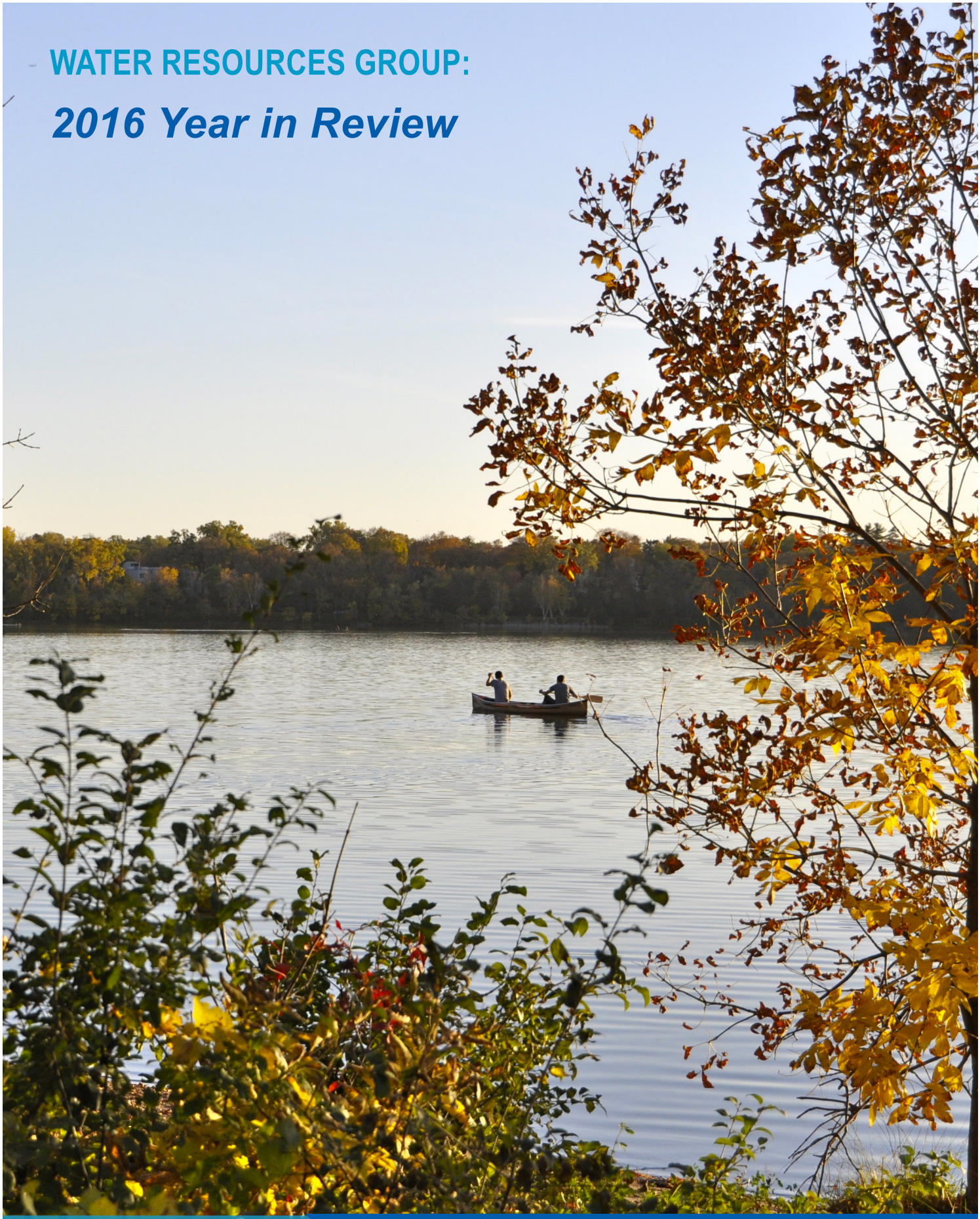
WATER RESOURCES GROUP:

