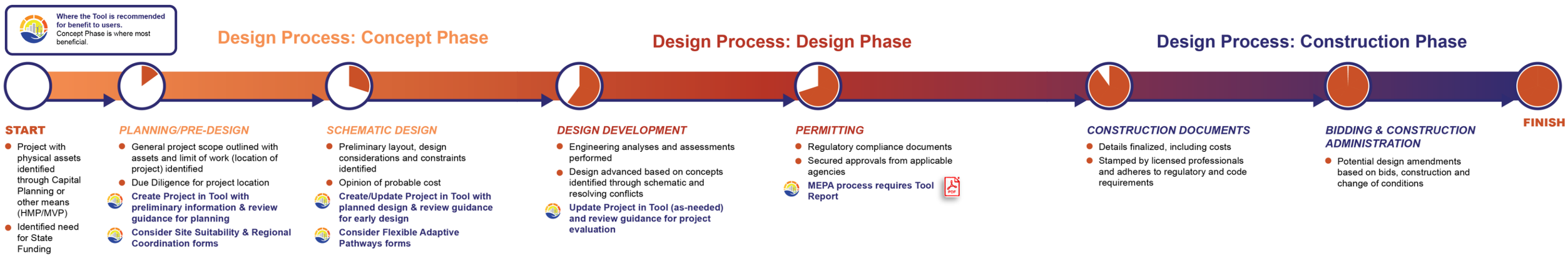


Figure 1.3. Expanded Typical Design Process and where Tool is recommended to benefit users

1.3 INTENDED USERS

There are four expected users of the Climate Resilience Design Standards and Guidance, with four categorical roles, as described in Table 1.1. Note: Some of these user categories may be the same person, depending on the nature of the project.

Table 1.1 Intended User Roles

User Category	Typical User Examples	Role
Project Manager	• State Agency Project Manager • Municipal Project Manager • Utility Project Manager • Regional Planning Authority Project Manager • Private Entity Project Manager	The Project Manager's role is to provide Project Inputs to the Tool, review Outputs, and solicit Technical Staff to design physical assets informed by the Standards Outputs and Guidance. They lead throughout preliminary planning, procurement, and provide support to Technical Staff during design development.
Asset Owner	• Municipality • State Agency (e.g., DCAMM) • Utilities Entity Private Entity	The Asset Owner's role is to support and collaborate with the Project Manager and Technical Staff throughout the preliminary planning and project design.
Technical Staff	• State Agency Technical Staff • Engineering/Design Consultant Firm	The Technical Staff's role is to apply the Standards Output and Guidance to the design of physical assets (as identified through the Tool). They lead the project design in coordination with the Project Manager and Asset Owner, as needed.
Project Evaluator	• State Agency • Executive Office of Administration and Finance • MEPA • Capital Grant Program Administrator	The Evaluator's role is to review the project design, which depending on the stage of the project may include Program Managers, the Executive Office for Administration and Finance, and grant administrators.

1.4 LIMITATIONS

The Tool was developed to support efforts by Massachusetts agencies and municipalities to integrate best available statewide climate change projections into conceptual planning and design of capital projects with physical assets. The outputs provided through the Tool are intended to be

used to inform climate resilient planning and design of infrastructure, buildings, and natural resource assets. Tool outputs may be used as a basis for discussion for project reviews and permitting.

This Tool was developed by the Executive Office of Energy and Environmental Affairs (EOEEA) in partnership with state agencies through the Commonwealth's ResilientMass Action Team (RMAT) and the Weston & Sampson (through Version 1.2) and BSC Group (through Version 1.5) consultant teams. Refer to **Attachment 1-A** for Stakeholder Engagement history and acknowledgements.

The Tool utilizes best available statewide climate projections at the time of the latest update. This information is subject to revisions as more detailed data, ground-truthing, new science, advances in climate modeling, and/or new or evolving climate parameters become available. Updates to the Tool over time are reflected in the supporting documents found on the Tool's "Start Here" page. The versioning history of the Tool is included as **Attachment 1-B**.

