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Env-Wt 608.03 Construction of Private Tidal Beaches Prohibited. No new beach shall be constructed in or on the tidal shoreline or within the tidal buffer zone, whether by cutting through vegetation, replacing or covering natural material with sand fill, replacing or covering natural ground surface and vegetation with a constructed sand perched beach, changing contours by excavating the intertidal zone, shoreline, or tidal buffer zone, or any other means.

Env-Wt 608.04 Beach Nourishment.

- (a) Beach nourishment shall be:
 - (1) Allowed only on publicly-owned beaches; and
 - (2) Authorized only by the state or local agency responsible for maintaining the beach.
- (b) Proposed nourishment material shall be:
 - (1) Chosen based on compatibility with that of existing beach material for grain size, shape, and color; and
 - (2) If not virgin material, tested for contaminants prior to placement on the beach.
- (c) The slope of the beach after beach nourishment shall mimic the natural beach profile.

Adopt Env-Wt 609 to read as follows:

PART Env-Wt 609 TIDAL SHORELINE STABILIZATION

Env-Wt 609.01 Tidal Shoreline Stabilization Requirements. Tidal shoreline stabilization projects shall:

- (a) Maintain or enhance the natural process functions of the shoreline as the critical transition zone between the intertidal zone and upland tidal buffer zone/sand dune regimes;
- (b) Include wildlife habitat while providing structural protection against coastal hazards; *necessary?*
- (c) Be compatible with the existing natural land cover and its functions;
- (d) Address the known causes of erosion; and
- (e) Avoid adverse impacts to nearshore ecosystem processes and habitats. *and neighboring shoreline*

Env-Wt 609.02 Hierarchy of Tidal Shoreline Stabilization Methods. Applications for tidal shoreline stabilization projects shall demonstrate that:

- (a) The technique or combination of techniques is based on best available scientific and engineering practices; and
- (b) The proposed technique or combination of techniques address:
 - (1) Results of the avoidance and minimization narrative required in Env-Wt 311.07, the avoidance, minimization, and mitigation demonstration required in Env-Wt 313.03, the CFA required in Env-Wt 603.04, and the project design narrative required in Env-Wt 603.06;
 - (2) Identifiable causes of erosion;
 - (3) The degree or extent of erosion;
 - (4) Relative exposure based on shoreline geometry, shore orientation, intensity of boat traffic, influence of adjacent structures, storm surge, and extreme precipitation events;
 - (5) Potential sea-level rise and vulnerability assessment under Env-Wt 603.05;

At this writing, it is not clear what is causing system-wide salt marsh edge erosion

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- (6) Potential marsh migration as a result of sea level rise as shown on SLAMM wetland bureau One-Stop mapper; and
- (7) The design requirements of Env-Wt 514.04.

Env-Wt 609.03 Analysis of Existing Structure Conditions Required. As part of an application to repair or rehabilitate an existing tidal shoreline stabilization structure, the engineer or qualified coastal professional shall rate the condition of the existing structure and the purpose for repair based on the following:

- (a) The degree of damage or extent of deterioration, as applicable, such as missing components, cracking, or weeping with erosion;
- (b) Whether the existing installation has functioned as intended;
- (c) Whether opportunities exist to use soft bank stabilization components or a combination of soft and hard components; and
- (d) The ability of the structure to withstand coastal flood risk in accordance with the vulnerability assessment required by Env-Wt 603.05.

Env-Wt 609.04 Preferred Techniques for Tidal Shoreline Stabilization.

(a) The preferred technique for tidal shoreline stabilization shall be living shoreline approaches with a first preference for soft shoreline stabilization, including the following:

- (1) Soft vegetative bank stabilization, including regrading and replanting of slopes, in which all work occurs at or above the mean high water line;
- (2) Bioengineered bank stabilization that uses a combination of live vegetation, shells, woody material, or geotextile matting, which may include regrading and replanting of slopes with all work occurring at or above the mean high water line;
- (3) Soft vegetative shoreline stabilization that occurs below mean high water and may include fill and soft sill structures to restore the stabilizing and natural functions of salt marshes; and
- (4) Bioengineered shoreline stabilization that occurs below mean high water and which may include fill and a combination of live vegetation, woody material, geotextile matting, and harder structural materials such as rocks to create a sill at toe of a marsh or bank stabilization project.

(b) Preferred techniques shall be required if the project is to replace an existing stabilization structure that has not functioned as required by Env-Wt 609.01 or is not an existing legal structure.

Env-Wt 609.05 Living Shoreline Design Plans.

(a) A living shoreline design plan shall be prepared by a professional engineer and, where wetlands are being enhanced or restored, reviewed and stamped by a certified wetland scientist, in accordance with "Guidance for Considering the Use of Living Shorelines", NOAA (2015), available as noted in Appendix B.

