

Case Study: Native Vegetated Mat

Geneva Lake, Fontana, Wisconsin

Problem: Eroded Shoreline

The existing site is an eroded shoreline at a beautiful residential lake property in southeast Wisconsin. Wave energy has undercut the shoreline and the resulting erosion has destabilized the slope to the point of making the Shore Path, a Geneva Lake scenic icon, a perilous adventure. The lack of stable soils prevented vegetation from growing and protecting the steep slope.



Solution: Soft Armoring

The Landscape Architect specified rip rap to be installed at the shoreline to deflect wave and ice energy and to provide a stable base to build the Envirolok Vegetated Segmental Retaining Wall System with Agrecol Native Vegetated Mat. Plans called for the Envirolok units to be stabilized with geogrid material and reinforced with earth anchors, providing a long-lasting and environmentally stable solution.

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Solution: Vegetated Mat

Vegetated mats consist of a coir reinforcing mat, soilless growing medium and native vegetation. Mats are rolled over the face of the Envirolok bag units and stapled into place. The micro-punched fabric of the Envirolok units allows vegetation to not only root into the unit fill and backfill soil, but also into the parent slope, creating a reinforced and stable monolithic structure. The only maintenance required is periodic watering of the vegetated mats until they are sufficiently rooted to the bag units.



Result: Ecosystem Services

The shoreline is protected by the rip rap boulders. The slope is stabilized and reinforced by the Envirolok Segmental Retaining Wall System. Native vegetation sequesters sediments and pollutants from entering the lake water, cleans surface runoff and traps excess nutrients from turfgrass fertilizers and provides habitat for pollinators and wildlife. The buffer area between the Shore Path and the crest of the slope has been restored, making walking the path safe again. Next Spring, Summer and Fall the diverse native plant species will explode with seasonal colors and textures, beautifying the Geneva Lake shoreline!