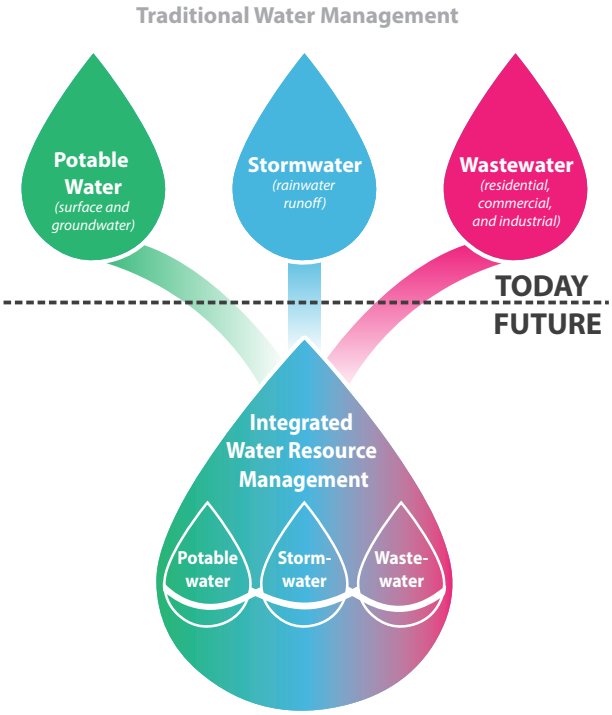
2016 Year in Review



METROPOLITAN COUNCIL **ENVIRONMENTAL SERVICES**

ABOUT US

Metropolitan Council Environmental Services (MCES) is starting to rethink traditional water management practices. Instead of viewing surface water, groundwater, stormwater, and wastewater separately, we are now beginning to address them in an integrated way. We intend to lead in developing integrated water resource management solutions for our region's complex water issues and are working to guide the use of water resources in the most sustainable way.



One organization cannot do this alone. Integrated management means that we will collaborate across traditional silos both internally and externally with government partners and other sectors. Our collective wisdom will help us build a sustainable future for our region.

To help overcome internal silos, our former Environmental Monitoring and Water Resources Assessment groups merged into one unit – Water Resources – in 2016. The mission of the Water Resources group is to:

"Provide leadership and information to ensure clean, healthy, and sustainable water resources."

The Water Resources group provides a diverse set of services to work toward the goals of integrated water resource management. Our primary focus is monitoring and assessment of water in the Twin Cities metro area and planning to ensure these water resources are used and managed responsibly. The stories on the following pages of this *Year in Review* highlight these themes.

The Water Resources group is managed by Judy Sventek. Dan Henely is the assistant manager and focuses on the group's monitoring efforts. He has been taking over many responsibilities from Kent Johnson, who retired in June 2017 as the manager of the former Environmental Monitoring group. Feel free to contact Judy or Dan with any questions about Water Resources.

