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

Wilmes Lake (Map 1) is situated in the Northern watershed. 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 through 2018 (Figure 1).

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. Mean total phosphorus concentration (Figure 2) shows no significant trend but is generally lower since around 2010. Eutrophication response variables—chlorophyll a (Figure 3) and secchi transparency (Figure 4)—are generally stable and meet SWWD interim goals for the lake.

SWWD has completed an extensive management plan for its entire Northern watershed, including Wilmes Lake. SWWD has implemented several improvements in partnership with the City of...
Woodbury. Examples of projects benefiting Wilmes Lake include retrofit of the west Wilmes ravine, construction of bioretention stormwater basins and water reuse irrigation system along Interlachen Drive, and installation of an iron enhanced sand filter to remove phosphorus.

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 changes in plant community. A 2018 vegetation survey found relatively few species present and low coverage compared to other District lakes. 67% of the lake was vegetated with 28% of the lake having vegetation to the surface. Eurasian Watermilfoil and Curly-leaf Pondweed, aquatic invasive species, are both present at low numbers. All monitoring data is available through SWWD’s web database at www.swwdmn.org.
Figure 4: In-lake Secchi Transparency at Wilmes Lake

Table 1: Lake Grades for Wilmes Lake

| Parameter   | Trophic Status | 97 | 98 | 99 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|-------------|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Total Phosphorus | 62; eutrophic | D  | D  | D  | D  | D  | D  | D  | C  | D  | D  | C  | C  | D  | C  | D  | D  | D  | D  | D  | D  | C  | C |
| Chlorophyll    | 60; eutrophic | C  | D  | B  | C  | C  | C  | C  | B  | C  | C  | C  | C  | B  | B  | B  | B  | B  | B  | B  | B  | B  | B |
| Secchi Transparency | 53; eutrophic | D  | D  | C  | C  | C  | C  | D  | C  | C  | D  | C  | C  | F  | D  | F  | C  | D  | C  | C  | C  | C  | C |
| Overall       | eutrophic     | D  | D  | C  | C  | D  | D  | C  | C  | C  | C  | C  | C  | D  | D  | D  | C  | C  | C  | C  | C  | C  | C |

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.