

# Tidal Wetland Rules

## Env-Wt 600



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“Time and tide wait for no man.”

~Geoffrey Chaucer

# Tidal Rules

Env-Wt 600

## Agenda

1. Similarities/differences with previous rules.
2. Analyze data.
3. Introduction to general criteria.



# Env-Wt 600 Coastal Changes

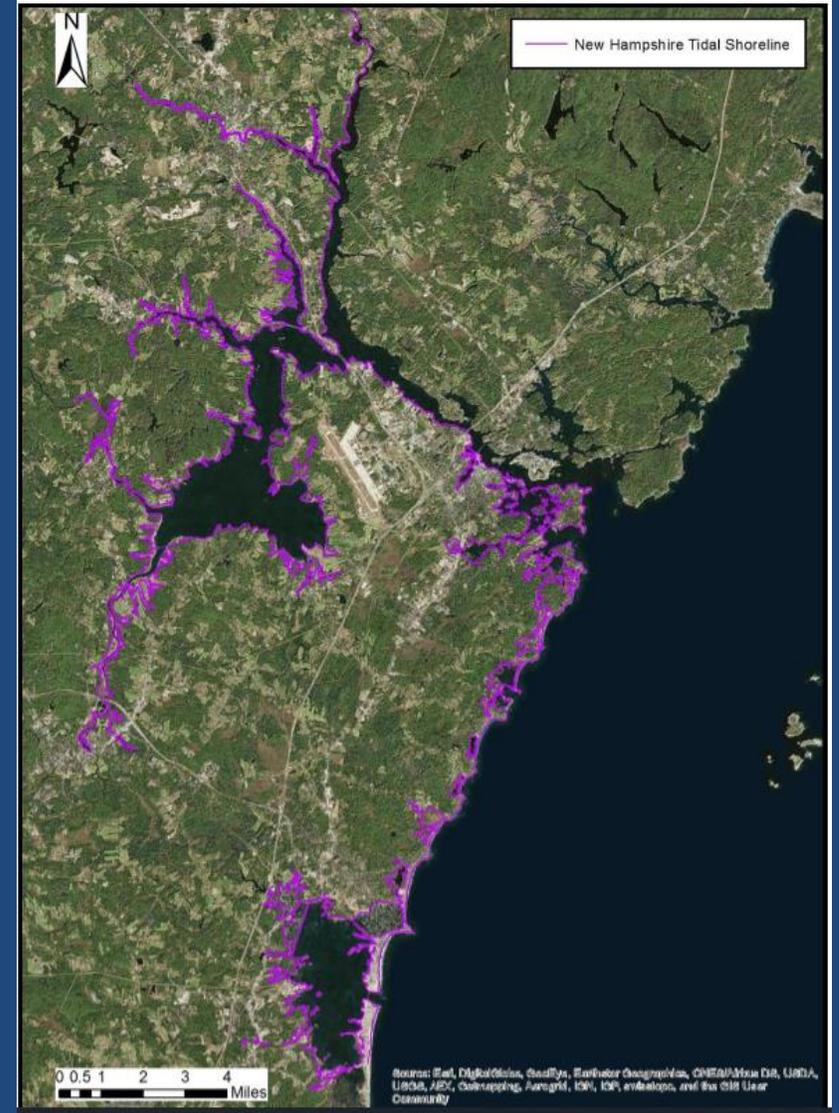
- Robust New Tidal Chapter
- General Criteria
- Coastal Functional Assessment
- Vulnerability Assessment
- Eight Project-specific Standards
- New Tidal Mitigation Criteria



# New Tidal Rules

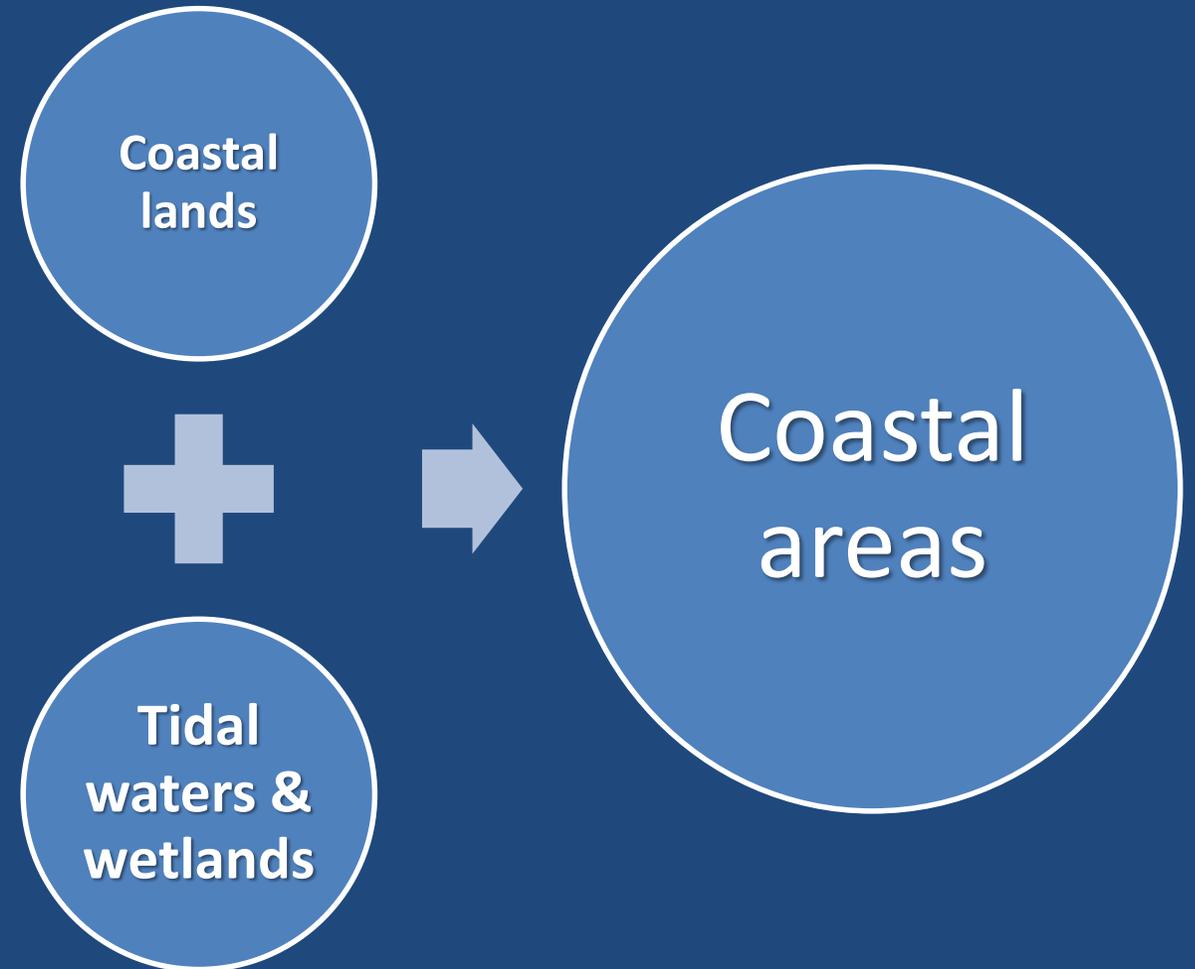
63 New definitions!

42 Pages of new rules specific to tidal resources!



# Delineation and Identification of... Coastal Areas (Env-Wt 600)

- Coastal / Tidal Features
  - Delineated based on their definitions.
    - Such as back dune, high salt marsh, protected tidal zone, tidal flats...
  - HOTL, MHT, MHW...



# New Coastal Definitions Env-Wt 602

Env-Wt 602.07 “**Coastal functional assessment**” (CFA) means an evaluation of the jurisdictional coastal natural resource areas that would be impacted by a proposed project, and recommendations to protect the areas during and as a result of the project.

