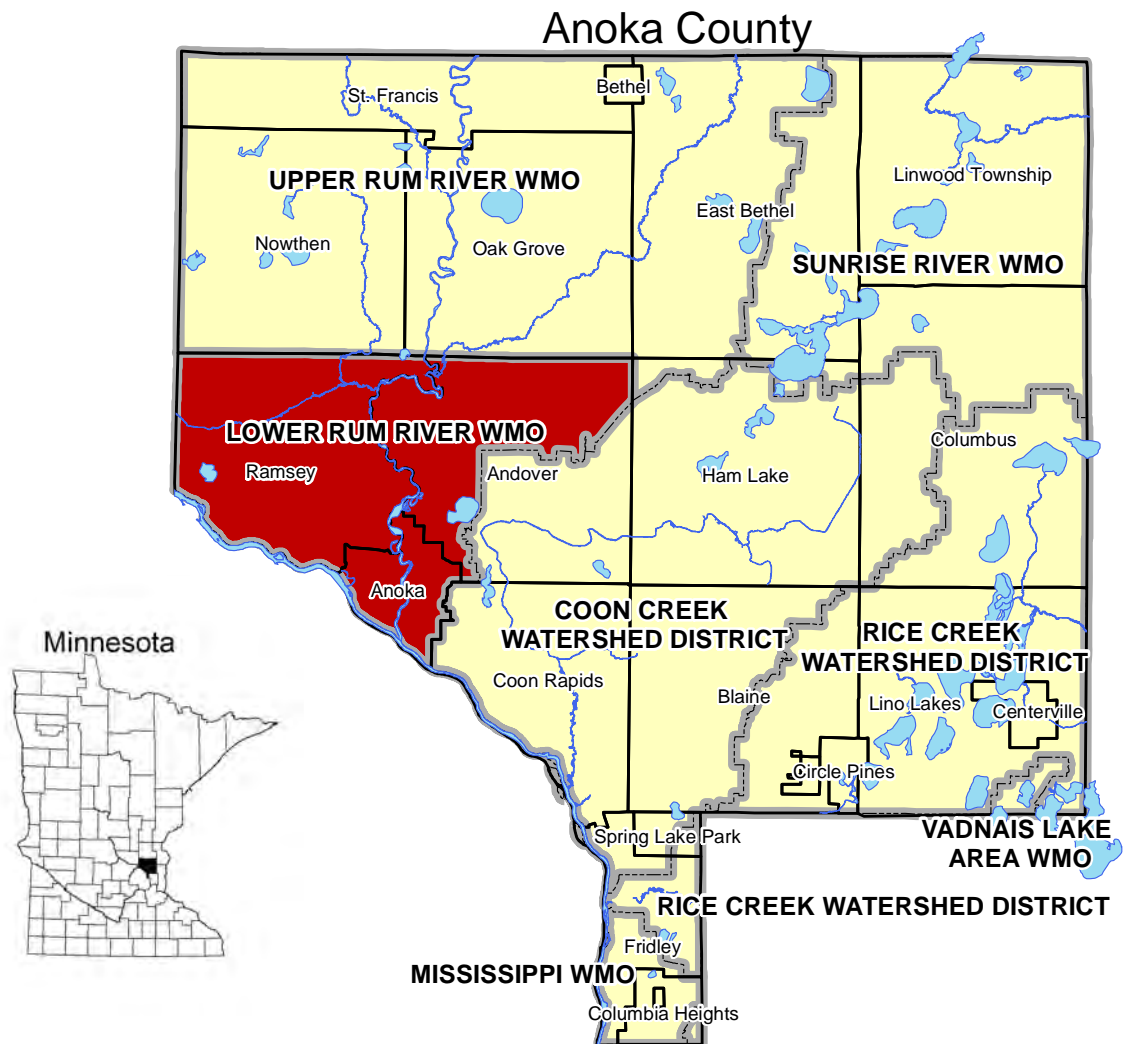


2017 Annual Report

Lower Rum River

Watershed Management Organization

Andover – Anoka – Ramsey



April 12, 2018

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Appendix A: 2017 Financial Report

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Lower Rum River Watershed Management Organization
2015 First Avenue
Anoka, MN 55303
www.LRRWMO.org

I. Introduction

This report has been prepared to meet the annual watershed management organization reporting requirements of Minnesota Rules 8410.0150. The report is intended to fulfill 2017 reporting requirements.

The Lower Rum River Watershed Management Organization (LRRWMO) is a joint powers organization under Minnesota Statutes, Section 471.59. It is comprised of the cities of Anoka and Ramsey, and portions of Andover. Board members are appointed by the member cities. The organization's direction is laid out in its watershed management plan and the member municipalities' local water plans. The LRRWMO meets every month on the third Thursday at 8:30 am at the Anoka City Hall.



II. Activity Report

a. Current Board Members

CITY OF ANDOVER

Todd Haas (Chair)
1685 Crosstown Blvd NW
Andover, MN 55034
763.755.5100
t.haas@andovermn.gov

Mike Knight (Alternate)
4660 175th Ave NW
Andover, MN 55304
763.421.9247
cm.knight@andovermn.gov

CITY OF ANOKA

Carl Anderson (Treasurer)
2015 1st Ave N
Anoka, MN 55303
763.576.2781
carl.anderson.eng@comcast.net

Jeff Weaver (Alternate)
2015 1st Ave N
Anoka, MN 55303
763.421.5522
angler55303@yahoo.com

CITY OF RAMSEY

Mark Kuzma (Vice Chair)
7550 Sunwood Dr NW
Ramsey, MN 55303
763.576.4366
mkuzma@ci.ramsey.mn.us

Chris Riley (Alternate)
7550 Sunwood Dr NW
Ramsey, MN 55303
763.427.1410
criley@ci.ramsey.mn.us



b. Day to Day Contact

The day to day contact person for the LRRWMO who can answer questions about the organization is:

Todd Haas, Chair
 1685 Crosstown Blvd NW Andover, MN 55034
 phone 763.755.5100 email t.haas@andovermn.gov

c. Employees and Consultants

The LRRWMO does not employ staff, but does utilize consulting services. A description of contracted services is listed below:

Consultant/Partner	Contact	Work Description
Anoka Conservation District	Jamie Schurbon Water Resource Specialist 1318 McKay Dr NW, #300 Ham Lake, MN 55304 763-434-2030 ext. 12 jamie.schurbon@anokaswcd.org	<ul style="list-style-type: none"> • Water quality and hydrologic monitoring, and special studies. • Website maintenance. • Administer the WMO’s cost share grant program. • Public outreach. • Assistance preparing annual reports to BWSR. • Assistance reviewing local water plans.
Barr Engineering	Bob Obermeyer Senior Water Resources Engineer 4700 West 77 th St Minneapolis, MN 55435-4803 952-832-2857 bobermeyer@barr.com	<ul style="list-style-type: none"> • Permit reviews. • Technical and engineering guidance. • Assistance reviewing local water plans.
City of Anoka Finance Department	Brenda Smith, Finance Director 2015 First Ave North Anoka, MN 55303-2270 763-576-2773 lyager@ci.anoka.mn.us	<ul style="list-style-type: none"> • Deputy Treasurer.
Kennedy & Graven	Troy Gilchrist 470 Pillsbury Center Minneapolis, MN 55402 612-337-9214	<ul style="list-style-type: none"> • Legal services.
Timesaver Off Site Secretarial Service	Carla Wirth 28601 Hub Dr Madison Lake, MN 56063 612-251-8999 Timesaver02@aol.com	<ul style="list-style-type: none"> • Administrative secretary. • Recording secretary for meetings.

d. Solicitations for Services

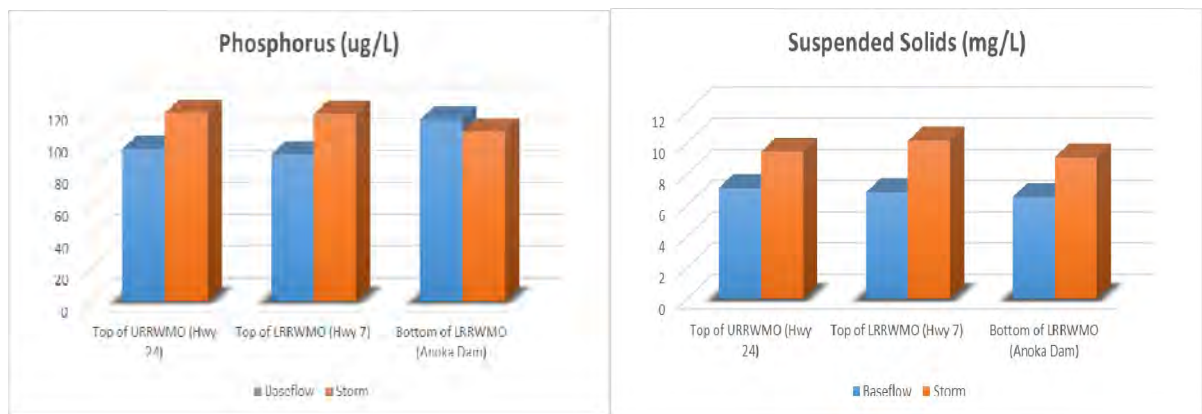
Minnesota Statutes 103B.227 require watershed management organizations to solicit bids for professional services at least once every two years. Most recently, in late 2016 the WMO solicited proposals for professional engineering services. Only one proposal was received, from Barr Engineering. The LRRWMO favorably viewed this proposal and Barr’s past performance for the LRRWMO, and selected this firm.

e. Water Quality Trends

The LRRWMO has a long term water quality monitoring program that includes most larger stream and recreational lakes in the watershed. Waterbodies are monitored either periodically or annually on a predetermined schedule customized to each waterbody. The monitoring serves to identify problems and responses to management, detect trends and track longitudinal changes.

In the recent term there have been no statistically significant trends in LRRWMO waters, but there have been longer term changes. While a long term statistical trend for the Rum River has not been found in the LRRWMO’s analysis for its reach of the river, there is a general observation of long term water quality improvement for the entire river. An analysis for the Rum River WRAP project, which covers the whole watershed found that at the Pleasant Street bridge in Anoka there had been a 51% decline in total phosphorus in the years 1953 to 2010.

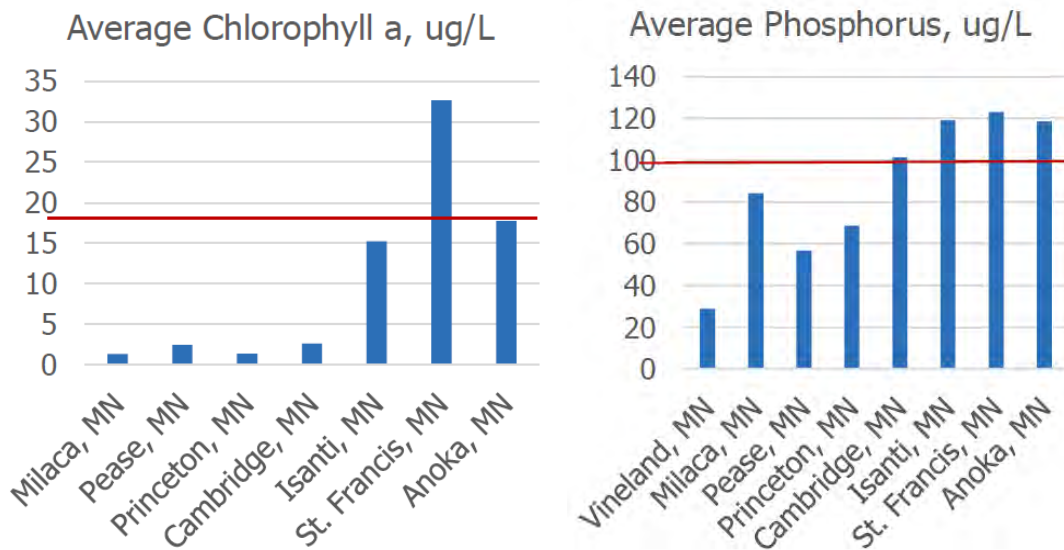
The LRRWMO also takes special interest in how the Rum River’s water quality changes longitudinally, particularly within its jurisdictional boundary. The Rum River is monitored most years near where it enters and exits the LRRWMO. The figure below provides data for phosphorus and suspended solids and **Appendix D** provides detailed results for many additional parameters. Phosphorus and suspended solids are similar when comparing water entering and leaving the LRRWMO. This is encouraging, because this reach includes many developed and developing areas which could contribute phosphorus and suspended solids, and the LRRWMO’s permitting program is designed to limit pollutant increases from these sources. The LRRWMO will continue efforts to improve water quality in its jurisdiction.



LRRWMO Longitudinal Rum River Water Quality Changes. Blue boxes show baseflow sampling results and orange boxes show storm flow sampling results.

Water quality of the river does change in other areas outside the LRRWMO. Water monitoring farther upstream has been sporadic, most recently occurring in 2013-2014. There are water quality declines that generally occur within the Isanti County reaches of the river, which has the most agriculture and impaired waterbodies draining to the lake (see figure below).

Whole Watershed Longitudinal Rum River Water Quality Changes (graphic from RESPEC for the Rum River WRAP)



In addition to statistical trend tests, it is often useful to examine graphs of water quality data to look for apparent trends that are not yet statistically significant and may or may not be real. These observations, combined with other knowledge about the waterbody (new invasive species, land use changes, etc) can guide management. For this purpose, **Appendix D** presents a variety of detailed water monitoring results.

Additional water quality data is available online. Annual watershed monitoring reports are available on the LRRWMO website (www.LRRWMO.org). All water quality data collected by the LRRWMO is on the MN Pollution Control Agency's EQUIS database, which is accessible through their website.

f. Impaired Waters

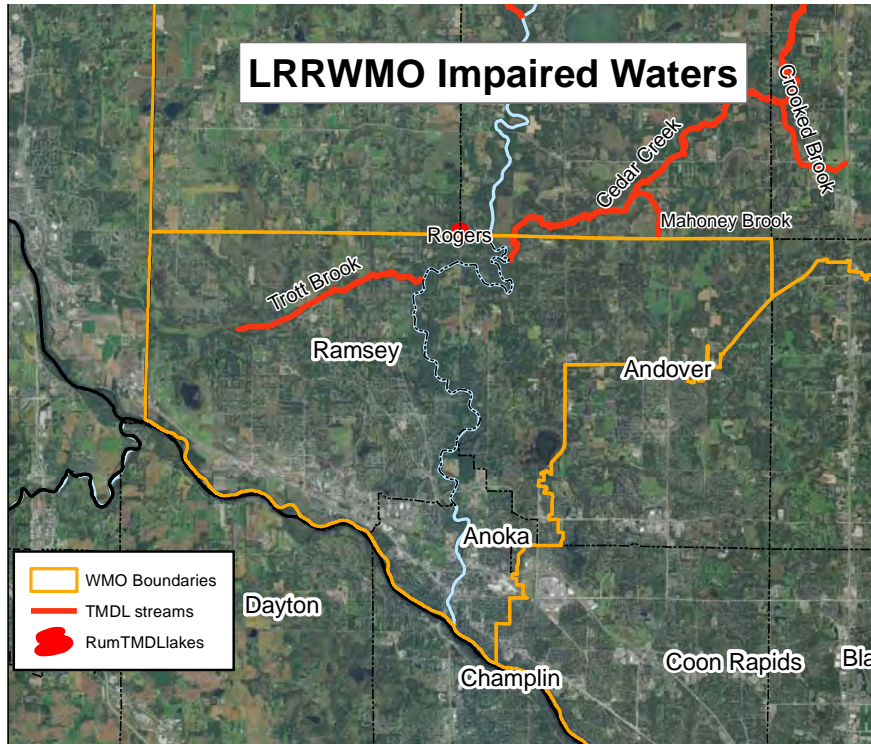
Two impaired waters are of relevance to the LRRWMO: Trott Brook and Mahoney Brook. None has an apparent water quality trend. Trott Brook originates in Sherburne County outside the LRRWMO but much of its length is in the LRRWMO. Mahoney Brook's subwatershed is partly within the LRRWMO, but the impaired reach of the stream is not.

