Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs

Massachusetts Environmental Policy Act

MEPA Climate Resiliency Policy (Straw Proposal)

Comments Due by September 30, 2024

TABLE OF CONTENTS

*https://www.mass.gov/info-details/mepa-advisory-committee

BACKGROUND: Key Chronology

- 2008: Global Warming Solutions Act adds requirement to consider climate change in Section 61 of MEPA
- 2014: *Draft* MEPA Climate Adaptation and Resiliency Policy issued for comment but not finalized
- 2016: Executive Order 569 requires state planning for climate change
- 2018: Statewide Integrated Hazard Mitigation and Climate Adaptation (SHMCAP) released
- April 2021: MA Climate Resilience Design Standards Tool released
- Oct 1, 2021: Effective date of MEPA Interim Protocol on Climate Adaptation and Resiliency
- Dec 2022: Massachusetts Climate Change Assessment released
- Fall 2023: SHMCAP five-year update (now called “ResilientMass” plan) released; EEA/CZM “Resilient Coasts” strategy announced

MA Climate Resilience Design Standards Tool

Overview

MEPA Project Data

10/1/21 – 4/30/24

2021 MEPA Interim Protocol on Climate Resiliency

Key Components

- All new project filings must attach output report from Climate Resilience Design Standards Tool.

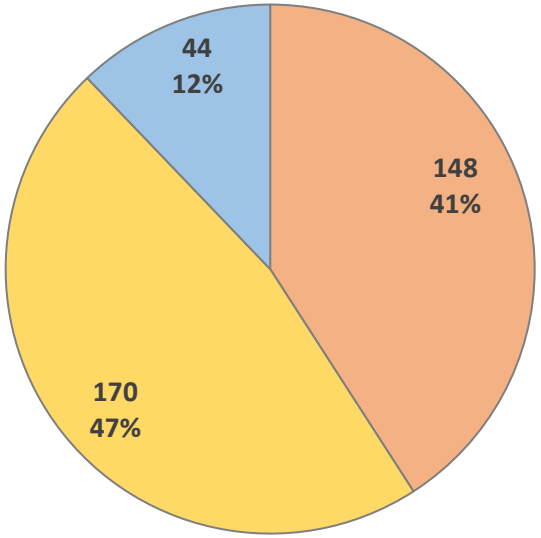
- New ENF Climate section solicits information on climate resilience strategies incorporated into project design.

- Proponents were encouraged (but not required) to utilize design recommendations and associated “tier” methodologies.

- Goal of interim protocol was to “gather data” to test accuracy of tool outputs and support future policy updates.

MEPA Project Data (Oct. 1, 2021 to Apr. 30, 2024)

	2021	2022	2023	2024	Total
Infrastructure	18	47	58	25	148
Building/Facility	29	69	56	16	170
Natural Resources	2	16	23	3	44
Total	49	132	137	44	**362**



362 new projects
96 exceed mandatory EIR thresholds
(*Note*: 224 new projects filed near EJ Populations 10/1/21 – 04/30/24)*

362 New Projects Subject to Interim Protocol

*MEPA Protocols for Environmental Justice Populations went into effect on 1/1/2022.

MEPA Project Types

Buildings/Facilities

- Real estate development (residential, office/lab, warehouse)
- Energy /water/wastewater/solid waste (building components)
- Coastal structures/facilities (marinas, boathouse, docks, jetties)

Infrastructure

- Transportation (roads, bridges, railroads, bike/pedestrian paths)
- Flood control structures (dam repairs, seawalls, revetments)
- Utilities (stormwater, electric/gas/water/sewer lines)
- Solid & hazardous waste / landfills (non-building components)

Natural Resources

- Parks, trails for recreational use (wo/ building component)
- Dune nourishment, dredging, ecological restoration

