Installing riprap along the shoreline of a coastal wetland under Section 8 PBR

Eligibility (applicability)

I am installing no more than 125 linear feet of riprap along the shoreline of a coastal wetland and:

- I am only placing riprap in areas where soils are exposed due to erosion from wave action, currents, ice scouring or changes in water levels;
- The project will protect: a water-dependent structure (e.g., pier, stormwater outfall, stairs to water); a septic system located <25 feet from the eroding bank; a publicly owned open space (e.g., park); or a residential dwelling, commercial or public building or facility, or road that legally existed prior to 1/1/26 (or is part of a redevelopment) and that is located <100 feet from the eroding bank;
- If the project will protect an open space or dwelling, building/facility, or road, the bank has been eroding at least 1 foot landward per year on avg., at least 5 feet landward in a single year, or is classified as or determined by the Maine Geological Survey to be an unstable or highly unstable bluff;
- Riprap will not be placed in, seaward, or within 25 feet of a coastal sand dune system;
- Riprap will not be placed in or seaward of a coastal barrier resources system unit;
- Riprap will not be placed in a tidal waterfowl and wading bird habitat that is a saltmarsh or mudflat; a shorebird nesting, feeding and staging area; or another significant wildlife habitat or Essential Habitat;
- The total area of shoreline stabilized by riprap, seawalls, retaining walls or similar structures on my lot will not exceed 125 linear feet along the shoreline, nor 400 square feet below the highest astronomical tide line;
- The activity will not cover or destroy saltmarsh or eelgrass vegetation; and
- I am complying with the local Shoreland Zoning ordinance.

Standards

- No trees larger than 4 inches diameter at breast height may be removed, except as necessary for regrading to allow for the required slope of between 1.5H:1V to 3H:1V for riprap, or for equipment access to the water. Hazard trees[1] may also be removed.

[1] A hazard tree is defined as follows: "A tree with a structural defect, combination of defects, or disease resulting in a structural defect that under the normal range of environmental conditions at the site exhibits a

- Disturbance of otherwise vegetated portions of the shoreline and bank must be avoided to the greatest extent possible, except for removal of invasive species. If non-invasive vegetation must be disturbed during the activity, similar types and amounts of native vegetation must be re-established in accordance with the revegetation standards in the Department's Chapter 1000 Guidelines for Municipal Shoreland Zoning Ordinances immediately upon completion of the activity and must be maintained to ensure survival.

- A yard or other developed area may not be extended closer to the water as part of a shoreline stabilization activity, and the elevation of a parcel may not be increased as part of a shoreline stabilization activity.

- The following measures must be taken to prevent erosion of soil or fill material from disturbed areas into the resource: The following measures must be taken to prevent erosion of soil or fill material from disturbed areas into the resource:
    - For any soil disturbance that is limited to the upland, sediment controls such as trenched and anchored silt fence, an erosion control mix berm at least 1 foot tall, staked straw bales, and/or anchored erosion control socks at least 12 inches in diameter must be properly installed between the disturbance and the resource before the activity begins and maintained until the disturbed area is permanently stabilized;
    - Any soil disturbance within a coastal wetland must be done at or near low tide and must be temporarily or permanently stabilized before being submerged.
    - Surface flows from above the disturbed area must be diverted around the disturbed area until final stabilization and any diverted runoff must be managed to prevent erosion (examples of diversions include but are not limited to erosion control mix berms or socks, sand bags, and shallow excavated trenches);

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high probability of failure and loss of a major structural component of the tree in a manner that will strike a target. A normal range of environmental conditions does not include meteorological anomalies, such as, but not limited to: hurricanes; hurricane-force winds; tornados; microbursts; or significant ice storm events. Hazard trees also include those trees that pose a serious and imminent risk to bank stability. A target is the area where personal injury or property damage could occur if the tree or a portion of the tree fails. Targets include roads, driveways, parking areas, structures, campsites, and any other developed area where people frequently gather and linger."

- Within 1 calendar day following the completion of any soil disturbance, and prior to any storm event, temporary or permanent stabilization must be implemented or spread on any exposed soils;
- All disturbed soils must be permanently stabilized; and
- Within 30 days of final stabilization of the site, any silt fence, straw bales, or temporary erosion or sediment controls containing plastic or other non-biodegradable materials must be removed and erosion control mulch berms must be raked to a depth of no more than 6 inches.

- Wheeled or tracked equipment may not operate in the water. Equipment operating on the shore may reach into the water with a bucket or similar extension. Equipment may cross streams or brooks on rock, gravel, or ledge bottom.

- Work below the highest astronomical tide line must be done at low tide except as required for emergency flood control work.

- All excavated material must be stockpiled either outside the protected natural resource or on mats or platforms while work is taking place. Appropriate sediment controls such as trenched and anchored silt fence, an erosion control mix berm at least 1 foot tall, staked straw bales, anchored erosion control socks at least 12 inches in diameter, or a combination of these methods must be used, where necessary, to prevent sedimentation. All excavated material must be removed to a location more than 75 feet from the protected natural resource, unless otherwise required by this section or otherwise approved by the DEP, and properly stabilized with vegetation upon project completion.

