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2025 Monitoring Summary





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2025 Monitoring Summary

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2025 Monitoring Summary

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2025 Monitoring Executive Summary

Overview

The monitoring team at the Mississippi Watershed Management Organization (MWMO) has completed another successful and active year of monitoring the watershed and is pleased to share a summary of environmental observations and outcomes in the watershed.

The MWMO monitors the Mississippi River, lakes, wetlands, groundwater, the watershed's stormwater drainage system, biological communities within the watershed, and MWMO-funded green infrastructure projects. Within these systems, major factors influencing water quality include the amount of precipitation, timing of precipitation events, and land use practices in the MWMO watershed. Long-term monitoring is necessary to characterize the impact of various land use practices on surface water runoff within our watershed and to assess the aggregate impact of MWMO-funded projects on reducing pollution entering the Mississippi River. Water quality in the Mississippi River is also influenced by activities in the entire Mississippi River basin upstream of the MWMO. Long-term monitoring of the river aids understanding of what is occurring upstream of the MWMO, including weather patterns and land use impacts.

The 2025 monitoring season included the collection of bacteria and other water quality samples from seven locations in the Mississippi River, flow data at nine stormwater locations, water quality samples from six stormwater locations, water quality samples from three green stormwater infrastructure (GSI) practices, and water level data at nine GSI practices. This year, the MWMO expanded our work assessing biological communities in the watershed by establishing methods for vegetation surveys. The Monitoring team surveyed plant diversity at three locations throughout the growing season. The Anoka Conservation District (ACD) collected water quality and elevation data at Sullivan and Highland Lakes for the MWMO, and the Minneapolis Park and Recreation Board (MPRB) collected water quality data in Loring Pond.

Activities Summary

Climate

In 2025, the MWMO collected precipitation data at 13 monitoring stations within the watershed, allowing us to characterize local precipitation conditions at our stormwater outfall stations and supported projects. To understand overall precipitation across the watershed, the MWMO took advantage of the [gridded precipitation database](#) maintained by the Minnesota State Climatology Office. Gridded data are compiled from thousands of precipitation records collected by a network of agencies and volunteer weather observers. In 2025, the average total rainfall in the MWMO watershed was 34.6 inches. On a monthly scale, June had the highest average precipitation (8.86 inches), while January had the lowest (0.18 inches).

