Proposed Updates to the Massachusetts Wetlands Protection Act Coastal Regulations

(310 CMR 10.00)

Public Information Sessions - January 18 & 23, 2024
Public Hearings – January 31 & February 1, 2024

Lisa Rhodes, MassDEP Boston Office, Wetlands Program Chief
Jill Provencal, MassDEP Northeast Regional Office, Wetland Section Chief
Pamela Harvey, Esq., MassDEP Environmental Analyst

Agenda

1. Introduction and Need for Proposed Regulations in Land Subject to Coastal Storm Flowage (LSCSF)
2. LSCSF Functions and Learning from Past Storms
3. Proposed Standards in LSCSF
4. Additional Coastal Resilience Regulations Proposed:
   - Nature-Based Shoreline Protection
   - Elevating Roads and Relocating Roads and Water Dependent Uses
   - Scientific Research Projects for Climate Change and SLR
5. Schedule and How to Comment

New Standards Proposed in Land Subject to Coastal Storm Flowage (LSCSF)

Improve Designs to Reduce Existing and Increasing Risk Due to:

- Stronger Coastal Storms
- Sea Level Rise
- Increasing Precipitation

New Standards will reduce storm and flood damage on development and infrastructure, reduce risk to public health and safety, and protect the natural function of the floodplain

Need for Wetlands Resilience Regulation Updates Environmental and Economic / Fiscal Drivers

Effects of climate change including Sea Level Rise, intensifying storms, and increased precipitation are worsening impacts to natural resources and the built environment such as coastal and inland flooding, storm damage, and polluted runoff.

Credit rating agencies are weighing in:

Commonwealth Magazine, October 2022: *"The big three credit rating agencies had largely good things to say about Massachusetts this month, but one firm warned that the strong economic fundamentals and growing state reserves have a counterweight in the state's vulnerability to coastal storms and flooding."*

S&P, 2022: *"We consider **Massachusetts' environmental risks moderately negative in our credit rating analysis** because of the commonwealth's **coastal exposure**, with about two-thirds of its population …in the combined Boston and Cape Cod area **exposing the state to significant economic disruption following a high-impact event**"*

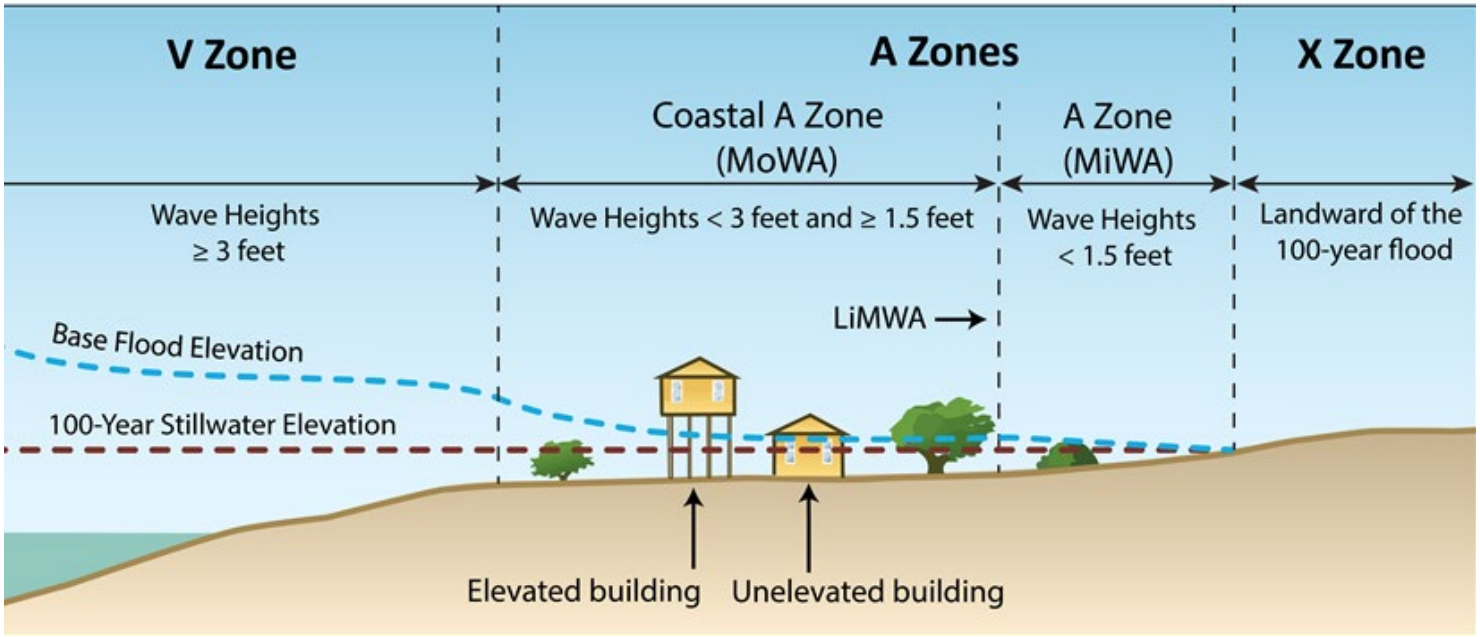
LSCSF Functions to Prevent Storm Damage and Promote Flood Control:

LSCSF in its natural condition diminishes and buffers the high energy effects of storms by:

- Absorbing wave energy and flood water movement affected by topography, soil & sediment, transportability and permeability of the land surface
- Preventing erosion by slowing water movement
- Allowing water to spread laterally and landward, dissipating storm flow energy
- Allowing existing vegetation to act as a filter to prevent pollution and assist in diminishing storm flood flows

LSCSF Standards Based on FEMA Flood Zones

FEMA Flood Zones



V Zone = Velocity Zone

A Zone = Coastal Floodplain = Moderate/Minimal Wave Action (MoWA/MiWA)

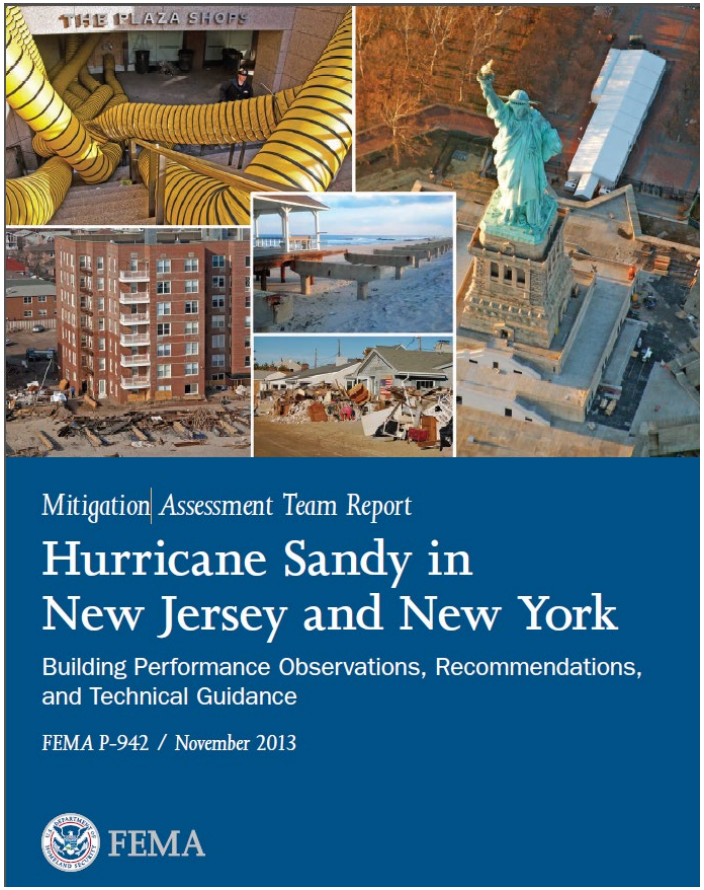
Coastal A Zone = MoWA (Wave heights < 3 feet and ≥ 1.5 feet)

Most Extensive Damage Occurs in V and MoWA Zones (Wave Heights ≥ 1.5 feet)

Learning from Past Storms

Mitigation Assessment:

- After major disasters, FEMA engineers & construction experts assess the causes of storm damage and building failure.
- The Mitigation Assessment Team (MAT) Reports include recommendations to reduce future damages.



