

# Preparing for Climate Change in the Hampton-Seabrook Estuary: Strategies and Tools

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Photo: Kristin Burchsted 2011



Photo: [blogs.lowellsun.com](http://blogs.lowellsun.com)

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# Workshop #1 – issues of concern

- ✓ Loss of wetlands/marsh, Impacts to salt marshes
- ✓ Saltwater intrusion
- ✓ Flooding (property damage) and loss of flood protection
- ✓ Beach erosion, barrier beach systems
- ✓ Economic impacts town budgets

*Solutions and Tools – depend on location, exposure and risk*

# NH Enabling Statutes

RSA 672:1 Planning and Zoning – Declaration of Purpose

RSA 674:16 Duties of the Planning Board

RSA 674:2 Master Plan – Purpose and Description

RSA 674:21 Innovative Land Use Controls

# NH Enabling Statutes

RSA 674:56 (I) Floodplain Zoning, (II) Fluvial Erosion Hazard Zoning

RSA 674:56 Flood Hazards (NFIP-floodplain standards)

RSA 674:57 FEMA Flood Insurance Rate Maps (FIRMs)

RSA 483-B:9 Minimum Shoreland Protection Standards (SWQPA)

RSA 482-A Water Management and Protection - Wetland Regulations

# Municipal Audit

Evaluate policies, zoning, regulations and plans to **identify level of protection** for areas vulnerable to hazards and changes in climate

Link public investment, public safety and private development to **promote safe growth and resiliency** both before and after an event



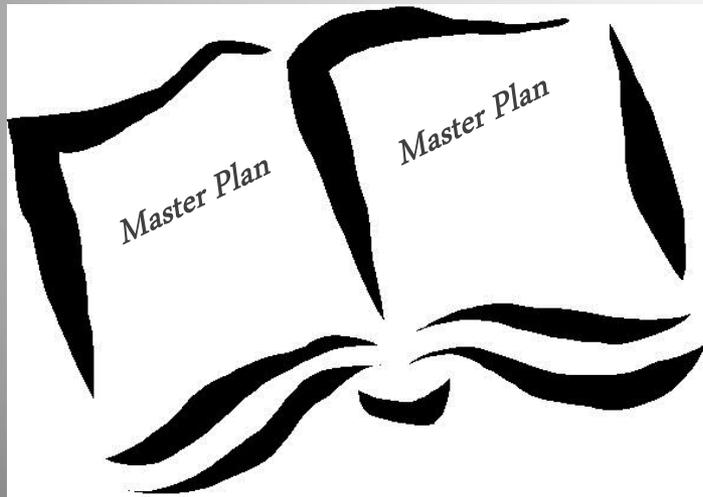
# Master Plan

Establish broad goals for

- Public health and safety
- Adaptation/Resilience
- Environment/Resources
- Municipal Assets
- Protection of property

*Unpredictable future conditions*

*Importance of taking action despite uncertainty*



# Zoning Ordinance

Floodplain Standards (NFIP)

Flood Hazard Overlay Districts

- land uses, development standards

Design-Performance Standards

- setbacks, building height/design

Public Health and Safety

Environmental Protection



# Site Plan and Subdivision Regulations

## Design-Performance Standards

- landscaping, impervious surface coverage, stormwater management, site design, road standards

## Open Space preservation (i.e. high risk areas)

## Environmental Protection

- Water quality, habitat protection, recreation, cultural and historical resources

# Shoreland and Wetland Standards

SWQPA and Water Management and Protection Statutes

Setbacks, buffers,  
impervious surface cover,  
stormwater management

Uplands provide critical  
flood storage and water  
quality benefits



# Designate High-Risk Areas-No-build Zones

Conserve strategic lands where erosion or flooding is severe via buy-out or protective easements

Prevention is a cost-effective tool for minimizing risk and vulnerability

- Floodproofing
- Setbacks, reduced density
- Limiting waterward expansion
- New/Redevelopment standards



## **Hazard Mitigation Plan**

Goal to reduce loss and damage of public and private assets and resources

Long-term plan for construction of sustainable, disaster-resilient infrastructure

## **Response and Recovery Plan**

Identifies existing and future flood hazard areas

Provides a clear pathway for safe and comprehensive planning and redevelopment (reuse) after an event

# Capital Improvement Plan



Management plan for existing and future infrastructure and assets - reduce risk and vulnerability

Limit municipal investments in high risk- hazard areas

Apply new designs, data, technology and models/maps

# Floodplain Property Buyout

Acquisition of properties using state and federal \$ (i.e. repetitive loss)

Restoration of critical flood protection and storage areas



# Land Conservation

Preserve high risk areas - compensation to the property owner by easement or purchase



## FROM TIDES TO STORMS: PREPARING FOR NEW HAMPSHIRE'S FUTURE COAST

# Tides to Storms Project

Work with coastal communities over the next year to evaluate risk and vulnerability to flooding from sea level rise and storm surge.

Identify practical approaches to protecting municipal and private assets, public safety and natural resources/services.



## FROM TIDES TO STORMS: PREPARING FOR NEW HAMPSHIRE'S FUTURE COAST

# Resiliency + Adaptation

**Resiliency:** The capacity to respond to changes in environmental conditions or disturbance by resisting damage and recovering quickly.

**Adaptation:** Deliberate and considered actions to avoid, manage or reduce the effects of a changing climate and to take advantage of the opportunities that such changes may create.



# FROM TIDES TO STORMS: PREPARING FOR NEW HAMPSHIRE'S FUTURE COAST

## *Infrastructure & Utilities*

Roads / Highways  
Water / Wastewater  
Wells (public)  
Utilities (electric, gas, telecom)  
Dams / Culverts  
Historic Landmarks / Structures / Graves

## *Critical Facilities*

Shelters  
Emergency Facilities  
Evacuation Routes  
Hospitals / Healthcare Centers

## *Natural Resources*

Surfaces Water  
Aquifers  
Wetlands (freshwater, tidal)  
Habitat  
Conservation Areas / Lands  
Agricultural Soils  
Parks

## *Transportation*

Roads / Highways  
Bridges  
Transit Routes & Facilities  
Bike Paths  
Long Range Plan projects  
Ports and Harbors



## FROM TIDES TO STORMS: PREPARING FOR NEW HAMPSHIRE'S FUTURE COAST

### COASTAL VULNERABILITY ASSESSMENT

- I. Executive Summary
- II. Purpose and Goals
- III. Climate Change in Southeastern New Hampshire
- IV. Sea Level Rise and Storm Surge Mapping
- V. Vulnerability Assessment Results
- VI. Regional Planning Recommendations
- VII. Town Summary and Profiles