ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

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Review of Bank and Shoreline Stabilization Applications by the DES Wetlands Bureau

All projects involving dredge, fill or the placement of structures in, or within the banks of surface waters require a permit from the Department of Environmental Services Wetlands Bureau. The NH Code of Administrative Rules Env-Wt 100-800 under which the Wetlands Bureau operates, require that impacts to jurisdictional areas be avoided whenever possible and minimized where they cannot be avoided. In keeping with this requirement, Env-Wt 404 requires the applicant to use the least intrusive stabilization method, with vegetative stabilization being the least impacting alternative, followed by riprap, then retaining wall construction, which is considered to have the greatest environmental impact.

Vegetative stabilization is the preferred method of stabilization. It may be as simple as seeding and mulching exposed soils, or it could involve regrading the bank to create a gentler slope and installing jute or turf reinforcement mats. The jute and turf reinforcement mats will also prepare the site to readily accept native plantings or live stakes (dormant, woody plant cuttings capable of quickly rooting in the stream bank). In addition, bioengineering (stabilization projects that assess river or stream dynamics, morphological characteristics and natural channel design) is another preferred method of stabilization because it utilizes techniques that improve channel stability and aquatic habitat from a watershed approach. These techniques typically include installing deflecting structures such as stone vanes, stream barbs, root wads, and tree revetments (trees or their tops cabled into the bank), and are typically combined with revegetation of the bank and restoration of a riparian buffer beyond the top of bank. Most deflecting structures keep stream currents away from the bank and help to trap sediment.

Stone riprap may be considered where turbulence, flows, restricted space, or similar factors render vegetative and diversion methods physically impractical. Riprap is stone placed against a sloping soil surface and keyed into the toe of slope. In some areas, stone riprap is used at the base or toe of slope and vegetative stabilization techniques are used higher up the bank. All plans for riprap projects in excess of 100 linear feet along a stream or river must be stamped by a New Hampshire licensed engineer; however, it is generally recommended that an engineer be consulted for any stone riprap project.

Retaining wall construction is the last alternative considered for bank stabilization. Before a retaining wall can be approved, it must be shown that there is a lack of space or other site limitation that makes alternative stabilization methods impractical. All proposals for retaining walls must include plans that identify the high water line, the footprint of the wall, and the distance from the wall to the property lines. All plans for riprap or retaining walls adjacent to great ponds or surface waters where the state holds fee simple ownership must be stamped by a New Hampshire licensed land surveyor.

While bank stabilization may be permissible, the DES Wetlands Bureau typically does not authorize the reclamation of land lost to erosion.

Shoreline and Bank Stabilization Projects are classified for review as follows.

Major Impact Projects

- Any disturbance greater than 20,000 square feet.
- Any construction or modification of a retaining wall lakeward of the high water line, including any refacing of a retaining wall that adds more than 6 inches in width.
- Any disturbance of more than 200 linear feet of shoreline or stream channel and its bank(s).
- Any project in a bog, sand dune, or tidal wetland, or within 100 feet of the highest observable tideline.
- Any project in or adjacent to prime wetlands.
- Any project in an area with recorded occurrences of threatened or endangered species.

Minor Impact Projects

Disturbance of less than 20,000 square feet, which:

- Disturbs less than 200 linear feet of shoreline or stream channel and its bank(s).
- Is not located in any bog, sand dune or tidal wetland.
- Is not in or adjacent to prime wetlands.
- Is not in an area with recorded occurrences of threatened or endangered species.

Refacing or repair of retaining walls that requires that work be done below the surface of the water, provided that the refacing does not add more than 6 inches in width.

Minimum Impact Projects

Disturbance of less than 50 linear feet of lake or pond shoreline or intermittent stream channel, which:

- Does not involve work below high water.
- Is not in or adjacent to prime wetlands.
- Is not in an area with recorded occurrences of threatened or endangered species.

Maintenance of existing structures with the exception of retaining wall repair as previously listed under major and minor impact projects.

For Quicker Application Review

1. Choose the stabilization method that poses the least impact possible for the site.

2. The appropriate application form (usually a Standard Dredge or Fill application) should be submitted with all of the requested attachments (USGS map with property labeled, copy of tax map with property and abutters labeled, color photographs of the project site, filing fee and plans, etc.) and address the requirements in Wt 302.04.

3. In accordance with Env-Wt 404.04, applications for riprap should include overview plans and cross-sections bearing the appropriate professional's stamp(s), showing the boundaries of all wetlands and surface waters on site, minimum and maximum stone size, proposed grade, riprap thickness, type of bedding, the distance of the project from fixed points on site, the high water line, the limits of construction, siltation and erosion controls, and a construction sequence.

4. In accordance with Env-Wt 404.05, applications for retaining walls should include overview plans and cross-sections bearing the appropriate professional's stamp(s), showing the boundaries of all wetlands and surface waters on site, the distance of the project from fixed points on site, the high water line, the limits of construction, siltation and erosion controls, and a construction sequence.

5. All plans and cross-sections must include existing and proposed conditions with dimensions or be drawn to scale.

6. Plans should indicate that dredge materials will be disposed in upland areas outside of the Wetlands Bureau's jurisdiction.

7. Schedule construction during a period of low water.

How to prevent problems

To avoid erosion along riverbanks:

- Keep structures, roads, equipment, animals, from continuous use of riverbank area.
- Provide for limited human access.

For More Information

For more information, please go to www.des.nh.gov and choose “Wetlands” from the A to Z List; e-mail wetmail@des.nh.gov ; or phone (603) 271-2147.

If you would like additional information about the project you are planning, you may set up an appointment to meet with the Wetlands Bureau permitting inspector at DES's offices in Concord. It is recommended that you assemble photographs and other information typically needed for a wetlands application. The inspector will review the information with you and provide guidance about the completeness of the information in terms of a permit application, or provide feedback as to whether the proposed project is approvable, as you have documented it. By following the inspector's suggestions, it can reduce or eliminate the technical issues during the permit review process and ensure the timely approval of a permit.