

Retaining Walls within the Shoreland Setback

Retaining walls are structures designed to restrain soil on unnatural/steep slopes. They are used in areas of terrain possessing unstable slopes or in areas where the landscape needs to be shaped severely and engineered for more specific purposes, such as creating a flat building site. Retaining walls are not one of the identified exempt structures that are allowed within the required 75' shoreland setback from the ordinary high water mark, so they must be avoided or authorized by variance if the standards are met. The following two issues that been repeatedly coming up:

- A property owner creates a cut and fill land disturbance in order to modify the property to suit a different purpose, such as creating a flat area for a 200 square foot open sided structure. (This assumes that the ordinance language adopted allows for this type of land disturbance within the filling and grading section. Some do allow for it and some do not. Those that do allow for it should make it clear to the property owner that a retaining wall is not permitted to create a level pad – see sample ordinance language below.)
- A property owner has a property with naturally steep slopes where stabilization is necessary to correct an established shoreland erosion problem.

One way that to manage the issue without a variance is to stabilize the slope naturally with a vegetated system. One example is the Envirolok Vegetated Retaining Wall System from Agrecol which is a green solution for erosion control and streambank and shoreline stabilization.

Envirolok vegetated walls are built by weaving rows of soil-filled geotextile bags together into a cohesive barrier and locking them in place with spikes. Then, the wall face is planted with native plants, sod and/or seed. Within weeks, plants grow through the bags and develop extensive root systems that lock into the native soil to form an ecologically sound vegetated erosion control system with permanent structural strength.

A vegetated wall:

- Grows deep-rooted perennial vegetation that locks, renews and improves the structure year after year
- Does not interfere with hydrological processes; retains oxygen and moisture
- Provides habitat that's safe for amphibious and aquatic species
- Moves with freeze/thaw cycles and absorbs sound



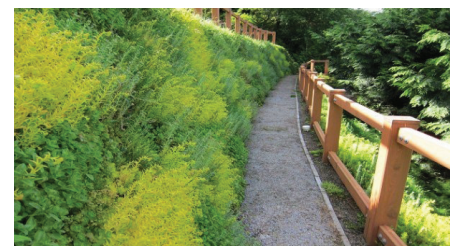
Day 1. Soil-filled geotextile bags are hydro-seeded or planted with native plant plugs.



Day 15. Native plant roots grow into and through the soil-filled bags.



Day 100. The deep roots of native plants stabilize soil and fight erosion naturally.



Below is sample ordinance language from a county ordinance that addresses the issue to start with:

“Any activity within 75 feet of OHWM, which involves removal of, or placing of fill, soil, or structures for the purpose of erosion control or run off into a waterbody shall use environmentally friendly products and bio-engineered practices accepted by the County Zoning Office. Accompanying the site plan shall be a complete list of all products, and species of trees, shrubs and ground cover.”

If a property owner does not want to do a green/vegetated retaining wall then a variance is required for the structure and all of the statutory variance criteria must be satisfied in order to grant a variance. They are: Unique physical property limitations that cause unnecessary hardship, and no harm to the public interests. Additionally, the board should take into consideration the following: The retaining wall is designed to correct an established shoreland erosion problem; the retaining wall is suitable given the demonstrated shoreland usage needs; the retaining wall may be required to be designed by a registered professional engineer or landscape architect, depending on the scope of the project; and the dimensions of the retaining wall are the minimum necessary to control the shoreland erosion problem. If you have questions on this topic, contact Kay Lutze, DNR Shoreland Policy Coordinator at (920) 755-1521 or e-mail at Kay.Lutze@Wisconsin.gov.