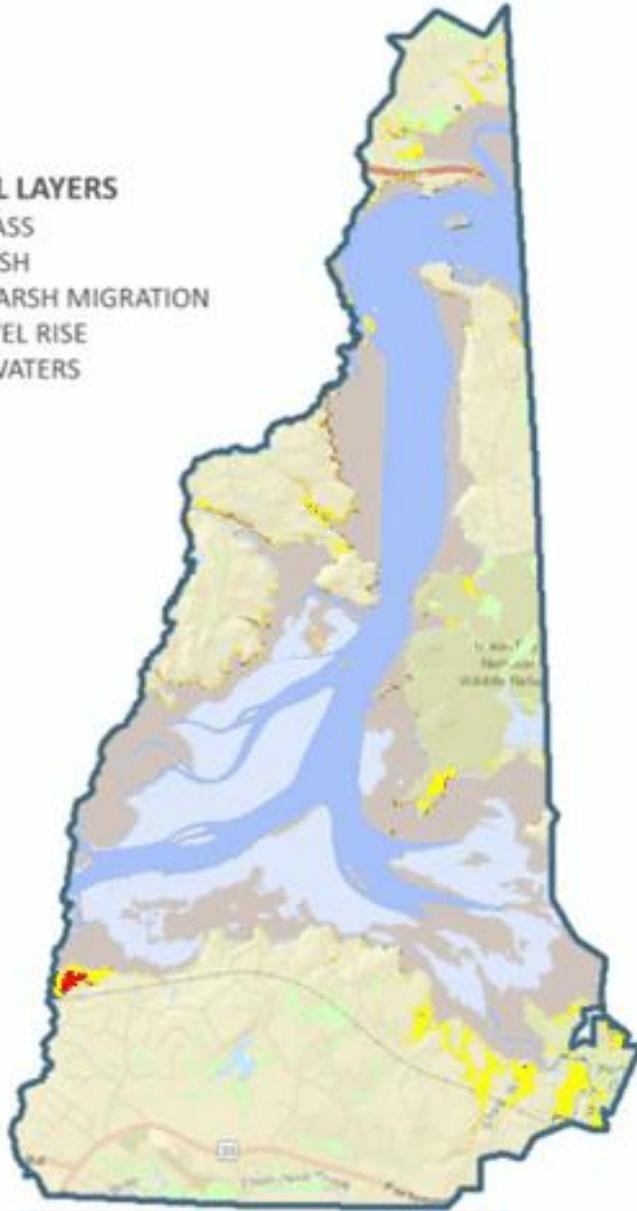
Env-Wt 602.10 “**Coastal flood risk**” means the likelihood and adverse consequences of flooding from seawater and is a function of the coastal flood hazard at a location and the exposure and vulnerability of people and their assets to that hazard.



# Outcome: Consolidate & Standardize Tidal Requirements

## COASTAL LAYERS

- EEL GRASS
- SHELLFISH
- SALT MARSH MIGRATION
- SEA LEVEL RISE
- TIDAL WATERS



**Data screen/assessment/plan 603**

**Avoid/Minimization/Mitigation 605**

**Overwater Structures 606**

**Dredge 607      Tidal beach 608**

**Tidal Shoreline Stabilization 609**

**Tidal buffer zone/Shoreland 610**

# Env-Wt 603.04 Coastal Functional Assessment (CFA)

## Report

- CFA report based on data screening information & on-site evaluation based on Env-Wt 603.03.

## Who?

- CWS or qualified coastal professional

## How?

- Army Corps Highway Method
- Alternative scientifically supported method

# Use Coastal Functional Assessment Results

## Results

- Apply results of Coastal Functional Assessment.

## Design

- Select location with the least impact to tidal resources and functions.

## BMPs

- Use onsite minimization measures & construction management practices (BMPs).

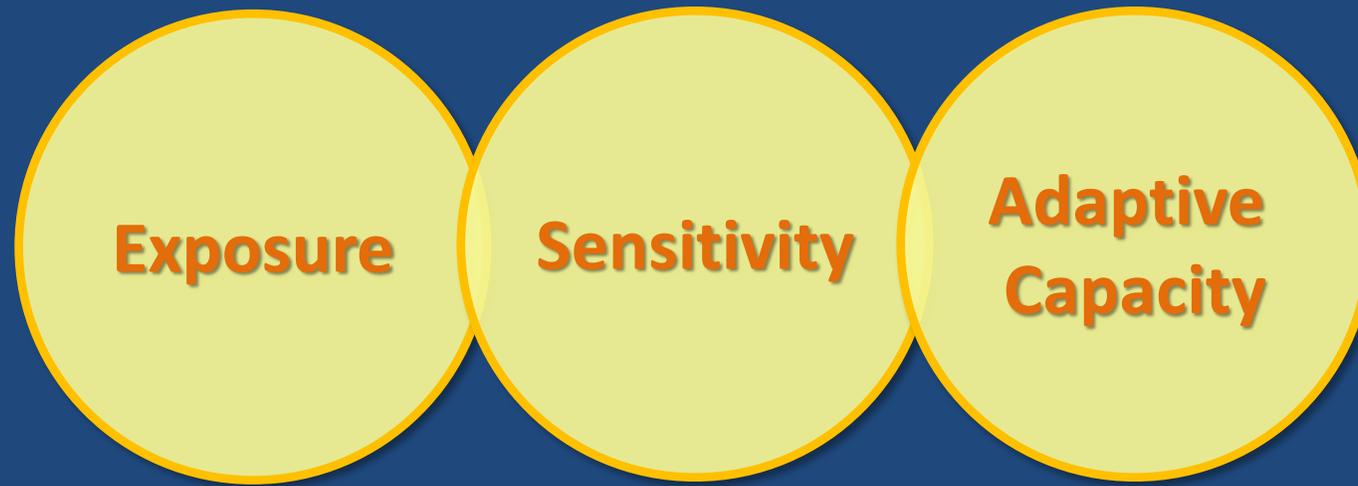
# Env-Wt 603.05 Vulnerability Assessment



# What is Vulnerability?

“...the likelihood that an asset will experience harm due to exposure to coastal hazards...”

*(NH Coastal Risk & Hazards Commission)*



# What is Risk Tolerance?

“...a project’s willingness to accept a higher or lower probability of flooding impacts.”

*(NH Coastal Flood Risk Summary, Part II: Guidance, draft)*

Ex. Critical Infrastructure, historic sites, essential ecosystems, high value assets

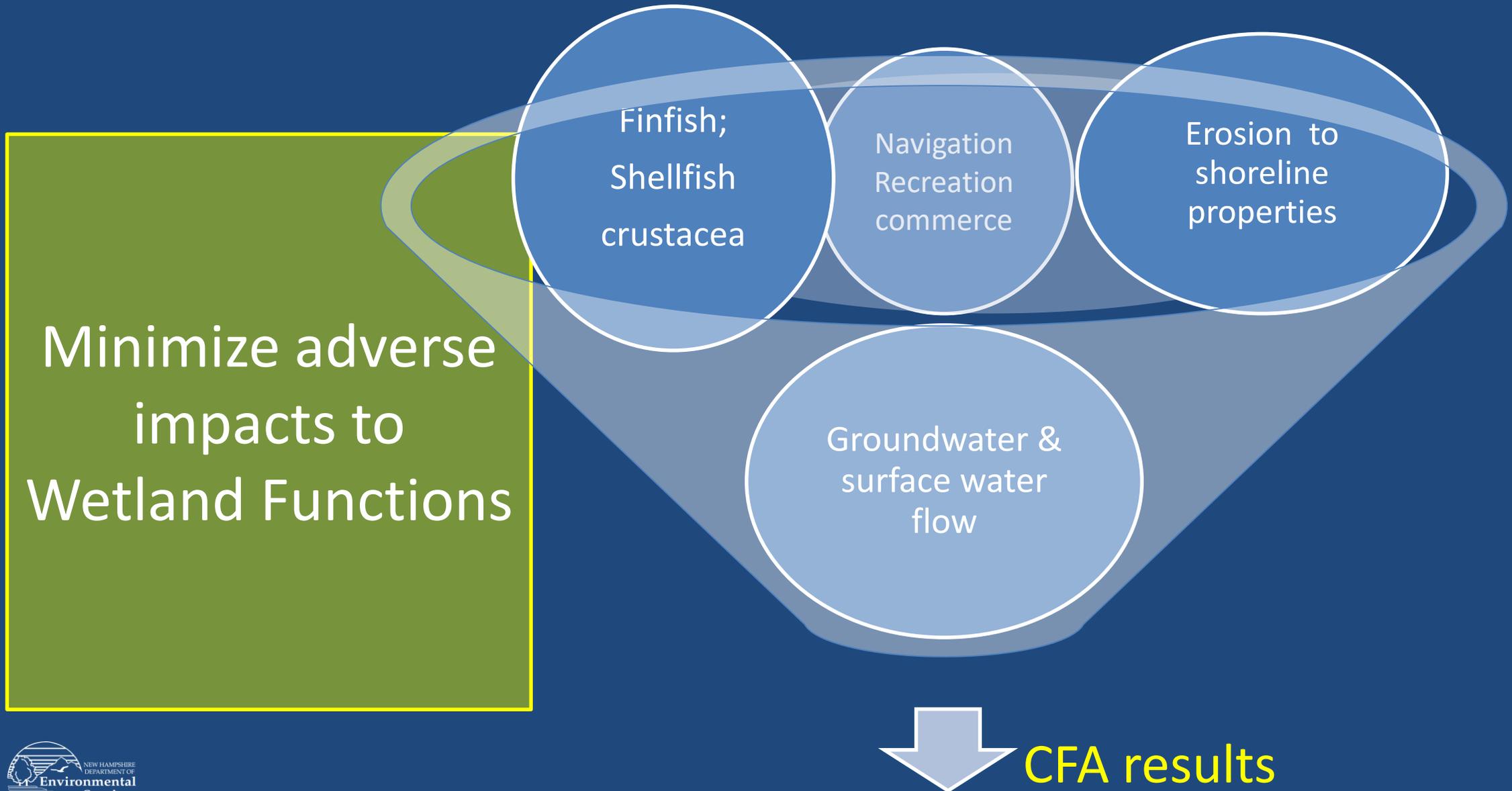
Plan, design & construct using higher coastal flood risk projections



