



# HydroTurf®

**Location**  
Cartersville, GA

**Owner**  
Terminus Wake Park

**Project Type**  
Lake Bank Protection

**Year Completed**  
2014

**Size**  
200,000 sq. ft.

**Product**  
HydroTurf® Z

**As wakeboarding parks increase in popularity, one challenge remains—controlling erosion of the lake banks specifically caused from wave attacks created both by wind and the wakeboard riders. Terminus Wake Park, located just north of Atlanta, Georgia, addressed the challenge with HydroTurf® Z, an innovative revetment system consisting of an engineered synthetic turf with an integrated heat-welded polyethylene geomembrane that is infilled with a high-strength cementitious material called HydroBinder®.**

The Terminus Wake Park includes three small lakes covering roughly 20 acres. The first lake is a “beginner” pond designed to introduce newcomers to wakeboarding. The second lake is designed to develop a wakeboarder’s abilities through increased experience and exposure to jumps, rails and other stunts. The third lake is for advanced participants and is the site of national and international wakeboarding competitions.

The potential for erosion on the banks was significant. The reality of the wakeboarders circling in the waters continuously for 8-12 hours per day, year-round, plus the potential for wind-driven waves, meant that wave attacks on the banks would be an almost daily occurrence. And while controlling erosion on the banks and turbidity prevention from the Georgia red clay was the top priority, other issues required attention as well. For example, wakeboard riders entering and exiting the water needed to navigate the banks comfortably and safely. Also, the park's high-profile location within the LakePoint Sporting Complex, a 1,300-acre destination resort, meant that aesthetics would be important. Finally, maintenance of the protection system had to be minimized to avoid a disruption in usage.

HydroTurf® Z was presented to the project stakeholders along with other revetment solutions. Three factors were addressed in regards to HydroTurf's performance: the system's suitability for controlling erosion of the bank from wave attacks, the accessibility and safety of the system, and aesthetics. Hydraulic testing was performed at the hydraulic lab at Colorado State University in which HydroTurf exceeded the maximum capacity of the simulators. Next, a test plot was installed directly on one of the lake banks and the synthetic turf surface was found to be neither too slippery nor too abrasive. The test plot also allowed the Terminus team to evaluate the aesthetics of the system up-close and in comparison to the rest of the complex. HydroTurf provided all of the positive attributes of traditional methods with none of the limitations, and therefore was selected for the final design.

The installation was sequenced so all of the turf installed each day was also filled with the Hydrobinder® material the same day. The result was an attractive, durable and virtually maintenance-free armoring system that supports barefoot traffic comfortably.



**Terminus Wake Park prior to subgrade prep and dewatering.**



**Grooming the HydroBinder® material into the synthetic turf.**



**Crews seaming the turf on the steep 1.5H:1V bank.**



Riders are pulled by a state-of-the-art moving cable system suspended by towers.



HydroTurf® provides a large space for spectators to comfortably watch from the sidelines.



**Aerial view of the completed Terminus Wake Park.**

HYDROTURF® is a U.S. registered trademark which designates a product from Watershed Geosynthetics, LLC. This product is the subject of issued U.S. and foreign patents and/or pending U.S. and foreign patent applications.