

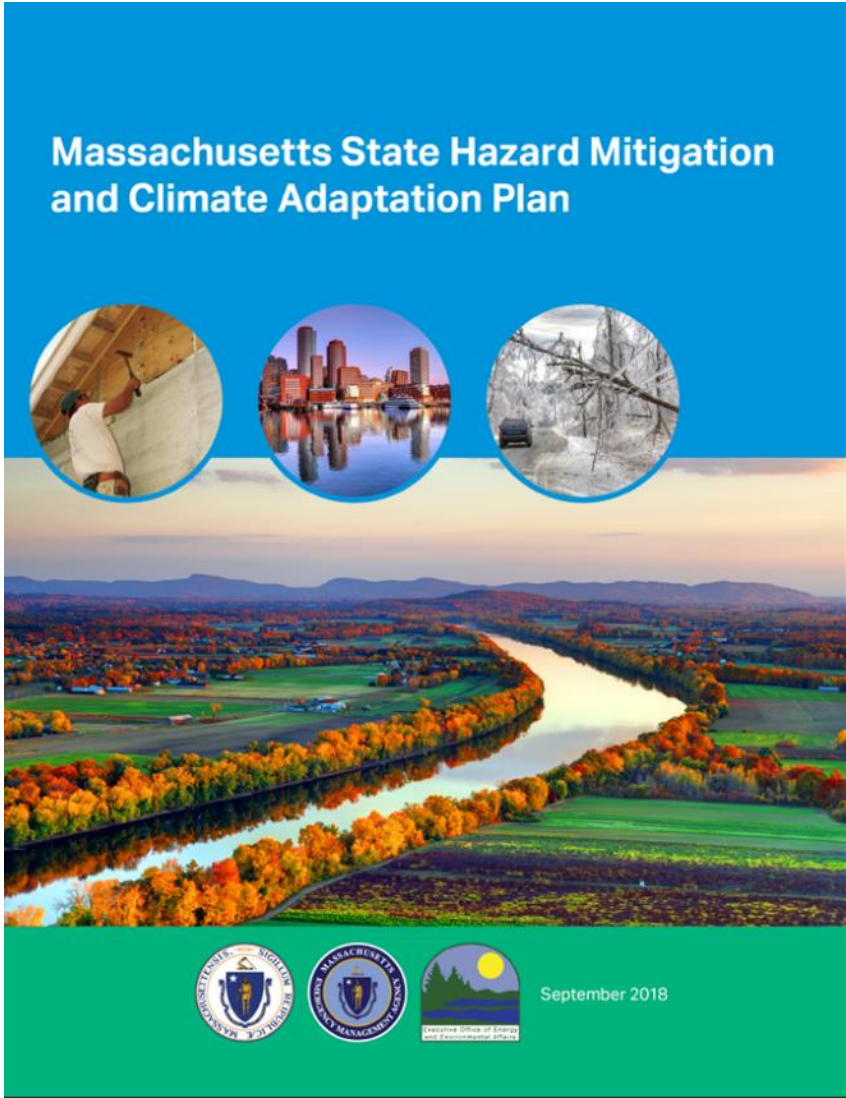
Development of a Framework for **Resilient**Coasts



ResilientCoasts

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STATE HAZARD MITIGATION & CLIMATE ADAPTATION PLAN (SEP 2018)



STATEWIDE COORDINATION (AUG 2019)

RESILIENTMASS ACTION TEAM (RMAT)