Ex. Sheds, pathways, small docks

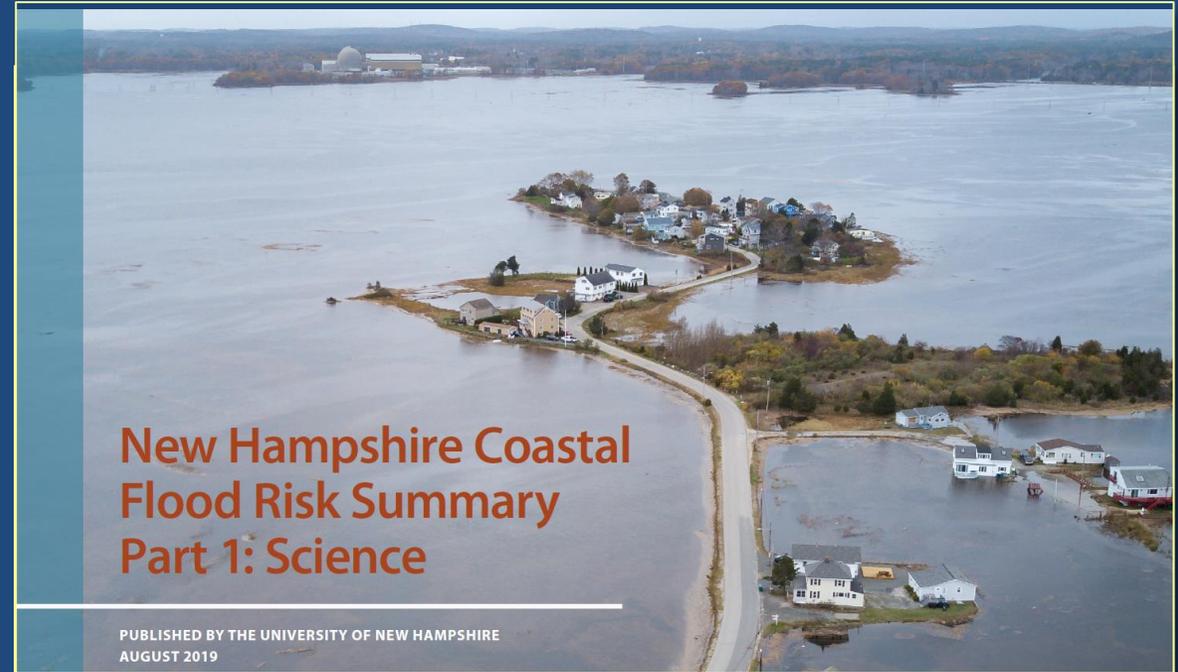
Option to plan, design & construct for less protective coastal flood risk projections

# Env-Wt 605 Avoidance & Minimization in Coastal Areas



# Additional Coastal Resources

- NH Coastal Flood Risk Summary
  - Part I: Science
  - Part II: Guidance (draft)
- NH Coastal Viewer
  - Resilient Tidal Crossings Project
- NH Coastal Program



DRAFT FOR PUBLIC REVIEW

APPENDIX 2 – WORKSHEET

NEW HAMPSHIRE COASTAL FLOOD RISK SUMMARY

PART II: GUIDANCE FOR USING COASTAL FLOOD RISK PROJECTIONS

WORKSHEET

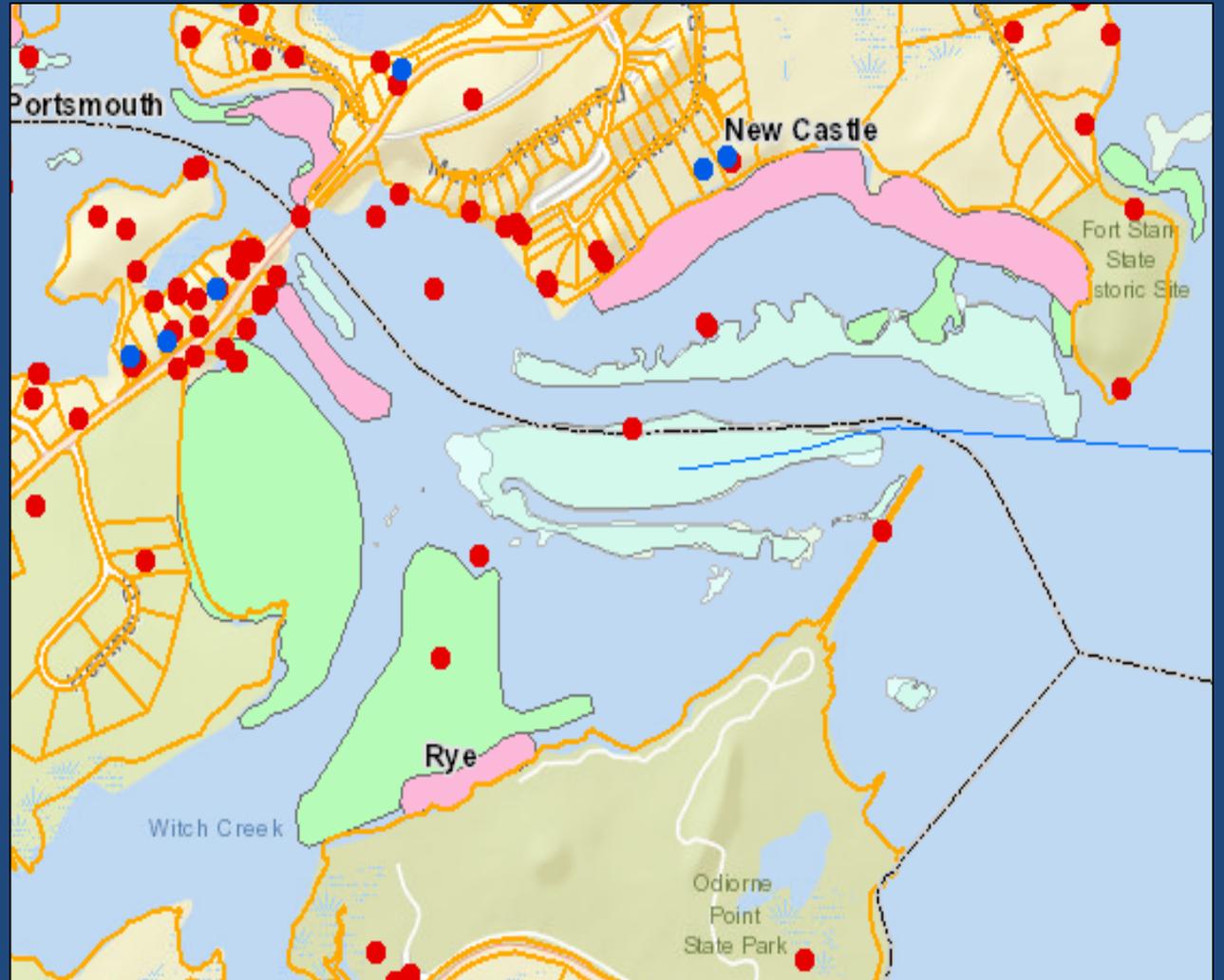
This worksheet is intended to help you work through the seven steps associated with the New Hampshire Coastal Flood Risk Summary, Part II: Guidance (*NHCFR Guidance*) in Coastal Zone municipalities.<sup>47</sup> The *NHCFR Guidance* data needed to fill out this worksheet.

