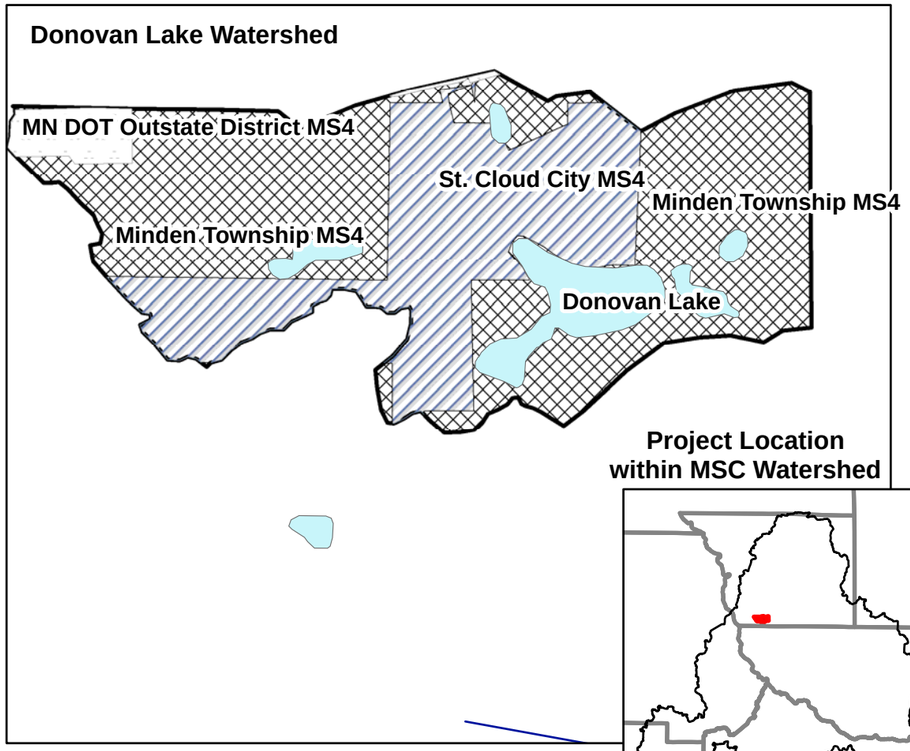
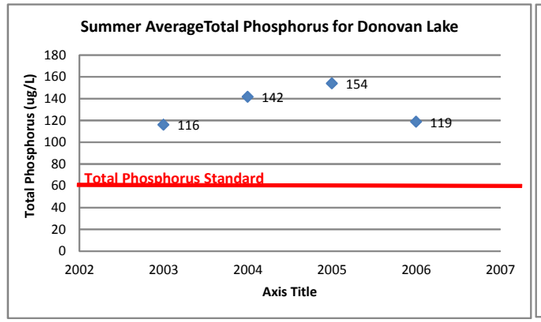
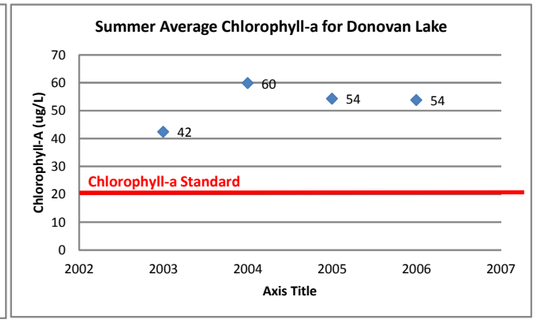
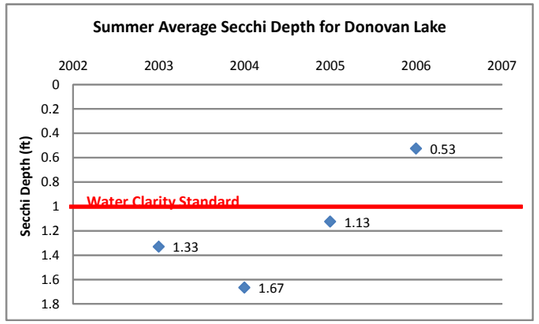
Donovan Lake (05-0004) TMDL- DRAFT





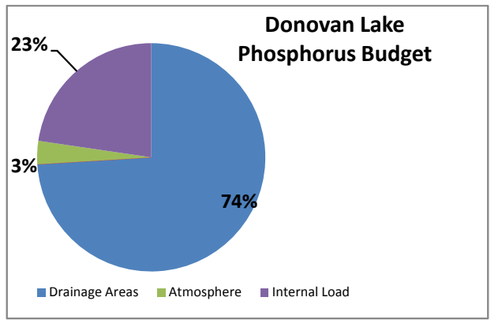




Lake Data

Surface Area: 54 Acres
Maximum Depth: 5 feet
Contributing
Watershed Area: 1,026 Acres

Classification: Shallow Lake



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	% Reducion Required
Direct (LA & WLA)	63%
Atmosphere	0%
Groundwater	0%
Internal	67%

Summary

- In-lake phosphorus and chlorophyll-a concentrations exceeded the TMDL shallow lake goals during all years sampled.
- Donovan Lake health is based off of a minimal dataset; thus, local knowledge and input are fundamental.
- While the watershed is small, land use runoff may influence in-lake health.
- No fish surveys have been conducted since the 1950's. Notes from those surveys indicated that fisheries could not be supported due to low water and loss of oxygen during winter.
- The last aquatic plant survey was done in 1951, while native species were noted as present there has likely been a change in populations since that time.
- Between 2003 and 2006 significant development occurred in the west portion of the watershed (St. Cloud). That development has temporarily halted.
- Internal nutrient recycling may contribute to reduced water quality; however there is little data available to support contributions.
- Permitted Sources will be assigned a categorical Waste Load Allocation.

Recommended Activities

- Completion of modern aquatic plant and fisheries surveys would help identify current biological health of this shallow lake.
- A shallow lake like Donovan is more sensitive to changes in the biological community within. Shallow Lakes typically reside in two states: Clear water dominated by rooted plants, or algae dominated turbid waters without much aquatic vegetation. Management strategies for shallow lakes can include: surface drawdowns, shoreline stabilizations, management of rough fish communities, and boating education and guidelines to minimize water quality degradations.**
- The shallowness of Donovan Lake makes it is susceptible to increased eutrophication with increases in phosphorus loading. Developmental pressure may have an impact on water quality; every effort should be made to minimize TP loading to the lake. For example, no untreated stormwater should be directed into the lake, the amount of impervious surfaces in developed areas should be kept to a minimum, natural buffers of vegetation should be maintained between lawns and the lakeshore.
- According to data reviewed from the DNR and GIS, the lake has no inlets and no outlets; Field observations may be worthwhile.

**Local resource professionals have indicated that having a healthy biological community is more applicable than a numerical water quality goal.