

Wetland Rules - Coastal Session

Avoidance, Minimization and Functional Assessment

Sandra Crystall, PWS
October 10, 2019



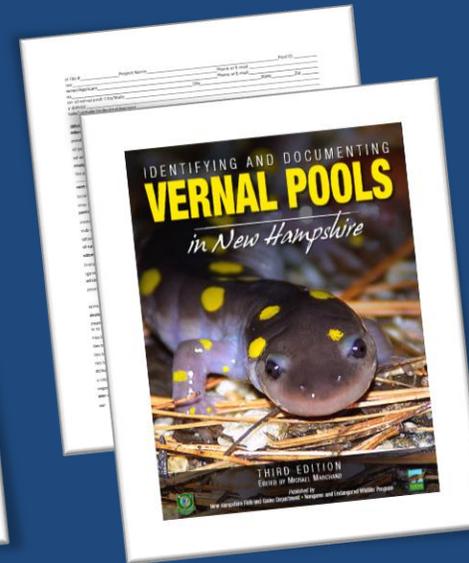
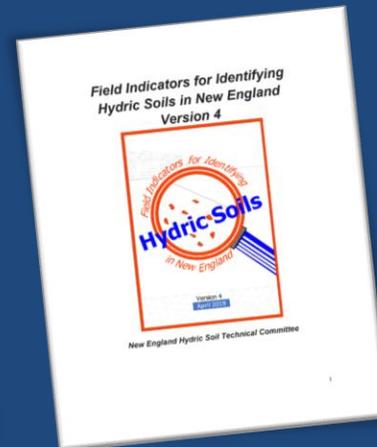
Introduction



- Identify resources.
- Classify resources.
- Evaluate resource functions.
- Use information to design and construct project and address mitigation, as needed.

Delineation of Jurisdictional Areas: Wetlands

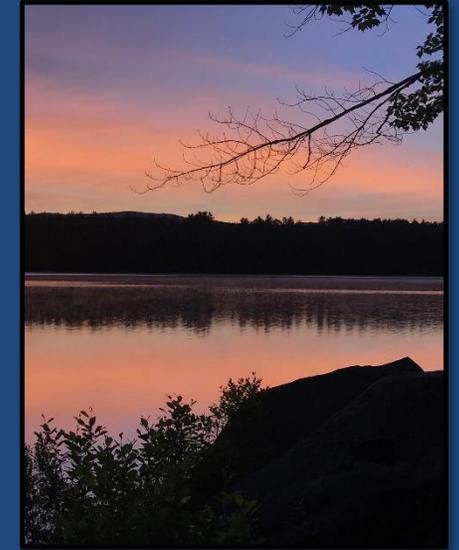
- Wetlands (Env-Wt 406):
 - *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region, (2012).*
 - Hydric Soils.
 - Hydrophytic plants.
 - Hydrology.



Delineation of Watercourses and Identification of Other Jurisdictional Areas

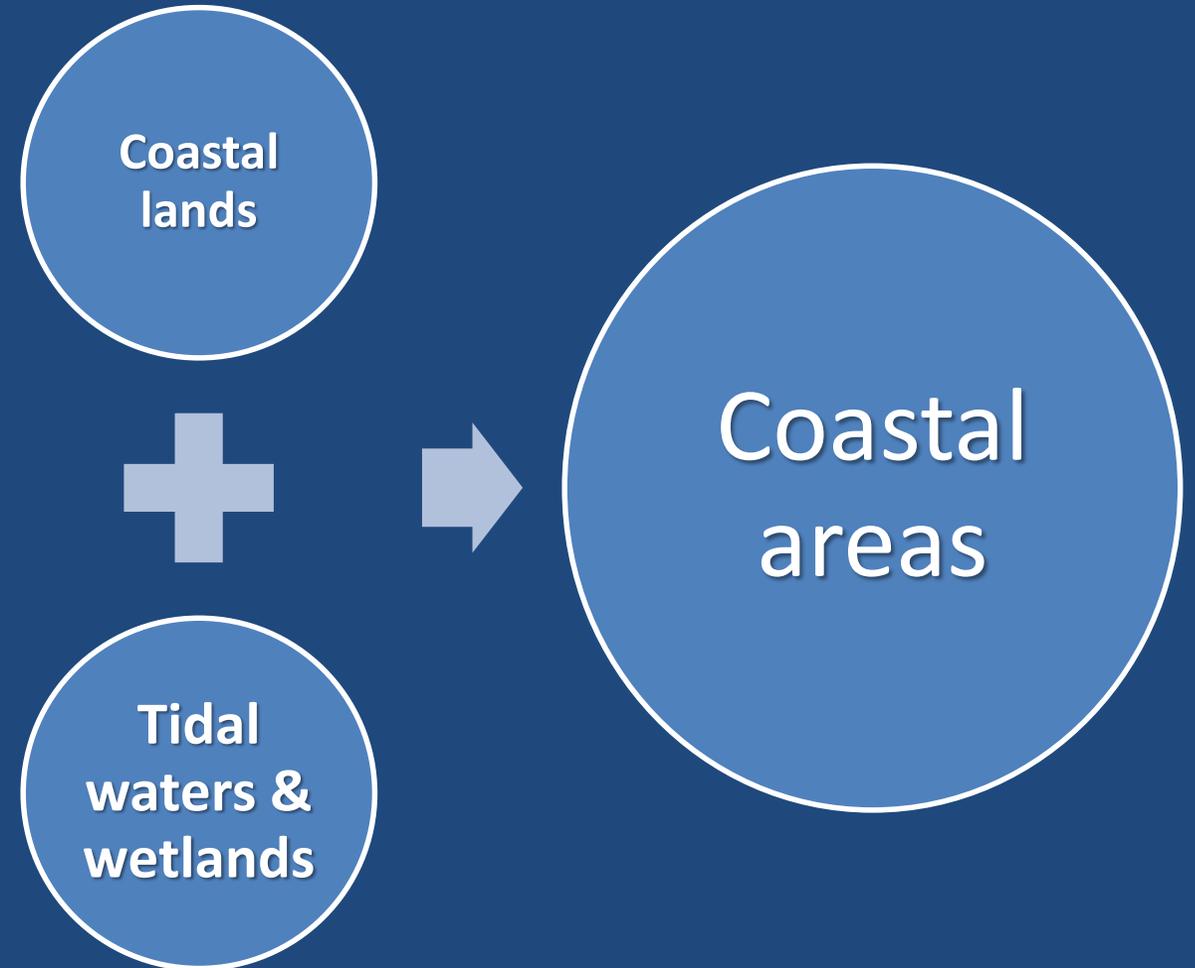
(Env-Wt 406.04 and 406.05)