- When planting vegetation, native species must be used. If slopes are steeper than 2H:1V, the bank may be cut back to a shallower slope for the purposes of establishing vegetation, as long as no trees larger than 4 inches diameter at breast height are removed (except as necessary for equipment access and hazard tree removal as noted above). New soil may be added to the bank adjacent to the resource and soil amendments, such as fertilizer or lime, may be used to increase soil fertility provided that:

  - No soil is placed below the highest astronomical tide line;
  - The slope is not steeper than 1H:1V;
  - Water bars or diversions are used to divert stormwater runoff away from the new soil and/or soil amendments;

- The depth of new soil is less than 2 inches;
- The amendment is worked into the underlying soils; and
- Disturbed areas are immediately mulched and seeded.

*Non-toxic, biodegradable tackifiers may be used for vegetation establishment only with prior written approval from the DEP.

- Riprap may be placed at or below the highest astronomical tide line, provided that it does not extend toward the water more than 3 feet horizontally from the change of slope at the toe of the bank and does not fill more than 400 square feet below the highest astronomical tide line (including fill placed during the activity and any pre-existing fill from shoreline stabilization activities on the lot).

- Rocks used for riprap may not be obtained from the shoreline or a protected natural resource, unless the rocks are from a previously failed riprap project. Riprap should be of similar color as the rocks and boulders in nearby areas.

- Riprap may not be used to stabilize more than 125 linear feet of shoreline on a coastal wetland (including existing portions of shoreline stabilized riprap, retaining walls, seawalls or other similar structures on the lot).

- Riprap may be utilized only where eroded slopes are steeper than 3H:1V. However, the slope of the riprap may not be steeper than 1.5H:1V. The bank may be regraded to meet this standard. With prior written agreement, the DEP may allow the slope to be as steep as 1H:1V.

- Riprap installed on the shoreline of a coastal wetland may not extend higher than one foot above the base flood elevation mapped by FEMA.

- Riprap must be tapered downward as it approaches an abutting property line and may not be placed within 5 feet of an abutting property line, unless the applicant owns the abutting property, the abutting property contains riprap (or another structural stabilization measure) up to the property line, or the abutting property owner agrees in writing that the riprap may be extended closer to the property line.

- Riprap must be anchored at the base of the existing bank by placing the bottom row of rock in a trench excavated at least to a depth equal to half the height of the largest rock, or the riprap must be pinned to underlying ledge. A layer of filter fabric and/or at least 6 inches of well-graded gravel with less than 5 percent fines, or a layer of dormant living brush bundles (a brush mattress), must be placed under the riprap to enhance the stability of the project by preventing the erosion of soil under the riprap.

- A vegetative buffer at least 10 feet wide as measured perpendicular to the shoreline and consisting of both native woody and herbaceous vegetation must be established and maintained along the upland edge of the riprap stabilization project. [2] The buffer must include trees if the project is along the shoreline of a river, stream or brook. If the buffer is planted over a subsurface wastewater disposal system, the buffer may be comprised entirely of herbaceous vegetation. The width of the buffer may be reduced if the DEP determines that a 10-foot buffer is not feasible due to the proximity of a structure to the upland edge of the eroding shoreline. If a buffer consisting of native woody vegetation or a diverse mix of native woody and herbaceous vegetation at least 5 feet wide already exists along the upland edge of the stabilization project, no additional buffer width is required. However, the buffer must be at least 25 feet wide if the project is conducted for the protection of agricultural land.

- Where feasible, native vegetation must be planted within gaps in the riprap. [3]

- When sediment is excavated to allow for riprap stabilization adjacent to a coastal wetland, the excavated sediment must be evenly distributed across the riprap. This requirement may be waived if the DEP determines that it is not feasible due to site conditions.

- Design of a riprap stabilization project along the shoreline of a coastal wetland must be approved by a design professional such as a Maine Registered Professional Engineer or a contractor or consultant with demonstrated experience designing coastal shoreline stabilization projects. Evidence of the design professional's approval and credentials must

[2] This requirement does not apply to a project using riprap only for toe protection. ("Toe protection" is when biodegradable stabilization materials or riprap is installed under or against the base of a bank, near the change in slope at the base of the bank, to prevent the undercutting of the bank from waves or currents.)
[3] This requirement does not apply to a project using riprap only for toe protection. ("Toe protection" is when biodegradable stabilization materials or riprap is installed under or against the base of a bank, near the change in slope at the base of the bank, to prevent the undercutting of the bank from waves or currents.)

be submitted with the Notification Form. With prior written agreement, the DEP may waive this standard for riprap stabilization activities in an area that is not mapped by FEMA as a high-velocity flood zone.

Application submission requirements

(1) The applicant is required to submit a minimum of one photograph in an orientation parallel to the shoreline and one photograph in an orientation perpendicular to the shoreline from the resource landward along each 25-foot section of shoreline where the activity is proposed. The photographs must clearly document erosion of the shoreline caused by wave action, currents, ice scouring or changes in water levels. The photographs should include a person or some other object for scale. Photographs along a coastal shoreline must be taken at or near low tide.