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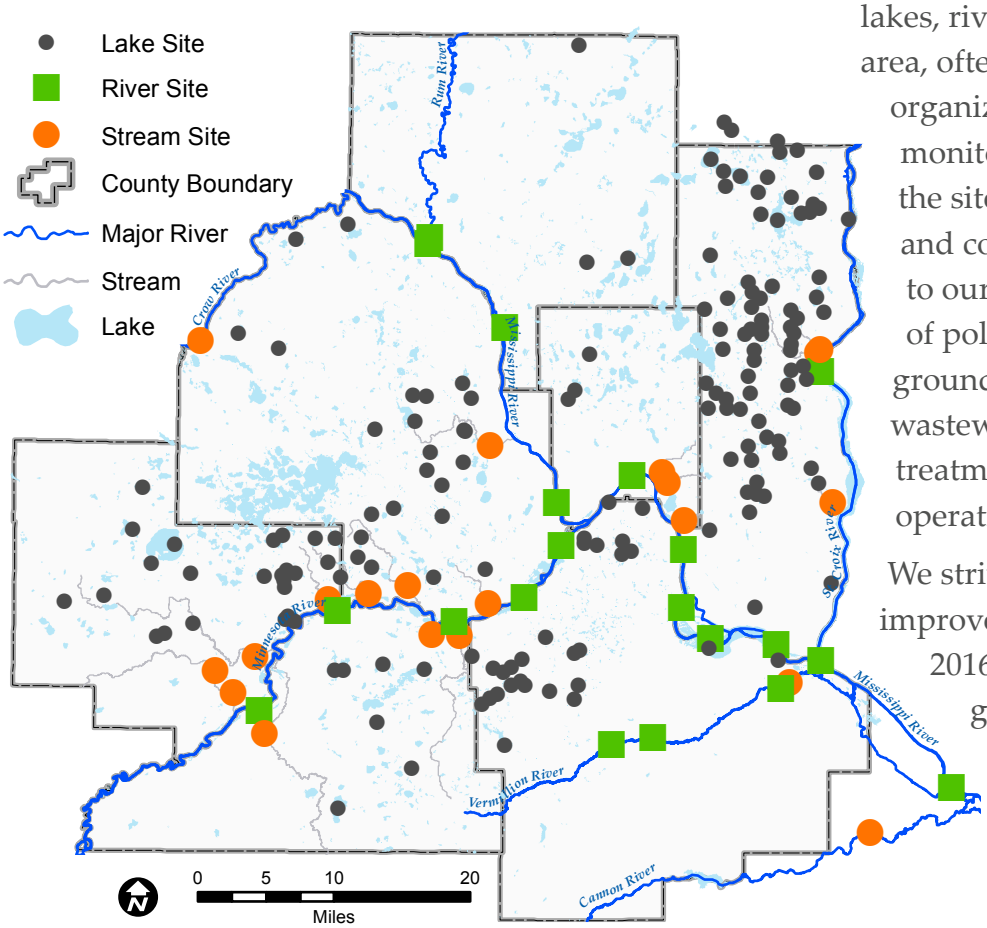
UNDERSTANDING OUR WATER RESOURCES

Water Monitoring

We operate several long-term programs to monitor the water quality of rivers, streams, and lakes across the metro area, as well as stream flow. The data from these programs are used by our organization and others for a variety of purposes, such as evaluating current water quality conditions and compliance with standards, assessing the performance of MCES-operated wastewater treatment plants, identifying sources of pollution, determining trends, and aiding in water resource management decisions.

2016 Monitored Lakes, Rivers, and Streams



In 2016, we monitored 221 locations in 192 lakes, rivers, and streams across the metro area, often in collaboration with other organizations and citizens. Generally, monitoring included taking readings at the site, operating continuous sensors, and collecting water samples to send to our laboratory to test for a variety of pollutants. We also monitored groundwater and the toxicity of treated wastewater at MCES wastewater treatment plants to ensure they were operating effectively.

We strive to continuously evaluate and improve our monitoring programs. In 2016, we reviewed the programs' goals and identified areas for improvement. Changes have already been implemented and will continue through the coming years.

For more information about our monitoring programs, visit: https://metrocouncil.org/Wastewater-Water/Services/Water-Quality-Management.aspx.
Data from our programs are available to download at: https://eims.metc.state.mn.us/.