# Env-Wt 606 Overwater Structures (Tidal Docks)

- ❖ Located and designed to avoid impacts to important wetlands and coastal resource functions in CFA

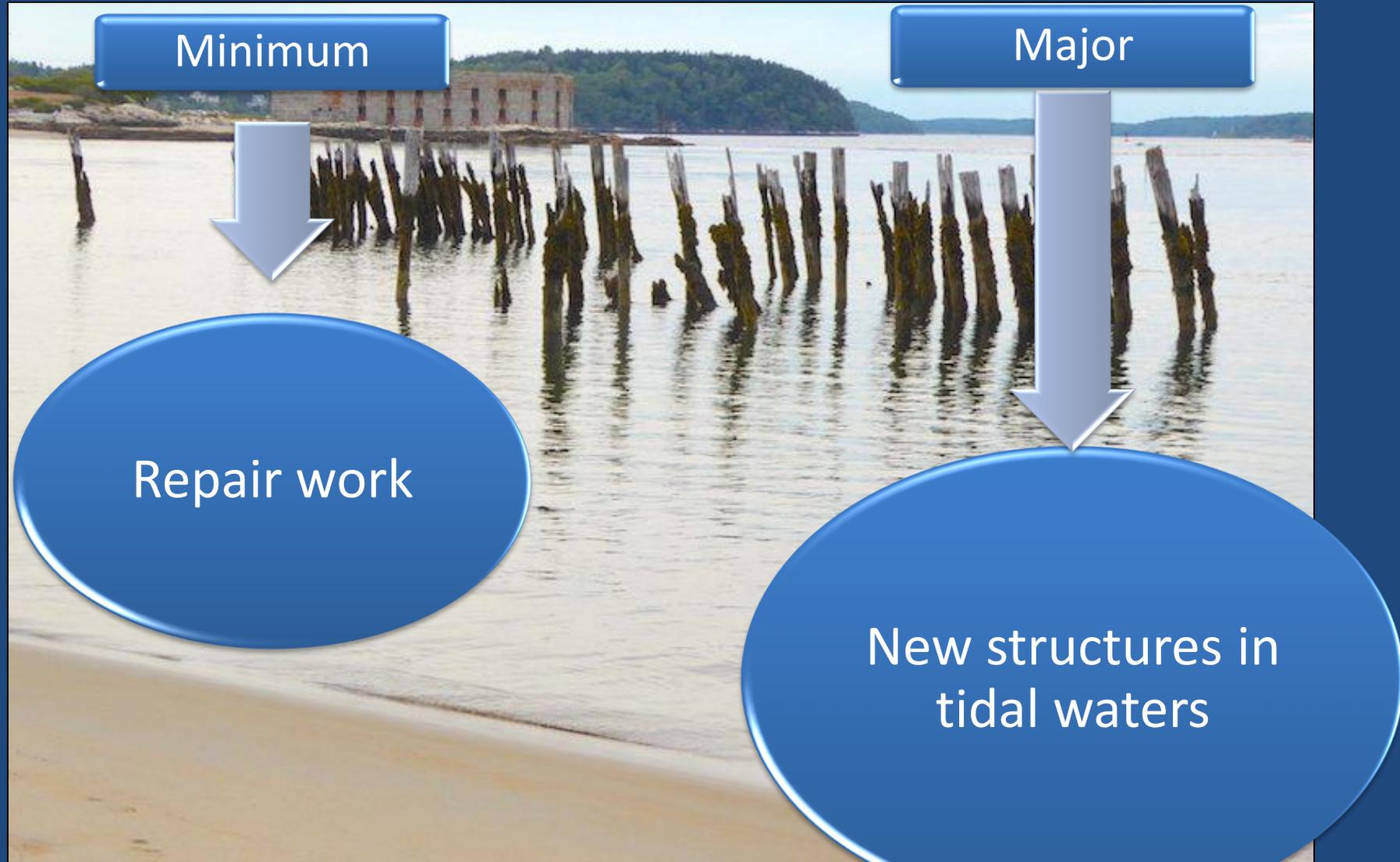
## New Design Standards for:

- Residential Docks
- Commercial Docks
- Industrial Docks



# Overwater Structures in Coastal Areas

## Existing Rules



# Overwater Structures in Coastal Areas

## New Rules



# Avoidance and Minimization – BMP Manual

## Wetlands Best Management Practice Techniques For Avoidance and Minimization

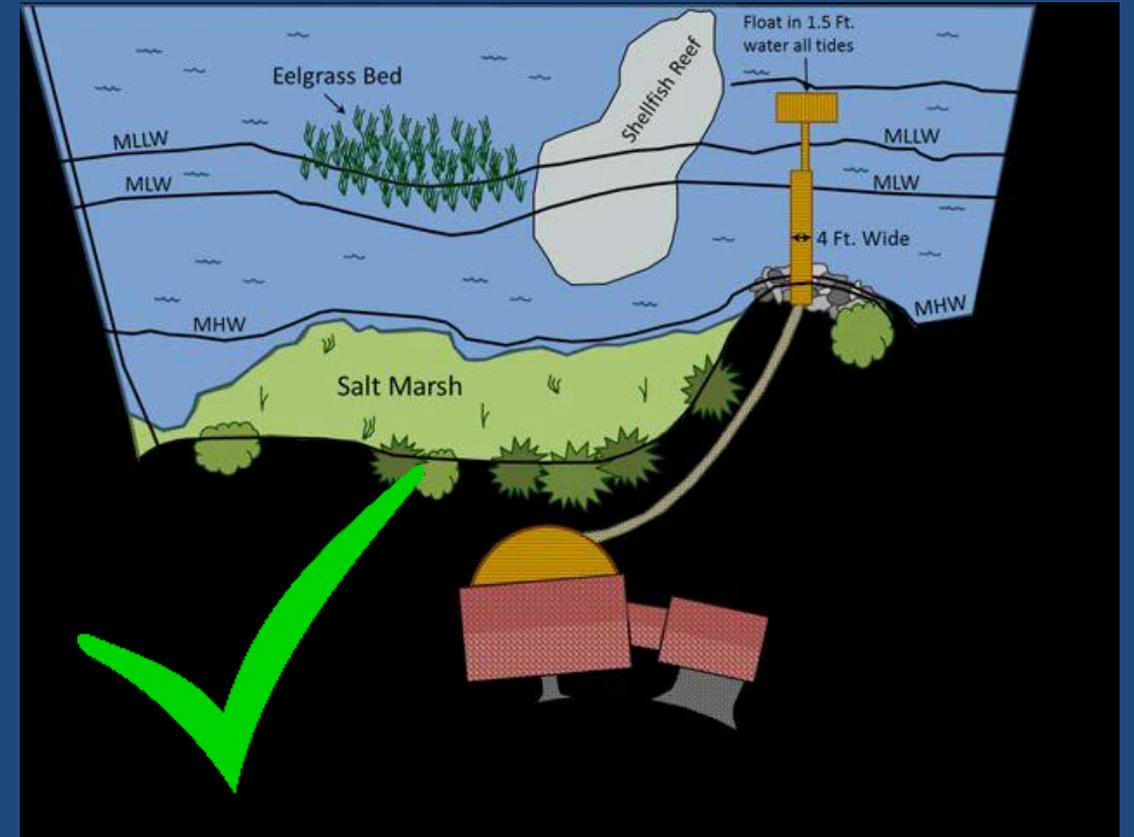
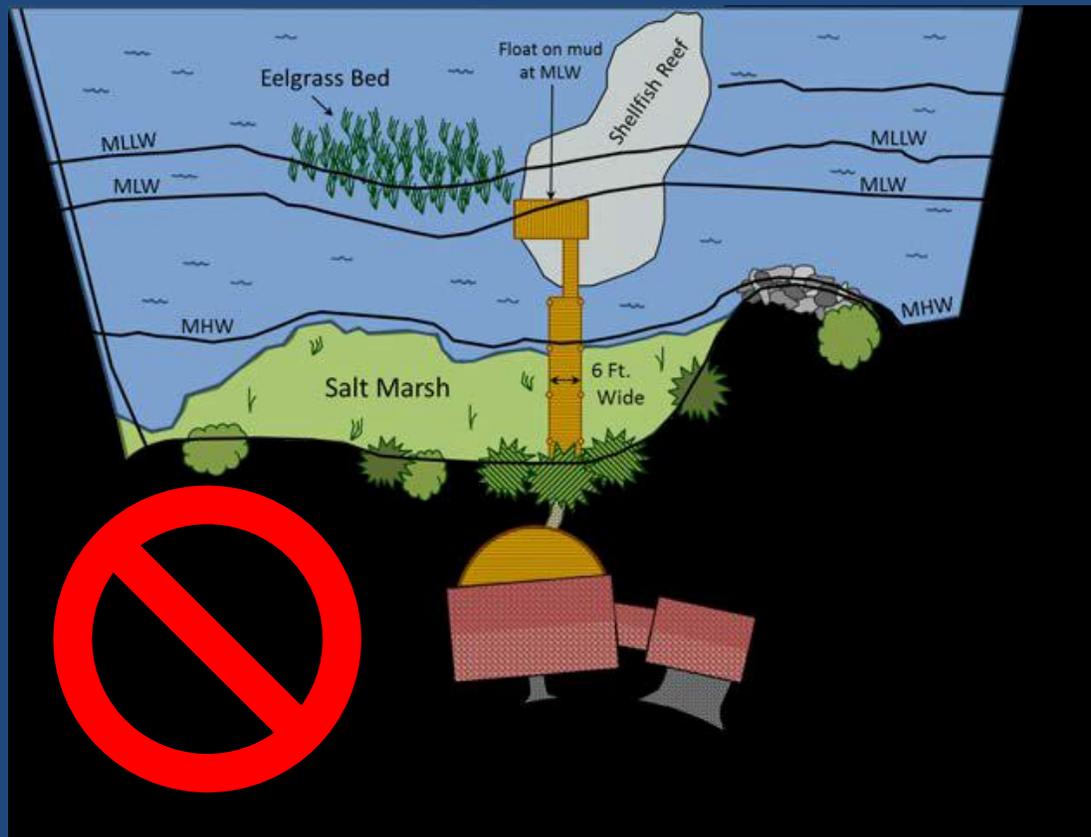


## Table of Contents

1. Importance of Protecting Wetlands
2. Single Family Lots
3. Subdivisions
4. Commercial & Industrial Projects
5. Bike Paths, Trails & Boardwalks
6. Golf Courses
7. Stream & Wetland Crossings
8. Streambank & Shoreline Stabilization
9. Plantings
10. Construction & Maintenance
- 11. Tidal Projects**
12. Non-Tidal Shoreline Structures
13. Utilities

# Env-Wt 606 Overwater Structures in Coastal Areas

## Wetlands Best Management Practice Techniques For Avoidance and Minimization



# Env-Wt 607 Tidal Dredging

- Maintain Federal Navigation Projects (FNPs)
- Remediate contaminated sites
- Restore Storm-driven sediment depositions
- Maintain intake and outflow infrastructure



# Env-Wt 608 Tidal Beach Maintenance & Stabilization

## Beach maintenance without a permit:

- By state agency for public beach.
  - April 15 – October 15
- Technique with least environmental impact.
  - No work in standing/ flowing water.
- No work within 10' of sand dune or salt marsh; unless developed area.
  
