Wilmes Lake

DNR ID #82-0090	Municipality: Woodbury
Surface Area: 30 Acres	Watershed Area: 3,242 Acres
Mean Depth: 3-5 feet	Maximum Depth: 7-18 feet
SWWD Maximum Allowable Phosphorus Load: 0.10 lbs/ac/yr	
SWWD Trophic State Index (TSI) Goal: 60-63	

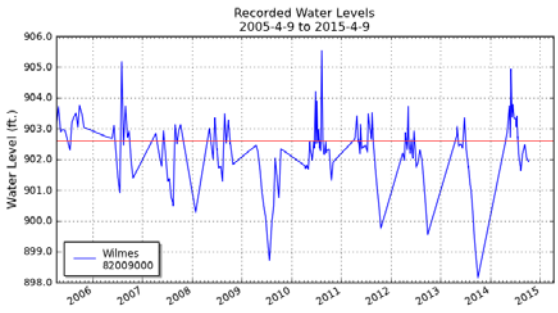
Map 1: Wilmes Lake

Wilmes Lake (Map 1) is situated in the Northern watershed. Similar to Armstrong Lake, Wilmes Lake is divided into two basins by a berm with a culvert connecting the north and south basins. The southern portion of the lake has a maximum depth of 7 feet while the northern portion has a maximum depth of 18 feet. Wilmes Lake receives flows from Armstrong Lake and Markgrafs Lake, together adding approximately 1,000 acres of drainage. There is also a lift station at Powers Lake that would allow for water to be pumped from Powers to Wilmes. However, that pump station is not routinely used.

Historically, Wilmes surface elevation has displayed high fluctuation which continued in 2014 following historic spring and early summer rainfall and late summer and fall drought.

Wilmes Lake has long been considered impaired but is stable. Met Council lake grades for Wilmes Lake (Table 1) which compare the lake to others in the Twin Cities area have remained fairly consistent since 1994. Likewise, mean total phosphorus concentration (Figure 2) shows no significant trends but has exceeded both SWWD's TSI goal for the Lake and MnPCA's shallow lake standard since monitoring began. Eutrophication response variables—chlorophyll a (Figure 3) and secchi transparency (Figure 4)—are stable and meet SWWD goals.

Figure 1: Wilmes Lake Surface Elevation



SWWD has completed an extensive management plan for all of its Northern watershed, including Wilmes Lake. SWWD is

currently implementing its plan in partnership with the City of Woodbury. Examples of projects benefitting Wilmes Lake include retrofit of the west Wilmes ravine and construction of bioretention stormwater basins and water reuse irrigation system along Interlachen Drive.

Monitoring will continue annually at Wilmes Lake to assess effectiveness of current and future watershed and lake restoration efforts and to monitor any lake dynamic changes due to increased abundance of Eurasian Water Milfoil which was confirmed in 2007. All monitoring data is available through SWWD's web database at www.swwdmn.org.