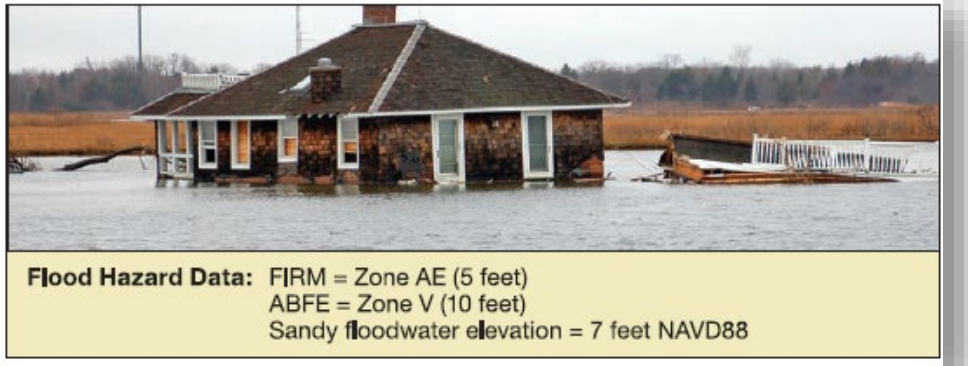
Learning from Past Storms and Effects of Flow channelization

Figure 3-10:
Flow channels A–D (dashed lines) formed between buildings on the bayward side of the barrier island at Mantoloking, NJ, and washed sand into the bay at their ends
SOURCE: NASA

Gaps in dunes, streets, and areas between buildings or other structures often channel floodwater flow.

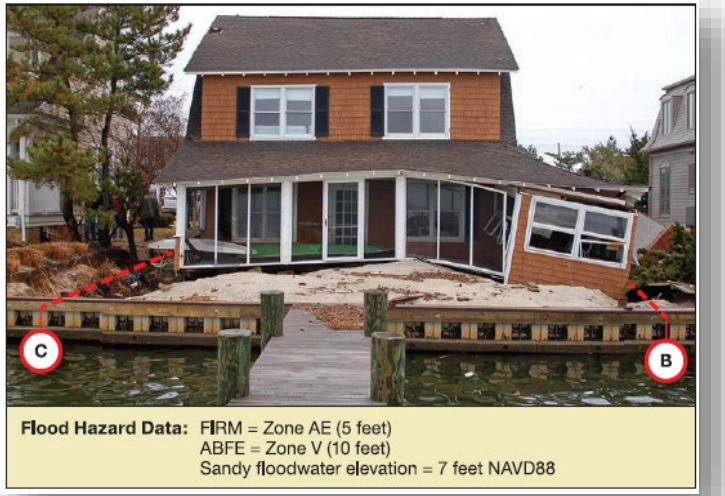
Learning from Past Storms and Effects of Flow Channelization

House washed into the bay at the site of flow channel A



Flood Hazard Data: FIRM = Zone AE (5 feet)
ABFE = Zone V (10 feet)
Sandy floodwater elevation = 7 feet NAVD88

Undermined house with damaged foundation between flow channels B and C.



Flood Hazard Data: FIRM = Zone AE (5 feet)
ABFE = Zone V (10 feet)
Sandy floodwater elevation = 7 feet NAVD88

MassDEP

Learning from Past Storms and the Effects of Flow channelization

Flood Hazard Data: FIRM = Zone AO (flood depth 1 foot above ground surface)
ABFE = Zone A (7 feet)
Sandy floodwater elevation = 9 feet NAVD88