- **Front-end bucket loaders used to collect beach debris if no other practicable means.**
- Consult with NHF& G to avoid piping plovers.



# Env-Wt 609 Tidal Shoreline Stabilization

## Requirements

- Natural process functions
- Provide wildlife habitat
- Address known causes of erosion
- Avoid adverse impacts to nearshore ecosystem processes and habitats

## Criteria and Design Standards

- Hierarchy of Stabilization Methods
- Analysis of Existing Conditions
- Techniques for Stabilization
- Living Shoreline Plans



# TIDAL SHORELINE STABILIZATION

## Living shoreline

A management practice that provides erosion control benefits, protects, restores, or enhances natural shoreline habitat, and maintains coastal processes through the strategic placement of plants, stone, sand fill, and other structural organic materials, maintaining the continuity of the natural land-water interface while providing habitat value and protecting against coastal hazards.

-Env-Wt 602.29



# TIDAL SHORELINE STABILIZATION

## Analysis of Existing Structure Conditions

- The degree of damage or extent of deterioration
- Whether the existing installation has functioned as intended;
- Whether opportunities exist to use soft bank stabilization components or a combination of soft and hard components; and
- The ability of the structure to withstand coastal flood risk in accordance with the vulnerability assessment

Env-Wt 609.03



# TIDAL SHORELINE STABILIZATION

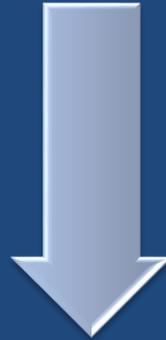
## Existing Rules

Minimum



Repair  
work/work  
above the  
HOTL

Minor



New work above  
HOTL exceeding 50  
linear feet

Major



Work in tidal waters/  
>100 linear feet

# TIDAL SHORELINE STABILIZATION

## Existing Rules vs **New Rules**

Major

Minimum

Minor

Repairs/work above  
the HOTL,  
Conversion to  
bioengineering,  
Living shoreline  
exposed at HT &  
Restoration work  
Env-Wt 609.10

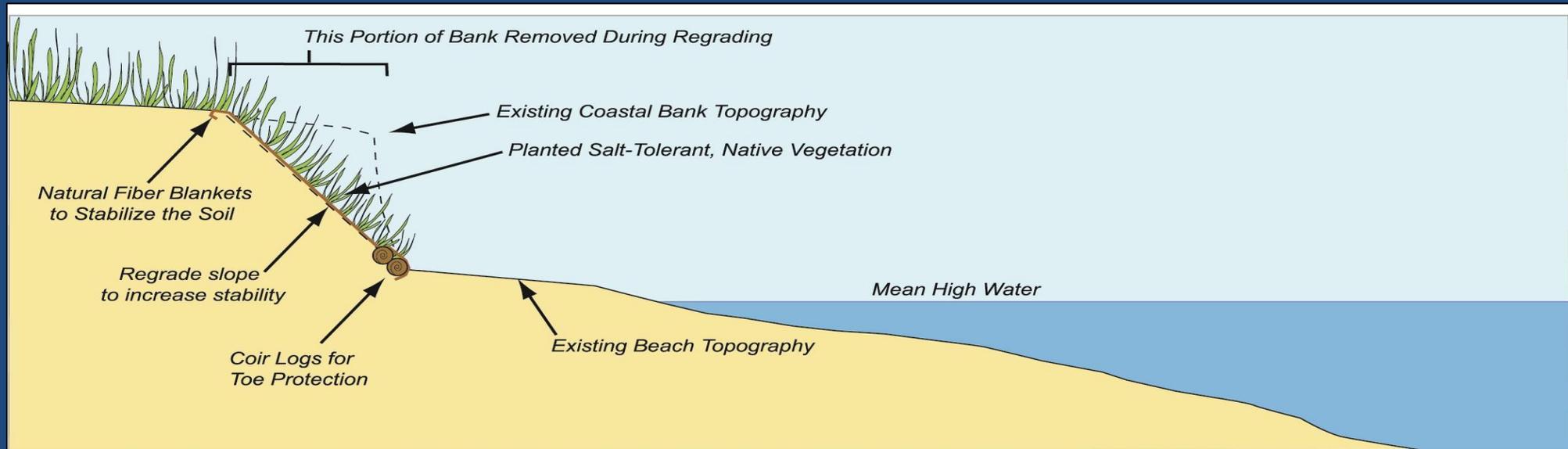
New hard structures and  
increase of hard structures

Within sand dune, tidal  
wetlands, and undeveloped  
TBZ  
Env-Wt 609.11

# Env-Wt 609 TIDAL SHORELINE STABILIZATION

## Techniques for Tidal Shoreline Stabilization. Env-Wt 609.04

- Tidal shoreline stabilization shall be accomplished using living shoreline techniques unless the applicant demonstrates that a living shoreline is not practicable.

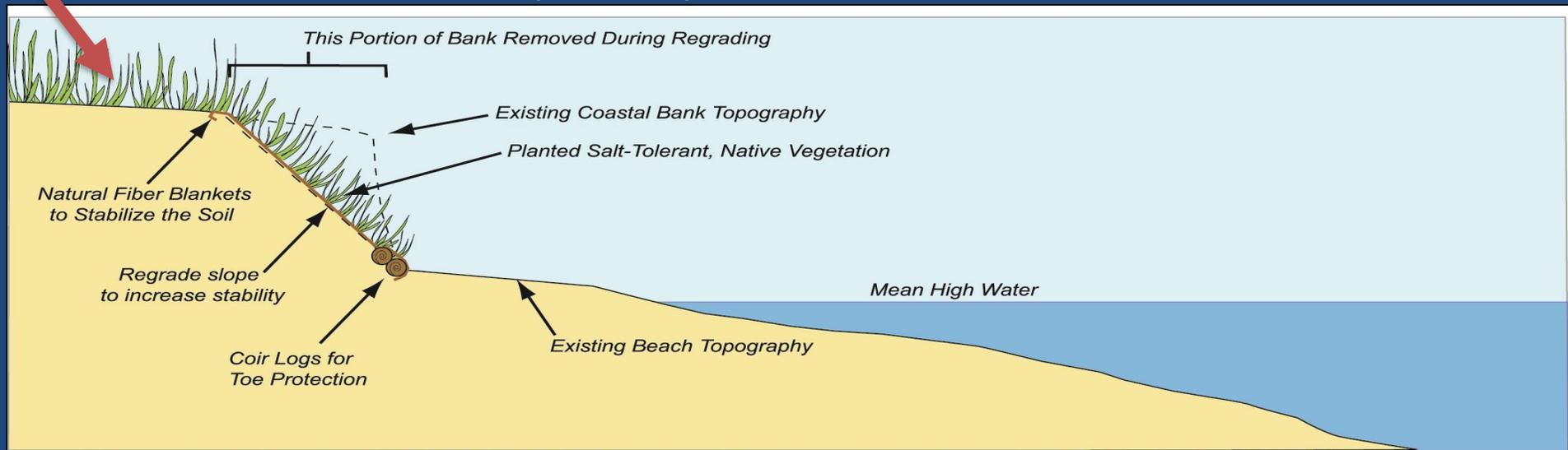


# Env-Wt 609 TIDAL SHORELINE STABILIZATION

## Living Shoreline Design Plans.

- A plan shall be prepared and stamped by a professional engineer and reviewed relative to delineations of wetlands and stamped by a certified wetland scientist
  - Use native vegetation, sand fill, and limited stone or wood protection and mimic the natural landscape
  - Design the sill to the lowest elevation possible
  - If space and soil conditions allow, cut back unstable banks to a flatter slope, seed and replant with native, non-invasive trees and shrubs
  - Provide habitat for wildlife and aquatic species.