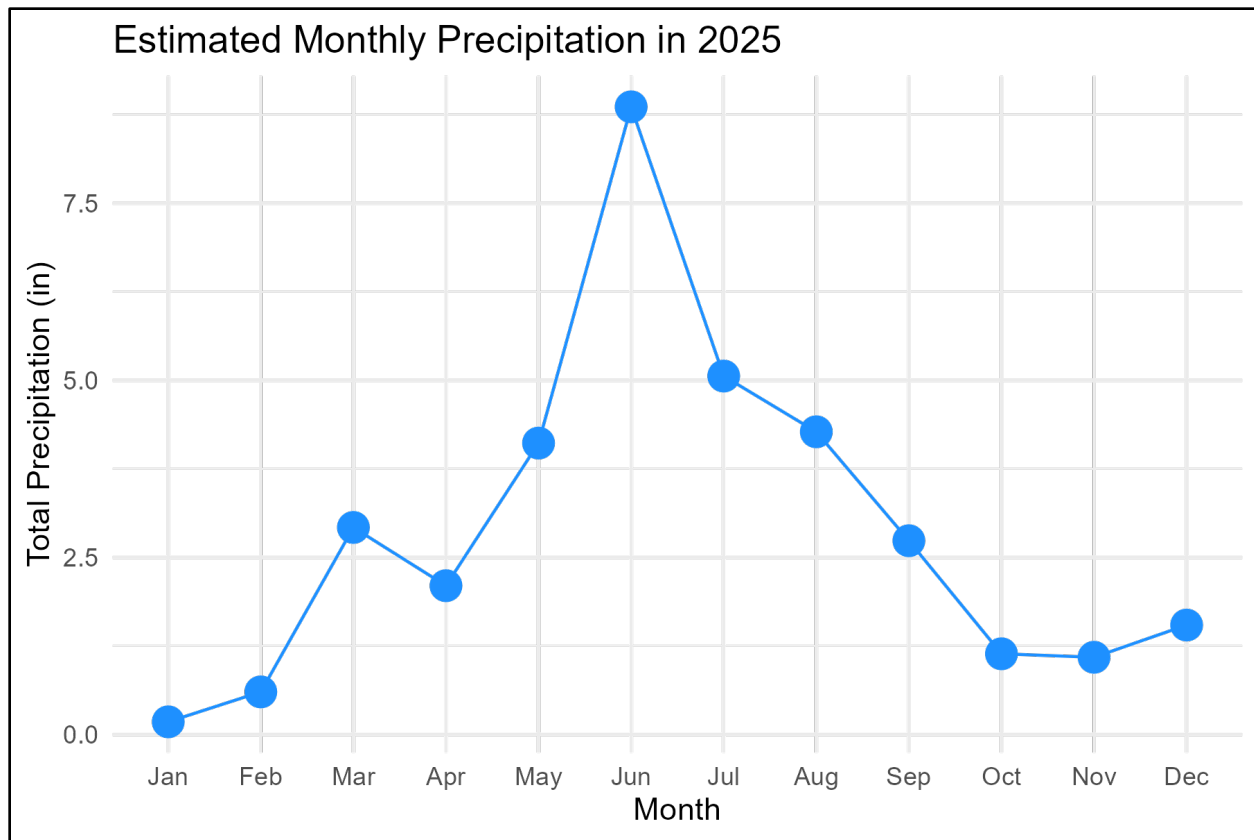


Figure 1. Monthly total precipitation estimated in the MWMO watershed in 2025. Data from the MN State Climatology Office.

Mississippi River Water Quality

The MWMO has collected bacteria data from the Mississippi River since 2003. Portions of the 14-mile stretch of the Mississippi River in the MWMO are listed on the Federal Clean Water Act's Section 303(d) list of impaired waters for fecal coliform. The Minnesota Pollution Control Agency (MPCA) moved from a fecal coliform standard to an *Escherichia coliform* (*E. coli*) standard; therefore, all fecal coliform impairments are now evaluated with *E. coli* data. The MPCA *E. coli* acute standard states that *E. coli* cannot exceed 1,260 CFU (colony-forming units)/100mL in more than 10 percent of samples taken in one month, while the chronic standard for *E. coli* in the river is 126 CFU/100 mL for a monthly geometric mean or geomean (a type of average that reduces the influence of extreme values) of at least five samples. The [MPCA Upper Mississippi River Bacteria TMDL Project](#) has information on *E. coli* load limits and water protection activities.

In 2025, 98 river samples were collected at seven locations and analyzed for *E. coli* between April and October. All samples collected in 2025 were below the acute standard of 1,260 CFU/100mL. The chronic standard for monthly geomeans of 126 CFU/100mL was exceeded in June but remained below the standard for the rest of the sampling season.