- Perennial Streams.
 - Limit of the banks.
 - Ordinary high water mark.
- Intermittent Streams.
 - Ordinary high water mark.
- Lakes and Ponds.
 - Limit of the bank.
 - Normal high water mark.



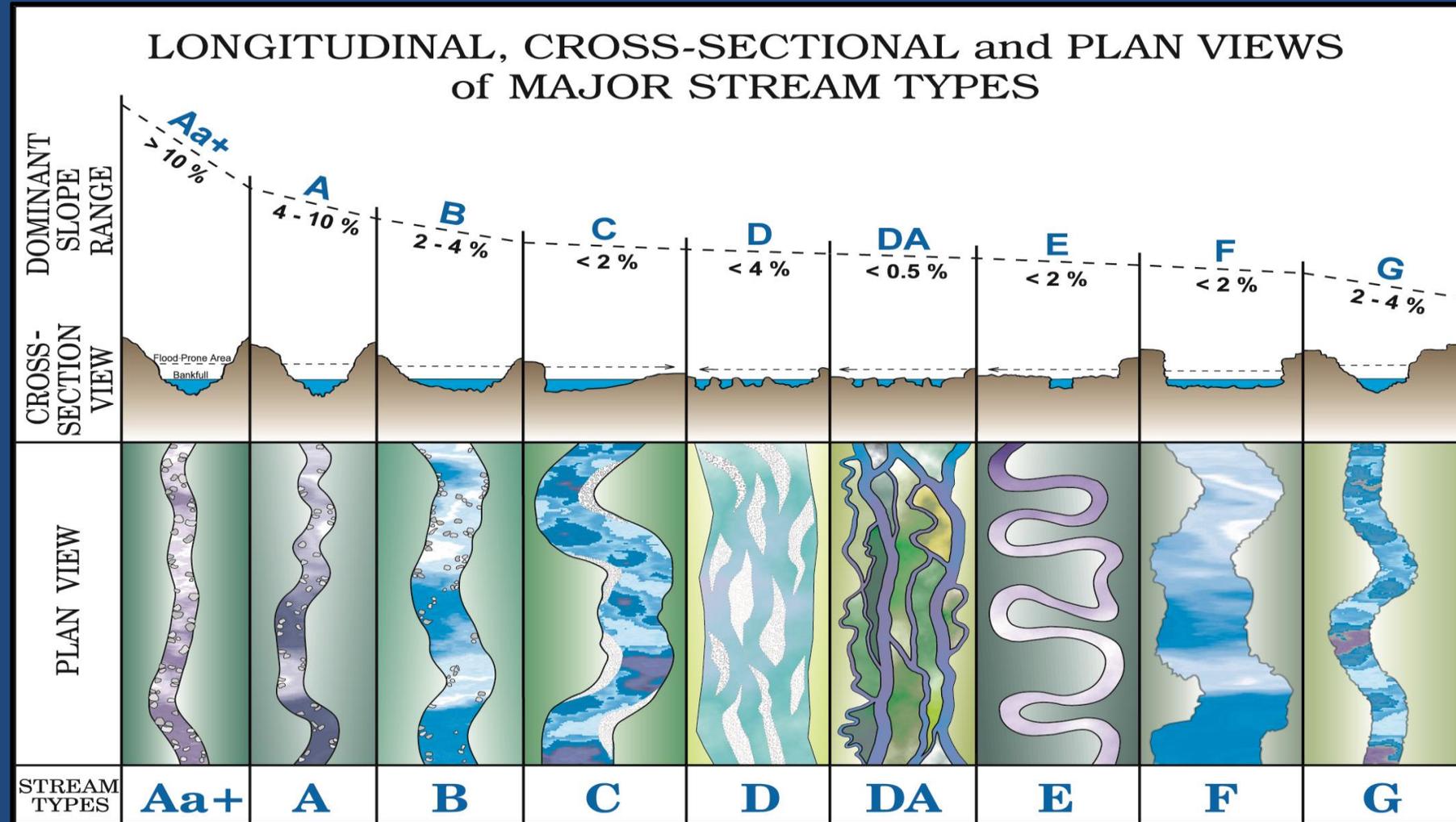
Delineation and Identification of... Coastal Areas (Env-Wt 600)