Env-Wt 609.05



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Env-Wt 609.05

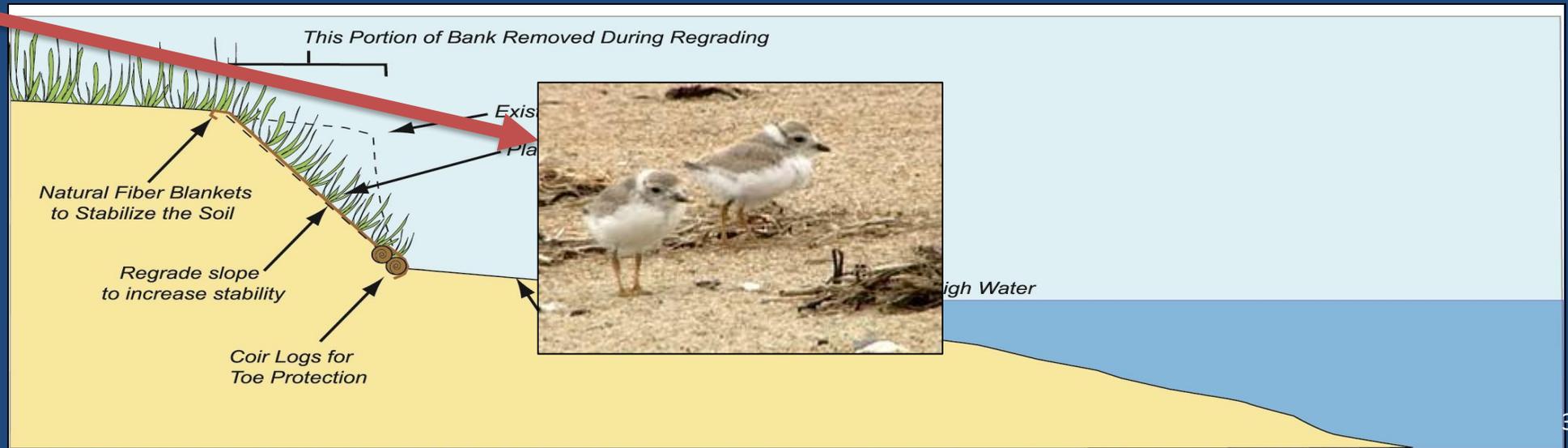


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Env-Wt 609.05



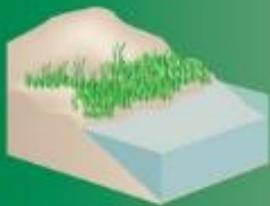
# Env-Wt 609 TIDAL SHORELINE STABILIZATION

HOW GREEN OR GRAY SHOULD YOUR SHORELINE SOLUTION BE?

GREEN - SOFTER TECHNIQUES

GRAY - HARDER TECHNIQUES

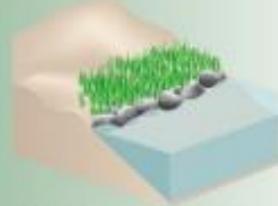
## *Living Shorelines*



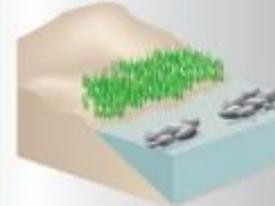
**VEGETATION ONLY -**  
Provides a buffer to upland areas and breaks small waves. Suitable only for low wave energy environments.



**EDGING -**  
Added structure holds the toe of existing or vegetated slope in place.



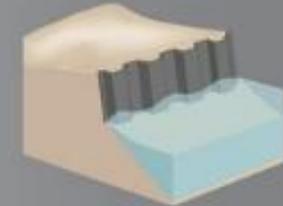
**SILLS -**  
Parallel to existing or vegetated shoreline, reduces wave energy, and prevents erosion. Suitable for most areas except high wave energy environments.



**BREAKWATER -**  
(vegetation optional) - Offshore structures intended to break waves, reducing the force of wave action, and encourage sediment accretion. Suitable for most areas.



**REVETMENT -**  
Lays over the slope of the shoreline and protects it from erosion and waves. Suitable for sites with pre-existing hardened shoreline structures.



**BULKHEAD -**  
Vertical wall parallel to the shoreline intended to hold soil in place. Suitable for areas highly vulnerable to storm surge and wave forces.

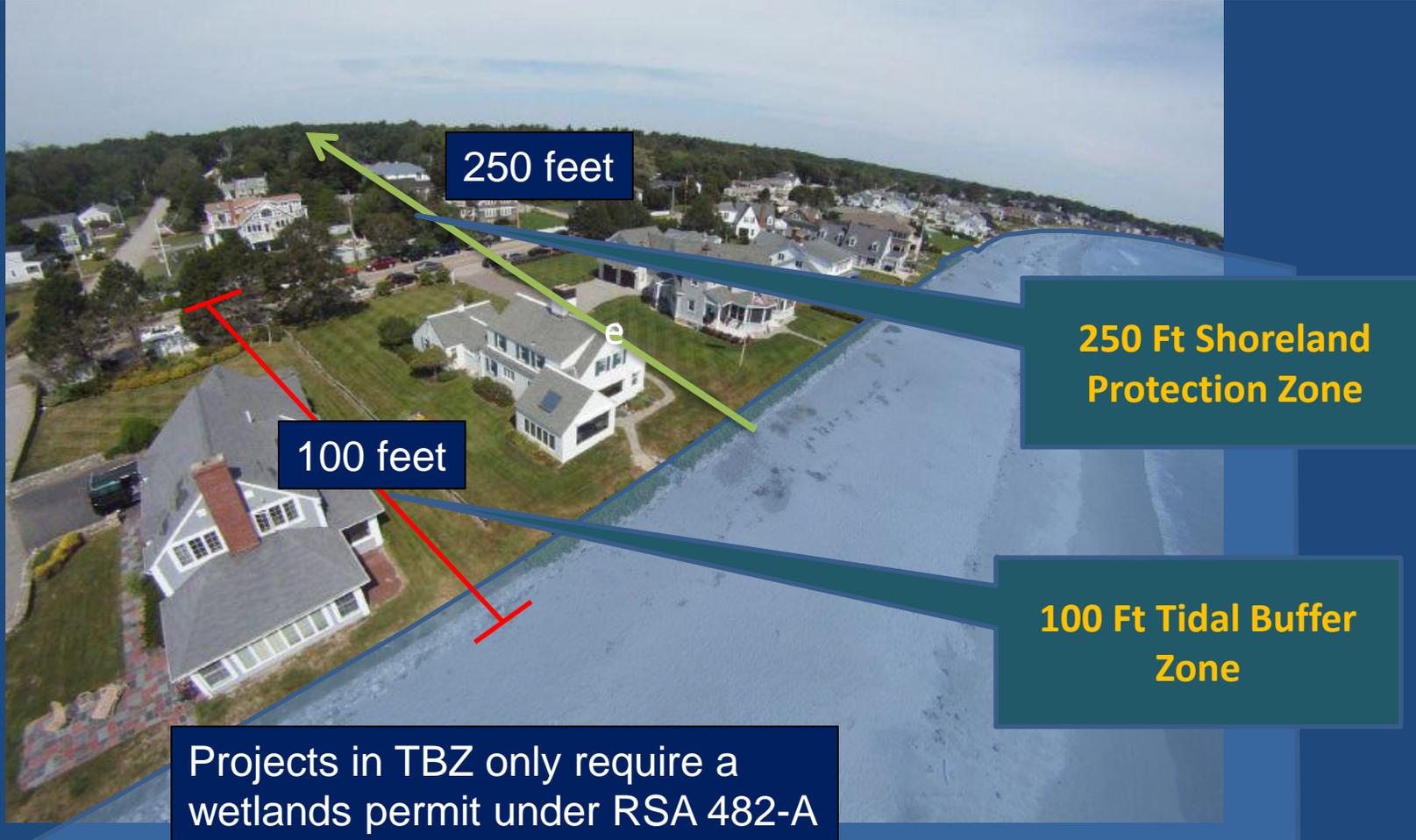
# Env-Wt 610 Protected Tidal Zone

- ❖ Eliminates inconsistencies between wetlands and Shoreland jurisdiction.
- ❖ Design Standards per FEMA Coastal Construction Manual.
- ❖ Incorporates RSA 483-B Water Quality Shoreland Protection Act restrictions, Waterfront buffer; Woodland buffer.