Users of the Tool and associated documentation must acknowledge the following important qualifications:

- The data and content are for informational purposes only and do not constitute and should not be construed as legal, financial, professional, or any other type of advice or counsel.
- This Tool is recommended to be used to inform planning and early design processes for projects with physical assets. Outputs provided through this Tool may be used as a reference point or basis-of-discussion in planning, early design, and/or evaluation of projects. The Tool does not replace location specific engineering calculations and analyses, existing code and regulatory requirements, risk and vulnerability assessments, or cost-benefit analyses.
- EOEEA and its partners do not guarantee or warrant that any information submitted by individuals using the Tool is correct and disclaims any liability for any loss or damage resulting from reliance on any such information.
- EOEEA and its partners make no representations or guarantees that the Tool will always be safe, secure, or error-free, or that it will function without disruptions, delays, or imperfections.
- Appropriate regulatory agencies should be contacted regarding existing practices, regulatory requirements, or codes.
- This Tool, associated data, and any related materials contained therein are provided "as is," without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement. The entire risk of the use of and reliance upon the Tool, associated data, and any related materials shall be with the user.

SECTION 1 ATTACHMENTS

Attachment 1-A – Acknowledgements and Stakeholder Engagement History

Attachment 1-B – Versioning History

Attachment 1-A. Acknowledgements and Stakeholder Engagement History

The development of the Climate Resilience Design Standards Tool included active engagement and regular feedback from representatives from the ResilientMass Action Team (RMAT), as well as subject matter experts. Five (5) internal working groups were established for the following sub-topics: Scientific, Building Assets, Infrastructure Assets, Natural Resource Assets, and Capital Planning. A Technical Advisory Group (TAG) comprised of consultants, academics, municipalities, regional planning organizations, non-profit agencies, and federal agencies reviewed preliminary draft materials.

We would like to acknowledge the following individuals and organizations for their contributions to the development of the Massachusetts Climate Resilience Design Standards Tool:

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- Rebecca Quinones, FWE
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- Lindsay Adams, EIT, Weston & Sampson (through Version 1.2)
- Doris Jenkins, EIT, Weston & Sampson (through Version 1.2)
- Lindsay Woodson, AICP, Weston & Sampson (through Version 1.2)
- Adria Boynton, Weston & Sampson (through Version 1.2)
- Bella Purdy, Weston & Sampson (through Version 1.2)
- Anna Hayden, Weston & Sampson (through Version 1.2)
- Kirk Bosma, Woods Hole Group (through Version 1.2)
- Joseph Famely, Woods Hole Group (through Version 1.2)
- Dr. Jennifer Jacobs, University of New Hampshire (through Version 1.2)
- Dalia Munenzon, ONE Architecture & Urbanism (*BETA version*)
- Aaron Weieneth, AECOM (*BETA version*)

Web-Development (through Version 1.5)

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- Roger Dubois, Geonetics (BSC Group)
- Jonathan Chartrand, Geonetics (BSC Group)

Scientific Working Group

- Cornell University
- EEA
- JFK Environmental Services LLC
- MA CZM
- MA DCR Office of Water
- MA DFW
- MA DPH
- MassDEP
- MassDEP – Wetlands Program
- MassDOT
- UMass Boston

Asset Working Groups

- DCAMM (Buildings, Infrastructure)
- DCR (Buildings, Infrastructure, Natural Resources)
- Department of Corrections (Buildings)
- DHCD (Buildings)
- DPH (Buildings)
- EEA (Buildings, Infrastructure, Natural Resources)
- EEA-DCS (Natural Resources)
- EODSS (Infrastructure)
- EOHHS (Buildings)
- FWE (Natural Resources)
- MA CZM (Natural Resources)

- MA DER (Natural Resources)
- Mass Wildlife (Natural Resources)
- MassCEC (Buildings)
- MassDEP – Wetlands (Natural Resources)
- MassDOT (Infrastructure)
- MBTA (Infrastructure)
- MEPA (Buildings, Infrastructure, Natural Resources)
- MPO (Infrastructure)