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



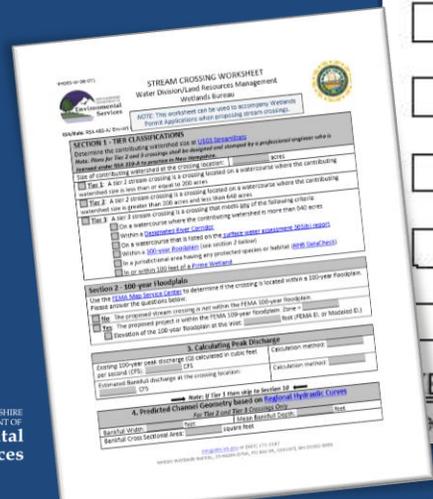
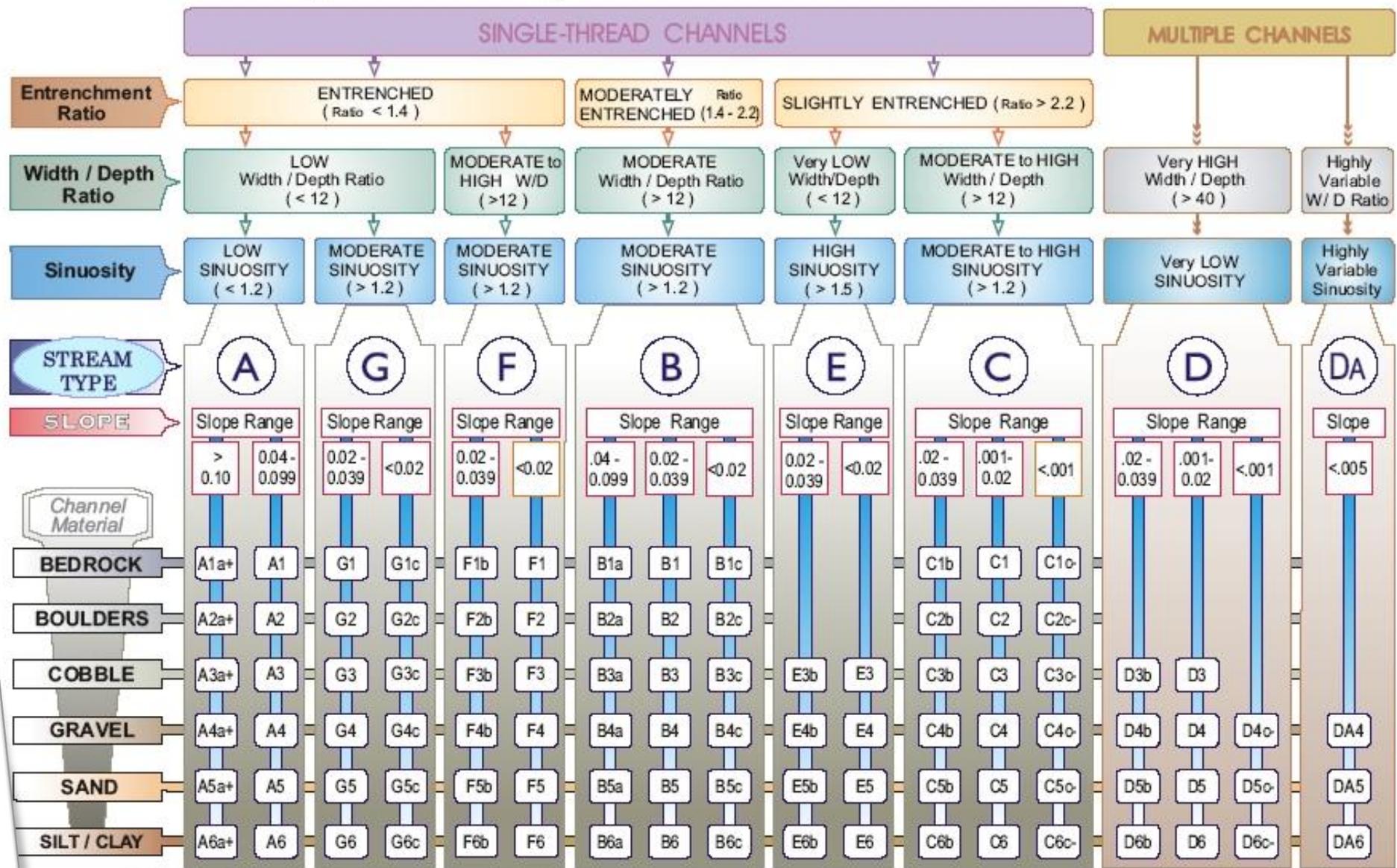
Watercourses: Rosgen Classification

- **Tidal crossings = Tier 4**
(Env-Wt 904.06)
- Where permanent stream or river impacts are proposed, these systems require Rosgen Classification.
- Minor and major crossings.
- Major bank stabilization projects.
- Mitigation proposals for stream restoration or enhancement.



- Entrenchment ratio.
- Width/Depth ratio.
- Sinuosity.
- Stream type.
- Slope.
- Channel material.

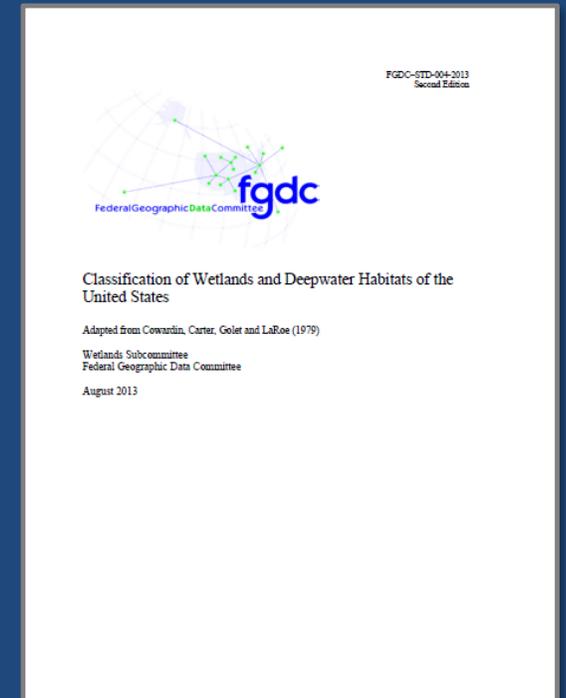
The Key to the Rosgen Classification of Natural Rivers



KEY to the **ROSGEN** CLASSIFICATION of NATURAL RIVERS. As a function of the "continuum of physical variables" within stream reaches, values of **Entrenchment** and **Sinuosity** ratios can vary by +/- 0.2 units; while values for **Width / Depth** ratios can vary by +/- 2.0 units.