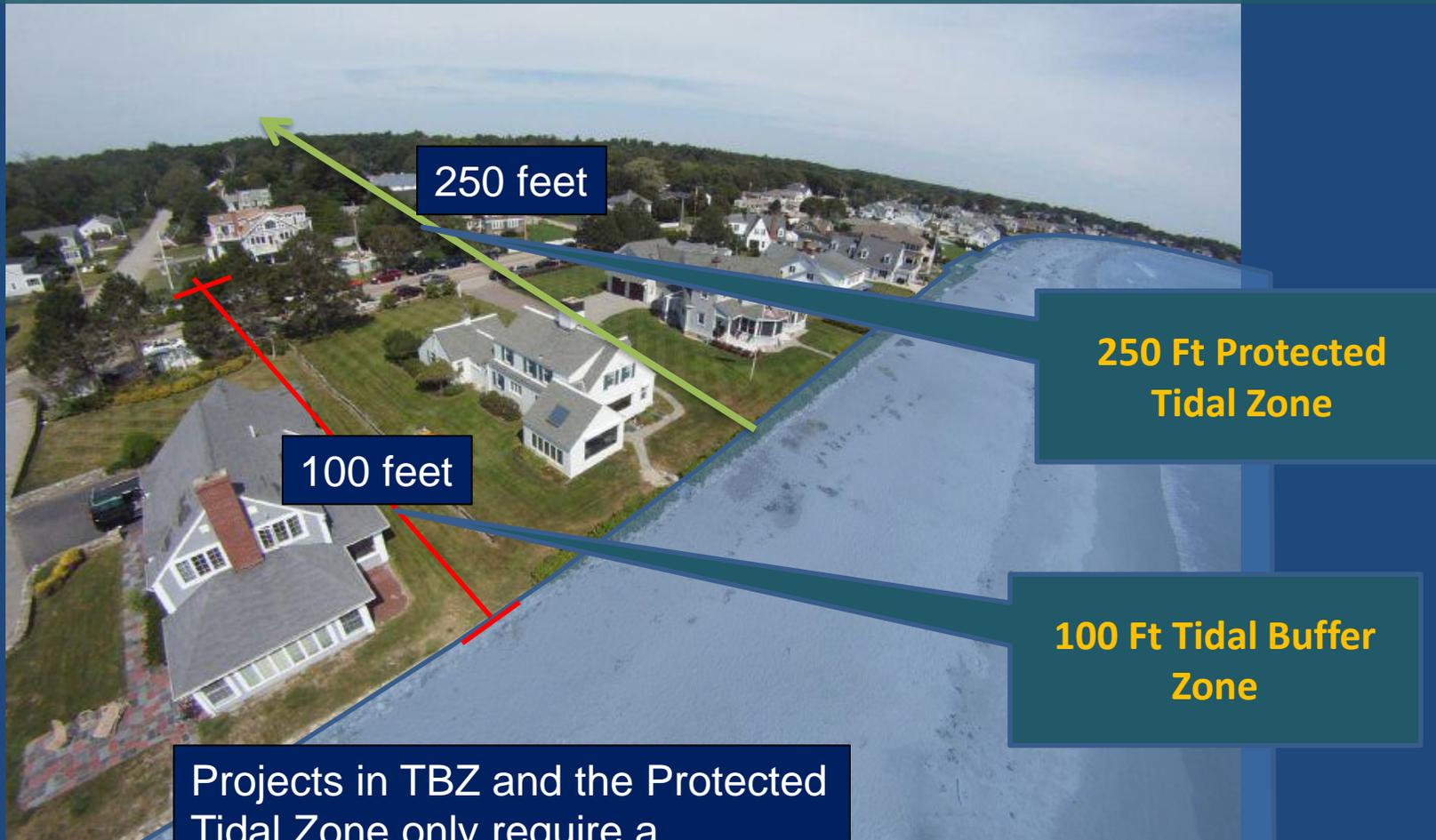
## Existing Rules

“Tidal Buffer Zone” (TBZ) extend 100 feet from the highest observable tide line & Shoreland extends 250’ from the HOTL.



## New Rules

“Tidal Buffer Zone” (TBZ) extend 100 ft from the highest observable tide line & Protected Tidal Zone extends 250 ft from the HOTL.



Projects in TBZ and the Protected Tidal Zone only require a wetlands permit under RSA 482-A

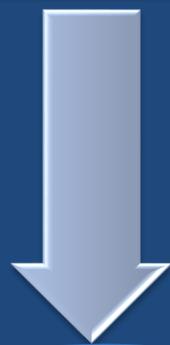
# Classification of Projects

Minimum



Previously developed TBZ  
100 ft. HOTL  
<2,000 SF

Minor



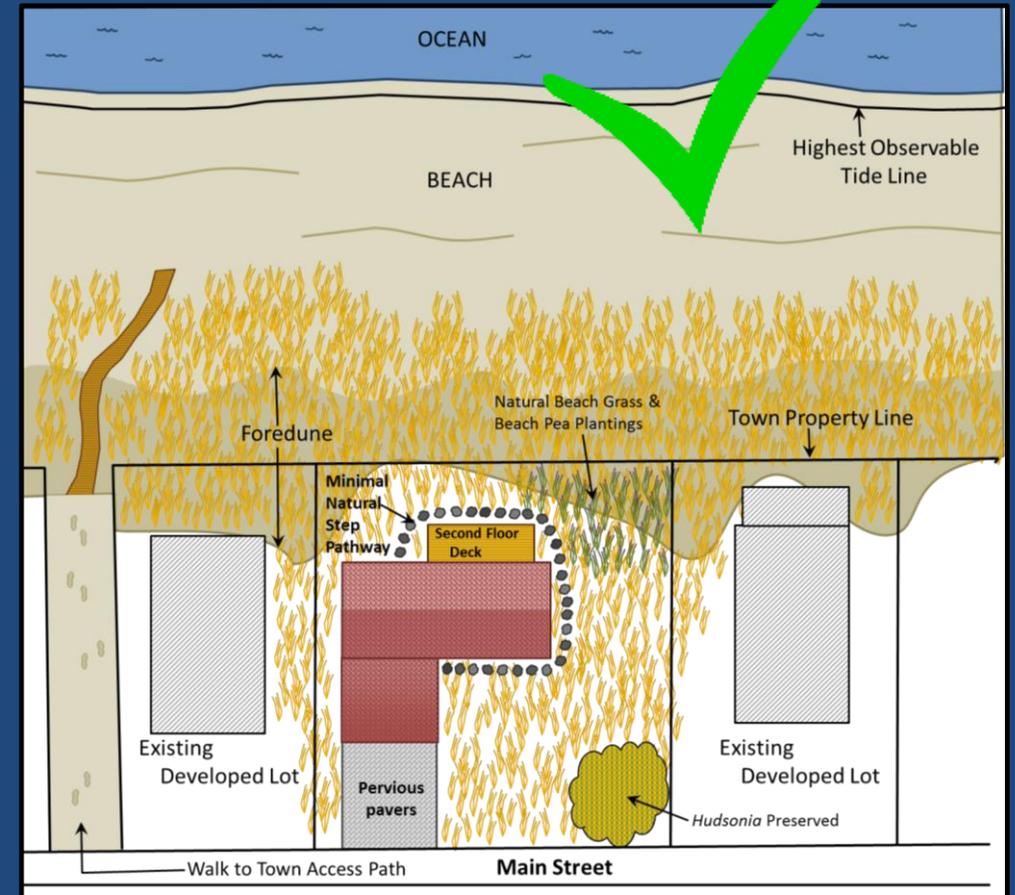
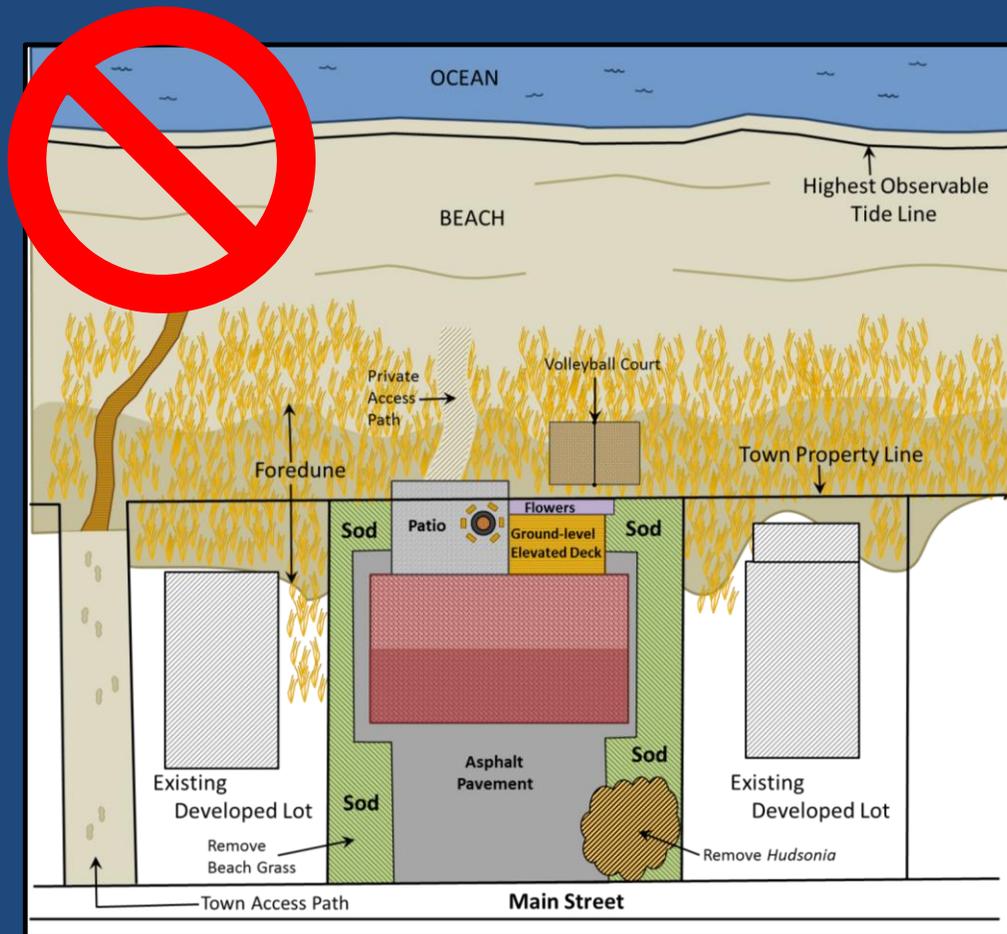
Within 75 ft.  
saltmarsh  
Not Major  
 $\geq 3,000$  SF  
<10,000SF

