



2011 Monitoring Report Summary

Background

Established in 1993, SWWD manages approximately 65,000 acres near the confluence of the Mississippi and St. Croix Rivers. The District encompasses 12 lakes, 4 of which are impaired, and 120 miles of public waters streams (piped and open channel), of which 3 reaches are impaired. SWWD actively manages surface waters in the District and places a strong emphasis on implementation through enforcement of development and redevelopment standards, collaboration with municipalities and agencies, and pursuit of public/private partnerships.

SWWD monitors its resources using a Regional Assessment approach in that baseline monitoring is focused on key crossings and checkpoints throughout the District. Data from those monitoring locations is used to identify regional issues for further investigation and track long-term water quality trends. In 2011, SWWD monitored water quality at 18 Regional Assessment locations (8 lakes and 9 stream/stormwater sites). SWWD also monitored flow and/or water quality at 10 additional surface water sites and 5 groundwater wells as part of various SWWD projects. This summary describes results from the District's baseline Regional Assessment monitoring sites. Results from additional sites are provided in SWWD's Subwatershed Monitoring Reports which are available online at <http://www.swwdmn.org/programs/monitoring-program/>. All data is available through the SWWD.

Lakes

Eight SWWD lakes are monitored as part of the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP). As part of the program, CAMP volunteers visit their assigned lake on a biweekly basis from April to October to measure a variety of water quality indicators. The Metropolitan Council compiles and analyzes the data and releases a report the following year. The annual CAMP report grades metropolitan lakes using a standard A through F scale which provides an indication of lake water quality relative to other metropolitan lakes. While the 2011 report has not been released, the preliminary data is available and summarized here (Map 1). All SWWD lakes are eutrophic or hyper-eutrophic meaning that they all experience frequent nuisance algal blooms throughout the summer. However, water quality in some lakes—Armstrong and Ravine—has shown improvement since monitoring began. Water quality of La, O'Conner's, Wilmes, and Colby Lakes has been consistent since monitoring began. Water quality of the remaining District Lakes—Markgrafs, and Powers—appears to be declining. Markgrafs Lake exhibited continued, rapid degradation far exceeding both state eutrophication standards and SWWD water quality goals. Powers Lake, considered a priority water body by SWWD, also continued to exhibit a prolonged decline in all standard water quality measurements reflecting influence from large scale suburban development over the past decade. SWWD is working to complete its management plan for the entire northern watershed chain of