Required Planning: Classification of Wetlands (Env-Wt 406.06)

- Federal Classification Method = **Cowardin System**.
- 2013 update.
 - Boundary between freshwater wetlands and deepwater habitats now at 8.2 feet (2.5 m).
- Required on plans submitted with the Standard application.
- CWS.



Required Planning: Identify Predominant Resource Functions

(Env-Wt 306.05(a)(1))

- Wetlands.
 - Freshwater.
 - Tidal.
 - Vernal pools.
- Watercourses and their banks.
- Coastal areas.



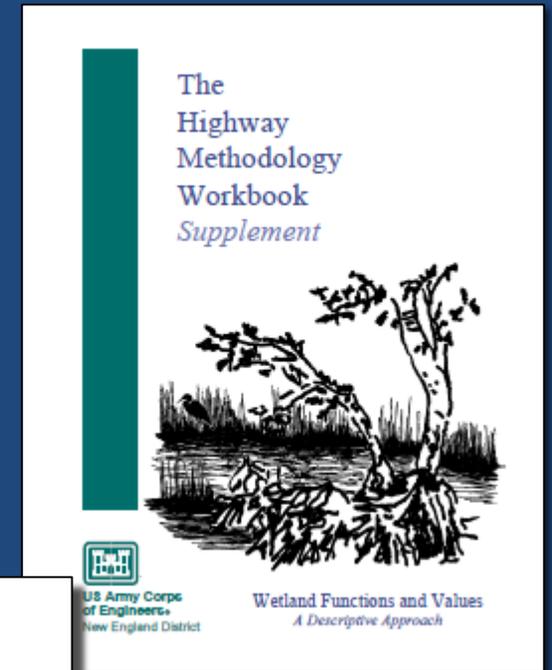
Coastal Functional Assessment: Requirements

(Env-Wt 311.10)

- Use Corps Highway Methodology Workbook Supplement

OR:

- An alternative scientifically supported method with cited reference and the reasons for the alternative method substantiated.



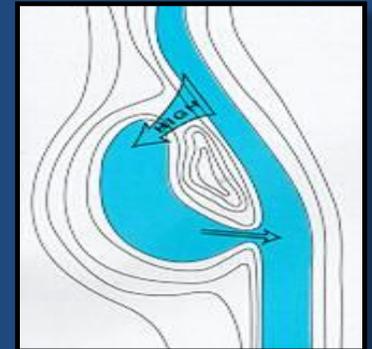
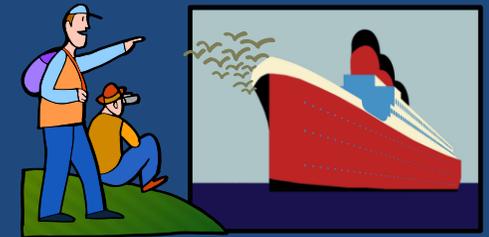
	Groundwater Recharge/ Discharge		Sediment/Shoreline Stabilization
	Floodflow Alteration (Storage & Desynchronization)		Wildlife Habitat
	Fish and Shellfish Habitat		Recreation(Consumptive & Non-Consumptive)
	Sediment/Toxicant Retention		Educational/Scientific Value
	Nutrient Removal/ Retention/Transformation		Uniqueness/Heritage
	Production Export (Nutrient)		Visual Quality/Aesthetics
		ES	Endangered Species 



Wetland Functions

(RSA 482-A:2, XI or Corps)

- Ecological integrity (R).
- Wetland-dependent wildlife habitat.
- Fish and aquatic life habitat.
- Scenic quality.
- Educational potential.
- Wetland-based recreation.
- Production Export (Nutrient) (C).
- Flood storage.
- Groundwater recharge.
- Sediment trapping.
- Nutrient trapping/ retention/ transformation.
- Shoreline anchoring.
- Noteworthiness.
- Uniqueness/Heritage(C).



NH Sea Grant

R= RSA only; C= Corps Method only

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).

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

Avoidance and Minimization Checklist

(Env-Wt 311.07(d))

- Section 1 - Primary purpose of the project
- Section 2 - Avoidance Project Design Techniques
- Section 3 - Minimization Design Techniques
- Section 4 - Resource-Specific Design Techniques
- Section 5 - Project-Specific Design Techniques
- Section 6 - Construction Techniques
- Section 7 - Construction Timing

Narrative text is required in each checklist section!



NHDES-W-06-050



AVOIDANCE AND MINIMIZATION CHECKLIST

Water Division/Land Resources Management
Wetlands Bureau



[Check the Status of your Permit](#)

RSA/Rule: RSA 482-A/ Env-Wt 100-900

Use this checklist to demonstrate compliance with requirements for Avoidance and Minimization, pursuant to RSA 482-A:1, Env-Wt 311.07(d).

SECTION 1 – PRIMARY PURPOSE OF THE PROJECT		
Env-Wt 311.07(b)(1)	Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA

Avoidance and minimization requirements have not been met if you answer “no” to any criteria below, unless you have provided justification in the form of a narrative consistent with the rules.

SECTION 2 - AVOIDANCE PROJECT DESIGN TECHNIQUES		
Env-Wt 311.07(b)(2)	For commercial/industrial lot development, including impacts required to create a buildable lot, impacts over one acre, or impacts to a Priority Resource Area (PRA), there are no other properties reasonably available to the applicant that could achieve the project’s purpose without altering the function and values of jurisdictional areas.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Env-Wt 311.07(b)(3)	Alternative design techniques could not be used to avoid impacts to jurisdictional areas or their functions and values on the subject property or on another property reasonably available to the applicant.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(1)	The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select the location of the proposed project having the least impact to wetland functions.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(2)	The proposed project has been designed to have the least impact to wetland functions.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(3)	Where impact to wetlands functions is unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions.	<input type="checkbox"/> Yes <input type="checkbox"/> No

irm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

Avoidance and Minimization: Application for Standard Permits

(Env-Wt 311.07)

Written Narrative

1. Primary purpose – access.
2. Address A&M for project that meet these criteria:
Industrial/ commercial; impacts to create a buildable lot; impacts > 1 acre; impacts to a PRA; Other properties available to avoid impacts (for certain projects/ resources).
3. Alternative designs or techniques used to avoid impacts.
4. How functional assessment was used to select location, design and identify construction techniques to minimize impacts to resource functions.