** Aligns with "Asset Type" Categories from Resilience Design Tool*

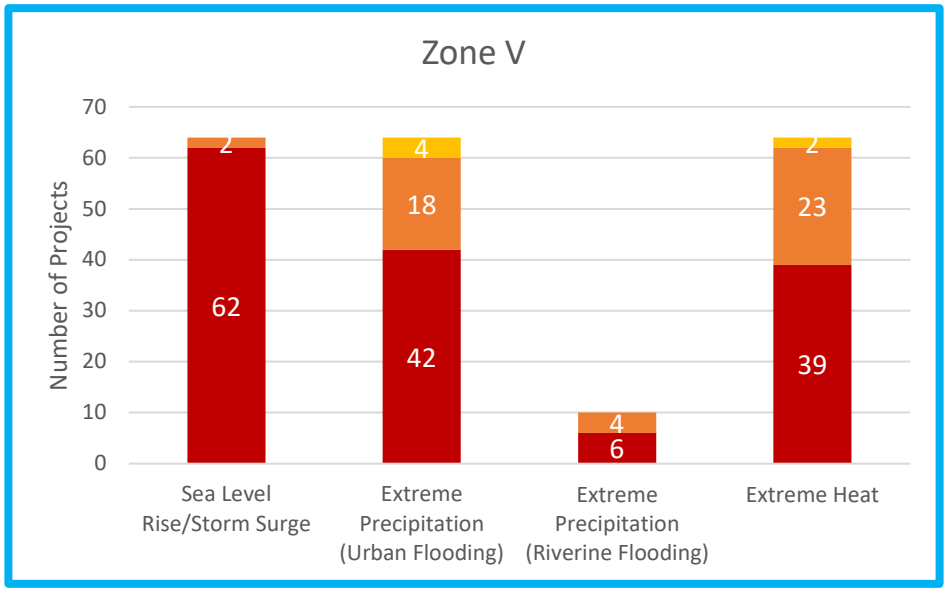
MEPA Project Data

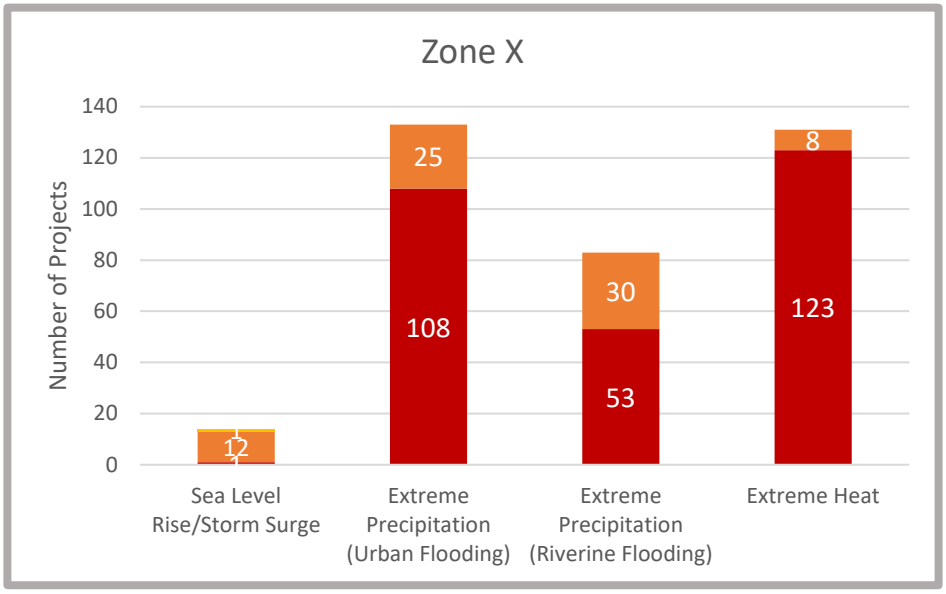
Exposure Rating

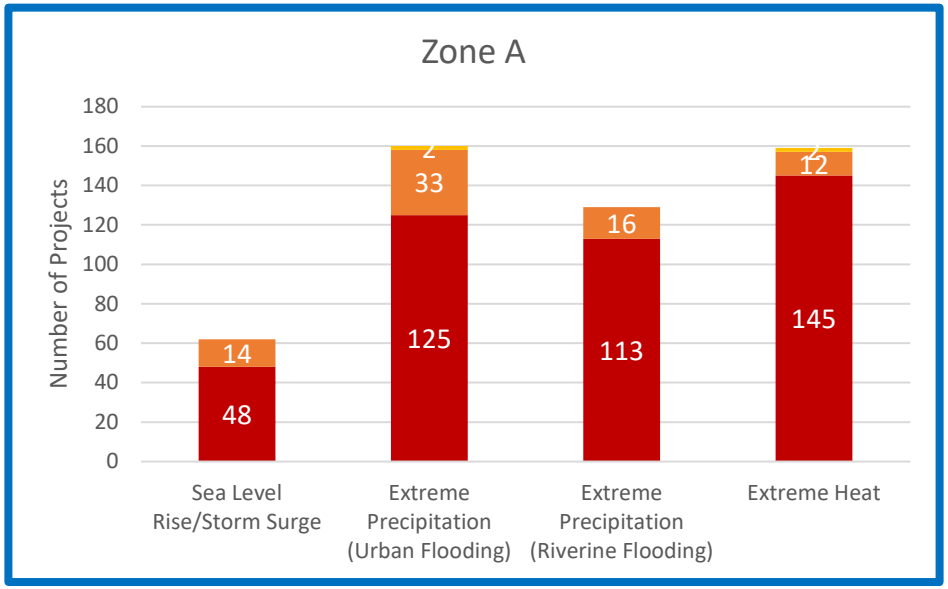
- High
- Moderate
- Low