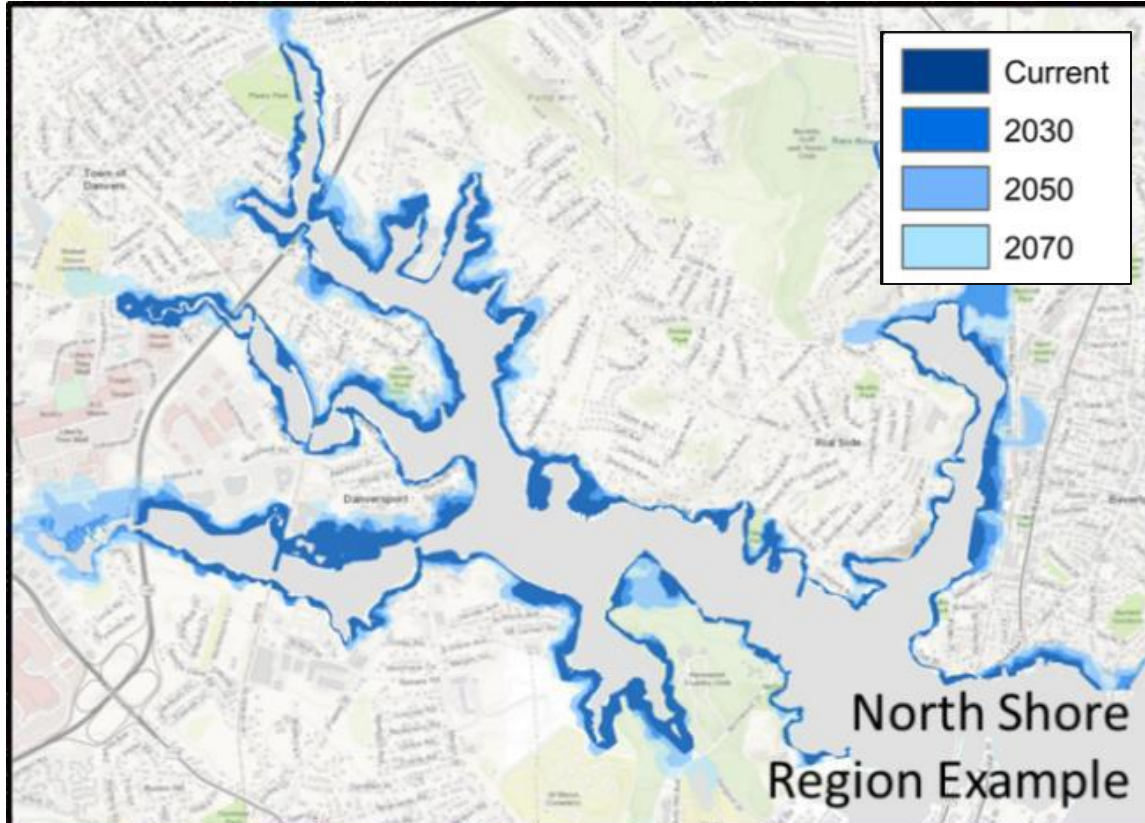
- State interagency working group responsible for implementation, monitoring & maintenance of ResilientMass Plan
- Led by Executive Office of Energy & Environmental Affairs & MA Emergency Management Agency
- Representatives & staff from each Secretariat including economic development, health, housing & transportation
- Provide outreach, technical assistance & stakeholder engagement
- Coordinate collaborative partnerships
- Support incorporation of plan into other state plans & programs

CLIMATE RESILIENCE DESIGN STANDARDS TOOL (2021-2022)

BASED ON PLANNING HORIZON & PROJECT USEFUL LIFE

- Developed to support efforts by state agencies & municipalities to integrate best available statewide climate change projections into conceptual planning & design of projects
 - Infrastructure
 - Buildings
 - Natural resources
- Tool outputs
 - Preliminary Climate Exposure (sea level rise/storm surge) & Risk Ratings (not exposed – high)
 - Recommended Climate Resilience Design Standards & Guidance

MA CLIMATE CHANGE ASSESSMENT (DEC 2022)



EXCERPT OF FIGURE 12. AREA EXTENT OF 1% ANNUAL CHANCE (100-YEAR) FLOOD

KEY FINDINGS ABOUT OUR COAST

- Coastal impacts on people & ecosystems are increasing due to sea level rise & changing coastal storms
- During extreme storms, road flooding causes delays in emergency response, potentially leading to loss of life
- Storm surge & coastal erosion cause property & infrastructure damages
- Sea level rise leads to coastal habitat shifts & loss of salt marshes & beaches

RESILIENTMASS PLAN (SEP 2023)



RECOMMENDED ACTION LED TO RESILIENTCOASTS

- Plan identifies actions state agencies will take to address risks to human health & safety, communities, critical assets & infrastructure, natural resources, governance & economy
- Develop a coordinated, equitable & effective coastal resilience strategy in partnership with coastal municipalities & other coastal stakeholders

RESILIENTCOASTS PLAN (LAUNCHED NOV 2023)