A total maximum daily load (TMDL) study was completed for Trott Brook in 2016 and was approved in 2017. The Trott Brook TMDL can be found in the Rum River TMDL report

available on the Minnesota Pollution Control Agency website. A TMDL was not done for Mahoney Brook at this time. Mahoney Brook's subwatershed is partly within the LRRWMO, but the impaired reach of the stream is not.

Impaired Waterbodies

(note: Rogers Lake was removed from the impaired waters list after production of this map in 2016.)



Trott Brook, a tributary to the Rum River, was added to the State impaired waters list in 2015 for impaired biota (fish and macroinvertebrates) and low dissolved oxygen. A TMDL was done only for the oxygen impairment in 2016 and approved in 2017 as part of the Rum River Watershed TMDL report (available on the Minnesota Pollution Control Agency website). That study found low oxygen is the likely cause of the biotic impairments. Causes of low oxygen include nutrients (phosphorus), decomposing organic matter (sediment oxygen demand and decomposition in surrounding ditched wetlands) and others. Low oxygen occurs under all flows (low to high), indicating the problem is not runoff-driven. Overall, a 50% reduction of oxygen demand is needed to meet water quality standards. Management strategies may include wetland restorations and nutrient reduction BMPs.

Mahoney Brook was added to the State impaired waters list in 2015 for an impaired biota (fish). The impaired stream reach is not in the LRRWMO, but begins at the LRRWMO boundary and flows north. Presumably, a future TMDL for the impaired reach would include pollutant allocations for the upstream portions of the watershed in the LRRWMO. Draft analysis for the Rum River WRAP project have concluded that low dissolved oxygen, excess phosphorus and habitat are all stressors to the biological community.

Rogers Lake was on the State impaired waters list until 2016. In 2016 it was determined that this waterbody met the definition of a wetland, where lake water quality standards were not

appropriate. Rogers lake is half in the LRRWMO and half in the URRWMO. It is small (~42 acres), shallow (< 4ft) and has no public access. Illegal herbicide applications at the lake may have played a role in switching the lake back and forth between turbid open water and clean water with dense macrophytes. The City of Ramsey, where most shoreline homes are located, has taken a lead role in educating landowners about lakes management.

g. Evaluation of Watershed Plan Implementation

The current LRRWMO Watershed Management Plan was approved by the Minnesota Board of Water and Soil Resources (BWSR) in late 2011 and adopted by the LRRWMO on January 19, 2012. Implementation began that same year. The plan contains a detailed schedule of tasks that the LRRWMO should accomplish each year in order to realize its goals.

Appendix B is a table that shows tasks planned for each year in the watershed management plan, as well as responsible parties. It details which tasks were planned and completed.

The LRRWMO deviated from its work plan in 2017 in the following ways:

- Change Diverted \$1,000 from the LRRWMO water quality cost share grant program to Rum River stabilizations with cedar tree revetments.
- Reason This project, coordinated by the Anoka Conservation District, assisted in meeting goals of the LRRWMO and leveraged funds for water quality projects on private lands. \$1,000 contributed by the LRRWMO was used as match toward 3 grants for >\$80,000 that funded nine residential riverbank stabilizations totaling 1,608 linear feet in 2017. Additional installations, without additional funding from the LRRWMO, are planned for 2018.
- Change Removed Trott Brook water quality and hydrology monitoring.
- Reason The LRRWMO Watershed Plan’s monitoring schedule states the goal of monitoring Trott Brook is to determine its impairment status and calculate a TMDL. Trott Brook was extensively monitored in 2013-14 as part of the Rum River WRAP and that data is being used for TMDL calculation. MPCA has informed us that additional data would not be used for the TMDL because it is complete. No management actions have since occurred that might lead to a change in condition.
- Change Removed Rogers Lake water quality monitoring.
- Reason Rogers Lake was monitored by the LRRWMO in the early and mid-2000’s. It was found to be impaired, then removed from the impaired waters list because it does not meet the definition of a lake. The LRRWMO decided to discontinue monitoring of this lake because it has no public access and no outlet (to impact downstream waters).
- Change Added Sunfish Lake water quality monitoring.
- Reason Sunfish Lake was being monitored by the Anoka Ramsey Community College, but the college discontinued this work and had not been submitting their data to state databases. The waterbody has a growing importance in the community with the development of a shoreline park and homes.

Change Did not monitor groundwater levels or trends.
Reason Groundwater monitoring is best done at a regional level. The MN DNR has taken the lead.

h. Status of Ordinances and Local Plan Implementation

All LRRWMO member cities local water plans were required to be updated for consistency with the LRRWMO Watershed Management Plan within two years of WMO plan adoption in January 2012. The status of each is summarized in the table below.

To track member cities’ progress on local plan implementation, the LRRWMO requires a brief annual report from each city and provides a template for this report. In addition to serving as a reporting tool, we hope that the template serves as a “to do” list for our cities. These reports are available upon request, and are summarized in the table below.

Status of city local water plans and some recent accomplishments toward plan implementation.

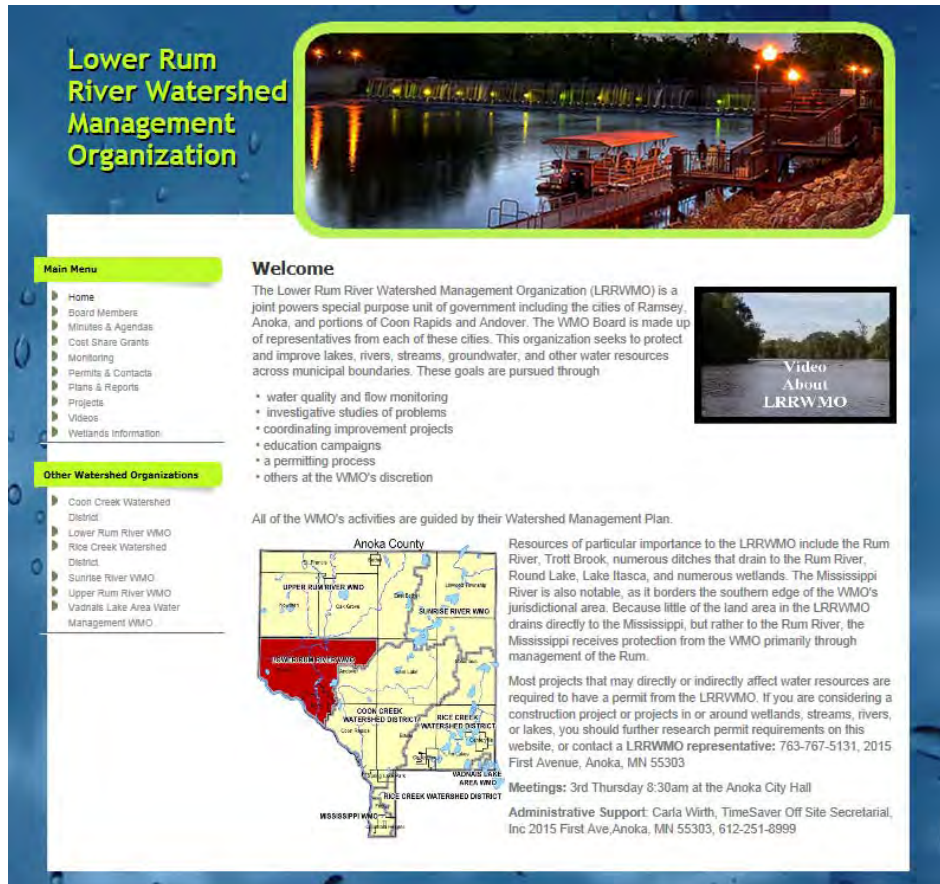
City of Andover	
Submitted 2017 annual report to LRRWMO?	Yes
Ordinances and Local Water Plan Status	Andover’s Local Water Plan was approved by the LRRWMO May 21, 2015. They had been granted an extension by the LRRWMO to their local water plan deadline because their city is in both the LRRWMO and Coon Creek Watershed District (CCWD), which recently completed updating its watershed plan. The extension allowed the city to perform updates needed for both watershed organizations simultaneously. The city has all of the ordinances required by the LRRWMO.
Some Recent Implementation Accomplishments	<ul style="list-style-type: none"> • Street sweeping completed annually. • Educational outreach in 2017 reached about 3300 households. Outreach efforts included newsletters covering topics such as lawn care, Adopt-a-Street, Adopt-a-Park, Adopt-a-Pond, and picking up pet waste; public service announcements on storm water quality were broadcast on local television periodically throughout the year; and information provided at the North Suburban Home Show. Overall, educational outreach covered wetland protection BMPs, controlling invasive species, water conservation, yard waste management, pet waste disposal, and groundwater quality and protection. • New and reconstructed street projects were completed in 2017. When feasible catch basin sumps were installed in storm sewers to collect sediment. • Water control structures and stormwater treatment basins are inspected every five years and maintenance action is taken as needed. • Illicit discharge detection and elimination program. • Andover is actively inspecting its outfalls into the Rum River and other public waters. Records are maintained in city GIS software. • Periodic inspections of erosion control at construction sites. • Management of natural preserves called Martin’s Meadows, Maple View, Dalske and Northwoods Preserve continue. Efforts underway include prairie establishment, buckthorn control, and scenic overlook site stabilization. • Habitat improvement projects such as Kelsey Round Lake Park are ongoing and include 15 acres of buckthorn control and establishing a 35 acre native prairie.

City of Anoka	
Submitted 2017 annual report to LRRWMO?	Yes
Ordinances and Local Water Plan Status	The City of Anoka's local water plan was approved by the LRRWMO May 21, 2015. The city has all of the ordinances required by the LRRWMO.
Some Recent Implementation Accomplishments	<ul style="list-style-type: none"> • Street sweeping. • Inspected water level controls and basins every 5 years. • The Public Service Department performed infrastructure repairs, removed sediment from treatment structures and cleaned storm sewers and catch basins • Illicit discharge detection and elimination program. • Planted 2000 plus seedlings in a nursery to be transplanted in future within the city. • Constructed 109 catch basins on city project. • Constructed a regional storm storage pond for flood storage. • Installed two rain gardens. • Removed invasive species along the Rum River. • Educational outreach including 2 newsletter article, 1 brochure, 5 website postings, and Arbor Day tree program and use of social media. Topics included controlling invasive species, water conservation, hazardous waste disposal, and yard waste management. The audience was 7,000 residents. • Installation of stormwater treatment associated with stree reconstruction projects annually. • Anoka manages stormwater activities to ensure no net increase in volume, rate, sediment or nutrient loading. • Annual outfall inspections and repair as needed. • River corridor reforestation and bank stabilization with native seedlings. • Continue to plan projects to help control buckthorn in the community. • Gathering information for establishing a no wake condition to reduce bank erosion. • Approved erosion and sediment control and wetland ordinances in 2017.
City of Ramsey	
Submitted 2017 annual report to LRRWMO?	Yes
Local Water Plan Status	The City of Ramsey's local water plan was approved by the LRRWMO September 17, 2015. Ramsey has all of the ordinances required by the LRRWMO.
Some Recent Implementation Accomplishments	<ul style="list-style-type: none"> • Annual street sweeping. • Implementing a five year plan for inspecting stormwater ponds. • Illicit discharge detection and elimination program. • Public Works cleaned ditches and culverts identified during inspection. • Reached 9,500 households in 2016 with 4 newsletter articles and posted information on the county's "Know the Flow" website. Topics of education efforts included wetland protection, controlling invasive species, water conservation, hazardous waste disposal, yard waste management, and pet waste disposal.

i. Public Outreach

The LRRWMO and its member cities do regular public outreach and education projects. These include:

- **WMO website**, including general information about the organization, the watershed management plan, meeting agendas and minutes, water monitoring results, profiles of WMO projects, access to mapping and data access tools, and others.



- **Web videos** – To bolster the content of the website the LRRWMO creates web videos. They include:
 - 2012 About the LRRWMO
 - 2013-14 Water conservation
 - 2014-15 Wetland regulation, correcting riverbank erosion
- **Newsletter articles** – Articles are prepared by the LRRWMO and printed in member city newsletters. Copies of several of these articles are provided in **Appendix C**.
- **Public officials meetings** – Approximately every 5 years the LRRWMO hosts a dinner meeting for local officials. The purpose is to educate elected officials about the role of the WMO, discuss upcoming projects, and consider the overall direction of the WMO. These meetings were last held in 2008, 2013 and 2017.

- **Bi-annual river float with city officials and staff** – Every other year the WMO Board, along with city staff and officials, float the Rum or Mississippi River. The trip is an opportunity to inspect for violations or problems, as well as share an appreciation of the river with decision-makers. A float was last done in August 2017 on the Rum River from the County Road 7 bridge (top of the LRRWMO) to the Anoka Dam (near the bottom of the LRRWMO).



LRRWMO and city officials toured the Rum River in August 2017

- **A wetland education series** – From 2013 to 2020 the LRRWMO is conducting a six-part education program about wetlands. The purpose is to improve public understanding of wetland values and rules. It includes on-line resources, property owner packets, newsletters, signage near public wetlands, workshops for elected officials, and local events exhibits.

In 2013 the LRRWMO produced a map about wetland regulation and mailed it to over 2,000 landowners who own land with or adjacent to wetlands. Each brochure included a custom neighborhood level map.

We also created a one-stop shop of wetland regulatory information website in 2013. This was done on the Anoka Conservation District's website so it could serve parts of our communities that are not in the LRRWMO, as well as surrounding areas.

In 2014 two newsletter articles and one web video were produced.

In 2015, 30 wetland interpretive signs of four different designs were produced. In early 2016 the member cities installed the signs along trails and other prominent areas near wetlands or shoreline.

Cities continued wetland education outreach including providing educational materials in city halls.

j. Permits, Variances, and Enforcement Actions

The LRRWMO’s 2017 permit activity is summarized in the table below.

Permit Name	Permit #	City	Summary
M & G Trailer Sales Parking Lot Expansion	#2016-17	Ramsey	The project proposed a 1-acre parking area with a surface (rainwater garden) basin constructed to meet the LRRWMO storm water management requirements.- Project approved.
Mississippi River Trail Extension	#2016-21	Ramsey	The project proposes 6900 lineal feet of 10 foot wide bituminous trail through Mississippi West Regional Park. No wetlands were delineated along the trail corridor. Project was approved.
Woodlands 4th Addition	#2016-22	Ramsey	13 lot, 28 acre single family residential subdivision. Majority of the site is wetland. Because of high groundwater, volume retention through infiltration not permissible. 5,553 cubic feet of volume retention to be provide by the City within a future municipal project to comply with the LRRWMO requirements. – Project was approved.
Covenant Meadows	#2017-01	Ramsey	12-lot, 12 acre single-family residential subdivision. Three proposed on-site basins to provide volume retention, rate control and water quality treatment. – Project was approved.
Country Oaks North 3rd Addition – Street and Utility Installation	#2017-04	Andover	Street construction and utility installation associated with Permit #2014-03. – Project was approved.
Anoka Wellness Center	#2017-05	Anoka	1.9 acre site located within Subcatchment 7 of the North Street Stormwater Study Area, Permit #2016-20. Site/stormwater management complies with approved study. – Project was approved.
Eastview Meadows	#2017-06	Anoka	9.2 acre site located in Subcatchment 8 of the North Street Stormwater Study Area, Permit #2016-20. On-site storm water management provided. – Project was approved.
Trott Brook Hall	#2017-08	Ramsey	Building addition and parking lot expansion that will add 36,700 square feet of new site impervious area. On-site stormwater management provided. – Project was approved.

