Schwanz Lake Direct-Drainage Runoff-Reduction Project

Clean Water Funds: 2010

Clean Water Grant	$90,000
Leveraged Funds*	$97,600
Total Project Budget	$187,600

*** Leveraged Funds include required 25% local match**

Targeted Water:
Schwanz Lake

Project Sponsor:
Gun Club Lake Watershed Management Organization

Partners:
Gun Club Lake WMO,
City of Eagan,
Dakota County

Grant Period:
January 2010 - December 2011

Project Contact:
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Project Narrative

Schwanz Lake is an 11.5-acre shallow lake in southeast Eagan that was found to be impaired in 2006 due to excessive levels of phosphorus. The land area draining to the lake is 762 acres, but a small a 28-acre residential neighborhood was found to disproportionately contribute 24 percent (roughly 14 lbs/yr) of the phosphorus, according to a 2010 study of phosphorus sources. The neighborhood was developed before Eagan established water quality requirements for stormwater retention ponds and the neighborhood drains runoff directly to the lake through a single pipe.

The neighborhood has no available space for new retention ponds, but because soils are suitable for infiltration, plans focused on constructing small bioretention basins along street rights-of-way. Bioretention basins (also called raingardens) capture and rapidly absorb stormwater runoff from streets and driveways.

Computer modeling estimates that 5,100 square feet of raingarden area along streets would reduce the flow of phosphorus into Schwanz Lake by 72 percent. The area was surveyed to identify optimum locations for raingardens and to determine whether adjacent residents would accept and maintain the raingardens once they were installed.

During construction, soils are deeply loosened and special soils and plants are added to help absorb stormwater runoff. By the end of 2010, 4,580 square feet of raingarden area has been constructed. In 2011, an estimated 1,530 square feet of additional raingarden area will be constructed. Neighborhood residents help to plant the sites with flowering perennials and shrubs and agree to maintain them. To measure actual runoff reduction, the City of Eagan installed a flow meter in the drainage pipe to the lake. Initial indications are this project will meet or exceed estimated phosphorus reductions.