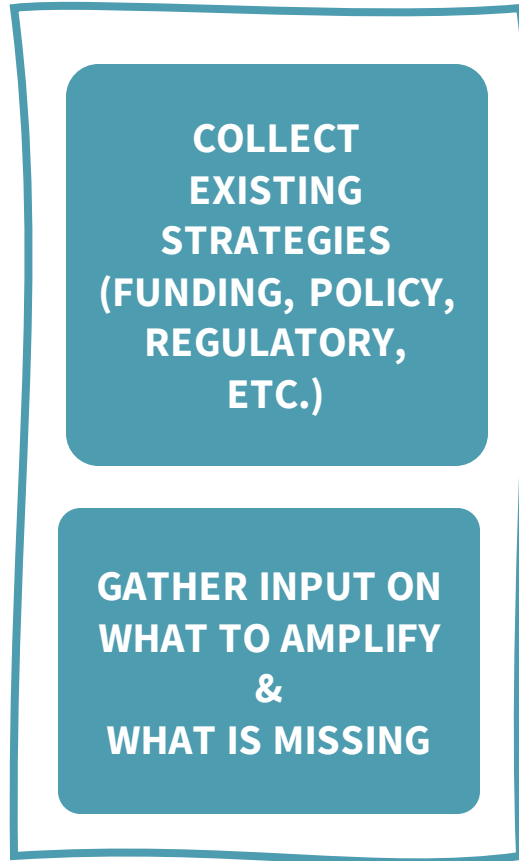
- **State lead:** EEA - Executive Office of Energy & Environmental Affairs & CZM - Office of Coastal Zone Management
- **Purpose:** guide state & local coastal resilience policy & management actions
- **Process:**
 - *Describe a vision/goals* & metrics for a resilient coast
 - *Map geographic zones* of climate vulnerability or “coastal resilience districts”
 - *Evaluate current & new strategies* & how they could be applied to different districts
 - *Develop recommendations* to guide management of vulnerable areas at state & local level

STAKEHOLDER ENGAGEMENT

Internal Agency Working Group	External Task Force	Community Liaisons	Public Meetings & Surveys	Focus Groups & Interviews
<ul style="list-style-type: none">• Energy & Environmental Affairs• Administration & Finance• Economic Development• Health & Human Services• Housing & Livable Communities• Public Safety & Security• Transportation & Public Works	<ul style="list-style-type: none">• Academic• Business• Environmental• Environmental Justice• Insurance• Legislative• Municipal• Philanthropy• Real estate• Regional planning	<ul style="list-style-type: none">• Beverly Climate Justice• Eastie Farm Climate Coalition• Groundwork Southcoast• Herring Pond Wampanoag• MA Lobstermen's Association• Nantucket Youth Climate Committee	<ul style="list-style-type: none">• Goals & indicators• Coastal Resilience Districts• Tools & strategies• Framework	<ul style="list-style-type: none">• TBD

PLANNING APPROACH

INPUT



ANALYZE



DEVELOP



GOALS FOR A RESILIENT COAST

GOAL 1: Improve **human health and safety**

GOAL 2: Protect and enhance the value of **natural and cultural resources**

GOAL 3: Increase resiliency of **built infrastructure functions**

GOAL 4: Strengthen the **coastal economy**

GOAL 5: Advance **equity** and **environmental justice**

GOAL 6: Support the **capacity of coastal communities**

INDICATORS TO EVALUATE PROGRESS TOWARDS GOALS

EXAMPLES

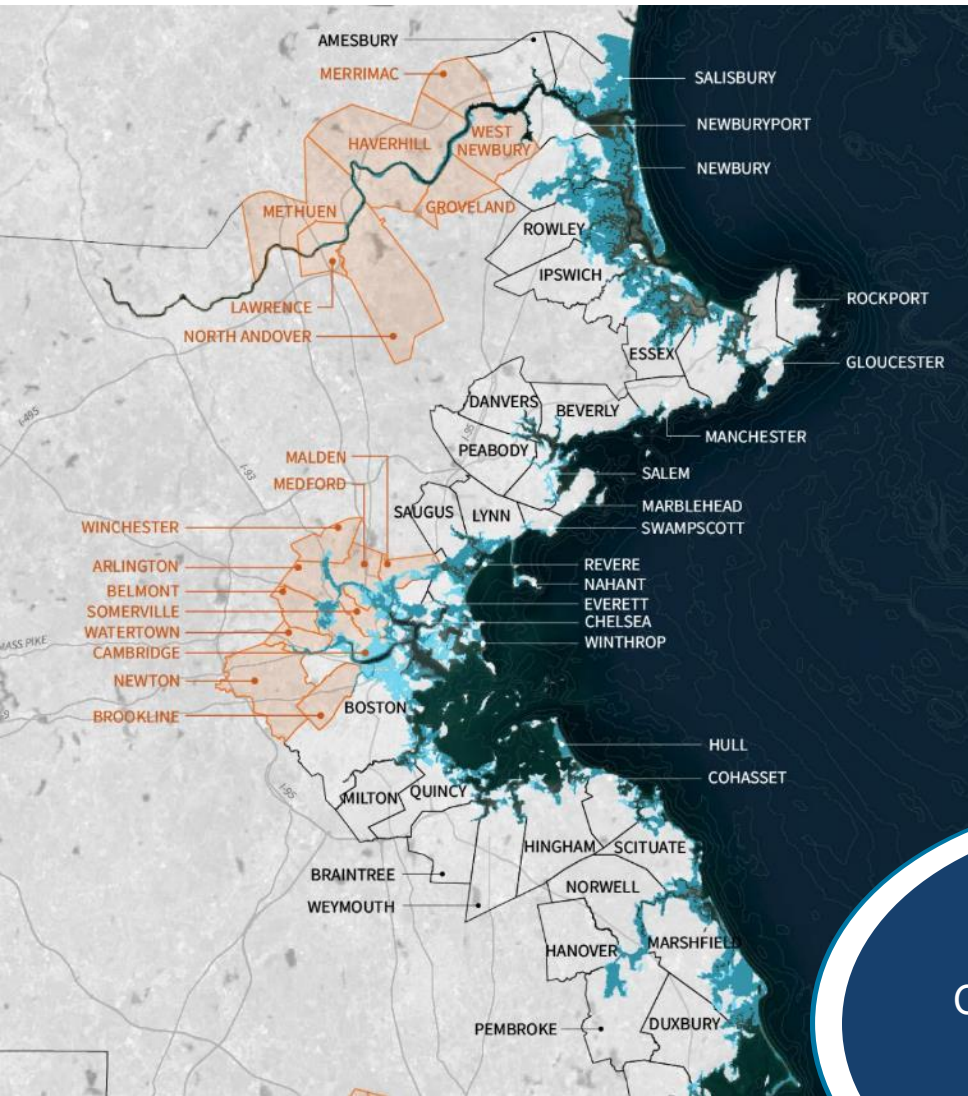
- **Health & safety:** accessible evacuation routes & reliable emergency response during coastal storm events
- **Natural resources:** reduced long-term erosion of beaches, dunes & coastal banks
- **Infrastructure:** reduced damages to coastal infrastructure & buildings
- **Economy:** commercial & industrial areas & activities maintain operations during king tides & minor coastal storms
- **Environmental justice:** new affordable housing isn't exposed to coastal flooding & erosion
- **Community capacity:** coastal communities have received technical & financial support on coastal resiliency issues