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Permit Name	Permit #	City	Summary
Ramsey Commons/National Self Storage	#2017-09	Ramsey	6.2 acre site located within a 10-year capture zone for a municipal well. On-site, lined basin, will provide rate control and water quality management. City of Ramsey will provide the required volume retention, 8,781 cubic feet, within a future municipal project. – Project was approved.
Ahlberg Driveway	#2017-10		Wetland boundaries, types and WCA de minimis exemption for the construction of a driveway at 15349 7 th Avenue N.W. – Project was approved.
Stone Brook Academy and Yolite Street Construction	#2017-11	Ramsey	0.9 acre site located within the Ramsey Town Center Development and also within a Drinking Water Supply Management Area. A regional basin within the Town Center will provide rate control and water quality management. City of Ramsey will provide the required volume retention, 3,064 cubic feet, within a future municipal project. – Project was approved
Vistas at North Commons	#2017-12	Ramsey	3.2 acre site located within the Ramsey Town Center Development and also within a Drinking Water Supply Management Area. A regional basin within the Town Center will provide rate control and water quality management. City of Ramsey will provide the required volume retention, 3,231 cubic feet, within a future municipal project. – Project was approved
Riverstone	#2017-13	Ramsey	245 single-family homes and eleven 4-unit town homes to be located on an 88.5 acre site. 27.3 acres of new site impervious area proposed. Five on-site stormwater basins proposed to comply with the LRRWMO stormwater management requirements. Low floor elevations to be a minimum of 2 feet above the calculated 100-year flood elevations of the basins – Project was approved.
Silver Oaks 2nd Addition	#2017-15	Ramsey	3.1 acre, 8 lot single-family residential subdivision. On-site stormwater management provided. – Project was approved.
Lennar Anoka Site 12	#2017-16	Anoka	17 residential row homes constructed on a 1.1 acre site. On-site stormwater management provided. – Project was approved.

Continued on next page...

Permit Name	Permit #	City	70 Summary
Lennar Anoka Site 17	#2017-17	Anoka	6 residential row homes constructed on a 1.1 acre site on the Greenhaven Golf Course. On-site stormwater management provided. – Project was approved.
Cole Addition	#2017-20	Ramsey	6-lot single family residential subdivision located on a 2.9 acre site. On-site stormwater management proposed. Geotechnical report not provided. Project was approved based on soils information required and provided showing that the underlying soils will provide the infiltration rate assumed by the applicant.
Bunker Lake Industrial Park	#2017-21	Ramsey	56.5 acre, seven building office business park located east of Puma Street N.W., south of Bunker Lake Boulevard N.W. and north of the BNSF railroad. Project to be constructed in phases. Phase 1 is 22.8 acres with two building proposed. On-site stormwater management proposed. – Project was approved for Phase 1.
17059 Nowthen Boulevard Wetland Delineation	#2017-22	Ramsey	Approval of the on-site wetland boundaries and types.
Northfork Villas	#2017-23	Ramsey	Concurrence with the no wetland determination on the site.
Northfork Meadows	#2017-24	Ramsey	Approval of the on-site wetland boundaries and types.
Lashinski Rum River Lot Delineation	#2017-25	Andover	Approval of the on-site wetland boundaries and types.
Greenway Terrace	#2017-26	Ramsey	54-unit apartment building to be located on a 3.4 acre site within a 10-year capture zone for a municipal well. A regional basin within the Town Center will provide rate control and water quality management. City of Ramsey will provide the required volume retention, 4,538 cubic feet, within a future municipal project. – Project was approved.
Rum River Prairie	#2017-27	Ramsey	Approval on the on-site wetland boundaries and types.
Pearson Place	#2017-28	Ramsey	12-lot single family residential subdivision located on a 23 acre site located off Bowers Drive N.W. On-site stormwater management provided. – Project was approved.

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Permit Name	Permit #	City	Summary
Norlex Turf Stockpile	#2017-29	Andover	20,000 cubic yard stockpile of top soil located in an area east of Hansen Boulevard and south of proposed 167 th Avenue. Erosion control installed. – Project was approved.
White Pine Wilderness 3rd Addition	#2017-30	Andover	Site grading associated with a 3-lot single-family residential subdivision. Stormwater management provided as a requirement of Permit #2014-02, White Pines Wilderness 2 nd Addition. – Project was approved.
Anoka High School Building Additions	#2017-31	Anoka	3 building additions that will add 29,200 square feet of new impervious area. On-site stormwater management to be provided. – Project was approved.
Anoka Municipal Liquor Store	#2017-32	Anoka	Redevelopment of two parcels with a combined area of 1.1 acres. On-site stormwater management provided. – Project was approved.

a. 2018 Work Plan

Planned 2017 activities are listed in the table below. Most routine administrative tasks are excluded.

Task	Purpose	Description	Locations or Action	Cost
Lake Level Monitoring	To understand lake hydrology, including the impact of climate or other water budget changes. These data are useful for regulatory, building/development, and lake management decisions.	Weekly water level monitoring in lakes by volunteers. All are available on the Minnesota DNR website using the “LakeFinder” feature (www.dnr.mn.us.state/lakefind/index.html).	Itasca Lake Round Lake Sunfish Lake Rogers Lake	\$1,200
Lake Water Quality Monitoring	To detect water quality trends and diagnose the cause of changes.	May through September lake water quality monitoring conducted every two weeks and including total phosphorus, chlorophyll-a and transparency.	Sunfish Lake	\$1,800
Stream Water Quality Monitoring	To detect water quality trends and diagnose the cause of changes. Rum River monitoring is done where the river enters and leaves the WMO.	Eight water samples are taken throughout the open water season. Parameters tested include total phosphorus, total suspended solids, turbidity, conductivity, dissolved oxygen, chloride, and others. Hydrology data is provided by the USGS station near St. Francis for the Rum River.	Rum River at CR7	\$1365
Rum River Invertebrate Biomonitoring	To assess overall river health. To provide a hands-on educational experience to high school students.	Facilitated by the ACD, science classes from Anoka High School assess aquatic insect populations. Students will collect macroinvertebrate samples, identify them, and calculate indices of river health. Anoka Conservation District staff provide instruction, oversight, and write a final report. This monitoring has been conducted for more than 10 years.	Rum River at Bunker Lake Blvd	\$900
Reference Wetland Hydrology Monitoring	The ACD maintains a network of 18 reference wetlands throughout the county. These data aid in understanding of water conditions in wetlands, surficial water table changes, and trends. It is useful for regulatory determinations (for example, is a dry area actually a wetland, or are all wetlands dry right now?) and resolving water level disputes. Each reference wetland has been monitored for more than 10 years, providing a long term record.	Install and maintain a WL40 electronic water level monitoring device at the edge of reference wetlands. These devices measure water levels every four hours.	AEC Ref Wtld Rum Central Ref Wtld Lake Itasca Trails Ref Wtld	\$1,950

Task	Purpose	Description	Locations or Action	Cost
LRRWMO Website	To increase awareness of the URRWMO and its programs. The website also provides tools and information that helps users better understand water resources issues in the area. The website serves as the URRWMO's alternative to a state-mandated newsletter.	Maintain and update the WMO website with current information about the organization, and meeting minutes and agendas. Web videos developed by the LRRWMO are also featured on the website. In 2018 the website will be reconstructed on a new template with greater security.	http://www.lrrwmo.org	\$2,425
Newsletter articles	To increase public awareness of water resources and the LRRWMO.	In 2018 two newsletter articles will be produced and printed in city newsletters.	Watershed-wide	\$1,120
Prepare Annual Report to State Auditor	To provide transparency and accountability of organization operations.	An annual financial report and online reporting of WMO finances though the State Auditor's SAFES website is completed by the WMO's Deputy Treasurer.	Watershed-wide	\$0
Prepare Annual Report to BWSR	To provide transparency and accountability of organization operations.	Produce an annual report of WMO activities and finances that satisfies Minnesota Rules 8410.0150.	Watershed-wide	\$850
Permitting Program	To ensure water quality and hydrology are properly taken into consideration during construction projects.	The LRRWMO permitting program targets land disturbance activities.	Watershed-wide	variable
Cost Share Grants for Water Quality Improvement	To improve water quality in lakes, rivers, and streams.	These grants offer up to 70% cost sharing of the materials needed for a water quality improvement project. Typical projects include erosion correction, lakeshore restoration, and rain gardens. The Anoka Conservation District provides administration.	Offer grants	\$2,000
Rum River Revetments	To stabilize mild or moderately eroding Rum Riverbanks for water quality improvement, habitat enhancement and protection of property.	The LRRWMO contributes to a riverbank stabilization program led by the Anoka Conservation District. 4-10 projects per year are anticipated starting in 2016 and extending 3 years. Partial funding is from the MN DNR Conservation Partners Legacy Grant program.	Multiple	\$0 (\$1,000 in 2016)
Stormwater Retrofits	To improve water quality by better treating stormwater before discharge to the local rivers.	The LRRWMO has secured a grant from the Metropolitan Council for stormwater retrofits. 2 rain gardens were constructed in 2017. One additional practice will be constructed in 2018. The ACD provides day-to-day project leadership.	A site draining to the Mississippi or Rum Rivers	\$16,981 grant + project management provided by ACD

The LRRWMO deviated from its watershed management plan for 2018 in the following ways:

Change Removed 2018 water quality monitoring of the Rum River at the Anoka Dam.

Reason: To avoid duplication with the Metropolitan Council. The Metropolitan Council will be monitoring this site more frequently, and for more parameters than the LRRWMO would have done. The LRRWMO will still analyze water quality trends and changes in the Rum River utilizing both data from the Metropolitan Council and LRRWMO.

Change The LRRWMO or member cities may add water quality improvement projects that utilize Watershed Based Funding.

Reason This new funding source began in early 2018. It is non-competitive and requires a 10% match.

Change Removed Trott Brook stream water quality and hydrology monitoring.

Reason The MPCA monitored this site in 2013-14 as part of a WRAP study and TMDL. The issues are understood. The City of Ramsey and others have begun implementing the TMDL.

Change Did not monitor groundwater levels or trends.

Reason Groundwater monitoring is best done at a regional level. The MN DNR has taken the lead.

Change Removed Rogers Lake water quality monitoring.

Reason This lake was declared impaired, but was delisted in 2016 because it meets the definition of a wetland not a lake. This waterbody is a low priority for the LRRWMO because of its small size, limited recreational capacity, lack of public access and because it has no outlets and therefore its water quality does not threaten high priority waterbodies downstream.

Change Added stormwater retrofit projects.

Reason A Metropolitan Council grant was secured for these projects that, while not specifically planned for 2018 is consistent with the LRRWMO plan's direction.

b. Anoka Dam Ownership and Assessment

One noteworthy completed work item in 2016 pertained to the Anoka Dam. The LRRWMO, working with its cities, clarified that the City of Anoka is the sole owner of the dam. Additionally, the LRRWMO paid the City of Anoka \$6,000 for an assessment of the dam. In this way the LRRWMO fulfilled obligations in their current watershed plan. Related documentation is below:

d. 2017 Budget

At its January 19, 2017 meeting the LRRWMO Board approved the 2017 budget shown

RESOLUTION # 2017-01

**RESOLUTION OF THE LOWER RUM RIVER WATERSHED
MANAGEMENT ORGANIZATION (LRRWMO) FOR ADOPTING
THE BUDGET FOR YEAR 2017**

BE IT RESOLVED by the Board of the Lower Rum River Watershed Management Organization of Minnesota as follows:

1. The budget for the LRRWMO the year 2017 hereby approved and adopted with appropriations for each of the various activities as follows:

REVENUE:

Assessments	
Andover	\$ 11,080
Anoka	\$ 8,920
Ramsey	\$ 20,000
	<u>\$ 40,000</u>
Permits	\$ 30,000
Grants	\$ 500
Interest earnings	\$ 100
TOTAL REVENUES	<u>\$ 70,600</u>

EXPENDITURES:

Engineering	\$ 4,000
Permit Review	\$ 26,700
Legal	\$ 4,000
Financial Services	\$ 2,400
Secretarial Services	\$ 7,300
Postage, Copying, etc.	\$ 1,500
Insurance	\$ 2,200
Web site maintenance	\$ 625
Report to BWSR - Annual Report	\$ 850
Water Quality cost share grant	\$ 1,000
Wetland education (2 city news articles)	\$ 1,120
Lake Level Monitoring	\$ 1,200
Stream Hydrology, water quality & biomonitoring	\$ 4,815
Wetland monitoring	\$ 1,950
Miscellaneous	\$ 10,000
TOTAL	<u>\$ 69,660</u>

NET INCOME \$ 940

Adopted by the Board of Commissioners of the Lower Rum River Water Management Organization of Minnesota this 19th day of January 2017.

below.

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Appendix A: 2017 Financial Report

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LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

ANNUAL FINANCIAL REPORT

For the Year Ended January 31, 2018

Prepared by the Deputy Treasurer

Brenda Smith

With assistance from Pam Richer, Finance Account Clerk

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

Annual Financial Report

Year Ended January 31, 2018

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Financial Statements:	
Statement of Net Position	2
Statement of Revenues, Expenses, and Change in Net Position	3
Statement of Cash Flows	4
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Lower Rum River Water Management Organization Board

Appointed Officials

January 31, 2018

Todd Haas, Chair

Mark Kuzma, Vice Chair

Carl Anderson, Secretary and
Treasurer

Administrative

Carla Wirth, Time Savers
Brenda Smith, City of Anoka

Administrative Secretary
Deputy Treasurer

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION
STATEMENT OF NET POSITION
JANUARY 31, 2018

Assets	
Current assets:	
Cash and investments	\$ 242,329
Accounts receivable	<u>2,589</u>
Total assets	<u><u>\$ 244,918</u></u>
 Liabilities	
Current liabilities:	
Accounts payable	\$ 6,088
Deposits	<u>59,549</u>
Total current liabilities	65,637
 Net Position	
Unrestricted	<u>179,281</u>
Total liabilities and net position	<u><u>\$ 244,918</u></u>

See accompanying notes to financial statements.

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

STATEMENT OF REVENUES, EXPENSES, AND CHANGE IN NET POSITION - BUDGET AND ACTUAL YEAR ENDED JANUARY 31, 2018

	Original and Final Budget	Actual	Variance From Budget Positive (Negative)
Operating revenues:			
Assessments from participating cities	\$ 40,000	\$ 40,000	\$ -
Permits:			
Service fees	6,000	3,825	(2,175)
Engineering fees	24,000	26,210	2,210
Intergovernmental	500	33,583	33,083
Miscellaneous	-	7	7
Total operating revenues	70,500	103,625	33,125
Operating expenses:			
Engineering fees:			
Permits	26,700	24,425	2,275
Administrative	6,400	9,781	(3,381)
Legal and professional fees	4,000	1,944	2,056
Insurance	2,200	2,013	187
Secretarial services and supplies	8,800	12,838	(4,038)
Projects	11,560	44,123	(32,563)
Other	10,000	1,243	8,757
Total operating expenses	69,660	96,367	(26,707)
Operating income	840	7,258	6,418
Nonoperating revenues:			
Interest income	100	1,816	1,716
Change in net position	\$ 940	9,074	\$ 8,134
Net position at beginning of year		170,207	
Net position at end of year		\$ 179,281	

See accompanying notes to financial statements.