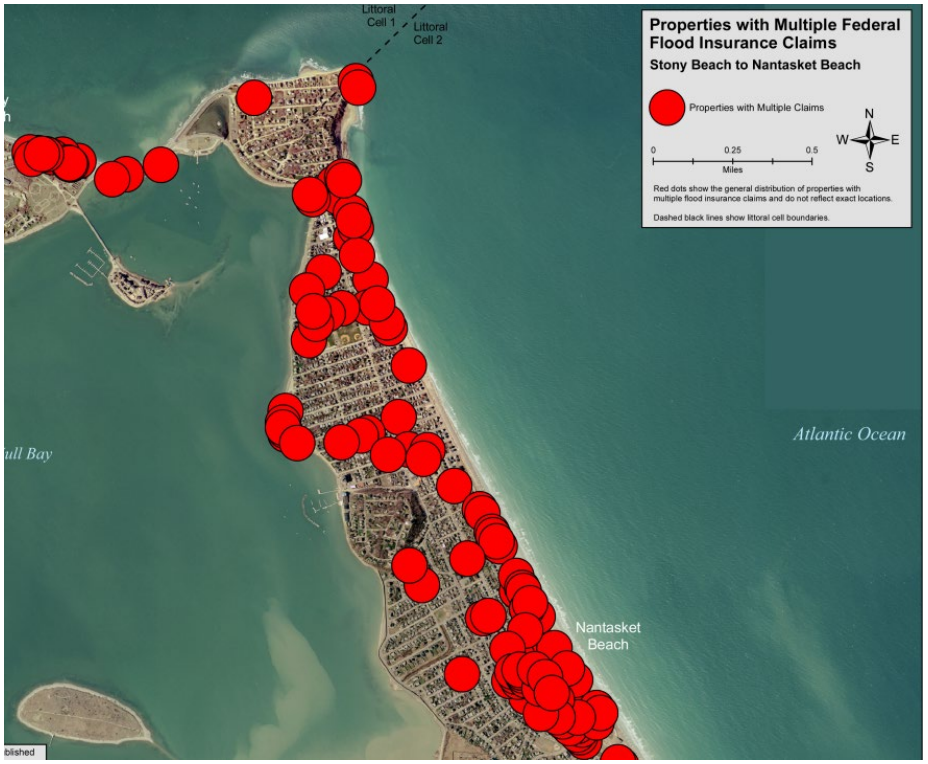
Figure 3-16:
Timber bulkhead was overtopped, resulting in lost backfill and damage to the house situated approximately 15 feet landward of the bulkhead (Lavallette, NJ)

Houses within 20 feet of erosion control structures and exposed to ocean waves during Hurricane Sandy had almost always sustained significant flood and/or erosion damage.

Learning from Past Storms

Storm Damage Patterns:

Properties with multiple Federal Flood Insurance Claims: properties that have sustained two or more claims over $1,000 over a ten-year period.



Source: South Shore Coastal Hazards Characterization Atlas

Proposed LSCSF Standards: Key Framework for Performance Standards and Project Design

Determine whether the project site is within Another Resource Area or only LSCSF. If within another Resource Area, follow performance standards for the other Resource Area with exceptions. Application of Performance Standards, 310 CMR 10.36(4)

Identify the LSCSF Zone – V-zone, MoWA, MiWA. Use FEMA maps to determine boundaries. Boundaries, 310 CMR 10.36(3)

Determine whether the project site is previously developed, so that the Redevelopment provisions apply, or the site will be reviewed as New Development. See 310 CMR 10.36(5)-(7) for New Development; see 310 CMR 10.36(8) for Redevelopment

Determine whether the project is eligible for review as a Limited Project. New provisions for roads and water-dependent uses have been added. 310 CMR 10.24(7)(c)1. and 9.

Nature-based shoreline protection must be considered in project design. 310 CMR 10.24(1)(b)

Proposed LSCSF Standards: Do Not Apply when Activity is in Another Resource Area -

Exceptions in 310 CMR 10.36(4)

Where LSCSF Overlaps another Resource Area, project must meet standards for other Resource Area, not LSCSF, except:

- No New Structures in Velocity Zone
- New Buildings within MoWA must be elevated under LSCSF standards or 10.28 (Dune) or 10.29 (Barrier Beach or Building Code whichever is higher
- For work on Coastal Bank that does not supply sediment (see 310 CMR 10.30(7)) must meet LSCSF and 10.30.
- Rocky Intertidal Shore must meet LSCSF and 10.31
- Does not apply to marine industrial uses in Designated Port Areas