- V Zones: 64
- A Zones: 161
- X Zones: 133*

*20 in 500-yr floodplain

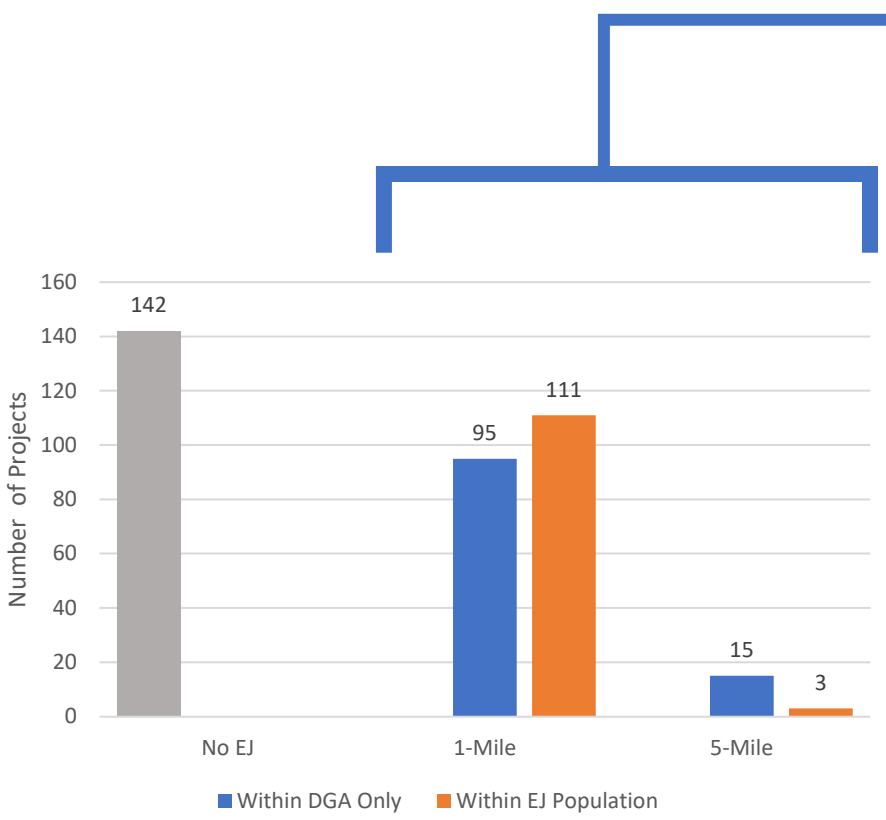






MEPA Project Data

Environmental Justice (EJ) Communities



Characteristics of 224 (out of 362) new projects near EJ Populations:

High Exposure Rating:

FEMA Zone	Sea Level Rise	Urban Flooding	Riverine Flooding	Extreme Heat
Zone V	23	17	3	13
Zone A	30	85	77	98
Zone X	1	73	34	82
TOTAL	54	175	114	193

MEPA Project Data

Key Observations from Project Filings

- Many projects outside coastal areas and 100-year floodplain are ranked “High” risk for extreme precipitation/flooding.

- Asset risk ratings and associated “return period” recommendations are variable due to user inputs (*climate tool was designed to provide variable results based on useful life and criticality*).

- Very few MEPA filings contain quantitative analyses (e.g., H&H modeling) to demonstrate resiliency to future climate conditions.

MEPA Climate Resiliency Policy

STRAW PROPOSAL

MEPA Climate Resiliency Policy: Potential Updates

Basic Filing Requirements

1. Continue to require standard output report from MA Resilience Design Tool and discussion of climate resiliency in ENF/EENF.

2. ENF Form to be revised to include:
   - Identification of FEMA flood zone and BFE (if established)
   - Useful life (user input)
   - Exposure score & key scoring rationale (from Tool output)
   - For “primary” assets: asset risk rating, planning horizon, return period recommendations (from Tool output)
   - Discuss whether project is anticipated to be consistent with recommendations (narrative)
   - Describe resiliency measures incorporated into project (narrative)

MEPA Climate Resiliency Policy: Potential Updates

Additional Analysis Required for EIRs

1. Address whether the project is consistent with Tool recommendations
   - Consult numeric values from the Tool as "first step"
   - May utilize alternative site-specific methodology if provide justification and demonstrate use of best available data

2. If the project does not meet recommendations, then explain:
   - Whether alternative designs and locations were considered
   - Flexible adaptation strategies
   - Compliance with local and state mandates

3. Consult best practices for assessing criticality and useful life
   - 40-60 years for "long-lived" hard structures
   - "Medium" to "High" criticality for most assets
   - Secretary may require revised Tool output at her discretion

MEPA Climate Resiliency Policy: Potential Updates

Applicability of EIR Analysis Requirements

1. Mandatory EIRs (environmental impact reports)
   - ❖ Projects that exceed EIR "review thresholds"
   - ❖ Projects located within 1 or 5 miles of EJ populations required to undergo EIR review

2. Discretionary EIRs
   - ❖ Any other EIR required by Secretary

3. Notices of Project Change (NPC) & Special Review Procedures (SRP)
   - ❖ NPC form will require climate output report as attachment
   - ❖ Discretion to require analysis for filings subject to SRP

4. "De minimis" exception
   - ❖ Analysis not required if "not exposed" to any climate parameter

MEPA Climate Resiliency Policy: Potential Updates

Minimum Analysis to be Provided in EIR

1. Structure elevation

- Applies to any new or substantial improvement to buildings/facilities and above-ground infrastructure assets.
- For sea level rise/storm surge, compare elevation to "wave action water elevation" or "water surface elevation" from Tool, or BFE if higher.
- For extreme precipitation (riverine flooding), compare elevation to established BFE on or near project site; determine BFE if site is in un-numbered "A" zone.
- Alternatively, propose "design flood elevation" based on site-specific analysis, including freeboard if applicable, to account for future climate conditions.
- If project will not meet Tool recommendation, must provide justification.

2. Stormwater sizing

- Applies to new or substantial improvement to stormwater management system.
- For extreme precipitation (urban/pluvial flooding), assess resilience of stormwater system to recommended 24-hour rainfall depth associated with future storm event (e.g., 2070 50-year storm) based on Tool output.
- If project will not meet Tool recommendation, must provide justification.

