



Nine Mile Creek Discovery Point
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MEMO

TO: Nine Mile Creek Watershed District Board of Managers

FROM: Randy Anhorn

DATE: April 10, 2019

RE: Summary of 2018 Water Quality Monitoring Program Report

Background/Information

Lakes

Attached is the Summary of the District's 2018 Water Quality Monitoring Report that will be included as an attachment to the 2018 Annual Report.

The primary goal of the Nine Mile Creek Watershed District (District) is to protect and enhance the surface water quality of the lakes and streams of the District. To help accomplish this goal, the District operates an extensive lake and stream management program. Generally, the program includes:

- Data collection (monitoring)
- Assessment (e.g., studies)
- Implementation of projects and programs

In 2018, the District monitored six lakes (NW Anderson, SW Anderson, SE Anderson, Bush, Smetana [to support the current UAA update] and Normandale).

The District monitors the water quality of its lakes on a rotating basis and in 2018 monitored six lakes: Bush Lake, Northwest Anderson Lake, Southwest Anderson Lake, Southeast Anderson Lake, Smetana Lake, and Normandale Lake. Each lake was monitored on six occasions for selected parameters including: total phosphorus, soluble reactive phosphorus (ortho phosphorus), total nitrogen, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen, pH, chlorophyll *a*, chloride, dissolved oxygen, temperature, specific conductance, turbidity, oxidation reduction potential (ORP), phytoplankton, and zooplankton. Aquatic plant (macrophyte) surveys were performed during June and August.

The District plans on monitoring the following lakes in 2019: Normandale, Mirror, Indianhead, Arrowhead, Rose, Wing and Holiday.

Stream

Because the primary use of Nine Mile Creek is ecological – a place for fish and aquatic life to live – the focus of the Nine Mile Creek stream monitoring program is evaluation of the stream's fish and aquatic life community as well as the ecosystem components essential for the survival of fish and aquatic life (Figure 9-1). In 2018 the District continued to monitor eight at set ecological monitoring stations along the North Branch, South Branch and Main Stem of Nine Mile Creek. Monitoring included:

- Annual monitoring of the fish community during summer.
- Annual monitoring of the macroinvertebrate community during October.

- Annual habitat monitoring during summer (i.e., stream substrate type, depth of fine sediment, percent embeddedness, and length of eroded streambank).
- March through October monthly measurements of specific conductance, dissolved oxygen, pH, temperature, turbidity, and flow.

The collected data are then evaluated to determine whether:

- Specific conductance, dissolved oxygen, pH, and temperature, levels meet MPCA standards for Class 2B waters published in Minnesota Rules 7050.
- Flow and water quality data were consistent with historical values.
- The fish and aquatic life communities were consistent with the stream's ecological use determined from past assessments.

In addition, three of the sites, N1, N2 and N3, are included in the Metropolitan Council's Watershed Outlet Monitoring Program (WOMP) where water quality and flow (base and continuous) data are also collected, summarized and reported through their program.

Some highlighted findings include:

- 2018 was a good year for lake water quality
 - All monitored lakes met Minnesota lake eutrophication standards
 - Best water quality year on record for Bush Lake in Bloomington (based on NMCWD-collected data)
- Lake monitoring results showed continued success resulting from the NMCWD's Eden Prairie Lakes Improvement Project
 - Phosphorus levels and clarity in Anderson Lakes remain well below state standards after curly-leaf pondweed management and alum treatment in SW Anderson Lake
 - Aquatic plant communities in Anderson Lakes remain healthy, based on MnDNR's plant Index of Biotic Integrity (IBI)
 - Water quality in Lake Smetana remains well below state standards following Bryant Lake alum treatment
- Monitoring results from SE Anderson Lake support completion of capital improvement project identified in NMCWD's Water Management Plan (alum treatment, additional aquatic plant management)
- High chloride levels in 2018 for creek and several lakes due to long/late winter.
 - Two lakes exceeded the state standard (Lake Smetana, Normandale Lake)
 - Main stem had the highest annual average chloride concentrations to date
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Request

No action required. The presented is for informational purposes to promote discussion.