Capital Planning Working Group

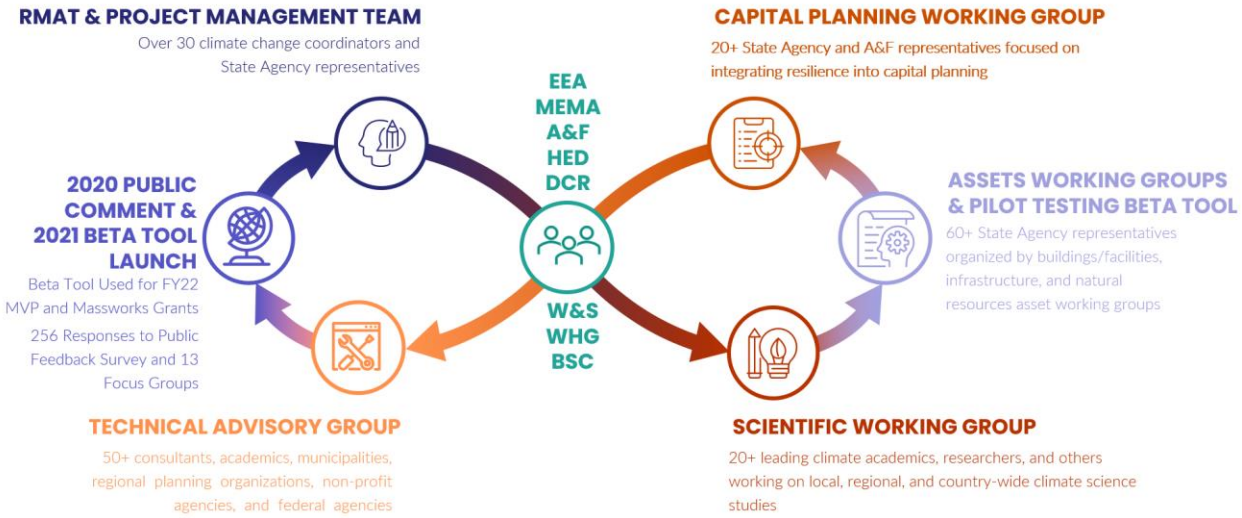
- BSH
- DCAMM
- DCR
- DER
- DFW
- DHCD
- EEA
- EEA IT
- ENV Finance
- EOHED
- EOTSS
- FWE
- MA CZM
- MassDEP
- MassDOT
- Massport
- MBTA
- OCD

Technical Advisory Group

- AECOM (Coastal)
- Architerra (Coastal)
- Boston Harbor Now (Coastal)
- Cape Cod Commission (Precipitation, Coastal)
- Charles River Watershed Association (Precipitation)
- City of Boston Environment Department (Precipitation, Coastal, Temperature)
- City of Boston Planning and Development Agency (Coastal)
- City of Cambridge (Precipitation, Coastal, Temperature)
- City of New Bedford (Coastal)
- City of Northampton (Precipitation)
- City of Revere (Coastal)
- City of Worcester (Temperature)
- Conservation Law Foundation (Temperature)
- DCR (Precipitation)

- EEA (Precipitation, Coastal)
- Franklin Regional Council of Governments (Precipitation)
- Horsley Witten Group (Precipitation, Coastal)
- HSH Associates (Precipitation)
- Kleinfelder (Temperature)
- MAPC (Precipitation)
- Massachusetts ECAN (Temperature)
- Massachusetts Smart Growth Alliance (Temperature)
- MassAudubon (Temperature)
- MBTA (Coastal)
- Merrimack Valley Planning Commission (Coastal)
- Mystic River Watershed Association (Precipitation, Temperature)
- New Ecology (Temperature)
- New Hampshire DES (Coastal)
- Nitsch Engineering (Precipitation)
- Noble, Wickersham & Heart LLP (Temperature)
- Pioneer Valley Planning Commission (Temperature)
- SGH (Temperature)
- Tetra Tech (Precipitation)
- The Nature Conservancy (Precipitation)
- Town of Amherst (Precipitation)
- Town of Arlington (Precipitation)
- UMass Boston (Precipitation, Coastal)
- USACE (Precipitation, Coastal)
- Utile Design (Coastal)
- Wilcox & Barton (Precipitation)
- WSP (Precipitation)

Stakeholder engagement and feedback were incorporated into the development of the draft materials during weekly interagency meetings, 10 working groups sessions, a technical advisory group workshop, beta-version pilot testing, public surveys and over 20 focus groups with more than 256 responses over 2.5 years (through Version 1.2).