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

STATEMENT OF CASH FLOWS YEAR ENDED JANUARY 31, 2018

Increase (decrease) in cash and cash investments:	
Cash flows from operating activities:	
Received from member cities	\$ 40,000
Received from customers	28,749
Payments to suppliers for goods and services	<u>(94,814)</u>
Net cash provided by operating activities	<u>6,093</u>
Cash flows from investing activities:	
Investment earnings	<u>1,816</u>
Net increase in cash and investments	7,909
Cash and investments at beginning of year	<u>231,570</u>
Cash and investments at end of year	<u>\$ 239,479</u>
Reconciliation of operating income to net cash provided by operating activities:	
Operating income	\$ 9,074
Changes in operating assets and liabilities:	
Accounts receivable	867
Due from other governments	1,425
Accounts payable	1,553
Deposits	<u>(2,160)</u>
Total adjustments	<u>1,685</u>
Net cash provided by operating activities	<u>\$ 10,759</u>

See accompanying notes to financial statements.

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

NOTES TO FINANCIAL STATEMENTS

YEAR ENDED JANUARY 31, 2018

1. NATURE OF THE ORGANIZATION

Lower Rum River Water Management Organization (the “Organization”) is a watershed management organization that has been created to fulfill the requirements and purposes of Minnesota Statutes 103B.201 to 103B.251. The purpose of such an organization as defined by Minnesota Statute 103B.201 is to “Protect, preserve and use natural surface and ground water storage and retention systems in order to (a) reduce to the greatest practical extent the public capital expenditures necessary to control excessive volumes and rate of runoff, (b) protect and improve surface and ground water quality, (c) prevent flooding and erosion from surface flows, (d) promote ground water recharge, (e) protect and enhance fish and wildlife habitat and water recreational facilities, and (f) secure the other benefits associated with the proper management of surface and ground water.”

The cities of Andover, Anoka, Coon Rapids, and Ramsey formed the Organization by executing a joint powers agreement in accordance with Minnesota Statute 103B.211, dated July 15, 1985. In July 2014 the joint powers agreement was amended removing Coon Rapids. Coon Rapids joined the Coon Creek Watershed District.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying summary of significant accounting policies is presented to assist the reader in understanding the Organization’s financial statements. The financial statements are representations of the Organization’s Board, which is responsible for the integrity and objectivity of the financial statements. The following is a summary of the more significant accounting policies:

A. Measurement Focus, Basis of Accounting, and Financial Statement Presentation

The financial statements are reported using the “economic resources” measurement focus and the accrual basis of accounting. Revenues are recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with the principal ongoing operations. The principal operating revenue of the Organization is charges to customers for permits. Operating expenses for the Organization include engineering services, administrative expenses, and related river, stream, and wetland monitoring, conservation, and compliance expenses. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

NOTES TO FINANCIAL STATEMENTS

YEAR ENDED JANUARY 31, 2018

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

B. Cash and Cash Equivalents

Cash balances are invested to the maximum extent possible. For the purposes of the statement of cash flows, the Organization considers all highly liquid investments with a maturity of three months or less when purchased to be “cash equivalents.”

C. Investments

Investments are reported at fair value.

D. Income Taxes

As a joint powers watershed management organization, the Organization is exempt from both federal and Minnesota income taxes. Accordingly, no provision for income taxes is included in these financial statements.

E. Receivables and Payables

Receivables represent outstanding reimbursements from permit holders for work already completed and paid for by the Organization and grants for activity completed but not received as of the end of current fiscal year. Payables are recorded for services completed for the Organization but unpaid as of the end of the current fiscal year. Deposits represent amounts owed to permit holders at year-end for services yet to be done.

F. Budgetary Information

Budgetary information is derived from the annual operating budget and is presented using the accrual basis of accounting, which is the same basis of accounting the Organization uses in preparation of its financial statements. The budgeted amounts presented include any amendments made.

G. Use of Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Actual results could differ from those estimates.

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

NOTES TO FINANCIAL STATEMENTS

YEAR ENDED JANUARY 31, 2018

H. Subsequent Events

Subsequent events have been evaluated through April 19, 2018, which is the date the financial statements were available to be issued.

3. CASH AND INVESTMENTS

The Organization follows state statute guidelines for investment purposes. The state statute allows for investments in United States securities, state and local government general obligation securities rated "A" or better by a national bond rating agency, state and local government revenue securities rated "AA" or better by a national bond rating agency, commercial paper rated in the highest quality category by two national rating agencies and that mature in 270 days or less, certificates of deposit, bankers acceptance, and repurchase agreements.

The Organization is invested in the Minnesota Municipal Money Market Fund (4M Fund). The 4M Fund is an external investment pool not registered with the Securities and Exchange Commission (SEC) that follows the same regulatory rules of the SEC under rule 2a7. The City's investment in the 4M Fund is measured at the net asset value per share provided by the pool, which is based on amortized cost method that approximates fair value.

(a) Interest Rate Risk

Interest rate risk is the risk that the fair value of investments will be adversely affected by a change in interest rates. The Organization does not have a formal investment policy related to interest rate risk. As of January 31, 2018, the Organization had the following investments and maturities:

Investment type:	<u>Fair Value</u>	<u>Less Than One Year</u>
External investment pool	\$ 242,329	\$242,329

(b) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Credit risk is measured using credit quality ratings of investments in debt securities as described by nationally recognized rating agencies such as Standard & Poor's and Moody's.

The following table lists the credit quality ratings, per Moody's and/or Standard & Poor's, of the Organization's investments as of January 31, 2018:

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

NOTES TO FINANCIAL STATEMENTS

YEAR ENDED JANUARY 31, 2018

3. CASH AND INVESTMENTS

(b) Credit Risk (Continued)

Investment type:	<u>Fair Value</u>	<u>Unrated</u>
External investment pool	\$ 242,329	\$242,329

(c) Custodial Credit Risk

Custodial credit risk is the risk that, in the event of the failure of a counterparty, the Organization will not be able to recover the value of the investments, collateral securities, or deposits that are in the possession of the counterparty. The Organization does not have a formal policy related to custodial credit risk of investments or deposits. At January 31, 2018, all of the Organization's investments are insured and registered and are held by the counterparty's agent in the Organization's name.

4. REVENUES

Assessments From Participating Cities:

Member cities are assessed on an annual basis for estimated Organization costs by motion of the Organization's governing board. Administrative and planning costs are apportioned by a formula, taking into account both valuation and gross area equally. Projects and improvement costs are charged to the benefiting properties by a formula adopted by the Organization's governing board. Member city assessments for administrative and planning costs were as follows:

Year Ended January 31, 2018

Andover	\$11,080
Anoka	8,920
Ramsey	<u>20,000</u>
	<u>\$40,000</u>

Permits:

The Organization issues permits for construction to cover the costs associated with the review of grading, drainage, and erosion control plans of the projects to improve overall water quality. The Organization earns \$100 for administrative costs for each permit it processes. A deposit is received upon application of the permit. The deposit is used to cover the administration costs and all professional services incurred to complete the permit process. Any remaining deposit excess is refunded upon issuance of the permit.

LOWER RUM RIVER WATER MANAGEMENT ORGANIZATION

NOTES TO FINANCIAL STATEMENTS

YEAR ENDED JANUARY 31, 2018

5. RISK MANAGEMENT

The Organization participates in a public entity risk pool to mitigate its exposure to these risks. Liability coverages are provided through a pooled self-insurance plan with other cities. The Organization has a \$250 deductible per occurrence for its coverage.

Appendix B:
Implementation of Watershed
Management Plan Summary

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Key to Symbols

X = Task completed

Empty box = task planned but not yet completed

Black box = Task not planned for that entity or at that time.

EDUCATION	2013						2014					2015					2016					2017					2018					2019					2020					2021						
	ACD	Andover	Anoka	Coon Rapids	LRRWMO	Ramsey	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other						
Task																																																
a. Newsletter - Distribution of education material biannually, fostering water quality management practices in Community newsletters, specifically addressing wetland regulation from time to time.	WMO hires ACD to write newsltr articles that cities print																																															
"X" when completed -- April	X	X	X	X	X	X		X	X	X	X		X	X	X	X		X	X	X	X		X	X	X	X			X		X																	
"X" when completed -- August	X	X	X	X	X	X		X	X	X	X		X	X	X	X		X	X	X	X		X	X	X	X				X																		
b. Website - Maintain and expand the WMO website for water resource management. In 2013 add wetland regulatory info. The WMO website will be linked to the Cities' websites.	Website overhauled.						Addition of wtld regulatory info on website																																									
"X" when completed	X	X	X	X	X	X				X		X			X		X			X		X			X		X		X																			
c. Volunteer Monitoring - Solicit volunteers for water quality monitoring – Citizen Assisted Monitoring Program (CAMP)	Done- comm. College monitoring Sunfish Lk																																															
"X" when completed	X				X		X			X		n	a		n	a		n	a		n	a		n	a		n	a		n	a		n	a														
d. City Local Water Plan Education Program - Member communities shall develop a public education program as part of their local plan development. May include newsltrs, door hangers, catch basin stenciling, cable TV, etc																																																
"X" when completed		X	X			X		X	X	X		X	X	X		X	X	X		X	X	X																										
e. Wetland Education - Develop a general information packet and neighborhood specific information regarding water resource management, including wetlands.	Completed by ACD for WMO																																															
"X" when completed	X				X		X			X																																						

EDUCATION	2013						2014						2015						2016						2017						2018						2019						2020						2021																
	ACD	Andover	Anoka	Coon Rapids	LRRWMO	Ramsey	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other											
e. Continued Wetland Education - Continue the distribution of the information packet to new property owners through the Cities' new resident packet information																																																																	
"X" when completed												X				X		X				X		X				X																																					
f. Wetland Ed Signage - Design up to 30 wetland interpretive signs to educate the general public about the function and value of wetlands. WMO makes signs, cities post them in public areas adjacent to wetlands, preferably along trails.																																																																	
"X" when completed												X	X	X	X	X	X																																																
g. Local Officials Workshop - Conduct local official workshops for elected and appointed officials. Should specifically include info about wetland regulation.																																																																	
"X" when completed				X																																																													
Hi. Local Events Exhibit - design - Design and develop informational materials or display for local events exhibit to educate the public about function and values of wetlands, wetland regulations.																																																																	
"X" when completed																X																																																	
h.ii Local Events Exhibit - display - Display the information created in the task above at local events such as home shows, city environmental events, etc																																																																	
"X" when completed																																																																	

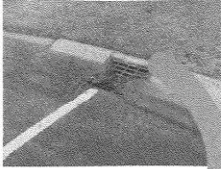
PLANNING, REPORTING AND ADMIN	2013						2014						2015						2016						2017						2018						2019						2020						2021																
	ACD	Andover	Anoka	Coon Rapids	LRRWMO	Ramsey	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other	ACD	Andover	Anoka	Ramsey	LRRWMO	Other											
Task																																																																	
a. City Reports to WMO - Member communities shall submit an annual status report by February 1 that describes the status of local plans and implementation of LRRWMO policies																																																																	
"X" when completed	X	X	X		X		X	X	X			X	X	X				X	X	X				X	X	X																																							
b. Annual Reporting to State. Submit annual reports to BWSR and the State Auditor.							ACD was hired to prepare reports for WMO																																																										
"X" when completed	X			X			X			X		X			X			X			X			X			X																																						
c. LRRWMO Plan Update – 4 th Generation Plan																																																																	
"X" when completed																																																																	
d. City Local Water Plans - Member communities shall update their local water resource management plans to be consistent with the WMO plan. WMO must review and approve local plans.							CR left WMO. Andover given extension, Ramsey underway																																																										
"X" when completed								X	X	X																																																							
e. WMO Plan Review - LRRWMO will annually review its Watershed Management Plan to ensure it reflects current goals																																																																	
"X" when completed			X							X						X							X																																										
f. JPA - Update LRRWMO Joint Powers Agreement, which expires 1/1/2015							Completed 9/2014					Done																																																					
"X" when completed							X	X	X	X		X	X	X	X																																																		
g. Solicit Bids - LRRWMO will solicit bids for professional services (solicit proposals for work to occur in the following year)							11 and 12 2014 selected engineer and attorney											Reviewed bids and selected providers at 11-17-16 mtg																																															
"X" when completed										X																																																							

Appendix C: Newsletter Articles


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THE LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION

Keep it Clean



Curbside Gutters Drain to Rivers and Lakes



Lower Rum River Watershed Management Organization
www.LRRWMO.org

Your lawn have a Drinking Problem?

Know when to say 'when'

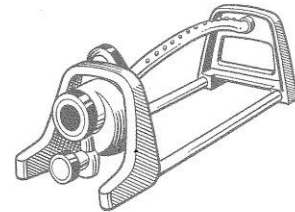
An inch is enough

Whether from rain or watering, a healthy lawn doesn't need more per week, but many of us keep serving up the water. Save your money, save some water. Consider a soil moisture sensor for your irrigation system to make it automatic.

Lower Rum River Watershed Management Organization
www.LRRWMO.org

WATER RESTRICTIONS

The City has in place watering restrictions that will allow everyone to water their grass and shrubs and maintain an adequate water system. These restrictions start every year on May 1st and runs through August 31st. The City allows watering or sprinkling of lawns at homes with even addresses on even days, and homes with addresses that have odd numbers on odd days, but only outside the total afternoon ban time. Vegetable gardens may be watered any day, outside the full afternoon ban time. Bushes and flowers may be watered with a handheld hose as needed. New sod is exempt for the first two weeks from day, but not hour, restrictions. The restricted hours are from noon to 6:00 p.m. every day. Stiff fines are assessed for violations. For more information about the restrictions, please check out the City website at www.andovermn.gov - Summer Water Restriction Information - City of Andover Code 10-1-13 Deficiency of Water or call City Hall at (763) 755-5100.



CLEAN WATER STARTS AT HOME TIP #5: LAWN CARE TIPS - NEW INFO!

A new University of Minnesota research study came out this spring about the sources of two main water pollutants of the Mississippi River in the Twin Cities Metro, phosphorus and nitrogen (MPR News- April 3, 2017).

The main sources trace back to homeowners and dog owners: #1) excess fertilizer and #2) pet waste (pun intended).

People tend to think that golf courses are the culprits of excess fertilizer, but the research study found that household fertilizer use was far higher. That might be partly due to training; the professionals get training on proper equipment use. In fact, we hosted a Turf Maintenance Training for professionals in March which some City Parks staff attended.

Your daily decisions matter! Do these simple things at home:

Tips from the Pros

1. Leave the clippings on your lawn while you mow!

Grass can use the nutrients from the clippings. If you do this all season, it's like saving one application of fertilizer.

- If you do fertilize, use the lowest setting on your spreader.
- For rotary spreaders, use a side shield.
- Sweep up any spill or excess that lands on sidewalks, driveways, or in the street.

Do not keep the clippings in a pile. Piles don't decompose quickly

and so can provide mosquito breeding sites or kill the plants under the pile.

2. Pick up after the dog, even in your backyard.

Surprise! The research study showed pet waste as the biggest source of phosphorus in the urban study area. Pet waste also contains millions of bacteria, including E. coli.