2016 Monitoring By the Numbers

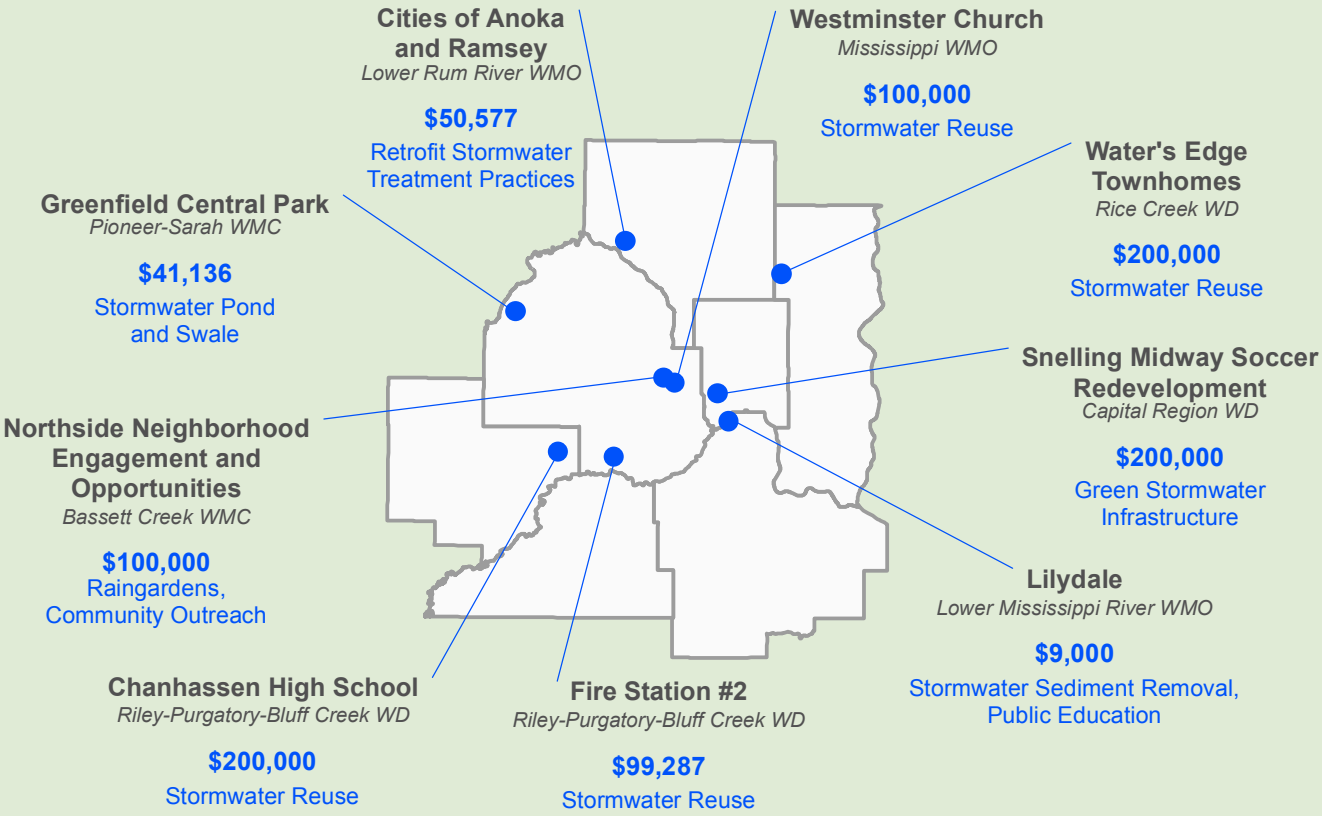
PROTECTING OUR WATER RESOURCES

Surface Water Management Planning and Stormwater Grants

In 2016, Water Resources staff were actively involved with "PlanIt", an effort created by the Council's Community Development Division to educate and assist communities in revising and updating their local comprehensive plans. PlanIt includes podcasts, tutorials, webinars, workshops, conferences, and online resources. You can find more information at: https://metrocouncil.org/Handbook/PlanIt.aspx.

As part of PlanIt, we helped produce a webinar explaining the minimum requirements for the surface water management chapter of the comprehensive plan. Additionally, we moderated a session at the December PlanIt conference to discuss the content that communities should include in the surface water management chapter, and how to go above and beyond the plan's minimum requirements to get the greatest benefits. We will continue offering communities assistance in revising their plans with a workshop in September 2017 and by providing direction with informal reviews through September 2018. Plans are due on December 31, 2018.