The specific stakeholder engagement interactions were as described below.

1. November 12, 2019 – Scientific Working Group – Introduction to the project, proposed tiered methodology, review of available climate data, existing methodologies for translating climate science into design criteria.
2. November 13, 2019 – Asset-based Working Group – Introduction, proposed tiered methodology, proposed asset categorization, proposed initial criticality considerations and framework for risk-based methodology.
3. December 11, 2019 – Capital Planning Working Group – Introduction, proposed evaluation framework (project resilience score methodology and resilience benefits score methodology).
4. January 2020 through March 2020 - Bi-weekly working meetings with the Executive Office for Administration and Finance (A&F) and the RMAT leadership team to advance development of the Tool.
5. February 4, 2020 – Scientific Working Group – Revisit framework of project inputs, outputs, and relationships, and tiered methodologies with proposed data sources and methods for Precipitation.
6. February 11, 2020 – Building Asset Working Group – Proposed asset categories and types, case studies, proposed design criteria and relationships, and criticality questions.
7. February 11, 2020 – Infrastructure Asset Working Group – Proposed asset categories and types, case studies, proposed design criteria and relationships, and criticality questions.
8. February 14, 2020 – Natural Resource Asset Working Group – Proposed asset categories and types, case studies, proposed design criteria and relationships, and criticality questions.
9. March 9, 2020 – Scientific Working Group – Updated input/outputs and relationships, draft tiered methodologies for precipitation, sea level rise/storm surge, and heat.
10. March 25, 2020 – State Agency Focus Group - Presentation of draft Excel prototype, updated relationships and proposed methodologies.

11. April 17, 2020 – Capital Planning Working Group – Exposure rating, risk rating, evaluation framework (standards score and project resilience score), and Excel prototype demonstration.
12. May 21, 2020 – Asset-based Working Group – Draft guidelines, best practices, case studies.
13. May 27, 2020 – Technical Advisory Group Workshop – Inputs/outputs and relationship tables, draft tiered methodologies with case study example for precipitation, sea level rise/storm surge, and heat; exposure rating, risk rating, evaluation framework (standards score and project resilience score) and Excel prototype demonstration.
14. June 12, 2020 – Project Management Team (PMT) Review Meeting – Draft materials were reviewed and distributed to the PMT. Following the PMT Review, it was determined by EEA that the evaluation framework (including the project resilience score, standards score, and resilience benefits) would not be included in Version 1.0 of the Tool.

- *August 24 – September 9, 2020 – The draft materials were reviewed during a public comment period.*

15. January 2021 – EEA conducted pilot testing of the Tool with state agencies. Feedback helped to revise project and asset inputs, and vet project outputs (exposure/risk rating and design standards) with EEA and the state agencies.
16. February 2021 – Pilot testing of the web-based Tool was performed, with model validation and revisions completed related to Tool functionality.

- *April 21, 2021 – Launch of the beta RMAT Climate Resilience Design Standards Tool on ResilientMass website and public comment survey open.*

17. June 10, 2021 - DCR technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool
18. June 11, 2021 - DEP technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool
19. June 15, 2021 – MassECAN and Natural Systems technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool
20. June 22, 2021 – Municipal (Central & Eastern, MA) technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool
21. July 8, 2021 – Design consultant technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool
22. July 13, 2021 – DCAMM/DHCD technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool
23. July 16, 2021 – MassDOT focus group – Integration of MC-FRM data into 2022 RMAT Climate Resilience Design Standards Tool updates
24. July 26, 2021 – CZM, MEPA, NHESP technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool

25. July 27, 2021 – Municipal (Western, MA) technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool

26. July 29, 2021 – Massworks technical focus group - Review of beta RMAT Climate Resilience Design Standards Tool

27. July 30, 2021 – A Better City technical focus group – Review of beta RMAT Climate Resilience Design Standards Tool

- *April 21, 2021 and September 15, 2021 – Over 256 people provided feedback on the beta Tool through the public survey, technical focus groups, and via email to rmat@mass.gov. Following this feedback, additional enhancements were identified for re-releases of the Tool in 2022. The Tool and supporting materials are intended to be updated over time with additional feedback from users and new climate projections.*

28. September 16, 2021 – State Agency & Scientific Focus Group – Review of updates planned for February 2022 to Ecosystem Service Benefits, climate exposure scoring methodology updates, and additional stakeholder feedback regarding guidance integration.

29. October 22, 2021 – State Agency & Scientific Focus Group – Review of proposed integration of USGS/Cornell Hydrorisk projections for updates planned for April 2022 related to climate exposure and precipitation standards.

30. November 15, 2021 – State Agency & Scientific Focus Group – Review of proposed integration of MC-FRM projections and guidance for updates planned for April 2022 related to coastal standards.

31. January 14, 2022 – State Agency & Scientific Focus Group – Review of proposed precipitation guidance integration for updates planned for April 2022 related to precipitation standards.

32. March 2, 2022 – Stakeholder meeting to discuss sea level rise / storm surge Standards updates. Review of the data and guidance accompanying the sea level rise / storm surge design criteria and design criteria values. Discussion of design criteria name changes.

33. March 4, 2022 – Stakeholder meeting to discuss extreme precipitation Standards updates. Review of the data and guidance accompanying the extreme precipitation design criteria and design criteria values.