MEPA Climate Resiliency Policy: Potential Updates

Minimum Analysis to be Provided in EIR (cont'd)

3. Extreme heat
   - Report on anticipated increase in # of days over 90 degrees or # of cooling days under future climate conditions, based on publicly available data.
   - Discuss ways the project will reduce extreme heat risks, including low-impact development (LID) strategies, tree planting, cooling spaces, etc. MEPA Office to provide guidance on mitigation options.
   - If project site is already <40% tree cover/>50% impervious (based on Tool output), mitigate for tree removal/new impervious area.
4. Natural resource projects
   - Provide narrative discussion of how project addresses standard design recommendation from Tool output. Also discuss ecosystem benefits.
5. Other potential analyses to be specified in Secretary's Scope
   - On- or off-site flood impacts
   - Culvert sizing
   - Coastal erosion rates

POTENTIAL SCHEDULE FOR 2024-25

Date	Activity
June 2024	Issue straw proposal for public comment (comments due by September 30, 2024)
Summer 2024	Public information sessions (June 18 and 20) and stakeholder discussions
Fall 2024	Issue full text of policy update for public comment
Winter/Spring 2025	Anticipated effective date of MEPA Climate Resiliency Policy update

WAYS TO KEEP INFORMED

- **Submit comments on straw proposal to MEPA-regs@mass.gov by September 30, 2024.**

- **Send blank email to subscribe-mepa_reg_review@listserv.state.ma.us to receive ongoing alerts. To request translation, email MEPA-regs@mass.gov.**

- **Updates will be posted at MEPA website at http://mass.gov/service-details/information-about-upcoming-regulatory-updates.**

APPENDIX: Other State Resiliency Initiatives

- Massachusetts Climate Change Assessment (2022)

- "Resilient Mass" Plan (formerly, "SHMCAP") (2023)
  - Released in 2008; 5-year update released in Fall 2023

- CZM "Resilient Coasts" Initiative (2023 launch)
  - Expected duration of 1+ year; considering "climate resilience districts"

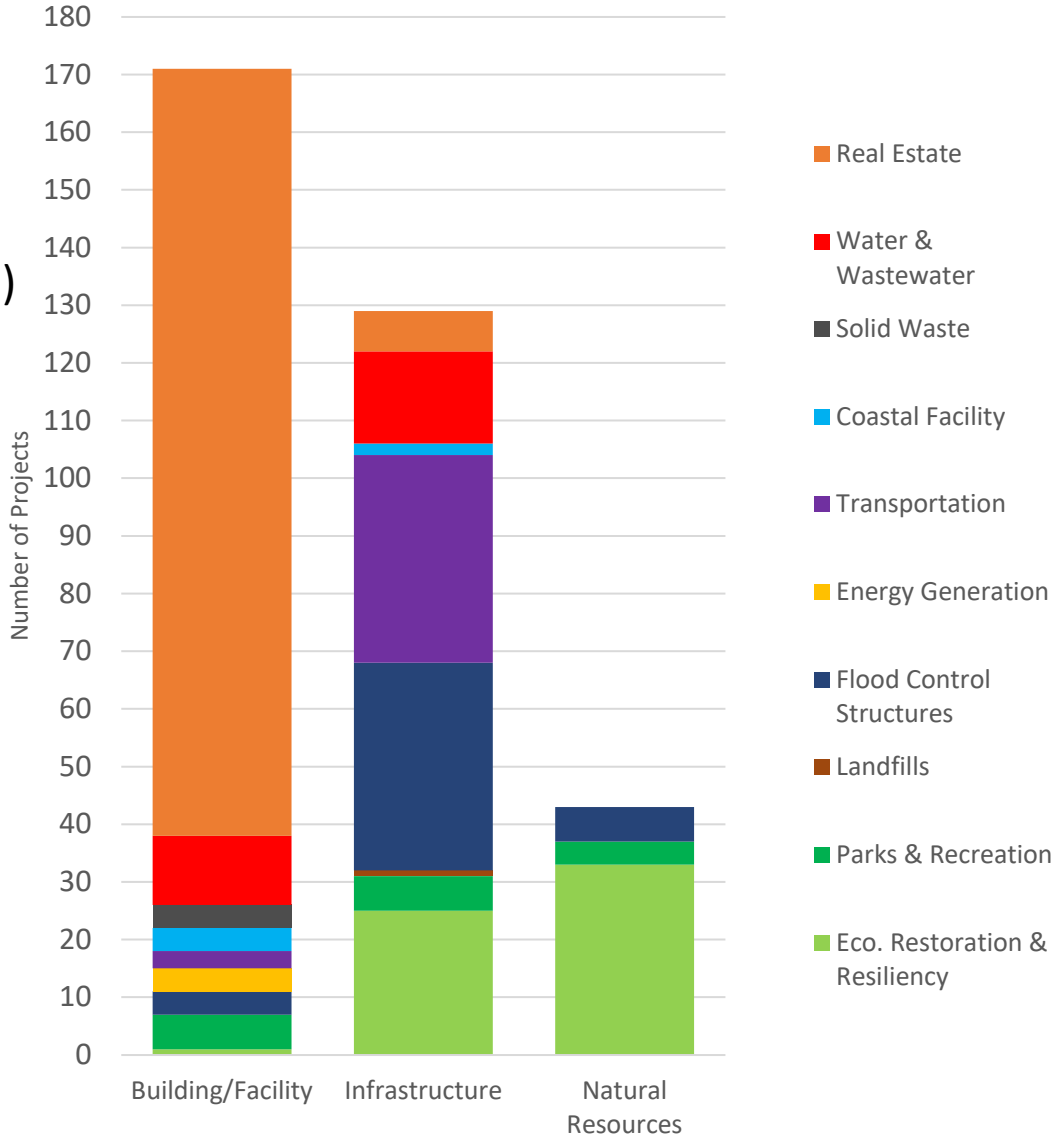
- M.G.L. Chapter 91 (2024 proposed regulations)
  - Requirement to consider future sea level rise for extended term licensing