PLANNING REGION BASED ON 2030 COASTAL FLOOD RISK



78 COASTAL COMMUNITIES (IN ORANGE)

2070 COASTAL FLOOD RISK EXPANDS REGION



78 COASTAL
COMMUNITIES +
20 ALONG
RIVERS

Extent of Coastal Resilience
Districts in blue

WHAT ARE COASTAL RESILIENCE DISTRICTS?

Neighborhoods & natural systems that have different landscape characteristics & face different climate hazards

THE POINT/EL PUNTO SALEM



Retrofit of coastal structures to protect environmental justice neighborhood

SCONTICUT NECK FAIRHAVEN



Land acquisition for public access & marsh migration in rural area

SANDY NECK BEACH BARNSTABLE



Shoreline restoration with infrastructure relocation for recreation on a barrier beach

THE POINT/EL PUNTO



SCONTICUT NECK



SANDY NECK BEACH



NATURAL RESOURCES

Low

Medium

High

LAND USE & ECONOMY

High density

Medium density

Low density

COASTAL EROSION

Stable

Eroding

Eroding

COASTAL FLOODING

Moderate

High

Moderate

ENVIROMENTAL JUSTICE

Yes

No

No

HISTORIC & CULTURAL RESOURCES

Yes

Yes

Yes

DATA SUPPORTING CREATION OF DISTRICTS

PRIMARY

SECONDARY



NATURAL RESOURCES

- Existing coastal wetlands
- Potential future coastal wetlands



COASTAL EROSION

- Shoreline change
- Coastal bank loss
- Seawalls & other coastal structures



ENVIRONMENTAL JUSTICE

- Low income & minority populations with language barriers



LAND USE & ECONOMY

- Density of development



COASTAL FLOODING

- Near-term (2030)
- Long-term (2070)



HISTORIC & CULTURAL RESOURCES

- Archaeological sites, historic buildings & cultural landforms

FINANCING ACTION

RESILIENTMASS FINANCE STRATEGY IN DEVELOPMENT

- Research & recommendations for new funding & finance mechanisms for resilience action
 - Mechanisms for funding resilience action in Coastal Resilience Districts
 - Resilience funding options for water-dependent industrial infrastructure in Designated Port Areas
 - Blue carbon credits for restoration of salt marshes
 - Environmental impact bonds
 - Loan options for homeowners to access federal assistance for floodproofing & elevating
- Impact analysis of recommended options
- Implementation roadmap

NEXT STEPS

- Finalize indicators based on input from public meetings & survey
- Map Coastal Resilience Districts
- Discuss possible strategies at a public meeting this spring
- For more info:
www.mass.gov/info-details/resilientcoasts-initiative



SCAPE

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