Proposed LSCSF Standards: Preamble, Definitions, Boundaries, Minor Activities

- **Preamble** 310 CMR 10.36(1)
  - Functions of LSCSF
  - Effects of development within LSCSF
  - Characteristics of LSCSF
  - Significant to the interests of flood control and storm damage prevention
- **Definitions** 310 CMR 10.36(2) – Terms used in LSCSF provisions
  - Terms also in 310 CMR 10.04 and 10.23
- **Boundaries** 310 CMR 10.36(3)
  - Zone boundaries shown on FIRM presumed accurate
  - Applicant may request adjustment from FEMA
  - Rebuttable to show more landward – credible evidence based on similar modelling methods
  - Historical evidence may be used for landward LSCSF boundary (LSCSF definition not changed)
- **Minor Activities** 310 CMR 10.02(2)(a)3. Limited list in MiWA zone only, outside other coastal resource areas, e.g., small sheds, vista pruning, conversion of lawn to vegetable garden

Proposed LSCSF Standards: New Development

Velocity Zone
310 CMR10.36(6)
	• The Standard for V zone is No Adverse Effect
	• No new buildings, even on piles, in V zone
	• Limited list of allowable activities, including
	  ○ Walkways
	  ○ Boating facilities
	  ○ Repair and maintenance of coastal engineering structures
	  ○ Septic systems allowed under 310 CMR 15.213 except mounded systems

Moderate Wave Action (MoWA) 310 CMR 10.36(6)	• The standard for MoWA Zone is No Adverse Effect • Buildings must allow unobstructed flow during Base Flood Elevation plus two feet • Limited waiver provision for additional two feet • Limited list of allowable activities (same as V zone) • MoWA standards also apply where AO Zone borders V zone as shown on FEMA map

Proposed LSCSF Standards: New Development

Minimal Wave Action (MiWA)
310 CMR 10.36(7)

- Elevation of buildings on piles or solid foundation with one-additional foot above BFE;
- Where wave energy across site may be significant and within the buffer zone of another resource area, elevation may be required to protect the Resource Area
- Avoid fill, structures that would redirect flow or increase flooding
- Preserve soils and vegetation, limit pavement
- Avoid or mitigate impacts from topographic or other restrictions (e.g., confined basins, culverts)
- Stormwater management
- Reduce impervious surfaces to increase permeability

Proposed LSCSF Standards: Redevelopment

Redevelopment 310 CMR 10.36(8)	• Must improve existing conditions - Reduce pavement, remove restrictions, provide storage • No reconstruction seaward on site, no increase in building footprint • V zone – No new buildings; Damage reconstruction or substantial improvement on open piles • Elevation on open piles for certain work in any zone (e.g., new foundation). Historic structures exempt.
Redevelopment in Highly Developed Areas – Flood Control 310 CMR 10.36(8)(f) and (g)	• Areas where impervious surfaces predominate • Placement of fill for flood control allowed in MiWA. • Elevation of existing seawalls or construction of berms for flood control allowed in V or MoWA zones as part of flood control conducted or supported by public agency. • No redirection of wave energy or flood waters to other properties.

Proposed LSCSF Standards: Important Resources

Salt Marsh & Dune Migration 310 CMR 10.36(9)	• Work in LSCSF to support salt marsh and dune migration is allowed to encourage migration • May be within Buffer Zone of Salt Marsh or provided no adverse effects on these resource areas. • Salt marsh or coastal dune created by passive or active migration will be subject to those performance standards.
Rare Species 310 CMR 10.36(10)	Protection of Rare Species Habitat – no adverse effect on specified habitat under 310 CMR 10.37

Proposed Standards for all Resource Areas: Prioritizing Nature-Based Shoreline Protection

General Requirement for Nature-Based Resiliency, 310 CMR 10.24(1)(b)

"For work in any coastal resource area or buffer zone, the Applicant shall consider, and the Issuing Authority may require, the restoration, enhancement or creation of wetland resource areas through natural methods and materials as an alternative to coastal engineering structures to promote resiliency along the shoreline."