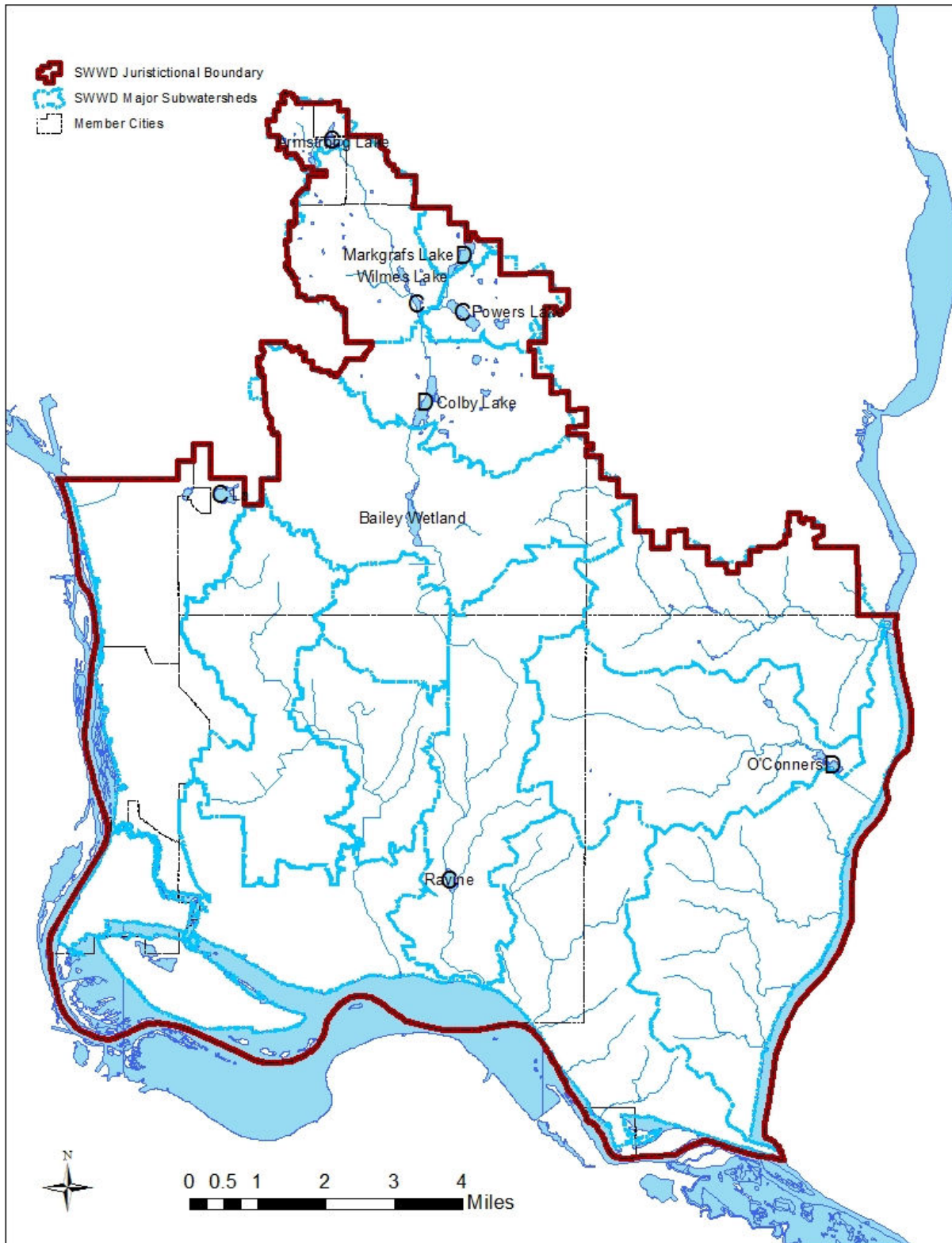
lakes (Armstrong, Markgrafs, Powers, Wilmes, and Colby) which will provide an overall strategy for the District's restoration and protection efforts which are already underway.

Stream and Stormwater

Regional assessment stream/stormwater locations were generally monitored from early April through October. Some sites—MS2, 100th Street, Wilmes Lake Outlet, and Trout Brook—display consistently good water quality which generally reflects the high degree of treatment in the respective watersheds. MS2 effectively serves as watershed outlet for the majority of SWWD's Northern Watershed (NWS) which is the focus of intensive SWWD assessment and restoration efforts. From MS2, runoff enters Bailey Lake and, ultimately, the District's regional infiltration facilities (CD-P85/86). Data collected at MS2 indicates that the NWS, though mostly developed, currently transmits relatively low runoff or pollutants and does not contribute to downstream problems. However, SWWD is working with the MN Department of Health to conduct baseline monitoring of both Bailey Lake and groundwater wells in the area which will be used to identify any potential impacts from large scale infiltration in the future. Like at MS2, the 100th St and Trout Brook sites showed very low pollutants transmitted out of SWWD's West and Central Draw and Trout Brook watersheds. In fact, data from both sites indicate that two watersheds are close to meeting proposed TMDL allocations for total suspended solids (TSS, Mississippi River) and total phosphorus (TP, Lake St. Croix).

Other Regional Assessment Locations—St. Paul Park, Central Ravine, and MS1—display flashy hydrographs indicating rapid transmission of even small storm events and high concentrations of pollutants. 2011 results for St. Paul Park and Central Ravine which drain to the Mississippi River indicate heavy metal concentrations frequently in excess of state standards. Of primary concern to the District, however is TP loading rates (Map 2) throughout the District. TP loading rates at both St. Paul Park and MS1 far exceeded SWWD standards however, much of that was likely due to frequent and intense rainfall in early 2011. All remaining sites met SWWD loading standards.

Map 1: 2011 Lake Grades



Map 2: 2011 Total Phosphorus Loading Rates at SWWD Regional Assessment Locations.