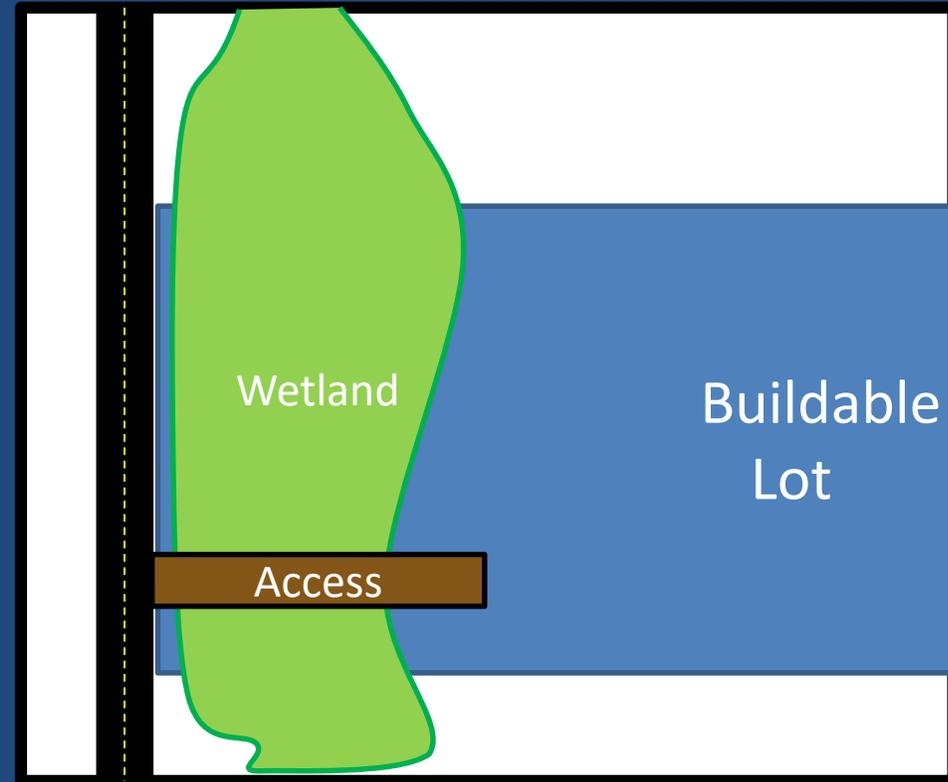
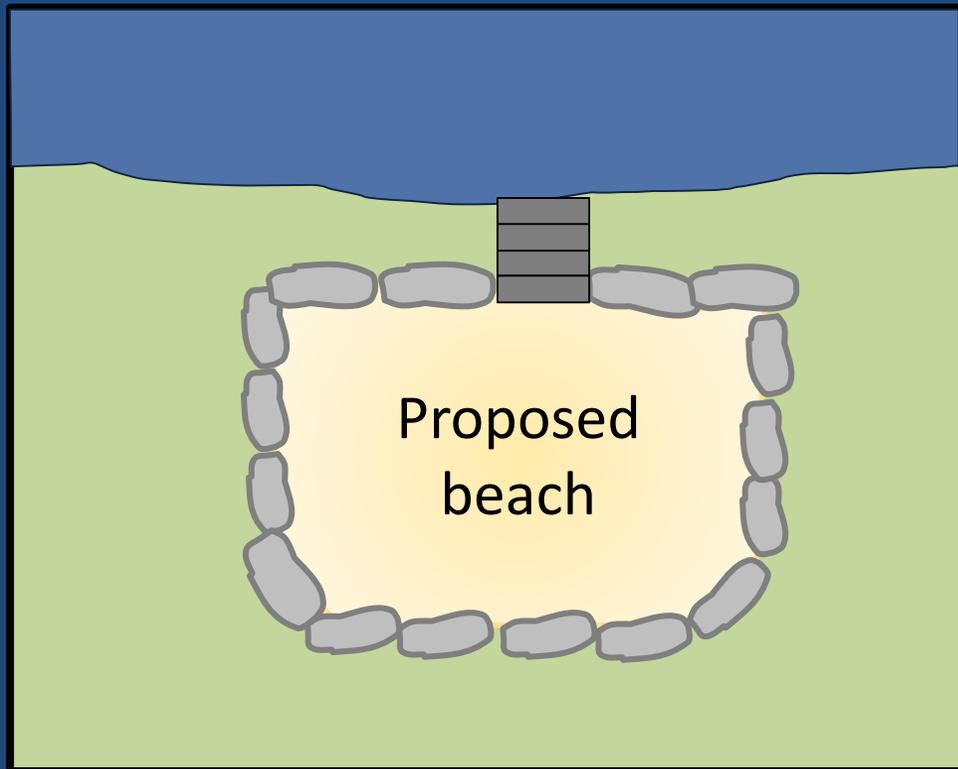


A&M Written Narrative Includes: Primary Purpose

(Env-Wt 311.07(b))