- Plan must be based on characteristics of the site
- Can convert one resource to another to create greater shoreline resiliency
- No loss of salt marsh or primary frontal dune
- Promotes capacity of resource areas to provide flood control, storm damage prevention to shoreline property owners
- Consult most current mapping for shoreline change and sea level rise for planning (resilientma.org)

Proposed Standards for New Limited Projects: Increased Resilience for Roads & Water Dependent Uses

Limited Project in Coastal Areas at Risk from Sea Level Rise:
Maintenance and improvement of existing public roadways, including:

- Road Elevation (310 CMR 10.24(7)(c)1.)
  - No roadway widening
  - Protection of resource areas, esp. salt mash
  - Hydraulics/hydrology must be maintained or improved with no restriction of flow and no increase in flood stage or velocity.
- Road Relocation/Water-dependent Use Projects (310 CMR 10.24(7)(c)9)
  - No work in, or alteration to hydrology of salt marsh
  - Alternative analysis – requires evaluation of alternate routes
  - No flow restriction, or increase in flood stage, velocity

Proposed Standards:
Pathway for Research on Climate Resilience

Scientific Research Projects, 310 CMR 10.05(12)

- Solely intended to gather info and test hypotheses on wetland response to climate change
- Must be based on sound theory, supported by reliable field, lab or modeling data
- Must be implemented by academic, government agency, environmental non-profit
- Limited impacts, duration, restoration required

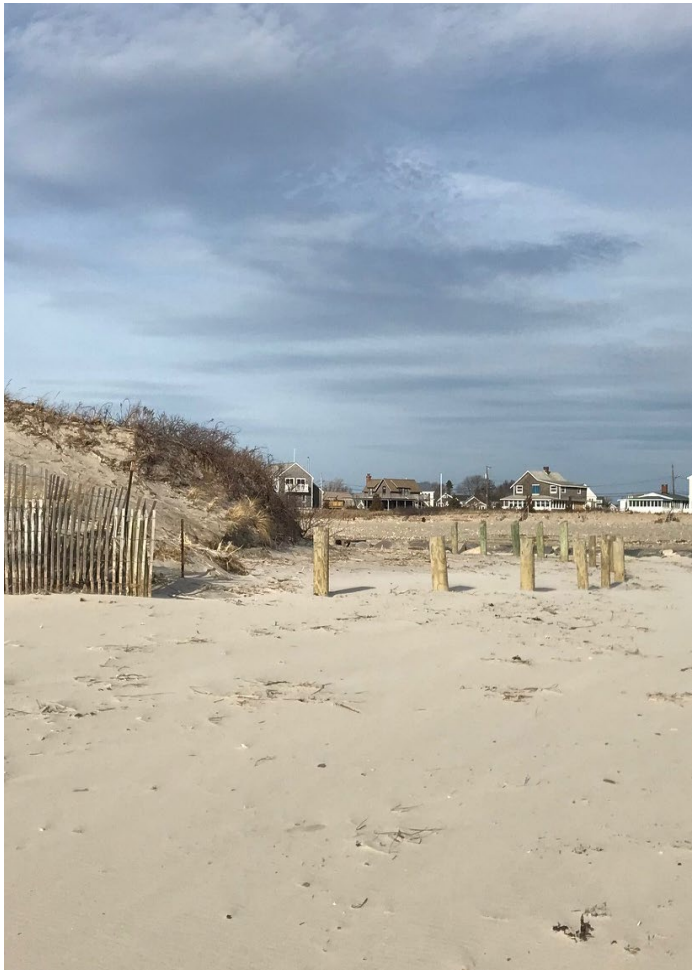
Wetlands Resilience Regulation Schedule

Schedule:

- Released for Public Comment: 12/22/23
- Public Info Sessions / Hearings: Jan-Feb 2024
- Comment Period Closes: 3/1/24
- Promulgation Expected: Spring-Summer 2024

January 18	2 Public Information Sessions (virtual, 1pm and 6pm)
January 23	3rd Public Information Session (virtual, 1pm)
January 31	2 public hearings (virtual, 1pm and 6 pm)
February 1	3rd Public hearing (virtual, 1pm)

https://www.mass.gov/info-details/massdep-public-hearings-comment-opportunities



THANK YOU

Testimony may be presented orally at the public hearing. Written comments will be accepted through 5:00pm on March 1, 2024.

The Department encourages electronic submission by email to dep.wetlands@mass.gov and must include Wetlands-401 Resilience Comments in the subject line.

In lieu of electronic submittal, paper comments may be mailed to Lisa Rhodes, Attn: Wetlands-401 Resilience Comments, MassDEP – BWR, 100 Cambridge Street, Suite 900, Boston, MA 02114.