2016 Stormwater Grants - $1,000,000



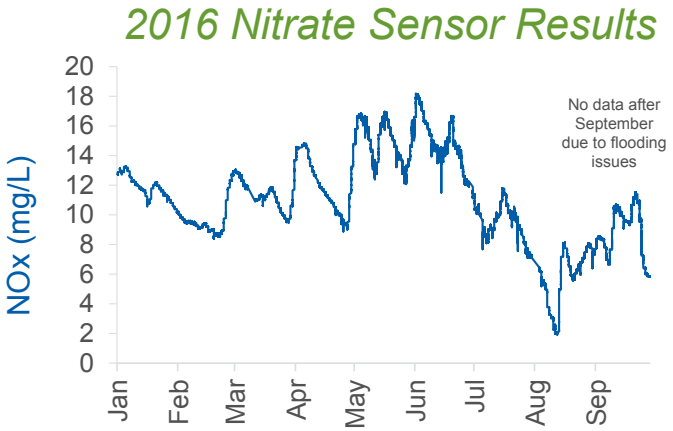
The Council approved $1 million in grants to fund stormwater management projects across the metro area in 2016. Council staff reviewed the proposals and selected nine innovative projects in the region. Four of the projects will collect stormwater to use for other purposes, such as irrigation and filling firetruck tanks. The other five projects will install features to clean up polluted stormwater runoff before it enters our lakes, rivers, streams, and wetlands.

USING NEW TECHNOLOGY FOR BETTER DATA

Nitrate Sensor

New and improving technology allows us to collect data more efficiently than ever before. To investigate nitrate concentrations in the Minnesota River, we installed a Nitratax sensor near Fort Snelling in late 2015. The sensor measures nitrate concentrations in the water every 15 minutes, providing a continuous series of results. Previously the river was sampled approximately 40 times a year.

The data from the sensor improves our understanding of nitrate fluctuations in the Minnesota River and how it's affected by changes in hydrology, geology, and land use. Additionally, it allows us to more precisely calculate nitrate loads flowing from the Minnesota River into the Mississippi River. These data help us identify sources of nitrate pollution and guide management decisions to improve the water quality of the region.



COLLABORATING ACROSS THE REGION

Streamflow Workshop

As a regional organization, we have the unique opportunity to facilitate discussions about water quality across the region. In early November, we hosted a workshop on streamflow monitoring principles and techniques. Presentations were provided by staff from the U.S. Geological Survey, Minnesota Department of Natural Resources, and MCES. Twenty-five metro-area professionals representing more than 80% of the region's watershed management organizations attended the workshop.

Attendees heard about and discussed streamflow measurement issues. They also spent time in the field at Battle Creek Regional Park, which featured several hands-on demonstrations of streamflow measurement techniques.

Feedback about the workshop was very positive, and the responses highlighted the value of getting together with other local professionals to build better relationships and connections in the region. Moving forward, we plan to help organize similar conversations focusing on other water monitoring and assessment topics.

ENGAGING CITIZEN SCIENTISTS

Citizen Assisted Monitoring Program (CAMP)

CAMP is a program managed by MCES that enables citizens to volunteer to monitor their neighborhood lakes in our region. Additionally, some lakes in CAMP are monitored by staff from watershed districts and city governments. CAMP participants collect lake surface water samples every two weeks from April to October and send them to our laboratory to test for pollutants. They also measure water temperature and clarity, as well as provide observations about the lake's condition.

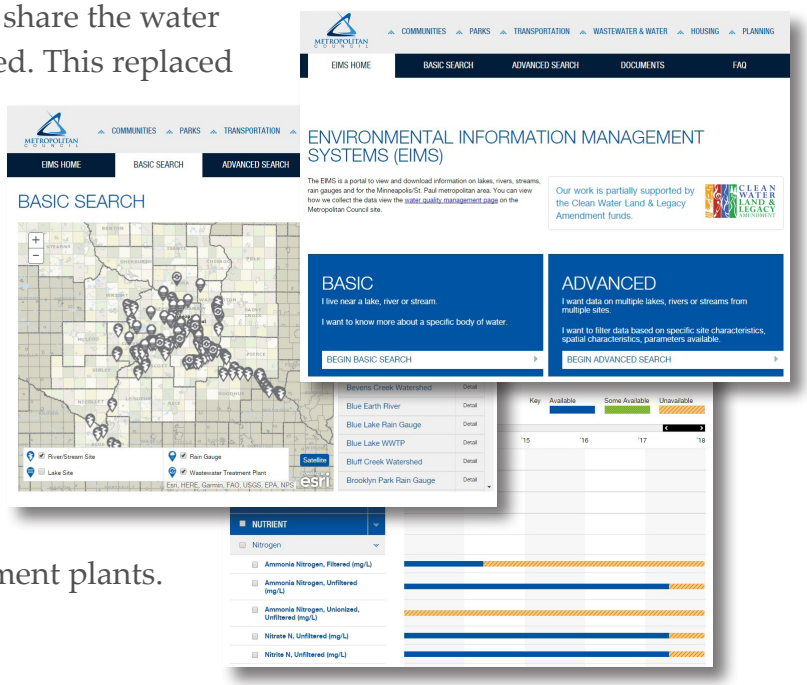
In 2016, CAMP volunteers monitored 166 lakes across the metro area. The data from CAMP help to document the conditions and long-term changes to the lakes in our region and can be used to make informed lake management decisions. CAMP also engages citizens to increase awareness of lake conditions, foster local efforts to protect lakes, and promote support for lake management.