(2) The applicant must submit a written description of the cause of the erosion.

(3) For an activity using riprap along the shoreline of a coastal wetland, the applicant must provide photographs or site plans showing the structure(s) or publicly owned open space that the riprap is designed to protect. As applicable, the applicant must also provide a measurement from the structure to the upland edge of the eroding bank and either a Maine Geological Survey map or site-specific evaluation by the Maine Geological Survey showing the bluff as unstable or highly unstable or dated photographs, satellite imagery, or aerial imagery demonstrating that the area where the project is proposed has eroded at least five feet landward in a single year or is eroding at least one feet landward per year, on average, over multiple years.

(4) The applicant must submit photographs of all pre-existing riprap on the lot and photographs or descriptions of all pre-existing fill from stabilization activities below the highest astronomical tide line on the lot. The applicant must state how many linear feet of shoreline on the lot have been stabilized using riprap and how many square feet of fill from stabilization exists below the highest astronomical tide line on the lot.

(5) The applicant must submit a scaled drawing and at least two cross-sections of the proposed activity. The drawing must clearly depict the property boundaries, the highest astronomical tide line, and the extent of any soil disturbance, grading, vegetated areas, biodegradable stabilization materials, and/or riprap proposed to be installed, such as the length along the shoreline, square footage of fill below the highest astronomical tide line, and height above the highest astronomical tide line. The drawing must be legible and drawn to a scale that provides a clear representation of distances and measurements on the plan.

(6) The applicant must submit a plan for how machinery will access the project site. If work will be done below the highest astronomical tide line, the plan must describe how machinery will access these areas.

(7) n/a

(8) If required pursuant to the standards above, the applicant must submit approval from, and evidence of the credentials of, a design professional for the design of a riprap stabilization activity along the shoreline of a coastal wetland.

(9) Photographs showing the finished activity must be submitted within 20 days of the activity's completion. The photographs must be sent with a copy of the notification form or labeled with the applicant's name and the municipality in which the activity took place.

Definitions

The following terms have the following meanings, unless the context indicates otherwise:

(1) **Biodegradable stabilization materials.** Natural, plant-based biodegradable or compostable fabrics, erosion control blankets, and logs or rolls made from coir, jute, straw, or other similar materials, including materials that contain or use gravel or cobble; discarded holiday trees and native trees, native brush, or native biodegradable materials; tree root wads; and wooden stakes. Metal anchors or cables may be used to secure those materials. Anchors may also include cobbles or small boulders that are not obtained from the shoreline or below the normal high water line or highest astronomical tide line.

(2) **Fill**. a. (verb) To put into or upon, supply to, or allow to enter a water body or wetland any earth, rock, gravel, sand, silt, clay, peat, or debris; b. (noun) Material, other than structures, placed in or adjacent to a water body or wetland. For the purposes of this section, fill includes biodegradable stabilization materials until such materials have entirely biodegraded.

(3) **Hazard tree**. A tree with a structural defect, combination of defects, or disease resulting in a structural defect that under the normal range of environmental conditions at the site exhibits a high probability of failure and loss of a major structural component of the tree in a manner that will strike a target. A normal range of environmental conditions does not include meteorological anomalies, such as, but not limited to: hurricanes; hurricane-force winds; tornados; microbursts; or significant ice storm events. Hazard trees also include those trees that pose a serious and imminent risk to bank stability. A target is the area where personal injury or property damage could occur if the tree or a portion of the tree fails. Targets include roads,

driveways, parking areas, structures, campsites, and any other developed area where people frequently gather and linger.

(4) **Mudflat.** A low-energy intertidal environment with sediments composed of fine clays, silt, sand and organic matter. Anoxic conditions are usually present below the surface. Mudflats are organically rich regions that support large populations of shellfish, baitworms and small invertebrates, and provide important feeding grounds for migrating and resident shorebirds.

(5) **Riprap.** Heavy, irregularly shaped rocks that are fit into place, without mortar, on a slope. Square or rectangular rocks with flat faces, such as quarry stone or manufactured blocks, do not qualify as "irregularly shaped." Rounded rocks are not considered riprap.

(6) **Riprap stabilization.** A shoreline stabilization technique that uses riprap to stabilize a bank above the toe.

(7) **Shoreline stabilization.** An activity designed to prevent erosion of soil or sediment from the terrestrial into the marine or freshwater environment caused by wave action, currents, ice scouring or changes in water levels.

(8) **Toe protection.** A shoreline stabilization technique in which materials are installed under or against the base of a bank, near the change in slope at the base of the bank, to prevent the undercutting of the bank from waves or currents.

(9) **Saltmarsh.** A persistent marine nearshore emergent grass habitat. Saltmarshes can be found between upland and intertidal flats and beaches, along tidal rivers, or behind barrier beaches. Saltmarshes are flooded by salt water on timescales ranging from twice daily to irregularly during spring tides.