Prevention of pollution is far cheaper than treatment even when using stormwater ponds, swales, or rain gardens (stormwater is not treated at a facility like your wastewater from your toilet, tub, and sink).

Please keep grass clippings, fertilizer, dog doo, leaves, and dirt out of the streets. In fact, they are considered an "illicit discharge," and so illegal, because of the pollution they can cause.

Clean Streets, Clean Water

Information provided by Coon Creek Watershed District: (763) 755.0975 or www.cooncreekwd.org.



NEW
business preview

Natural Nails

Complete Professional Nail Care
13650 Hanson Blvd. NW, #106
(763) 767-3142

Joy Kitchen

Sushi & Asian Bistro
13650 Hanson Blvd. NW, #102
(763) 567-2720 (763) 567-2722

CLEAN WATER STARTS AT HOME

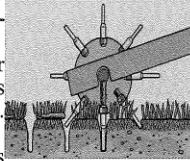
TIP #6: FALL LAWN CARE

Turf grass has a growth spurt in the fall to store up energy for winter. You can help your grass, save on your water bill, and prevent water pollution at the same time:

1. **Mulch** leaves and grass with your lawnmower to return nutrients to the soil and to help keep them off the streets... and out of our waters! This is so important, in fact, that there is an ordinance against such 'Illicit Discharges' in our stormwater.

2. **Aerate your lawn late August, early-September**

How? Use a core aerator, available for rent at many home & garden stores and offered by some lawn care services.



Water and air can reach the grass roots more easily with aeration.

3. **Wait to fertilize until after aeration**

If you use fertilizer, use it after aerating your lawn. Then it

can be absorbed and saved by plants for spring. Fertilizing once per year should be enough.

- If you regularly mulch your clippings and leaves, you may not need to fertilize.
- Test your soil at UMN Extension by contacting them at (612) 625-3101; or at <http://soiltest.cfans.umn.edu/>.

Healthy lawns can be good for water quality by absorbing rainfall and so need less watering.

Information provided by Coon Creek Watershed District (763) 755-0975 or email: info@cooncreekwd.org.

“Water You Waiting For?”

Results of last year's survey by the UMN on residential lawn watering:

<https://metro council.org/News-Events/Wastewater-Water/Newsletters/Council-funds-U%E2%80%9D-research-on-lawn-irrigation.-dro.aspx>.

HOMESTEAD FILING


New homeowners are reminded that December 15, 2017 is the deadline to file for Homestead Classification. You may file at City Hall or at the Anoka County Government Center. A copy of your deed is needed to file. If you have any questions, contact Michelle at (763) 755-5100.

Andovertoday

Page 3

Rain Gardens

are strategically placed, shallow basins that are typically planted with native, deep-rooted grasses and flowers. They are meant to capture and infiltrate storm water.




Rain Barrels

are barrels that capture storm water from roofs. The water can be used for gardens, trees, etc.


Pervious Pavers

are a type of hardscape that allows storm water to infiltrate into the soil.



Useful websites


www.anokanaturalresources.com
www.cleanwatermn.org
www.bwsr.state.mn.us
www.dnr.state.mn.us
www.andovermn.gov
www.cooncreekwd.org



Credits


City of Andover
City of Maplewood
www.civicsartsCouncil.org
www.historicalbricks.com
www.panaramio.com
www.freepicturesweb.com
www.flickr.us/wildflowers
www.flickr.com

CITY OF ANDOVER



1685 Crosstown Blvd. NW Andover, MN 55304
(763) 755-5100 FAX (763) 755-8923
www.andovermn.gov

THINK CLEAN WATER!



Water Resources in the City of Andover

A bounty of different water bodies are found in the City including the Rum River, Coon Creek and several lakes and wetlands. These resources are very important for wildlife, recreation, aesthetics and storm water treatment.



What are Wetlands?

Areas where water covers the soil or is at or near the surface of the soil during varying times of the year. There are many different types of wetlands; some have standing water and others do not.



Two different types of wetlands

Wetlands are Good!

Wetlands are like sponges, as they soak up storm water and filter out pollutants. They provide multiple other benefits including wildlife habitat, reduced flooding and recreation.

Keep in mind that there are restriction on what can be done in wetlands. Please contact your local watershed agency or City Hall if you have questions.

Let's protect our water resources!

WHAT YOU CAN DO TO HELP.....

If we simply lessen the amount of stormwater runoff and prevent pollutants from running off our properties, we will be helping to keep our waterways clean.

CLEAN UP, PICK UP, SWEEP UP: Don't leave potential pollutants on impervious surfaces, including grass clippings and leaves.



LESS IS MORE! When taking care of our lawns, generally, the less we do, the more positive impact we have. Use less fertilizer and weed killers, water less and mow less.



PLANT MORE NATIVE TREES AND SHRUBS: Trees intercept considerably more rainfall than turf grass; plus, they provide shade, beauty, wildlife habitat and energy savings, to name a few.



GET CREATIVE! There are many other approaches that can be utilized to improve storm water quality, including rain gardens, native prairie plantings, rain barrels, pervious pavers, etc



Ramsey Street Sweeping

Street sweeping is one of the core services of the City of Ramsey Public Works Department. City-wide sweeping is performed spring and fall. Spring sweeping is the most critical because of the ice control sand spread over the winter. If the sand is not swept up before spring rains start, it washes into the natural waterways and eventually damages that environment. Part of Ramsey's annual road maintenance program includes seal coating road surfaces. Seal coating helps prevent water infiltration into the road bed and provides traction to road surfaces that may have been polished by traffic. Oil is sprayed on the road surface and crushed rock is applied. Any loose rock left on the roadway is initially swept up by the contractor within 72 hours of application and re-swept within two weeks. Even after two sweepings, rock will continue to loosen up due to traffic, especially in areas with lots of turning movements such as intersections and cul-de-sacs. City crews will re-sweep these areas twice more before plowing season. As you can imagine, snow plowing loosens up any additional rock that hasn't set properly. Some loose rock still appears in the spring, but it's greatly reduced. Fall sweeping is done to pick up dead leaves and any other loose material that may have accumulated on the roadway over the summer. If you have questions about sweeping, or any other maintenance concerns, please contact the Public Works Superintendent, Grant Riemer at 763-433-9863 or griemer@cityoframsey.com.

The Draw Summer Event Series

The Ramsey Foundation in partnership with the City of Ramsey, invites YOU to the seventh year of the Summer Event Concert Series hosted at The Draw park and amphitheater, located in The COR. This community gathering takes place every Thursday night 6:30 to 8:00 pm from June 15 to August 24, and is paired with the Farmers Market starting mid-July (on the west side of Center Street near City Hall). Performances include a variety of genre's from Roadhouse Blue to 'Elvis' to 70's music to rock 'n' roll.

To learn more, please contact Mark Riverblood, Parks & Asst. Public Works Superintendent at mriverblood@cityoframsey.com or 763-433-9853.



Attention: City Water Customers - Odd/Even Day Sprinkling Ban

To reduce peak water usage in areas served by the municipal water system, the City of Ramsey has implemented an odd/even day sprinkling ban, pursuant to City Code, Section 58-118. The sprinkling ban will be in effect from May 30 until September 5, 2017.



Residents may water their lawns on odd numbered days if their address ends in an odd number and on even numbered days if their address ends in an even number.

The sprinkling restriction includes **no watering between 10:00 am and 8:00 pm** since a significant amount of water is lost due to evaporation during the hottest times of the day. Homeowners with automated systems are strongly encouraged to program their irrigation systems to operate after 10:00 pm. This minimizes evaporation and lessens peak demand on the municipal water system.

The only exception to the sprinkling ban is for new sod or seeded areas. These areas may be watered every day for two weeks to establish root growth, **but not between 10:00 am and 8:00 pm.**

In addition to the residential sprinkling ban, the City has an irrigation policy that is specific to townhome, multifamily residential and commercial connections to the municipal water supply requiring that:

- All irrigation systems must have an approved backflow device.
- All irrigation systems must include a rain sensor device to prevent irrigation systems from operating during rain events.

If you have any questions, please contact Mary Jo Warner, Engineering/Public Works Administrative Assistant, at 763-433-9820 or mwarner@cityoframsey.com.

Anoka Conservation District



Keep it Clean



Curbside Gutters
Drain to
Rivers and Lakes



Lower Rum River
Watershed Management Organization
www.LRRWMO.org

Rum River Streambank Stabilization – Grants Available to Landowners

Landowners on the Rum River have access to funding to address riverbank erosion with a unique method – cedar tree revetments. Cedar tree revetments are a low cost, but effective, means to address minor to moderate bank erosion before it gets worse. The technique involves cable-anchoring cut cedar trees alongside the bank. Their dense branches and naturally rot-resistant wood provide many years of bank armoring. In doing so, they protect property, help improve the river's water quality and provide fish habitat.

Residents interested in having their riverbank evaluated for a cedar tree revetment should contact Leah Hall at the Anoka Conservation District (763-434-2030 ext. 11; Leah.Hall@anokaswd.org). Installation of revetments will occur in summer 2017 and continue in 2018. Most projects cost \$5,000-\$10,000. Landowners must provide 10% of the total project cost; the remainder is grant-funded.

Buckthorn Removal Workshop

Join us for this FREE workshop (offered twice) at the Rum River Library, 4201 6th Ave., in Anoka on Sept. 13, 2017 from 6:30-7:30 p.m. OR at Martin-Island-Linwood Picnic Pavilion, Martin Lake Drive, Linwood Township, on Sept. 21, 2017 from 6:30-7:30 p.m.

Learn how to identify two invasive buckthorns, compare them to desirable Minnesota native trees and shrubs, and learn how to effectively treat and remove them. Following the workshop, attendees can purchase herbicide at a low cost and borrow herbicide application equipment from Anoka Conservation District. You will be set to effectively remove invasive buckthorn on your property and help restore native habitats! Please RSVP at the Anoka Conservation District: carrie.taylor@anokaswd.org or 763-434-2030 ext. 19.

Celebrate Anoka Day Golf Tournament



Anoka's Economic Development Commission will host the 34th Annual "Celebrate Anoka Day" on Monday, Sept. 11, 2017 at Green Haven Golf Course & Event Center. Enjoy an angels and demons scramble format on the course, showcase your business or organization by sponsoring a hole, grab some lunch, and end the day with delicious, hearty appetizers, golf awards and fun door prizes. Start recruiting your team. This event will be a great way to start off your work week!

Two graduating seniors from Anoka High School will receive a scholarship through this event. If your business would like to share in brightening a student's future, please consider a sponsorship in support of the Gary Stout Memorial Scholarship Fund. Gary Stout was instrumental in the development of Anoka's Enterprise Park.

Learn more and register your team online at greenhavengolfcourse.com or call 763-576-2791. Come join the fun and check out Green Haven's beautiful redecorated interior, too.

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one menu item with purchase of another menu item of equal or greater value.
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Military Discount Day – Current military and veterans, Wednesday is your day to save 10% off your entire purchase of regular-priced liquor, beer and wine items.

Specials

- Daily traffic-stopping specials are available at each store every business day.
- Advertised specials run in the Smart Money insert with the Anoka Shopper the first Wednesday of each month. View our sale items online at abcnewspapers.com, Facebook or Bettervaluesliquor.com
- Free wine tastings at each store are held the first Friday of every month from 4:30 p.m. to 7 p.m.

Store Hours: Monday - Saturday, 8 a.m. - 10 p.m.
Sundays, 11 a.m. - 6 p.m.

Holiday Hours:

Day before Thanksgiving: 8 a.m. - 10 p.m.
Thanksgiving Day: Closed
Christmas Eve: 11 a.m. - 5 p.m.
Christmas Day: Closed
New Year's Eve: 11 a.m. - 6 p.m.
New Year's Day: Closed

Better Values Liquor West
809 West Highway 10
763-427-1821

Better Values Liquor East
847 East River Road
763-421-3070

Enjoy the products we sell in moderation and please don't drink and drive.

Lower Rum River Watershed Management Organization

For information about the Lower Rum River Watershed Management Organization visit LRRWMO.org. The LRRWMO is a joint powers organization formed by the cities of Anoka, Andover and Ramsey. The group meets the third Thursday of the month at 8:30 a.m. in the committee room of Anoka City Hall to discuss storm- and surface-water issues. Meetings are open to the public.



Sprinkling the road or sidewalk wastes water



Lower Rum River Watershed Management Organization
www.LRRWMO.org

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- Railroad and Train Accidents
- Estate Planning
- Probate
- Business Law and Litigation
- Divorce and Family Law



David Bolt
Personal Injury
Wrongful Death
Railroad & Train Accidents



Christopher Hoffer
Personal Injury
Wrongful Death
Railroad & Train Accidents



Joseph Saylor
Personal Injury
Wrongful Death
Railroad & Train Accidents



Lee Orwig
Personal Injury
Wrongful Death
Railroad & Train Accidents



Kelly A. Boyd
Divorce
Family Law



Ryan Wallace
Divorce
Family Law



Steve Helseth
Estate Planning
Probate
Business Law
Litigation



William Forbes
Business Law
Litigation

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Stormwater Ponds

Stormwater ponds are constructed ponds that are designed specifically to capture and treat stormwater runoff before it enters rivers, lakes, and wetlands. Stormwater ponds can hold runoff for up to several weeks, allowing pollutants and sediment to settle to the bottom, before the water either infiltrates into the ground or is discharged to natural water bodies. Routine activities like mowing, fertilizing and irrigation can have a significant impact on our stormwater ponds, especially when considering the cumulative effect of numerous properties engaging in similar practices.



As the City continues to grow, more impervious surfaces, like roads, driveways, and rooftops, replace natural vegetation and undisturbed land. As a result, there is more runoff generated and less infiltration into the ground. The rainwater collects sediment and pollutants from impervious surfaces before draining into the metal grates along the edge of streets, known as catch basins, which direct runoff to area stormwater ponds.

Pollutants include grass clippings, leaves, excess fertilizer and other chemicals, which negatively impact stormwater ponds. Excess nutrients, primarily nitrogen and phosphorous, found in fertilizers, grass clippings, and leaves, encourage growth of algae and algal blooms. These are unattractive and emit a foul odor. More importantly, certain algae, such as blue-green algae (cyanobacteria), present a serious health threat to both humans and pets if ingested.

Stormwater ponds are located throughout the City. Stormwater enters these ponds through a network of underground pipes, known as a storm sewer system. So, in a sense, routine yard maintenance on any property can have a direct impact on downstream stormwater ponds. But, there are some simple actions we can all take to help reduce algae and potential odors including:

- Prior to fertilizing, have your soils tested to determine what, if any, nutrients are deficient. Use



phosphorous-free fertilizer, which is a state law with few exceptions, and follow label directions. Sweep granules off of driveways, sidewalks, and streets back into the yard. Remember, what the lawn doesn't absorb will be washed into the storm sewer system and ultimately into stormwater ponds.

- Keep grass clippings and leaves off of roads. As grass and leaves decompose, they produce phosphorous, which will be carried by runoff to catch basins and discharged into stormwater ponds.
- If you live adjacent to a stormwater pond or other bodies of water, consider establishing a buffer of native plants along the edge. Buffer strips help slow down runoff and strip excess nutrients and pollutants from stormwater before entering the pond.
- Pick up pet waste and properly dispose of it.
- Adjust downspouts so they discharge runoff into the yard rather than onto sidewalks or driveways; consider installing a rain garden 'downstream' from the downspout to help promote infiltration of runoff before it enters the storm sewer system. Better yet, install rain barrels to capture runoff from downspouts and store it for irrigation during drier periods.