(b) A living shoreline design plan shall be prepared so that the project will:

- (1) Use native vegetation, ^{appropriate} sand fill, and limited stone or wood as specified in Env-Wt 609.06 to provide shoreline stabilization and protection;
- (2) Mimic the natural landscape and leave natural vegetation intact to the greatest extent practicable;
- (3) If practicable based on the location of the HOTL, water turbulence, and soil conditions, add vegetation to existing sand beaches or dunes or construct vegetated sand dunes;

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- (4) Design the sill to the lowest elevation possible that still ensures stabilization of the toe of the living shoreline;
- (5) Maintain the shoreline's ability to absorb and mitigate storm impacts and adapt to the landward progression of the sea;
- (6) If space and soil conditions allow, cut back unstable banks to a flatter slope, seed and replant with native, non-invasive trees and shrubs; and
- (7) Provide habitat for wildlife and aquatic species.

minimize or prevent wave reflection → Env-Wt 609.06 Use of Wood and Rock in Living Shorelines. Large wood ~~debris~~ such as driftwood and natural rock that is comparable to naturally-occurring rock found in the vicinity of the project may be incorporated into a soft tidal shoreline stabilization design as matrix material for a bio-engineering bank stabilization technique.

Env-Wt 609.07 Tidal Shoreline Stabilization Using New Hard-Scape or Rip-Rap.

(a) The department shall not approve any tidal shoreline stabilization plan that proposes to install new rip-rap unless:

- (1) The applicant demonstrates that:
 - a. Anticipated turbulence, flows, restricted space, fetch, or similar factors render soft stabilization methods physically impractical; and
 - b. Natural areas or naturalized soft shoreline stabilization on neighboring properties will not be damaged by the placement of the proposed rip-rap; or
- (2) The rip-rap is a component used as a sill to stabilize the toe, but is not the primary or dominant component of a living shoreline stabilization design.

(b) The applicant proposing to install new rip-rap shall include with the application:

- (1) Evidence of erosion that cannot be stabilized solely with a soft stabilization design;
- (2) A description of anticipated turbulence, flows, restricted space, fetch, or similar factors that render vegetative and diversion methods physically impractical;
- (3) An assessment of the potential for the proposed rip-rap to erode the shoreline of neighboring properties, based on an examination of the shoreline and modeling based on tides, average wave height and force, and the energy absorption or deflection ability of the proposed rip-rap;
- (4) Specification of:
 - a. Minimum ~~and~~ maximum stone sizes; *and gradation*
 - b. Existing contours and final proposed contours;
 - c. The minimum and maximum rip-rap thickness; and
 - d. The type and thickness of bedding for the stone;
- (5) *e. Volume of rip-rap* Cross-section and plan views of the proposed installation; and
- (6) The relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.

(c) In addition to plan requirements specified in Env-Wt 311, applications to use rip-rap adjacent to tidal water bodies shall:

- (1) Include stamped engineering plans; and
- (2) If the state holds fee simple ownership, a stamped survey showing the location of the mean high water tide line on the shoreline and the footprint of the proposed project.

Env-Wt 609.08 Repair of Existing Rip-Rap.

- (a) Existing rip-rap may be maintained in-kind, repaired in-kind, or replaced in-kind as a minimum impact tidal shoreline stabilization project only if the work meets the requirements of Env-Wt 609.10.
- (b) The applicant shall provide the following with or as part of an application for any work that does not qualify under Env-Wt 609.10:
 - (1) A signed certification that the rip-rap that is the subject of the work is an existing legal structure; and
 - (2) The design information specified in Env-Wt 609.07(b)(2)-(6).

Env-Wt 609.09 Tidal Shoreline Stabilization Using Walls.

- (a) Due to the loss of natural features, such as habitat and the ability of the shoreline to move and adapt naturally to coastal hazard events that results from constructing a wall in tidal waters/wetlands, and due to the reflection and redirection of wave energy that can have an adverse effect on surrounding properties and ecology, the department shall not approve the installation of a wall unless required to protect public infrastructure in situations where a softer stabilization technique is shown to be impracticable.
- (b) The following shall apply to any application to install a wall to stabilize a tidal shoreline:
 - (1) Walls shall be permitted only if there is insufficient space to cut back slopes to eliminate the need for a wall;
 - (2) The applicant shall provide:
 - a. Cross-section and plan views of the proposed installation; and
 - b. Plans that clearly show the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline;
 - (3) The face of a project shall be angular, not smooth, to minimize reflected wave energy;
 - (4) Fill shall be allowed only to the extent necessary to achieve structural stability;
 - (5) Weep holes shall be provided to allow seepage of groundwater and to promote slope stability;
 - (6) Walls shall:
 - a. Not reflect or re-direct currents or wave energy towards adjacent wetlands, structures, or neighboring properties, or otherwise contribute to erosion; and
 - b. Be concave on the seaward side to reflect wave energy where practicable.

Env-Wt 609.10 Minimum Impact Tidal Shoreline Stabilization Projects.