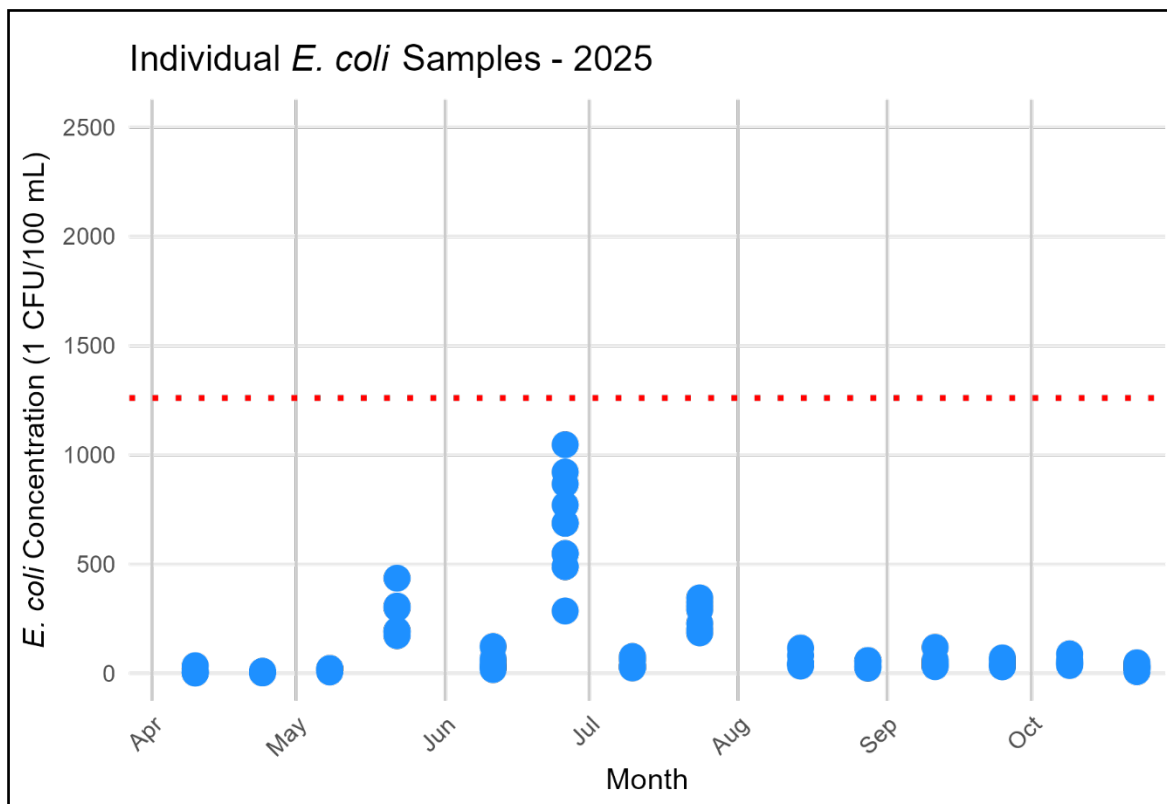


Figure 2. Observed *E. coli* concentrations in individual samples compared to the MPCA acute standard in the Mississippi River during 2025.

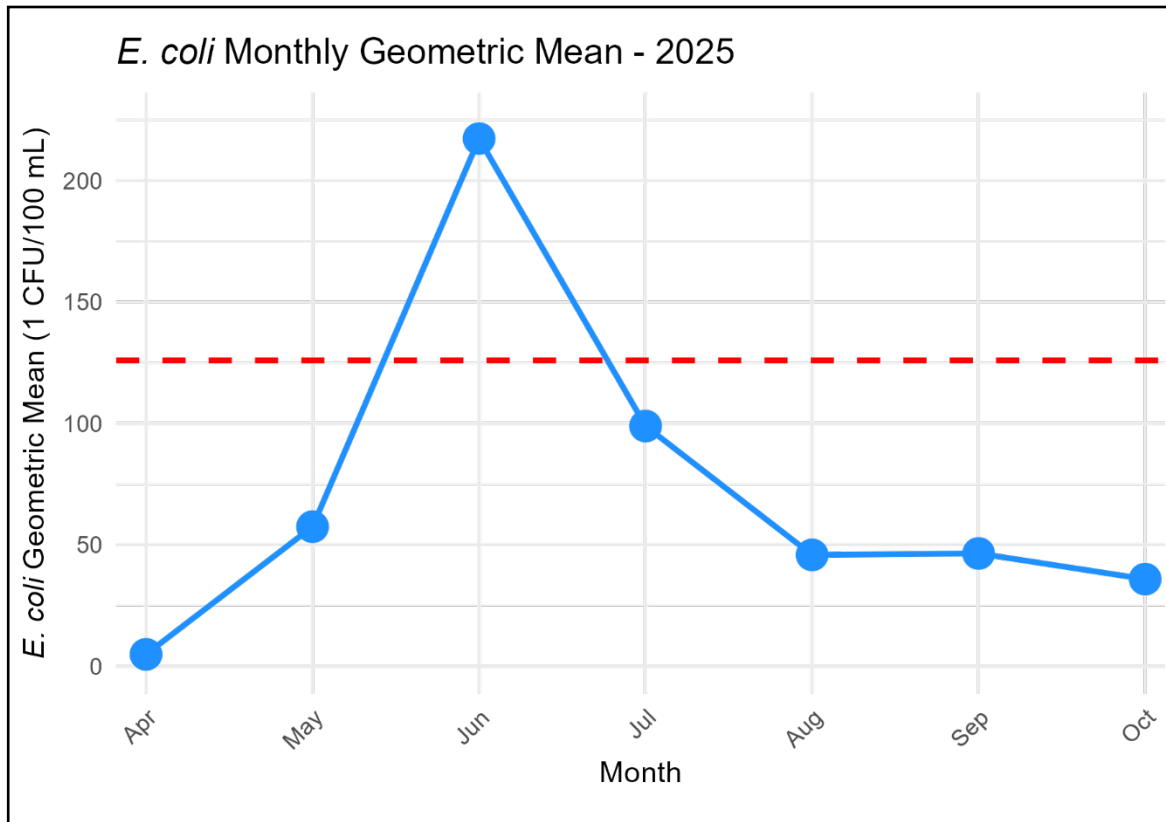


Figure 3. Monthly geomeans of measured *E. coli* concentrations in the Mississippi River during 2025 compared to the MPCA chronic standard.