- Wetlands / Water Quality Certifications (2024 proposed regulations)
  - Heightened standards for new buildings in "Coastal A" zone (i.e., follow V-zone standard of BFE+2ft or 500-year BFE, whichever is higher)
  - Higher rainfall volumes for stormwater design (NOAA+/90th percentile)

APPENDIX: MEPA Project Data

Projects in each category

- Building/Facility
  - Real Estate (133)
  - Water/Wastewater Facility (12)
  - Solid Waste Facility (4)
  - Coastal Facility (4)
- Infrastructure
  - Transportation (36)
  - Energy Generation (19)
  - Flood Control (36)
  - Landfill (1)
- Natural Resources
  - Parks & Recreation (4)
  - Ecological Restoration & Resiliency (33)



APPENDIX: Sample MEPA Projects

V Zone: Salisbury project

- Residential/mixed use in VE/A zones
- Filed before Apr 2022; did not make use of numeric values from climate tool
- Did not estimate future flood elevations for the site

Target Planning Horizon: 2070			
SLR/Storm Surge	High Exposure	Return Period	50-yr (2%)
Extreme Precip (Urban)	High Exposure		10-yr (10%)
Extreme Precip (Riverine)	Not Exposed		
Extreme Heat	High Exposure	Percentile	50th

A Zone: Revere project

- Residential use in A Zone
- Site-specific modeling shows that building elevation will be above 2070 100-year elevation; however, off-site flood impacts to roadway expected

Target Planning Horizon: 2070			
SLR/Storm Surge	High Exposure	Return Period	50-yr (2%)
Extreme Precip (Urban)	High Exposure		10-yr (10%)
Extreme Precip (Riverine)	Not Exposed		
Extreme Heat	High Exposure	Percentile	50th

X Zone: Raynham project

- Warehouse in A/X zones.
- Stormwater design resilient up to 100-year storm under current conditions (NOAA 14)
- Did not provide future projections or inland flood elevations for the site (present or future)