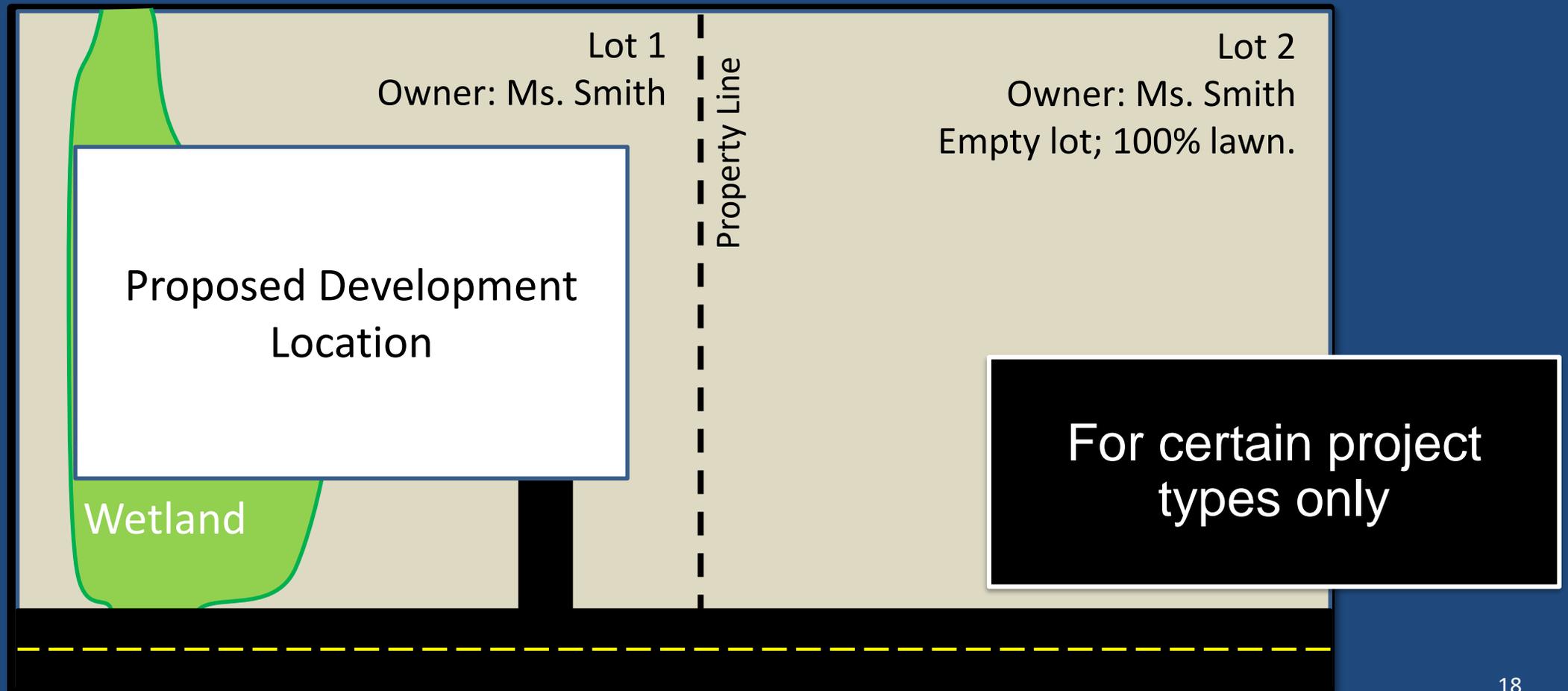
(1) Primary purpose: Access

Access to water or through wetlands required to reach a buildable lot?



