



Reducing Nutrients to Hydes Lake



Clean Water Funds: 2012

Clean Water Assistance Grant & Conservation Drainage Grant	\$63,350
Leveraged Funds*	\$32,600
Total Project Budget	\$120,950

* Leveraged Funds include required 25% local match

Targeted Water:
Hydes Lake

Project Sponsor:
Carver Soil and Water Conservation District

Partner agency: Carver County WMO

Grant Period:
January 2012—December 2014
Extended to December 2015

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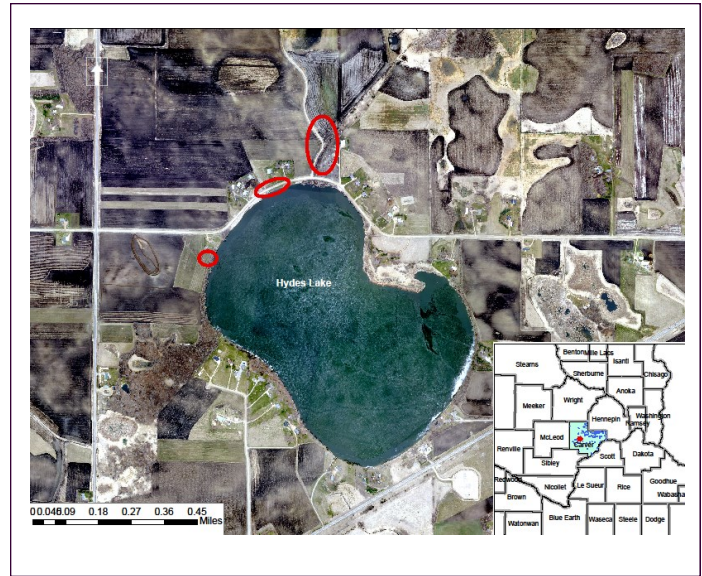
C12-41 - Clean Water Assistance

Project Narrative

Hydes Lake is the headwaters to Carver Creek and is known for its excellent fishery. However, the lake has elevated nutrient levels which lead to poor water quality. A clean up plan for Hydes Lake has identified the need to reduce phosphorus loading by 81 percent from watershed sources.

The purpose of this project is to significantly reduce the phosphorus loading into Hydes Lake by installing three projects. The first project will install a bioreactor on a tile drainage system to treat 40 acres of agricultural land. The second project will identify options to treat high volumes of

phosphorus laden water entering the lake from an adjacent sub-watershed. The third project will restore approximately 400 feet of shoreline that is sparsely vegetated and mowed close to the waters edge.



Actual Outcomes:

The first project installed with this grant was the bioreactor. Construction of the bioreactor took place in November 2013 on a tile line on the west side of Hydes Lake. The bioreactor is 90 feet long by 10 feet wide and was installed near the outlet of the drain tile line before entering the lake. Engineering estimates of the bioreactor pollution reduction are 111 pounds of nitrate removed per year. In addition, soluble phosphorus can be reduced by 40% - 60%.

The second project installed was an enhanced sand/iron filter adjacent to the drainage ditch that brings water from Patterson Lake to Hydes Lake. A 2,500 square foot sand/iron filter shelf and water diversion weir was installed, along with a 6,000 square foot pretreatment pond. The amount of water passing through this system can vary greatly depending on local precipitation factors. High flows had to be allowed to by-pass the system in order to prevent water ponding on adjacent parcels. Conservative engineering estimates put the phosphorus removal at 8 pounds per year, but it is likely the system treats much more than that.

The third and final project installed was a 400 foot shoreline restoration on the north side of Hydes Lake. The record flooding event of June 2014 forced this project to be delayed until 2015. A grant extension was approved to allow one additional year to get this project completed. In June, 2015 the shoreline restoration was installed and staff worked with the land-owner on weeding and maintenance during the first growing season.

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Bioreactor being installed—Hydes Lake in the background



Installation of the sand/iron filter shelf



Shoreline Before



Shoreline After