In addition to monitoring *E. coli*, the MWMO began collecting water quality samples from the Mississippi River in 2014. The purpose of monitoring the Mississippi River’s water quality is to establish baseline data within the watershed that can be used to understand characteristics of the river and how they may change over time. Water quality measurements and samples were collected twice per month from April to November and once per month from December to March at seven sites. MWMO monitoring staff collected 117 river water quality samples in 2025. Sampling locations in the Mississippi River and within the MWMO’s boundaries were selected to represent three distinct reaches of the river. Each site is located within, at the beginning of, or at the end of a river reach. Samples were collected from the middle of the river at a depth of three feet below the water surface and were analyzed for nutrients, sediment, inorganics, organics and metals. Plots displaying the annual variation of chloride and nitrate in the river are summarized below. MWMO water quality data can be downloaded from the [MPCA EQuIS database](#) or by reaching out to the MWMO at monitoring@mwmo.org.

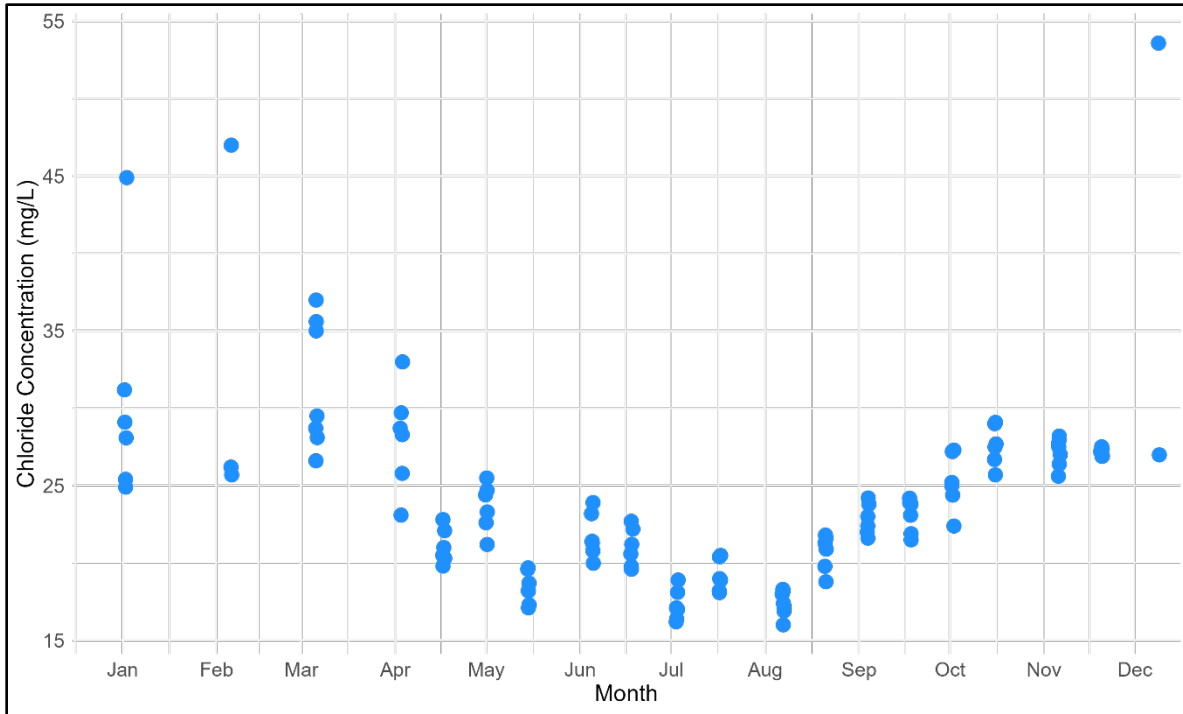


Figure 4. Concentrations of chloride (Cl^-) in the Mississippi River at MWMO-monitored sites in 2025. Collected samples show an increase in Cl^- concentrations during the winter months, likely due to runoff of road salts.