For more information about lake monitoring and CAMP, visit: https://metrocouncil.org/Wastewater-Water/Services/Water-Quality-Management.aspx.

SHARING OUR KNOWLEDGE

Environmental Information Management Systems (EIMS)

In 2016, we launched a newly designed website to share the water quality data that we and our partners have collected. This replaced our previous, outdated data portal. With the new website, users have around-the-clock access to data and reports.



The new website offers flexible database search options. Users can search with a map or text filters to find monitored lakes, rivers, streams, and rain gauges. The website has information about each of our sampling sites and allows users to download data and reports. Additionally, users can find the locations and basic information about MCES's wastewater treatment plants. Check it out at: https://eims.metc.state.mn.us/.

LOOKING AHEAD

Planned Work for 2017

In 2017, we will continue our programs in the metro area and look for ways to improve them. Some of the major plans for 2017 are highlighted below.

Biological Sampling

The types of organisms that live in the water can tell us a lot about the water quality. In 2017, several of our programs will explore the value of collecting more biological information, which may include macroinvertebrates, algae, periphyton, zooplankton, and phytoplankton. We will analyze the results to identify how the biological information can be used and if it's beneficial to continue monitoring.

Workshops

Building off of the success of the streamflow workshop in November (page 5), we plan to hold additional workshops focused on water monitoring and assessment topics. In May 2017, we hosted water quality professionals from across the metro area to discuss future interest in additional workshops and potential topics.

River Trend Assessment

We will publish a river trend assessment report in the second half of 2017. This report documents changes in water quality of the Mississippi, Minnesota, and St. Croix Rivers in the metro area from 1976 to 2015. It shows the annual, seasonal, and spatial patterns of several parameters and identifies long-term changes of flow adjusted concentrations using the model QWTREND.

Policy Planning

Water Resources staff will partner with the Council's Water Supply group to offer a half-day workshop in September 2017 as part of PlanIt (page 4). The workshop will facilitate discussion on how communities can enhance their surface water and water supply management plans. We will review communities' preliminary and final comprehensive plans, which include their local water management plans, as the Council receives them.

Grants

The Council is offering another $1 million to fund innovative stormwater projects in 2017, and the selected projects were awarded in May. MCES also has a new grant program in 2017 offering $1 million to fund projects which integrate green infrastructure to solve water-related problems. Information about the green infrastructure grant program and a link to the application are available at: https://metrocouncil.org/Wastewater-Water/Funding-Finance/Available-Funding-Grants.aspx. Applications are due on July 17, 2017.

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The Metropolitan Council is the regional planning organization for the seven-county Twin Cities area. The Council operates the regional bus and rail system, collects and treats wastewater, coordinates regional water resources, plans and helps fund regional parks, and administers federal funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Council board is appointed by and serves at the pleasure of the governor.

On request, this publication will be made available in alternative formats to people with disabilities. Call Metropolitan Council information at 651.602.1140 or TTY 651.291.0904.

MCES's mission is to provide wastewater services and integrated planning to ensure sustainable water quality and water supply for the region

July 2017

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