- (a) Subject to the conditions in (b), below, a shoreline stabilization project shall be classified as minimum impact if it consists of:
 - (1) In-kind maintenance, in-kind repair, or in-kind stabilization of an existing installation that is fully exposed at low tide;

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- (2) Conversion of an existing stabilization practice to bioengineered bank stabilization or living shoreline;
 - (3) A living shoreline project that is fully exposed at low tide; or
 - (4) An existing stabilization project located below mean high water, including the placement of fill material landward of sills, provided the fill is for erosion control and or wetland function enhancement and not recreational activity.
- (b) For a project that is listed in (a), above, to qualify as minimum impact, the following conditions shall be met:
- (1) The applicant shall consult with department staff in a pre-application and pre-design review meeting;
 - (2) There shall be no change in the location, configuration, construction type, or dimensions of the installation unless the project is a living shoreline project that enhances the natural processes and functions of a previously disturbed or eroding shoreline;
 - (3) All work shall be done at low tide when the work area is fully exposed;
 - (4) The existing installation shall have functioned as intended without adverse effects on the property or surrounding properties such as increased erosion due to deflection of waves or currents;
 - (5) A living shoreline project shall be either:
 - a. A restoration/enhancement project under Env-Wt 500; or
 - b. No longer than 200 linear feet with marsh restoration of less than one acre and extending no more than 50 feet seaward of mean low water;
 - (6) Unless converted to a living shoreline, the applicant shall certify in writing that each installation being maintained, repaired, or replaced in-kind is an existing legal structure as defined in Env-Wt 100; and
 - (7) The applicant shall perform a CFA and a vulnerability assessment.

Env-Wt 609.11 Tidal Shoreline Stabilization Projects Requiring Standard Permit. A shoreline stabilization project shall require a standard permit, except as provided for in Env-Wt 609.10(b)(5), if it:

- (a) Is a living shoreline that does not meet the requirements of Env-Wt 609.01 or an installation of hard structures in any previously undisturbed coastal lands or tidal wetlands;
- (b) Represents an increase in hardening of the shoreline, such as by constructing a wall, installing rip-rap, converting a bio-installation to armoring, or increasing the dimensions of existing armoring; or
- (c) Does not qualify as a minimum impact project under Env-Wt 609.10.

Adopt Env-Wt 610 to read as follows:

PART Env-Wt 610 PROTECTED TIDAL BUFFER ZONE AND PROTECTED SHORELAND

Env-Wt 610.01 Applicability. This part shall apply to the tidal buffer zone established in RSA 482-A and to all protected shoreland in coastal areas established by RSA 483-B, referred to collectively as the protected tidal zone.

Env-Wt 610.02 Projects in the Protected Tidal Zone that Do Not Require a Permit. The following activities may be undertaken in the protected tidal zone without first obtaining a permit under RSA 482-A:

In some cases of salt marsh restoration, it may be more convenient to construct fully exposed sill frames to surge cut higher water levels.

what is source of these numbers?

(a) The maintenance, repair, or modification of an existing legal primary or accessory structure that does not:

- (1) Increase or move the footprint or impervious area of the structure;
- (2) Result in the alteration of previously-unaltered areas;
- (3) Result in an increase in loading to an onsite sewage disposal system;
- (4) Increase the number of residential units on the property; or
- (5) Necessitate or result in any dredging or filling within the protected tidal zone;

(b) Work done pursuant to an approved remediation plan that is prepared in response to any enforcement action against a property owner or contractor where the violator is directed by the department to remediate violations of:

- (1) RSA 482-A or rules in subtitle Env-Wt, or both; or
- (2) RSA 483-B or Env-Wq 1400, or both;

(c) Landscaping or gardening consistent with Env-Wq 1400;

(d) The construction of stairs in the upland protected tidal zone, provided:

- (1) The bottom of the stair structure lands on a beach above mean high tide; and
- (2) No excavation is required;

(e) Trimming, pruning, and thinning of branches to the extent necessary to protect structures, maintain clearances, or maintain the ecological health of the planted area, provided the activity does not endanger the health of the plant;

(f) Removal of dead, diseased, or unsafe trees, limbs, saplings, or shrubs that pose a hazard to structures or have the potential to cause personal injury, provided:

(1) The work is done in a way that:

- a. Prevents damage to surrounding healthy trees, limbs, saplings, and shrubs;
- b. Minimizes damage to ground cover;
- c. Prevents soil erosion and sedimentation to the water body; and
- d. Leaves all stumps intact; and

(2) The person who authorizes the work bears the burden of proving, in any enforcement action for a violation of this rule, that the trees, limbs, saplings, or shrubs removed were in fact dead, diseased, or unsafe, where proof that removed trees, limbs, saplings, or shrubs were dead, diseased, or unsafe shall include the following:

- a. Photographs of the property which clearly show the dead, diseased, or unsafe trees, limbs, saplings, and shrubs; and
- b. Written certification signed by an individual with knowledge and experience in assessing tree health, such as a licensed forester, certified arborist, or licensed landscape architect, that the trees, limbs, saplings, and shrubs that were removed were dead, diseased, or unsafe, as applicable;

(g) Hand-pulling or use of hand tools to remove invasive species or other noxious or harmful plants such as poison ivy, including root systems, provided that any area exceeding 10 SF left without vegetation shall be replanted with native, non-invasive species in accordance with Agr 3802;