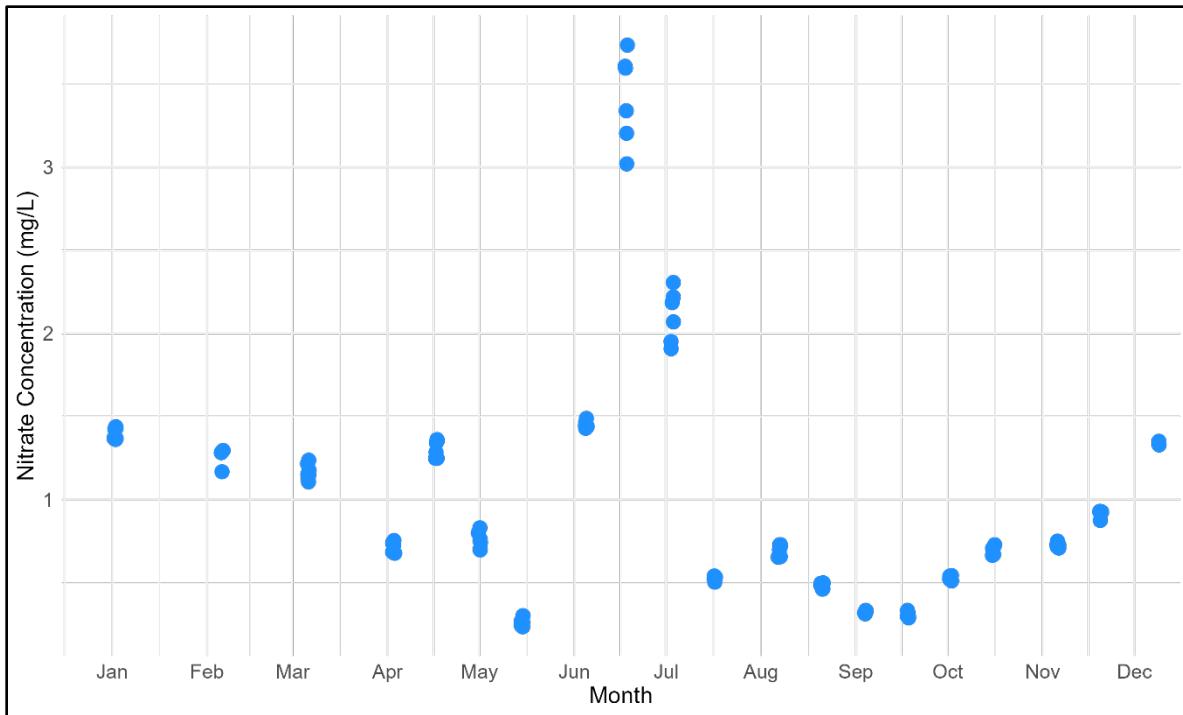


Figure 5. Nitrate (NO_3^-) concentrations in the Mississippi River at MWMO monitored sites in 2025. Collected samples showed increased concentrations of NO_3^- during the 2025 growing season, which could relate to increased precipitation creating more runoff during that time.

Mississippi River Elevation

The MWMO monitored water elevation at three locations in 2025. This data supplements elevation data collected by the U.S. Geological Survey and the U.S. Army Corps of Engineers at locations throughout the watershed. Because the MWMO watershed includes parts of three pools of the Mississippi River — the Upper St. Anthony Falls Pool, Lower St. Anthony Falls Pool, and Pool 1 above Lock and Dam 1 — the water level drops approximately 75 feet from the top to the bottom of the watershed. MWMO staff also recorded river water elevation data between April and November. A reliable and representative site for river elevation in the MWMO watershed is the [USGS gauge above 37th Avenue](#), located a short distance upstream of the MWMO Stormwater Park and Learning Center. River elevation in 2025 peaked in early July between smaller peaks in late May and late July. The lowest water levels in 2025 were observed in December with a total change of 4.9 feet during the year.