If you have questions or concerns about a stormwater pond in your neighborhood, please call 763-433-9820.

ACD Tree and Shrub Sale

The Anoka Conservation District (ACD) is now accepting preorders for their annual tree and shrub sale. The ACD offers a wide variety of native plants; the trees and shrubs are sold in bare root seedlings or transplants and range from 8 inches to 24 inches in height. They may be purchased in bundles of ten for \$17, or twenty-five for \$30, not including tax. Native prairie seed and tree aides are also available.

If interested, visit www.AnokaSWCD.org for more details and plant varieties. Orders will be accepted until mid-April or until inventory is gone (if sooner). Orders must be picked up the morning of April 29. If you have questions, please contact ACD Staff at 763-434-2030.

Ramsey Street Sweeping

Street sweeping is one of the core services of the City of Ramsey Public Works Department. City-wide sweeping is performed spring and fall. Spring sweeping is the most critical because of the ice control sand spread over the winter. If the sand is not swept up before spring rains start, it washes into the natural waterways and eventually damages that environment. Part of Ramsey's annual road maintenance program includes seal coating road surfaces. Seal coating helps prevent water infiltration into the road bed and provides traction to road surfaces that may have been polished by traffic. Oil is sprayed on the road surface and crushed rock is applied. Any loose rock left on the roadway is initially swept up by the contractor within 72 hours of application and re-swept within two weeks. Even after two sweepings, rock will continue to loosen up due to traffic, especially in areas with lots of turning movements such as intersections and cul-de-sacs. City crews will re-sweep these areas twice more before plowing season. As you can imagine, snow plowing loosens up any additional rock that hasn't set properly. Some loose rock still appears in the spring, but it's greatly reduced. Fall sweeping is done to pick up dead leaves and any other loose material that may have accumulated on the roadway over the summer. If you have questions about sweeping, or any other maintenance concerns, please contact the Public Works Superintendent, Grant Riemer at 763-433-9863 or griemer@cityoframsey.com.

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To learn more, please contact Mark Riverblood, Parks & Asst. Public Works Superintendent at mrivblood@cityoframsey.com or 763-433-9853.



Septic Loan Program

In the City of Ramsey there are over 4,000 homes that have Individual Sewage Treatment Systems (ISTS). Many of these homes were constructed in the 1960's and 1970's. Systems that were constructed in the 1960's and 1970's were often constructed with tanks that were installed deep in the ground and were designed to allow the waste liquids (effluent) to drain with little thought of the effect it would have on the ground water. Since their construction, there has been a considerable increase in the knowledge of how Individual Sewage Treatment Systems function and properly treat the waste products.

Systems that have deep tanks that leak effluent do not provide for the protection of the ground water. State Statute 115.55, and City Ordinance #14.03, identifies such a system as "failing to protect the ground water" and requires the system to be corrected. If you have such a system on your property there is a greater risk that your system may be negatively affecting the groundwater and you should plan on upgrading the system.

To help with the cost of upgrading the system, low interest loans are available to eligible property owners to repair or replace private septic systems under a program offered by Anoka County Community Development and the Minnesota Department of Agriculture's Best Management Practices Program (AgBMP). The program aims to fund projects that prevent or reduce water pollution.

The AgBMP loan program provides financing at below market interest rates. Property owners are encouraged to apply. Loans will be repaid via a special assessment on the property tax statement through Anoka County.

For more information or to obtain a loan application, go to anokacounty.us/cd or call 763-323-5722.

Attention: City Water Customers - Odd/Even Day Sprinkling



To reduce peak water usage in areas served by the municipal water system, the City of Ramsey has implemented odd/even day sprinkling, pursuant to City Code, Section 58-118. The sprinkling restrictions will be in effect from May 30 until September 5, 2017.

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The only exception to these sprinkling restrictions is for new sod or seeded areas. These areas may be watered every day for two (2) weeks to establish root growth, but not between 10:00 am and 8:00 pm.

In addition to the residential sprinkling restrictions, the City has an irrigation policy that is specific to townhome, multi-family residential and commercial connections to the municipal water supply requiring that:

- All irrigation systems must have an approved backflow device
- All irrigation systems must include a rain sensor device to prevent irrigation systems from operating during rain events

If you have any questions, please contact Utilities Supervisor John Nelson at 763-433-9861 or jnelson@cityoframsey.com.

It's Safety Camp Time!

ATTENTION all parents of second and third graders! It's time to start thinking about summer fun and making plans for your kids! The Ramsey Kid's Safety Camp is a great place to start the summer out safely.



The 16th annual Ramsey Kid's Safety Camp will be held on June 20-21 at Elmcrest Park in Ramsey. Camp is limited to 120 second and third grade (2016-2017 school year) children and will be filled on a first come basis. A registration fee of \$30 includes activities, supplies, snacks, lunches, bike helmet, and t-shirt. Limited scholarships are available.

Registration materials are now available at www.cityoframsey.com/safety-camp.

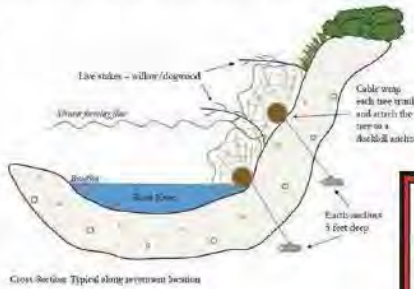
For more information, call 763-433-9890 or mschantzen@cityoframsey.com

Rum River Streambank Stabilization – Grants Available to Landowners

Landowners on the Rum River have access to funding to address riverbank erosion with a unique method – cedar tree revegetations. Anoka Conservation District, in partnership with Isanti Soil and Water Conservation District, has secured funding from the MN Department of Natural Resources as part of the Clean Water, Land and Legacy Amendment.



Cedar tree revegetations are a low cost but effective means to address minor bank erosion before it gets worse. It's not appropriate for major bank erosion, such as on outside bends of the river. The technique involves cable-anchoring cut cedar trees alongside the bank. Their dense branches and naturally rot-resistant wood provide many years of bank armoring. In doing so, they protect property, help improve the river's water quality and provide fish habitat.



Residents interested in having their riverbank evaluated for a cedar tree revegetation should contact Leah Hall at the Anoka Conservation District, 763-434-2030 ext. 11, or email leah.hall@anokawcd.org. Installation of revegetations will occur in summer 2017 and continue in 2018. Most projects cost \$5,000-\$10,000. Landowners must provide 10% of that amount; the remainder is grant-funded.

Parking on Public Streets

Remember, parking is generally allowed on any public street, but prohibited between the hours of 2:00 am – 6:00 am year round. Evening parking restrictions prevent abandoned vehicles, improve neighborhood safety, and make street maintenance more efficient. Vehicles in violation will be cited and may be towed.

Driver Improvement Classes for 55+



The Ramsey Lions are offering to Ramsey and Nowthen residents a chance to take Driver Improvement Classes. Classes will be held at the Ramsey Municipal Center, Alexander Ramsey Room, 7550 Sunwood Drive NW, Ramsey, MN. For more information and to sign up for classes, please call St. Cloud University at 1-888-234-1294 or visit www.mnsafetycenter.org.

First Time Basic 8 Hour Course
Two 4 Hour Sessions on Consecutive Days
 Monday and Tuesday, June 26 and 27, 2017
 5:00 - 9:00 pm

4 Hour Refresher Class (Repeat Student)
 Tuesday, May 23, 2017
 5:30 - 9:30 pm
 Thursday, June 8, 2017
 5:00 - 9:00 pm



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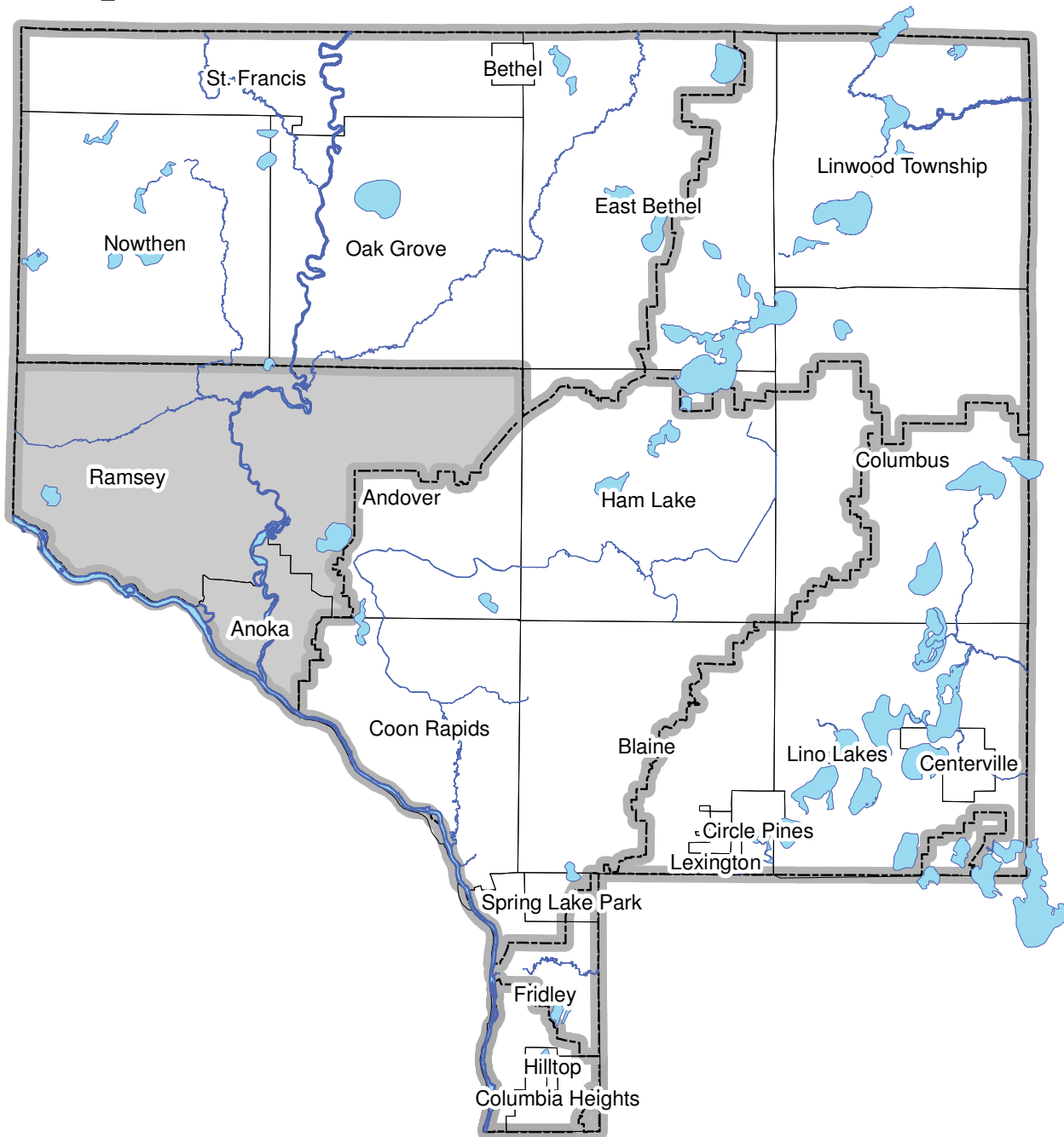
FYI: "Brush your teeth or they will end up on the Darkside."

Appendix D: 2017 Work Results

Intentionally Blank

Excerpt from the 2017 Anoka Water Almanac

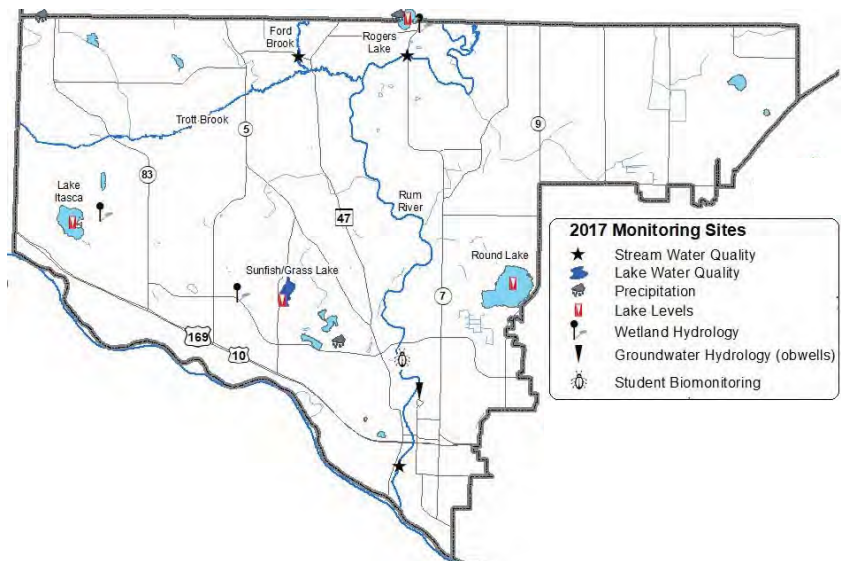
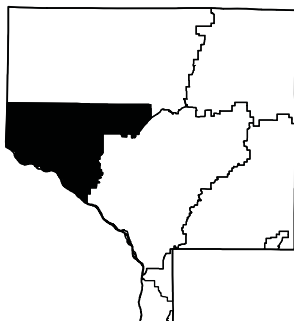
Chapter 4: Lower Rum River Watershed



CHAPTER 4: LOWER RUM RIVER WATERSHED

Task	Partners	Page
Lake Levels	LRRWMO, ACD, volunteers, MN DNR	4-120
Lake Water Quality	MPCA, ACD, volunteers	4-122
Stream Water Quality – Chemical	MPCA, ACD	4-125
Stream Water Quality – Biological	LRRWMO, ACD, ACAP, Anoka High School	4-133
Wetland Hydrology	LRRWMO, ACD	4-136
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Rum River 360 Photo Inventory	ACD	4-141
Rum River Bank Stabilizations	URRWMO, LRRWMO, ACD, LSOHC, Co Parks, landowners	4-142
Anoka Rain Gardens	LRRWMO, ACD, Anoka	4-143
Newsletter Articles	LRRWMO, ACD	4-144
LRRWMO Website	LRRWMO, ACD	4-145
Financial Summary		4-146
Recommendations		4-147
Groundwater Hydrology (obwells)	ACD, MNDNR	Chapter 1
Precipitation	ACD, volunteers	Chapter 1

ACAP = Anoka County Ag Preserves, ACD = Anoka Conservation District, LRRWMO = Lower Rum River Watershed Mgmt. Org, MC = Metropolitan Council, MNDNR = MN Dept. of Natural Resources, LSOHC = Lessard-Sams Outdoor Heritage Council



Lake Level Monitoring

Description: Weekly water level monitoring in lakes. The past five and twenty five years of data are illustrated below, and all historical data are available on the Minnesota DNR website using the “LakeFinder” feature (www.dnr.mn.us.state/lakefind/index.html).

