

PROJECT: Reitz Lake East Side Treatment Retrofit (Carver County, 2012/2013)
CLIENT: Carver County Watershed Management Organization

CHALLENGE: The TMDL Implementation Plan for Reitz Lake indicates a reduction in phosphorus loading of up to 84%/year is necessary to meet the required State Standard concentration for the pollutant. With approximately 2,000 acres of primarily agricultural land draining untreated runoff into the eastern end of the lake, retrofitting Best Management Practices into the watershed is a key strategy to achieve the desired load allocation limit.

SOLUTION: Hydromethods analyzed the watershed and identified treatment options that were feasible given the physical limitations of the site and project funding restrictions. The cost-to-expected-reduction ratio for phosphorus removal was compared, allowing for the selection of the most cost-effective alternative. Ultimately, a Floating Treatment Wetland (FTW) was chosen for its ability to remove dissolved phosphorus.

A literature review indicated FTWs would be a desirable option due to their ability to effectively assimilate nutrients and other pollutants, as well as their simplicity, low cost, and relative ease of maintenance. A new retention pond would settle a significant portion of the incoming particle load, while the floating wetland mat would remove a significant quantity of dissolved phosphorus. FTW maintenance includes annual removal of vegetation shoots from the mat (necessary to prevent phosphorus redistribution when plants die back in the fall), as well as periodic plant replacement. Hydromethods completed plans & specifications, cost estimates, and contract administration for the pond construction in 2012; In addition, Hydromethods installed the Floating Treatment Wetlands and windmill aeration system the following spring.