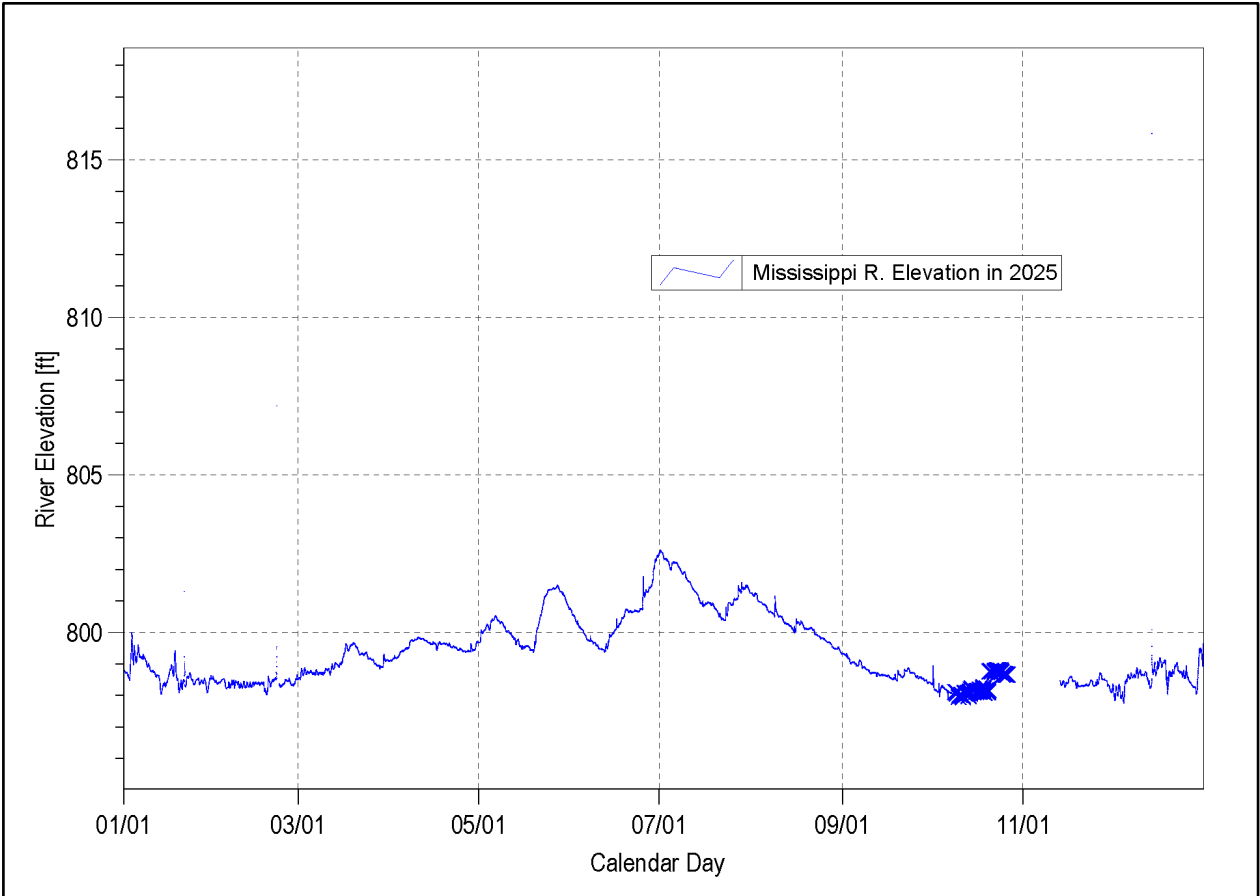


Figure 6. Hourly water level on the Mississippi River between January and December 2025 collected at the USGS gauge above 37th Avenue.

MWMO staff also collect bathymetric data on the Mississippi River. This data is used to create a map of river depth, providing and updating baseline data on the shape and condition of the riverbed and how it changes over time. The MWMO typically collects bathymetric data on the sections of the Mississippi River on an alternating basis, with the Upper St. Anthony Falls Pool surveyed one year and Pool 1 surveyed the next. Bathymetric maps of the Mississippi River were collected in the Mississippi River upstream of the Upper St. Anthony Lock and Dam to 53rd Avenue North in Minneapolis in 2025. If you are interested in obtaining bathymetric data from the MWMO, please contact us at monitoring@mwmo.org.