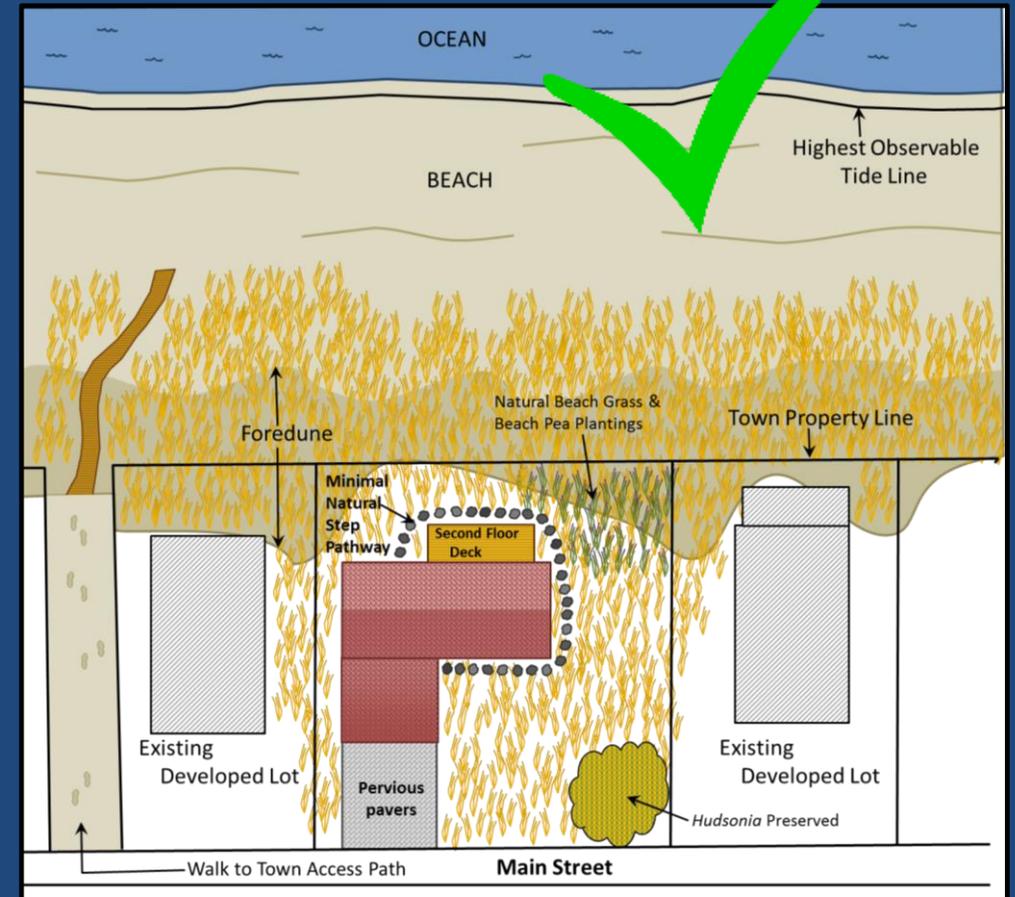
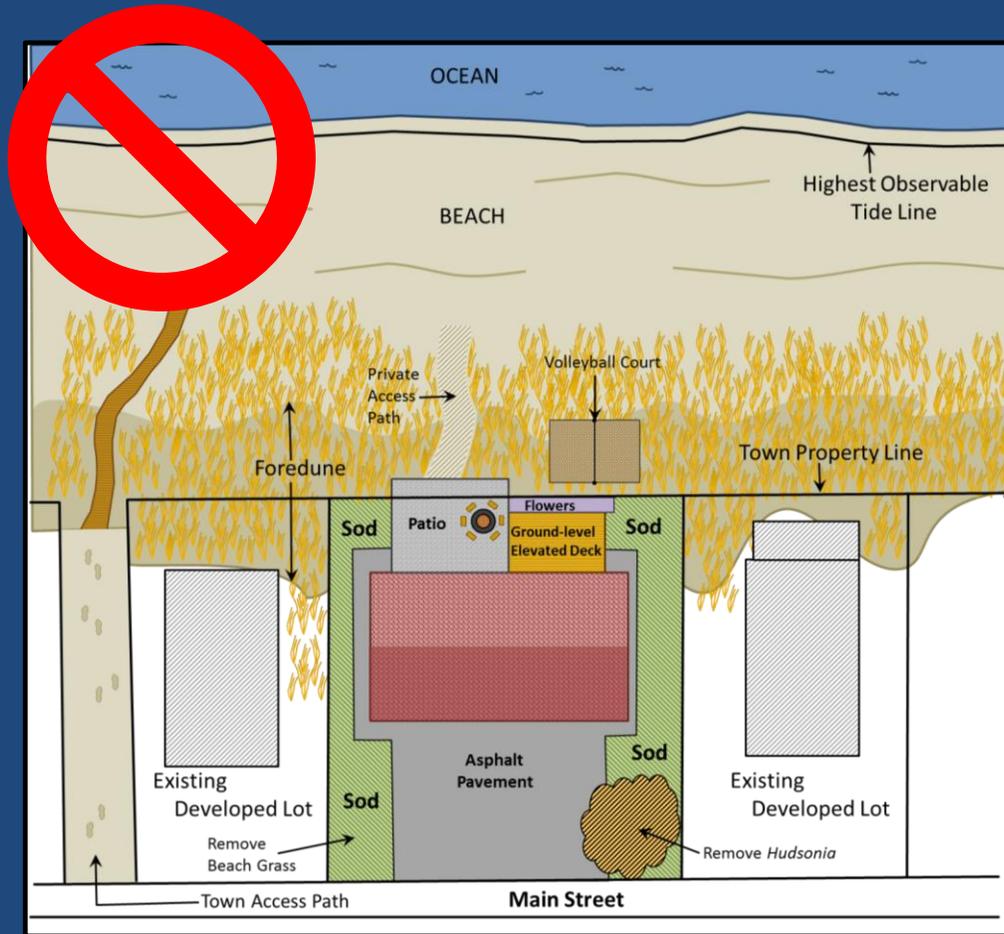
A&M Written Narrative Includes: Other Properties Available? (Env-Wt 311.07(b)(2))

(2) Other properties available to avoid impacts?



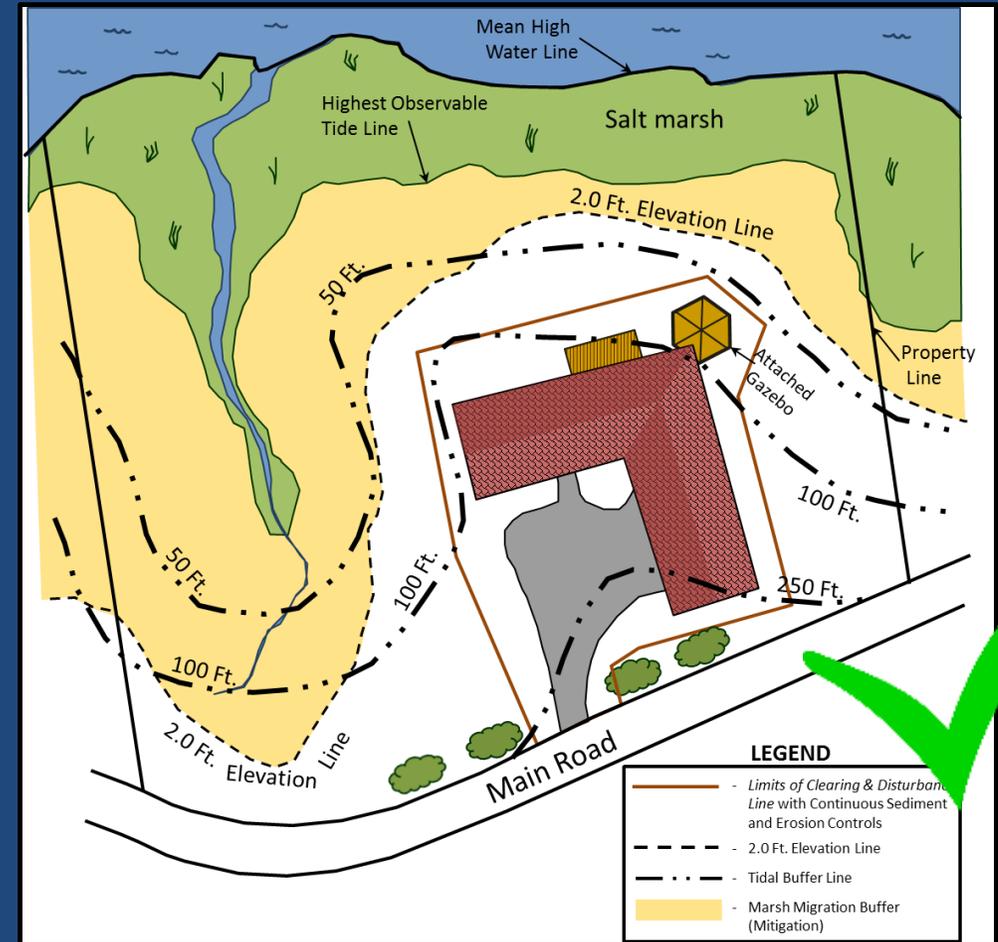
A&M Written Narrative: Use of Alternative Designs or Techniques (1)