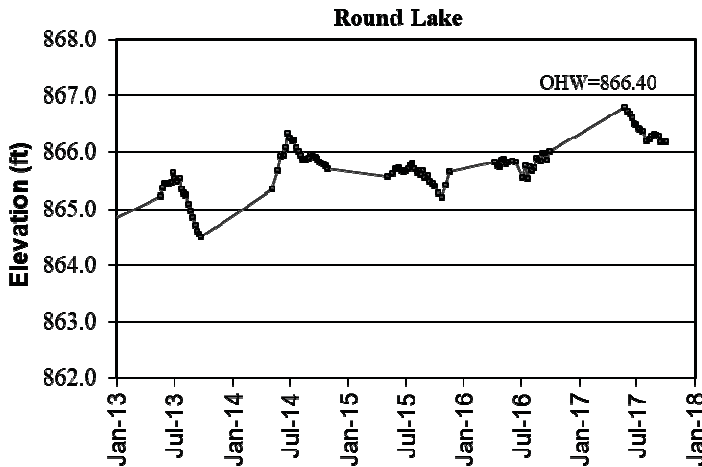
Purpose: To understand lake hydrology, including the impacts of climate or other water budget changes. These data are useful for regulatory, building/development, and lake management decisions.

Locations: Round, Rogers, Itasca, and Sunfish/Grass Lakes

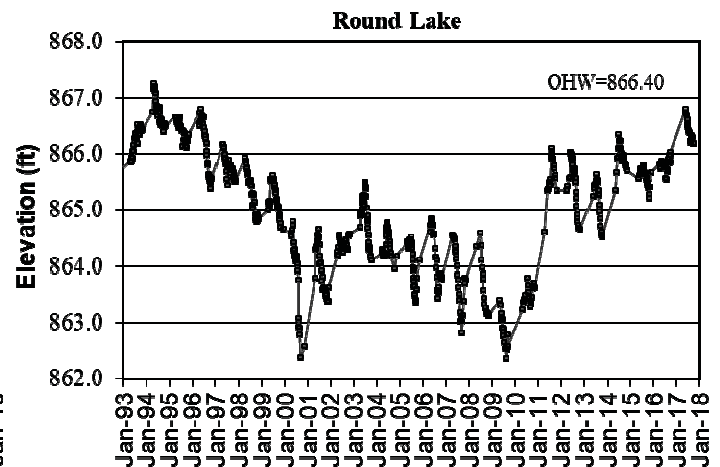
Results: Lake levels were measured by volunteers throughout the 2017 open water season. Lake gauges were installed and surveyed by the Anoka Conservation District and MN DNR. 2017 levels were generally higher than 2016 levels. All lakes followed the expected pattern of high levels in the spring with declining levels through summer. Sunfish Lake appears to be rising over the past 25 years, and Round Lake has almost rebounded to its 1994 levels after dropping almost five feet through 2010.

All lake level data can be downloaded from the MN DNR website’s Lakefinder feature. Ordinary High Water Level (OHW), the elevation below which a DNR permit is needed to perform work, is listed for each lake on the corresponding graphs below.

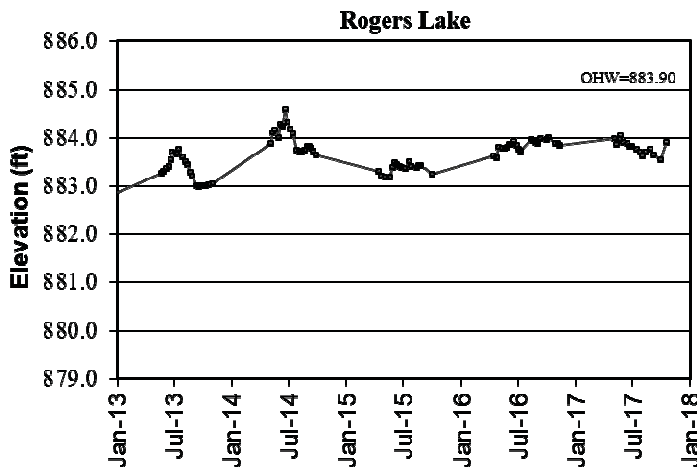
Round Lake Levels – last 5 years



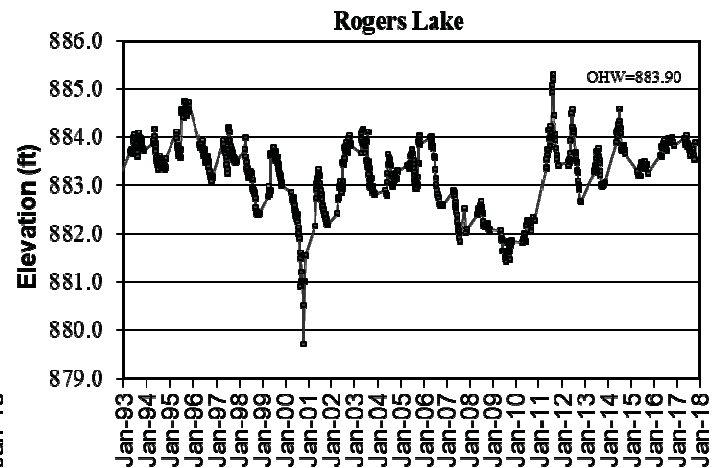
Round Lake Levels – last 25 years



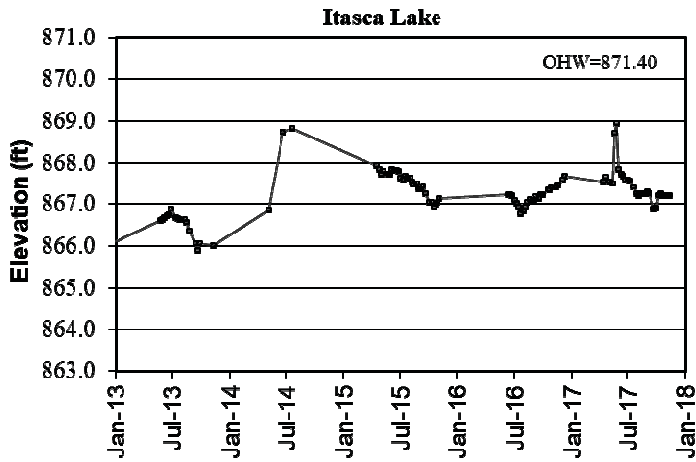
Rogers Lake Levels – last 5 years



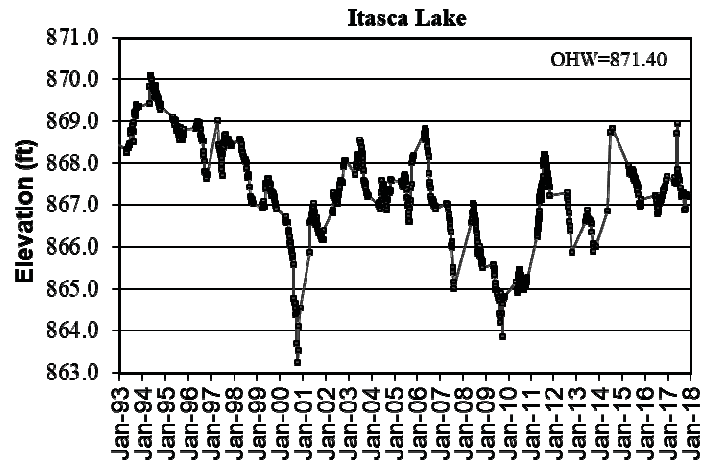
Rogers Lake Levels – last 25 years



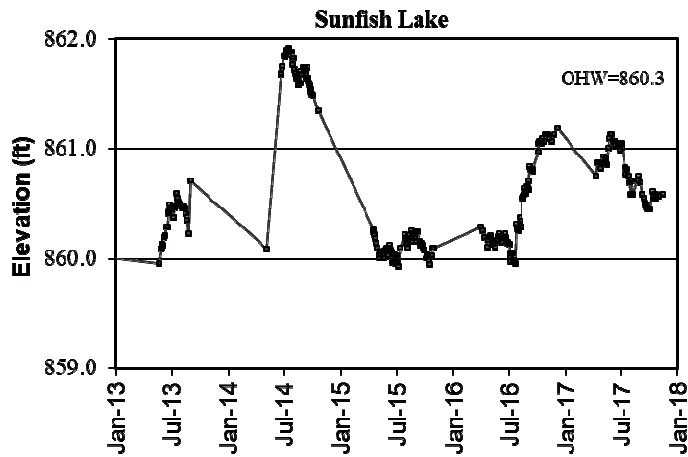
Itasca Lake Levels – last 5 years



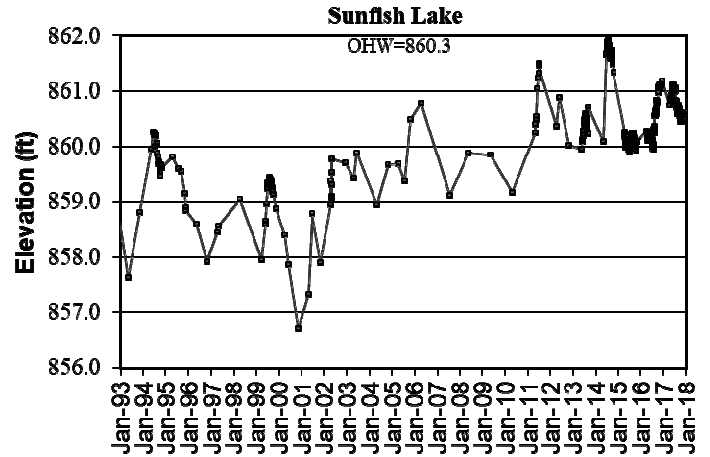
Itasca Lake Levels – last 25 years



Sunfish/Grass Lake Levels – last 5 years



Sunfish/Grass Lake Levels – last 25 years



Lake Water Quality

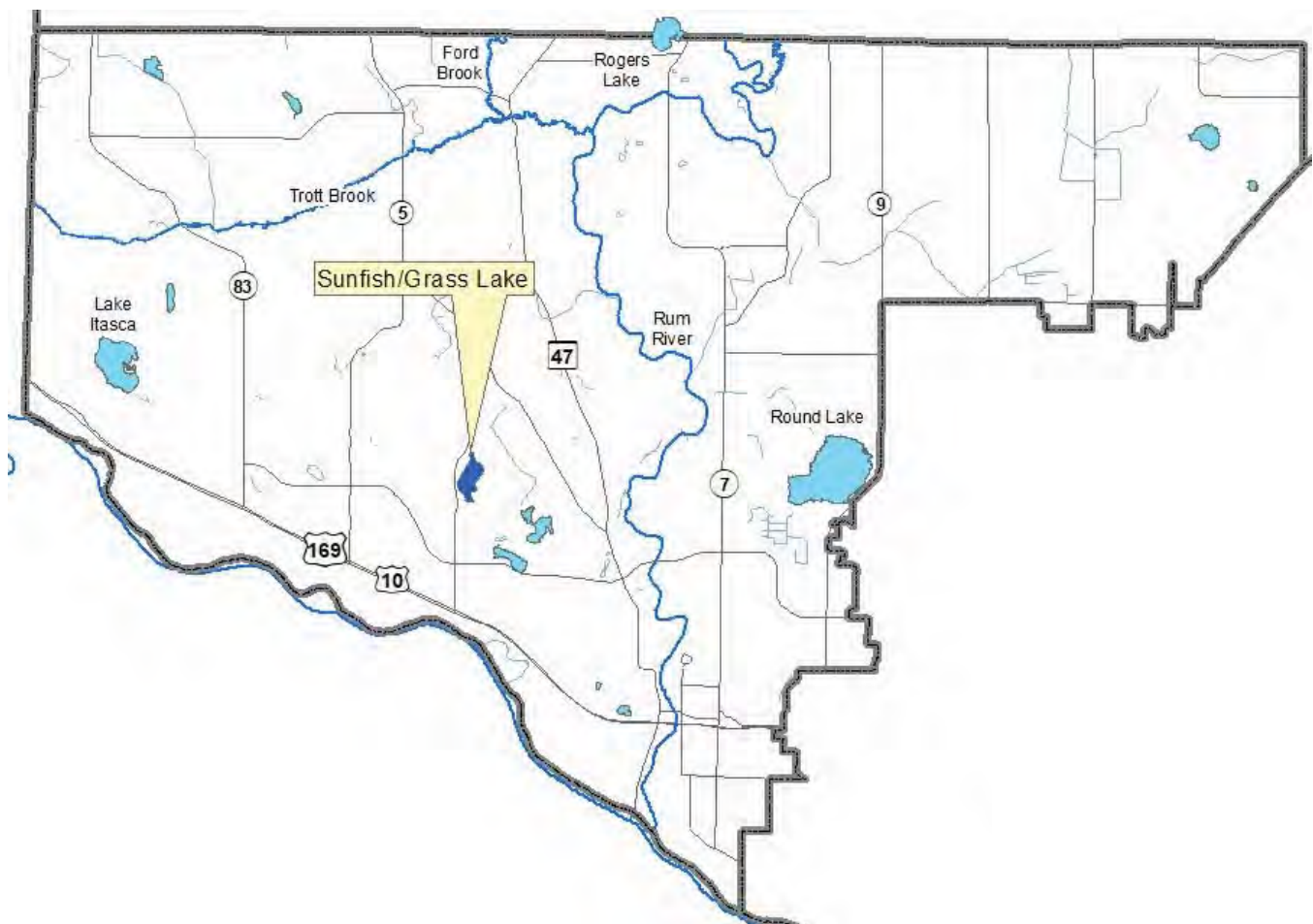
Description: May through September, every-other-week, monitoring is conducted for the following parameters: total phosphorus, chlorophyll-a, Secchi transparency, dissolved oxygen, turbidity, temperature, conductivity, pH, and salinity.

Purpose: To detect water quality trends and diagnose the cause of changes.

Locations: Sunfish/Grass Lake

Results: Detailed data for each lake are provided on the following pages, including summaries of historical conditions and trend analysis. Previous years' data are available from the ACD. Refer to Chapter 1 for additional information on lake dynamics and interpreting the data.

LRRWMO Lake Water Quality Monitoring Sites



Sunfish/Grass Lake

City of Ramsey, Lake ID #02-0113

Background

Sunfish/Grass Lake is located in the City of Ramsey in southwestern Anoka County. It is a small lake with a surface area of 35 acres. The lake does not have a public boat landing, but can be accessed through Sunfish Lake Park on the west side of the lake. The park has a fishing pier and kayaks, which can both be used by the public. The lake is quite shallow with floating leaf, emergent and submergent aquatic vegetation throughout. A very small portion of the shoreline is developed with most of the lake being surrounded by park or wooded land.

2017 Results

Sunfish/Grass Lake has not been extensively monitored in the past. 2017 was the second year in which the Anoka Conservation District (ACD) monitored the lake as part of the regular lake sampling efforts. The lake was monitored by ACD in 2016 and four additional years through the MPCA Citizen Lake Monitoring Program (CLMP) with varying degrees of intensity. In 2017 Sunfish Lake's water quality was good compared with other lakes in this region (NCHF Ecoregion), receiving an overall A letter grade. Total phosphorus (TP), Chlorophyll-a (CL-a) and Secchi readings were all better than state water quality standards. The average total phosphorus concentration in 2017 of only 16.6 µg/L was down from 25 µg/L in 2016. The average chlorophyll-a concentration of 3.09 µg/L was the lowest on record over four monitoring years. In fact, average chlorophyll-a concentrations have decreased each year monitored since 2012. On each sampling occasion in 2017 Secchi depth was greater than lake depth, the first time in this lake's short monitoring history that this has been the case.

Discussion

Grass Lake looks to be in good health, receiving an overall A letter grade in 2017 after receiving B grades in each of the previous three years monitored for each parameter since 2012. This letter grade would likely be further substantiated if Secchi readings were not limited by the depth of the lake.