Stormwater

In 2025, the MWMO continued monitoring water quantity and quality in the watershed's stormwater drainage system. The MWMO monitored baseflow, snowmelt, and rain events in six stormwater tunnels that drain to the Mississippi River. In addition to those six, the MWMO had three flow-only monitoring stations. In 2025, MWMO staff collected 138 stormwater quality samples. Samples were analyzed for nutrients, sediment, *E. coli*, inorganics, organics, and metals. Water quality standards do not exist for stormwater, so data were not compared to standards. The MWMO continues to monitor stormwater drainage systems to build on our record of baseline data, which is used to characterize stormwater quality within the watershed. The MWMO provides stormwater data to the MPCA annually to support Total Maximum Daily Load (TMDL) projects within the watershed. If you are interested in obtaining stormwater data collected by the MWMO, please contact us at monitoring@mwmo.org.

Green Stormwater Infrastructure

In 2025, the MWMO monitored 11 green stormwater infrastructure (GSI) practices at eight sites within the watershed to assess their effectiveness and information operations and maintenance. The monitored GSI includes: St. Anthony Regional Treatment and Research System (SART), Towerside District Stormwater System, Edison High School Green Campus parking lot tree trench and athletic field underground reuse system (Minneapolis), Eighth Street Stormwater Planters (Minneapolis), Minneapolis Sculpture Garden reuse system (Minneapolis), Summit Square underground infiltration chamber (Fridley), Sylvan Hills Park underground infiltration basin, and the MWMO Stormwater Park and Learning Center and its media filter beds, green roof, and cistern (Minneapolis). MWMO monitoring staff collect stormwater flow, volume, and water quality data at SART and the MWMO Stormwater Park. At the Towerside and Minneapolis Sculpture Garden reuse systems, water level was measured to observe reuse operations and ensure the tanks are watertight. In addition, a paired water quality sample was taken at Towerside in the

tank and at the spigot where water is used for garden watering, to ensure the water is being treated appropriately to remove bacteria. At the Eighth Street Stormwater Planters, water level was measured in two of the five planters to calculate stormwater infiltration rates and estimate stormwater treatment. At Edison High, water level was measured in the parking lot tree trench, and tank level, inflow, and outflow were monitored for the reuse system. At Summit Square and Sylvan Hills, water level was measured to understand infiltration basin drawdown rates. Collectively, staff collected a total of 36 water quality samples from GSI practices.

Biological Communities

During the 2025 field season, MWMO expanded our biological monitoring by testing and selecting methods for surveying vegetation. Vegetation is a critical component of habitat and can indicate and improve other components, such as soil quality and wildlife support. To test survey methods, MWMO staff surveyed vegetation communities at three MWMO project sites representing a green infrastructure project, a rain garden or prairie habitat restoration, and a forested habitat planting. The MWMO now has established protocols for monitoring project sites and other vegetated green spaces across the watershed. Data collected from vegetation surveys can inform site management as well as environmental benefits the area provides to wildlife and humans alike.

Lakes and Wetlands

The MWMO works with Anoka Conservation District to monitor water level and water quality on Sullivan and Highland Lakes in Columbia Heights. Water level is measured annually, while water quality is monitored every three years; both measurements were taken in 2025. Highland Lake was monitored once per month from May to October, and Sullivan Lake was monitored biweekly from April to October. Water quality monitoring included taking a surface grab sample to send to the lab for analysis, and a sonde lake profile at the deepest point of the lake. Water quality monitoring at Sullivan Lake also included three algae samples and one microcystin test to assess the presence and density of harmful algae in the lake. Sullivan and Highland Lake water quality data can be downloaded from the [MPCA EQuIS database](#) or by reaching out to the MWMO at monitoring@mwmw.org.

In 2025, lake levels were recorded continuously at Sullivan and Highland Lakes using water level loggers. Data were submitted to the Minnesota Department of Natural Resources (DNR) LakeFinder database. Additional information about water levels at [Sullivan](#) and [Highland](#) Lakes can be found on the [MnDNR's Lake Finder website](#).

MWMO staff collect water quality and biological samples at the Kasota Ponds once every five years. The last time samples were collected was in 2021, and the next time the MWMO will collect samples will be in 2026. Prior to 2018, water quality samples were collected yearly. See the [2008 – 2017 Summary Report](#) on the MWMO website for more information. In 2021, the macroinvertebrate assemblages of the Kasota Ponds indicated that the wetlands were in poor health. However, Index of Biological Integrity (IBI) scores showed slight improvement at two of the ponds (KP East and KP West) compared to 2016 sampling, while KP North remained the same. Aquatic plant assessments showed all three wetlands remain in poor health relative to other wetlands in the state of Minnesota.