Attachment 1-B. Versioning History

Climate Resilience Design Standards Tool
–
Versioning History
July 2026

Beta Tool – April 2021

Tool Version 1.0 – February 2022

Tool Version 1.1 – April 2022

Tool Version 1.2 – July 2022

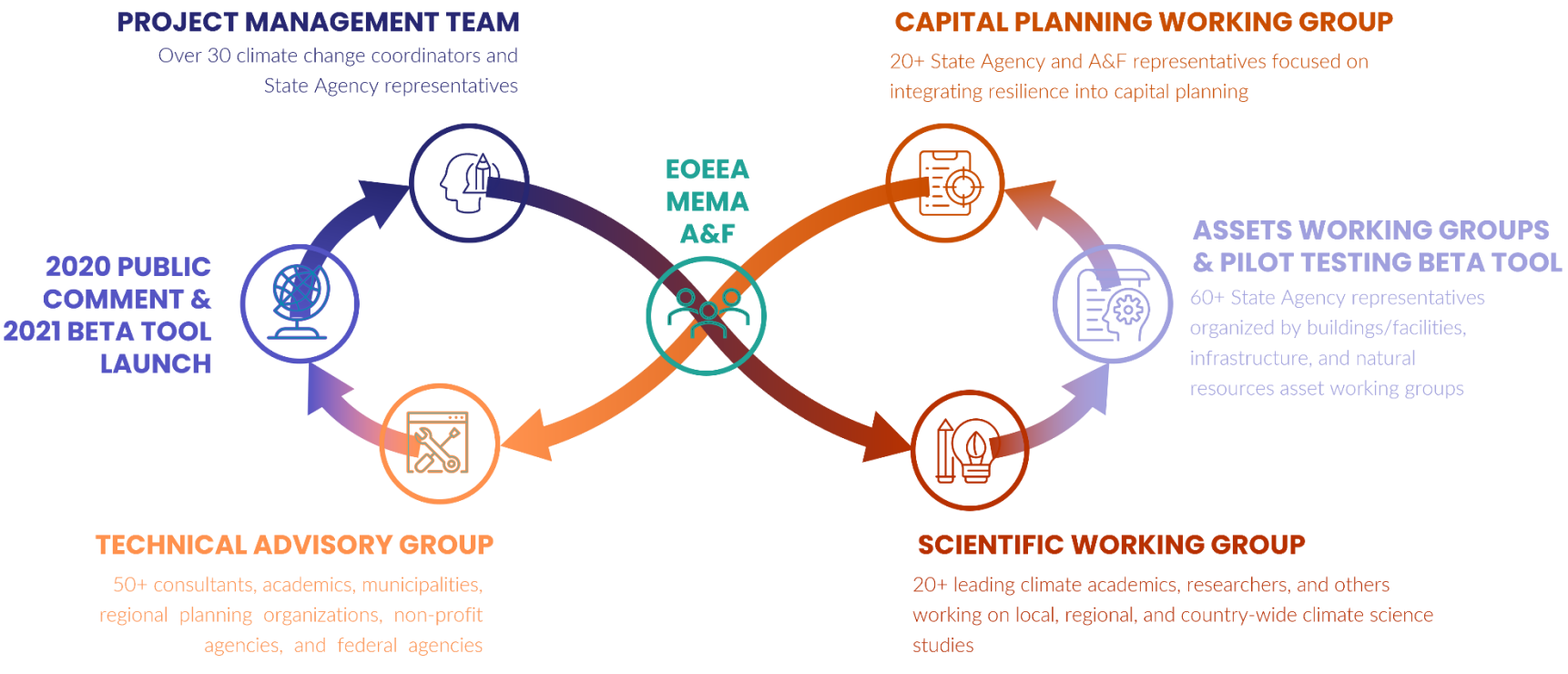
Tool Version 1.3 – March 2023

Tool Version 1.4 – December 2024

Tool Version 1.5 – July 2026

Weston & Sampson BSC GROUP

2.5-Year History of Stakeholder Engagement (through Version 1.2)



Snapshot of feedback from Beta Tool

- Over **900** projects initiated!
  - Piloted in FY22 MVP and Massworks grant applications
- **256** people contributed feedback!
  - Public Feedback Survey (mass.gov)
  - 13 Focus Groups
  - FY22 MVP RFR Appendix E
  - Agency feedback

Stakeholder feedback was prioritized into several categories: critical, must have, nice to have, and future work. **The FY22/FY23 enhancements represent critical and must have improvements**.

How we integrated feedback – User Experience

- Greater guidance on a project's **"useful life," ecosystem benefits,** and **criticality questions** – February 2022
- A more **user-friendly report,** more guidance on **how to interpret tool results,** and clarifying what happens when a user **submits a project** – February & April 2022
- Increased support for drawing the **project location polygon** – April 2022
- More **guidance** with standards, and **integration of MC-FRM and Cornell data** into standards recommendations in the tool **(values instead of methodologies)** – April 2022
- Included **maps** visualizing **Projected Water Surface Elevations** for **2030, 2050, and 2070** planning horizons – July 2022

Enhancements from Stakeholder Feedback Organized into Several Updates

1 February 2022 Updates
"Version 1.0"

- Climate exposure updates
- Ecosystem service benefits updates
- Additional stakeholder feedback updates, such as integrating more guidance

2 April 2022 Updates
"Version 1.1"

- SLR/storm surge standards (Massachusetts Coast Flood Risk Model, MC-FRM)
- Extreme precipitation standards (EEA's Massachusetts Climate and Hydrologic Risk Project)
- Enhancements to extreme heat standards

3 July 2022 Updates
"Version 1.2"

- Minor User Interface Updates
- Addition of Projected Water Surface Elevation Maps to accompany SLR/storm surge standards (Massachusetts Coast Flood Risk Model, MC-FRM)

4 March 2023 Updates
"Version 1.3"

- Update of Environmental Justice layer (now using EEA 2020 EJ Populations data layer)
- *Note: no supporting document update for this tool version*

5 December 2024 Updates
"Version 1.4"

- Addition of Projected Wave Action Water Elevation Maps to accompany SLR/storm surge standards (Massachusetts Coast Flood Risk Model, MC-FRM)
- Updates to temperature design standards
- Bug fixes

6 July 2026 Updates
"Version 1.5"

- Riverine flooding and coastal flooding exposure data updates
- Riverine flooding and coastal flooding exposure scoring updates
- Adjustments to riverine flooding design standards logic
- Bug fixes