Major



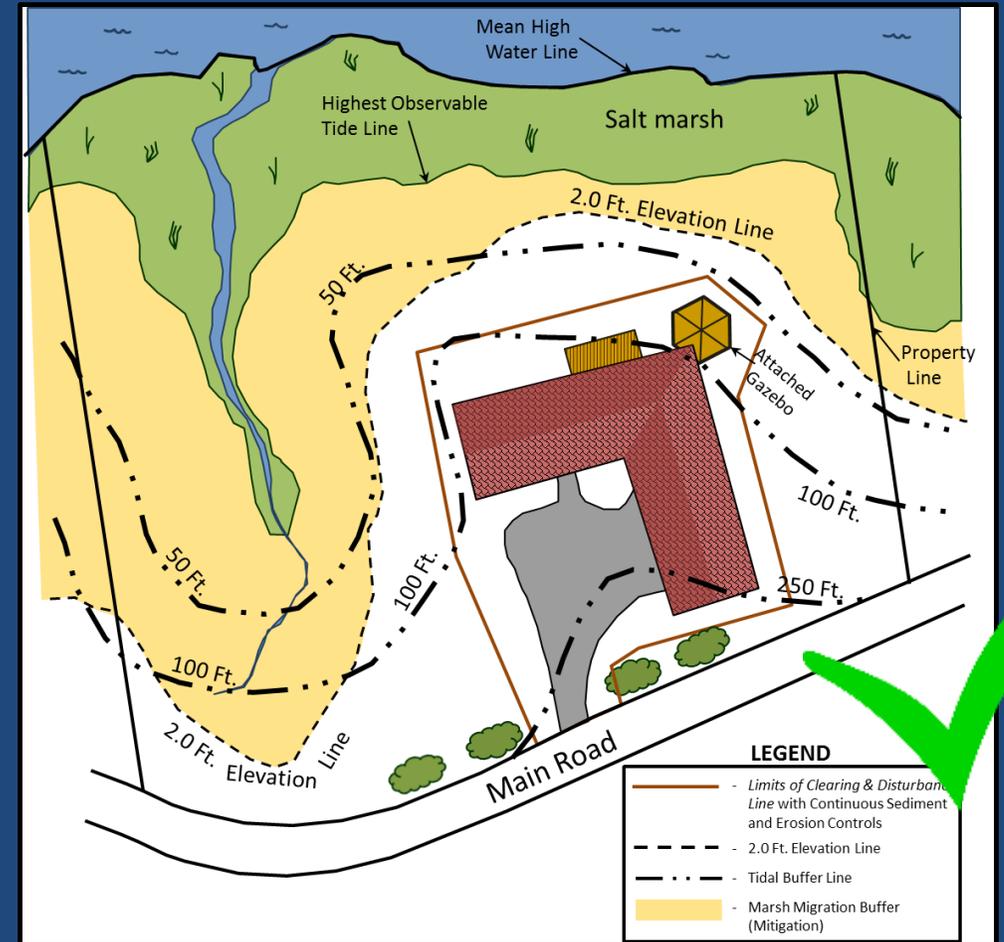
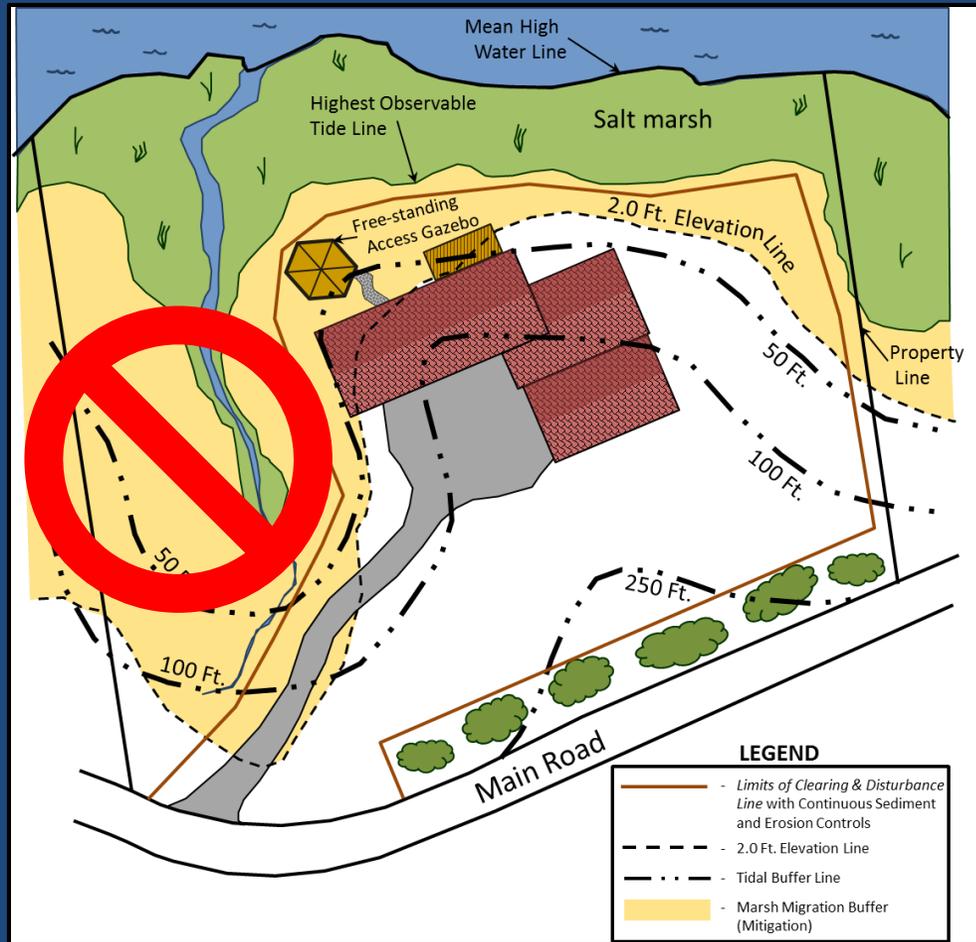
Within 100 ft. HOTL  
AND  
Undeveloped/tidal  
bank, flat, wetland

# A&M Written Narrative: Use of Alternative Designs or Techniques (1) (Env-Wt 311.07(b)(3))



(3) Alternative designs or techniques to avoid impacts?

# A&M Written Narrative: Use of Alternative Designs or Techniques (2)



(3) Alternative designs or techniques to avoid impacts?

# Env-Wt 611 Sand Dunes

## Env-Wt 611.02 Projects that do not require a permit pursuant to RSA 482-A

- Police and fire vehicles
- Authorized maintenance vehicles to perform maintenance duties
- Vehicles used by commercial fisherman or commercial lobsterman/fishing

## Env-Wt 611.03 Pre-application assessment

- Of any lot of record; review of protected species or habitat
- DES review for pre-application assessment of photography, aerials, GIS and other information that may be needed (including a field inspection)
- Sand Dune design standards and requirements established



Above: Volunteers plant beachgrass on dunes at Hampton Beach State Park. Photo by: Gregg Moore.

# Env-Wt 612 Aquaculture

- An aquaculture operation licensed by NHF & G prior to Dec 15, 2019 shall not be required to apply for a permit.
- An aquaculture operation not licensed by NHF & G prior to Dec 15, 2019 shall be considered minimum impact and not require a permit with certain conditions.



# Tidal Mitigation not required when...

(Env-Wt 605.03)

## Maintenance

- Docking structure.
- Sediment.
- Dredge of Federal Navigation Project.

## Restoration

- Public projects.
- Living Shorelines.
- Increases hydraulic capacity, AOP or geomorphic compatibility.
- Sand dune/ tidal marsh migration.

## Docking

Combined total surface coverage < 2,000 SF.

## Tidal Buffer Zone

Within altered TBZ  
>75 ft. from salt marsh  
OR  
< than 10,000 SF of impact.



Questions?  
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