Figure 2: In-lake Total Phosphorus Concentration at Wilmes Lake

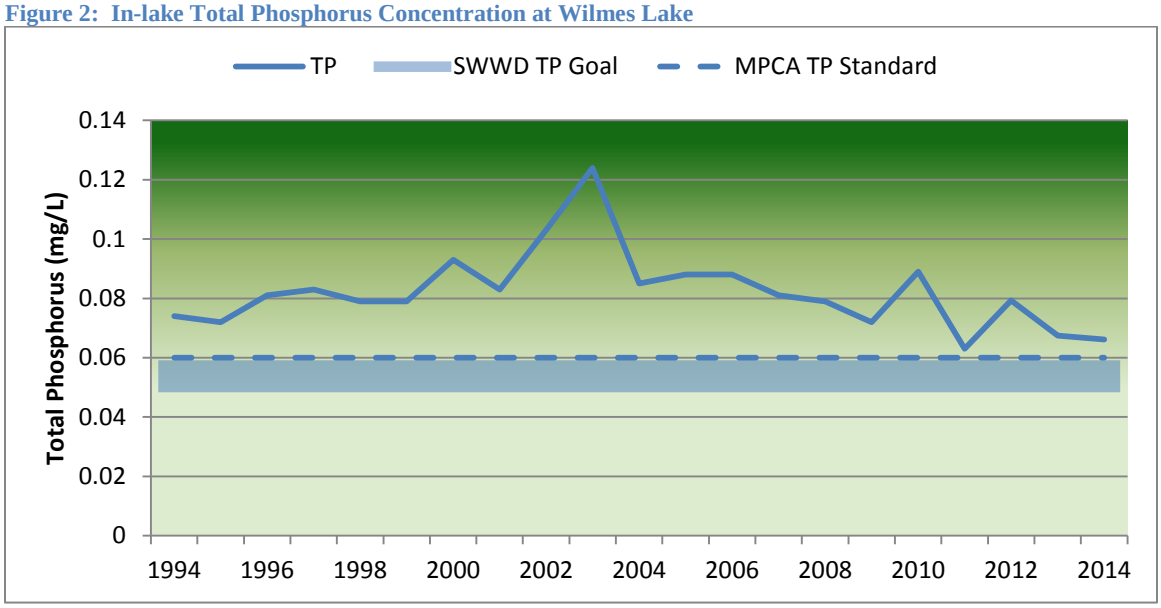


Figure 3: In-lake Chlorophyll a Concentration at Wilmes Lake

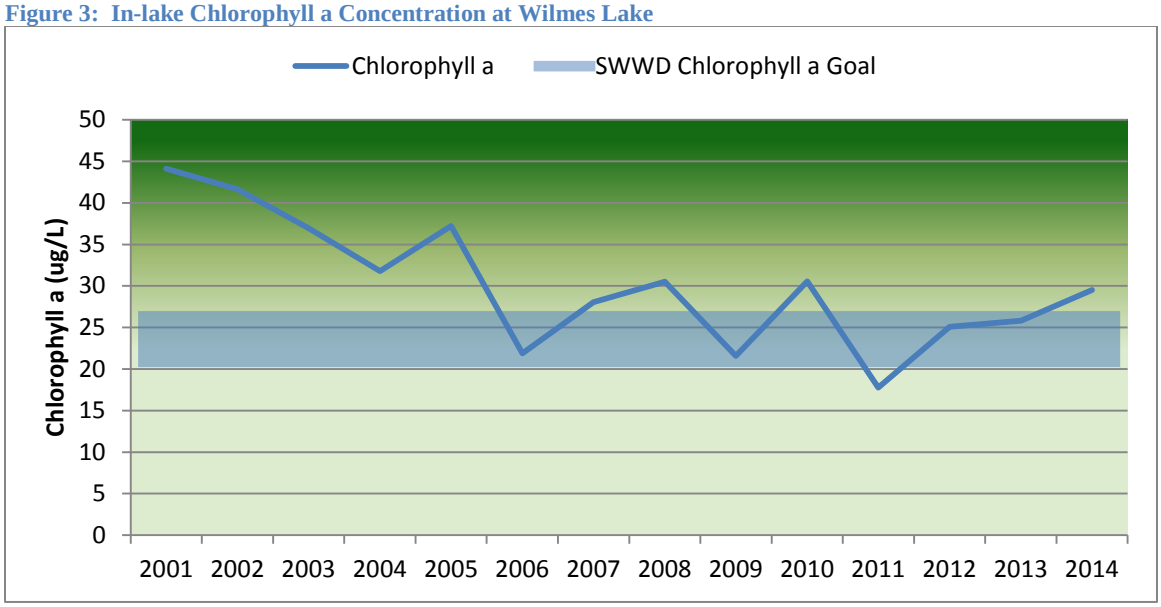


Figure 4: In-lake Secchi Transparency at Wilmes Lake

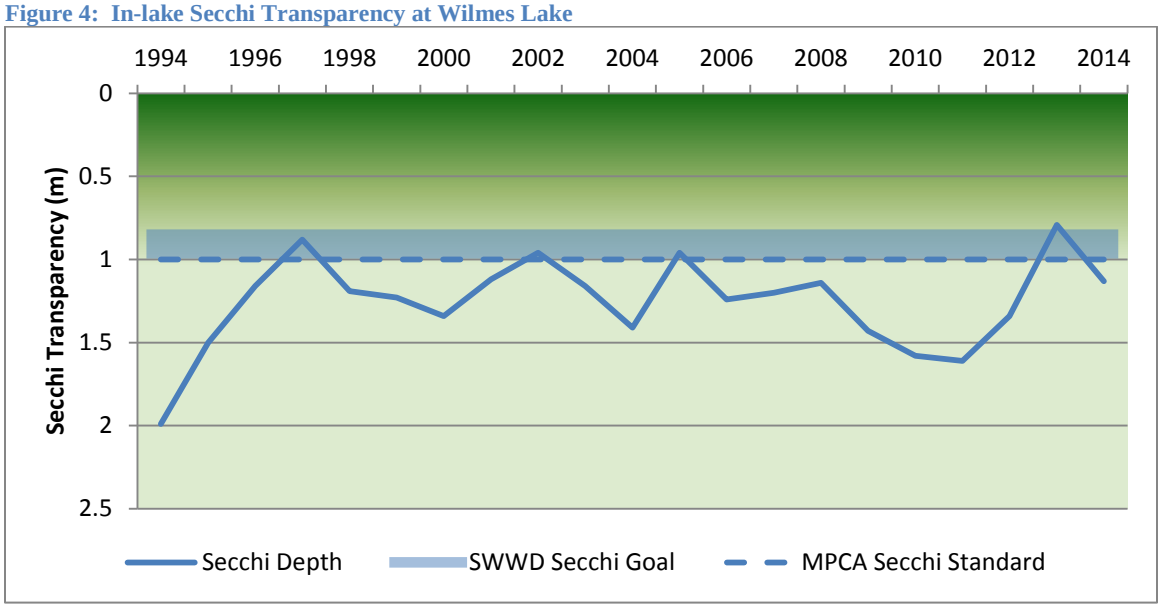


Table 1: Lake Grades for Wilmes Lake

		Lake Grade																				
Parameter	Tophic Status	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
Total Phosphorus	65; eutrophic	C	D	D	D	D	D	D	D	D	D	C	D	D	D	C	C	D	C	D	D	D
Chlorophyll	64; eutrophic								C	D	C	C	C	C	C	C	C	C	B	C	C	C
Secchi Transparency	58; eutrophic	B	C	C	D	D	C	C	D	D	C	C	D	C	C	D	C	C	C	C	F	D
Overall	eutrophic	B	C	C	D	D	C	C	D	D	C	C	D	C	C	C	C	C	C	C	D	D

Note: Lake grades are based on comparison with other lakes in the Minneapolis-St. Paul metropolitan area. Criteria for assigning lake grades are established by the Metropolitan Council.