Target Planning Horizon: 2070			
SLR/Storm Surge	Not Exposed	Return Period	N/A
Extreme Precip (Urban)	High Exposure		10-yr (10%)
Extreme Precip (Riverine)	High Exposure		
Extreme Heat	High Exposure	Percentile	50th

APPENDIX: MA Resilience Design Tool Outputs

Table 4.4. Recommended Return Periods Provided by the Tool for the Sea Level Rise & Storm Surge Climate Parameter

				INFRASTRUCTURE				
SEA LEVEL RISE & STORM SURGE	Criticality[1]	Exposure Service Life[1]	BUILDINGS / FACILITIES	Transportation	Dams & Flood Control Structures	Utilities	Green Infrastructure[2]	Solid / Hazardous Waste
			Recommended Return Period (Annual Probability)					
	High	51-100 years	500-yr (0.2%)	1000-yr (0.1%)	500-yr (0.2%)	500-yr (0.2%)	N/A	1000-yr (0.1%)
	Medium	51-100 years	200-yr (0.5%)	200-yr (0.5%)	200-yr (0.5%)	200-yr (0.5%)	N/A	200-yr (0.5%)
	Low	51-100 years	100-yr (1%)	100-yr (1%)	100-yr (1%)	100-yr (1%)	N/A	100-yr (1%)
	High	11-50 years	200-yr (0.5%)	500-yr (0.2%)	200-yr (0.5%)	200-yr (0.5%)	N/A	500-yr (0.2%)
	Medium	11-50 years	100-yr (1%)	200-yr (0.5%)	100-yr (1%)	100-yr (1%)	N/A	200-yr (0.5%)
	Low	11-50 years	50-yr (2%)	100-yr (1%)	50-yr (2%)	50-yr (2%)	N/A	100-yr (1%)
	High	10 years or less	100-yr (1%)	100-yr (1%)	100-yr (1%)	100-yr (1%)	N/A	100-yr (1%)
	Medium	10 years or less	50-yr (2%)	50-yr (2%)	50-yr (2%)	50-yr (2%)	N/A	50-yr (2%)
	Low	10 years or less	20-yr (5%)	20-yr (5%)	20-yr (5%)	20-yr (5%)	N/A	20-yr (5%)

APPENDIX: MA Resilience Design Tool Outputs

Table 4.11. Recommended Return Periods Provided by the Tool for the Extreme Precipitation Climate Parameter

	Criticality	Useful Life	BUILDINGS / FACILITIES	INFRASTRUCTURE				
				Transportation	Dams & Flood Control Structures	Utilities	Green Infrastructure[1]	Solid / Hazardous Waste
			Return Period (Annual Probability)					
EXTREME PRECIPITATION	High	51-100 years	100-yr (1%)	100-yr (1%)	500-yr (0.2%)	100-yr (1%)	N/A	100-yr (1%)
	Medium	51-100 years	50-yr (2%)	50-yr (2%)	100-yr (1%)	50-yr (2%)	N/A	50-yr (2%)
	Low	51-100 years	25-yr (4%)	25-yr (4%)	50-yr (2%)	25-yr (4%)	N/A	25-yr (4%)
	High	11-50 years	50-yr (2%)	50-yr (2%)	100-yr (1%)	50-yr (2%)	5-yr (20%)	50-yr (2%)
	Medium	11-50 years	25-yr (4%)	25-yr (4%)	50-yr (2%)	25-yr (4%)	5-yr (20%)	25-yr (4%)
	Low	11-50 years	10-yr (10%)	10-yr (10%)	25-yr (4%)	10-yr (10%)	5-yr (20%)	10-yr (10%)
	High	10 years or less	25-yr (4%)	25-yr (4%)	50-yr (2%)	25-yr (4%)	5-yr (20%)	25-yr (4%)
	Medium	10 years or less	10-yr (10%)	10-yr (10%)	25-yr (4%)	10-yr (10%)	5-yr (20%)	10-yr (10%)
	Low	10 years or less	5-yr (20%)	5-yr (20%)	10-yr (10%)	5-yr (20%)	5-yr (20%)	5-yr (20%)