(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)



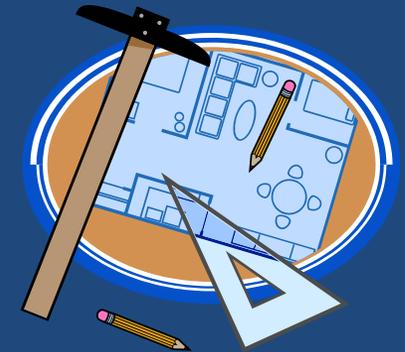
(3) Alternative designs or techniques to avoid impacts?

A & M Written Narrative: Use of Functional Assessment Results

(Env-Wt 311.07(b)(4))

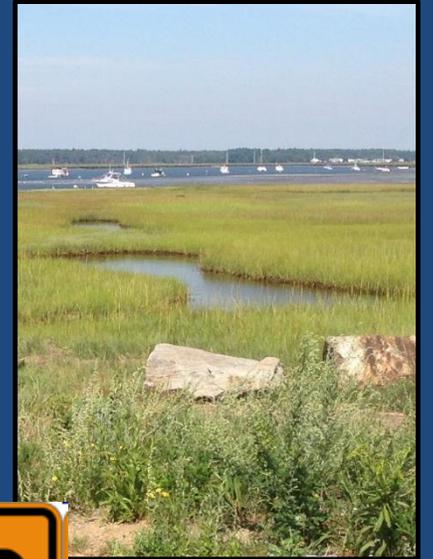
(4) How the project conforms to Env-Wt 311.10(c) for:

- Site Selection
 - Project design
 - Limiting the project impacts to the least valuable functions
 - On-site minimization measures and construction practices.
-
- For a **minimum impact project**, the applicant may replace the explanation required, with a certification signed by a certified wetland scientist that the project is located and designed to minimize impacts to wetlands functions and values.



General Criteria - Coastal Projects (Env-Wt 604.01,.02, .03)

- Protect public safety or homeland security.
- Optimize natural wetland function.
- Preference for soft stabilization design.
- New permanent impacts are limited in some resources.
- Addresses Sea Level Rise projections.

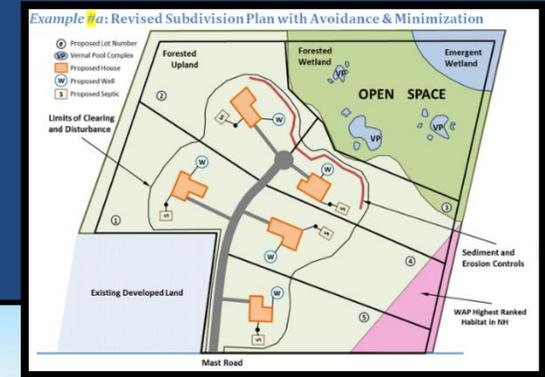


Nine items minor and major impact projects must demonstrate (1)

(Env-Wt 313.03(a))

Nine aspects of avoidance and minimization need to be incorporated in project design:

- (1) No practicable alternative with less adverse impact.
- (2) Avoids and minimizes impacts to marshes.
- (3) Maintains hydrologic connections.
- (4) Avoids and minimizes impacts to exemplary natural communities, vernal pools, documented fisheries, etc.



Nine items minor and major impact projects must demonstrate (2)

(Env-Wt 313.03(a))

Must avoid and minimize impacts to:

- (5) Commerce, navigation, recreation.
- (6) Floodplain wetlands.
- (7) Natural riverine forested wetland systems and scrub-shrub marsh complexes of high ecological integrity.
- (8) Wetlands adjacent to drinking water supply and groundwater aquifer levels.
- (9) Stream channels and their ability to handle runoff.



Tidal Resources - Mitigation Requirements (Env-Wt 605.04)

- Use onsite mitigation wherever practicable.
- If not practicable, and no list of local mitigation projects.
- Provide explanation for:
 - Why restoration of disturbed upland TBZ is not practicable.
 - Why restoration, enhancement or creation of wetlands, tidal waters, sand dunes or tidal flats is not practicable.
 - Why local stream crossing project cannot be upgraded to improve hydraulic capacity, AOP, geomorphic compatibility.
 - Why local project cannot open tidal restrictions for tidal marsh migration when associated w/ land preservation.
 - Why project does not meet a state or federal coastal assessment priority or a recognized priority project.



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.

Tidal Buffer Zone Mitigation Projects

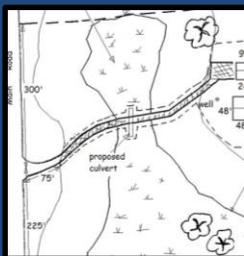


- Stream crossing upgrades w/tidal inflow or conservation easement that provides for marsh migration.



- Restoration/preservation of aquatic resource buffer.
- Replacement or enhancement of buffer functions.
- Meet waterfront buffer/ woodland buffer percentage requirements, ratios and standards in Env-Wt 800.

We covered...



- Identifying resources.
- Classifying resources.
- Evaluating resource functions.
- Using information to design and construct project and address mitigation.
- Documenting all of the above in permit applications.

Questions?