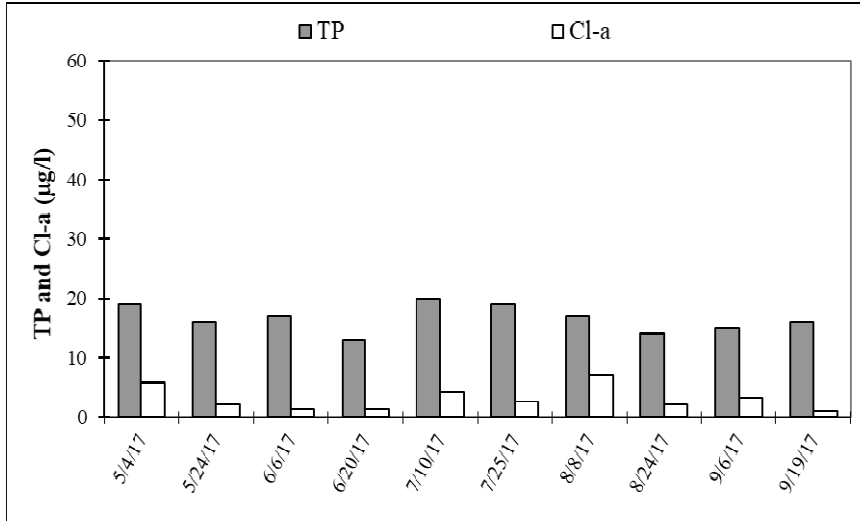
Trend Analysis

There is not yet enough data for a trend analysis of any parameter. Secchi transparency and chlorophyll-a have improved in each year monitored, but no true trend may exist.

Sunfish/Grass Lake

City of Ramsey, Lake ID #02-0113

2017 Daily Results

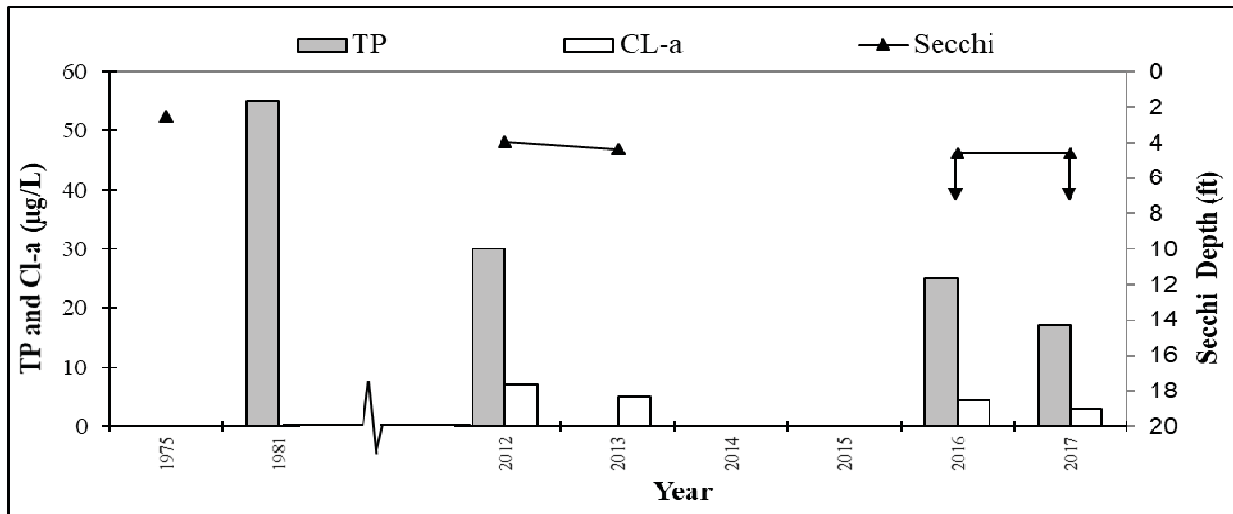


Historical Report Card

Year	TP	Cl-a	Secchi	Overall
1975			D	
1981	C			
2012	B	A	C	B
2013		A	C	B
2016	C	A	N/A	B
2017	A	A	N/A	A
2017 average	16.6 µg/L	3.09 µg/L	>1.4 meters	
State standards	60 µg/L	20 µg/L	1.0 meters	

Due to Secchi transparency exceeding lake depth in recent years, it was not included in the overall grade. It is likely overall grades would have been even better if the good clarity of the lake could be incorporated.

Historical Annual Averages



2017 Raw Data

Date:	5/4/2017										5/24/2017										6/6/2017										6/20/2017										7/10/2017										7/25/2017										8/8/2017										8/24/2017										9/6/2017										9/19/2017									
	Time:	11:20										11:15										12:30										10:50										12:45										12:25										12:25										13:00										12:20										12:05								
Units	R.L.*												Average												Min												Max																																																															
pH		0.1	8.86	8.79	9.53	8.34	7.98	7.48	24.23	8.01	7.95	8.08	9.93	7.48	24.23																																																																																					
Conductivity	mS/cm	0.01	0.278	0.309	0.316	0.324	0.358	0.471	0.497	0.423	0.422	0.414	0.381	0.278	0.497																																																																																					
Turbidity	NTU	1	3.0		3.6	3.2	1.9	13.1	1.6	0.0	0.0	2	0	4																																																																																						
D.O.	mg/l	0.01	12.88	10.96	13.48	6.66	6.89	7.66	10.96	10.17	8.30	5.46	9.34	5.46	13.48																																																																																					
D.O.	%	1	125.8%	113.8%	160.1%	80.8%	88.5%	95.9%	133.1%	128.8%	91.3%	62.7%	1	1	2																																																																																					
Temp.	°C	0.1	12.76	14.91	24.69	23.34	26.43	25.52	24.23	23.23	19.61	20.06	21.5	12.8	26.4																																																																																					
Temp.	°F	0.1	55.0	58.8	76.4	74.0	79.6	77.9	75.6	73.8	67.3	68.1	70.7	55.0	79.6																																																																																					
Salinity	%	0.01	0.13	0.15	0.15	0.16	0.17	0.23	0.24	0.20	0.20	0.20	0.18	0.13	0.24																																																																																					
Cl-a	µg/L	1	5.70	2.10	1.40	1.40	4.30	2.60	7.10	2.10	3.20	1.0000	3.09	1.0	7.1																																																																																					
T.P.	mg/l	0.005	0.019	0.016	0.017	0.013	0.020	0.019	0.017	0.014	0.015	0.016	0.017	0.013	0.020																																																																																					
T.P.	µg/l	5	19	16	17	13	20	19	17	14	15	16	17	13	20																																																																																					
Secchi	ft		>5.3	>5.3	>4.6	>5.1	>4	>4.5	>5	>3.8	>4.1	>4.4	>4.6	>4																																																																																						
Secchi	m		>1.6	>1.6	>1.4	>1.5	>1.2	>1.4	>1.5	>1.2	>1.2	>1.3	>1.4	>1.3																																																																																						
Field Observations			Clear	Clear	Clear	Clear/Slight	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear																																																																																						
Physical			1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.0	1.0																																																																																			
Recreational			2	2	2	3	3	1	2	2	2	2	2	1	2.0	1.0	3.0																																																																																			

* Reporting Limit

Stream Water Quality - Chemical Monitoring

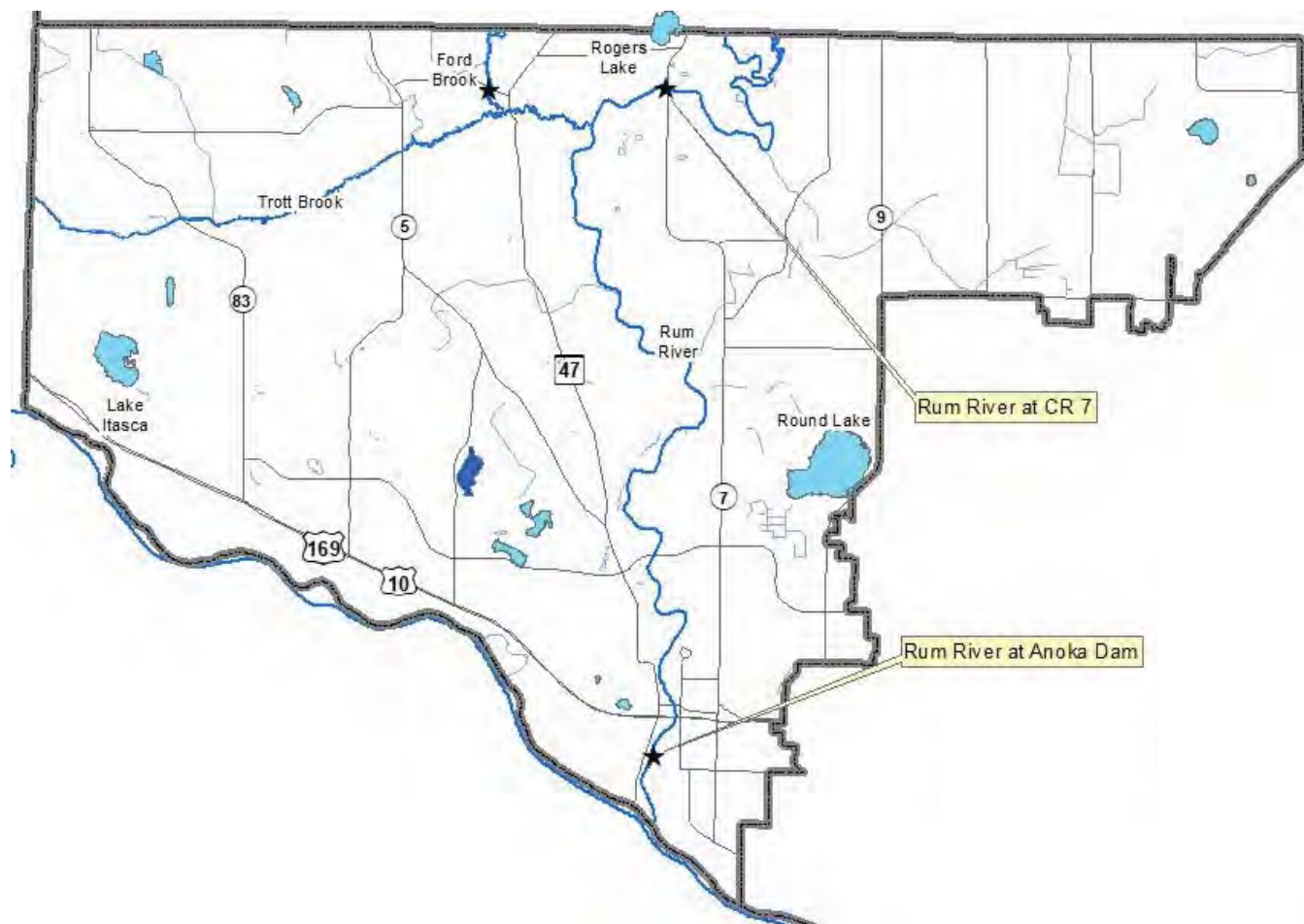
Description: In 2017, monitoring events were scheduled May through September for each of the following parameters: total suspended solids, total phosphorus, Secchi tube transparency, dissolved oxygen, turbidity, temperature, conductivity, pH, and salinity.

Purpose: To provide an assessment of water quality to be used in the completion of the Rum River Watershed Restoration and Protection Plan (WRAPP).

Locations: Rum River at County Road 7
Rum River at Anoka Dam

Results: Results are presented on the following pages.

2017 Lower Rum River Monitoring Sites



Stream Water Quality Monitoring

RUM RIVER

Rum River at Co. Rd. 24 (Bridge St), St. Francis*	STORET SiteID = S000-066
Rum River at Co. Rd. 7 (Roanoke St), Ramsey	STORET SiteID = S004-026
Rum River at Anoka Dam, Anoka	STORET SiteID = S003-183

*Located in and paid by the URRWMO, but reported with other Rum River data for a more complete analysis.

Years Monitored

At Co. Rd. 24 –	2004, 2009-2011, 2014-2017
At Co. Rd. 7 –	2004, 2009- 2011, 2014-2017
At Anoka Dam –	1996-2011(MC WOMP), 2015-2017

Background

The Rum River is one of Anoka County's highest quality and most valuable water resources. It is designated as a state scenic and recreational river throughout Anoka County, except south of the county fairgrounds in Anoka. It is used for boating, tubing, and fishing. Much of western Anoka County drains to the Rum River. Subwatersheds that drain to the Rum include Seelye Brook, Trott Brook, and Ford Brook, and Cedar Creek.

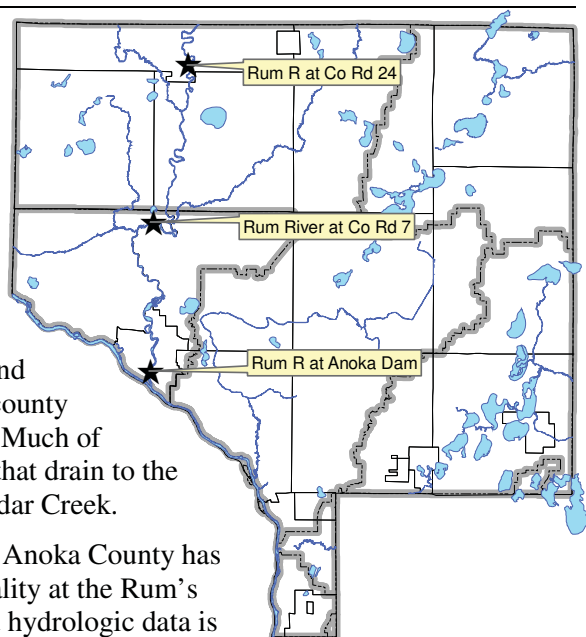
The extent to which water quality improves or is degraded within Anoka County has been unclear. The Metropolitan Council has monitored water quality at the Rum's outlet to the Mississippi River since 1996. This water quality and hydrologic data is well suited for evaluating the river's water quality just before it joins the Mississippi River. Monitoring elsewhere has occurred only in more recent years. Water quality changes might be expected from upstream to downstream because land use changes dramatically from rural residential in the upstream areas of Anoka County to suburban in the downstream areas.

Methods

In 2004, 2009- 2011 and 2014-2017 monitoring was conducted to determine if Rum River water quality changes in Anoka County, and if so, generally where changes occur. The data is reported for all sites together for a more comprehensive analysis of the river from upstream to downstream.

In 2017 the river was monitored during both storm and baseflow conditions by grab samples. At the two further downstream locations, eight water quality samples were taken; half during baseflow and half following storms. At the upstream site, only four samples were taken due to lower funding levels. Storms were generally defined as one-inch or more of rainfall in 24 hours, or a significant snowmelt event combined with rainfall. In some years, particularly the drought year of 2009, smaller storms were sampled because of a lack of larger storms. All storms sampled were significant runoff events. Parameters tested with portable meters included pH, conductivity, turbidity, temperature, salinity, and dissolved oxygen. Parameters tested by water samples sent to a state-certified lab included total phosphorus and total suspended solids. During every sampling event the water level (stage) was recorded. The monitoring station at the Anoka Dam includes automated equipment that continuously tracks water levels and calculates flows. Water level and flow data for other sites were obtained from the US Geological Survey, who maintains a hydrological monitoring site at Viking Boulevard.

The purpose of this report is to make an upstream to downstream comparison of Rum River water quality. It includes only parameters tested in 2017. It does not include additional parameters tested at the Anoka Dam or additional monitoring events at that site. For that information, see Metropolitan Council reports at <https://eims.metc.state.mn.us/>. All other raw data can be obtained from the Anoka Conservation District, and is



also available through the Minnesota Pollution Control Agency's EQUIS database, which is available through their website.

Results Summary

This report includes data from 2017. The following is a summary of results.

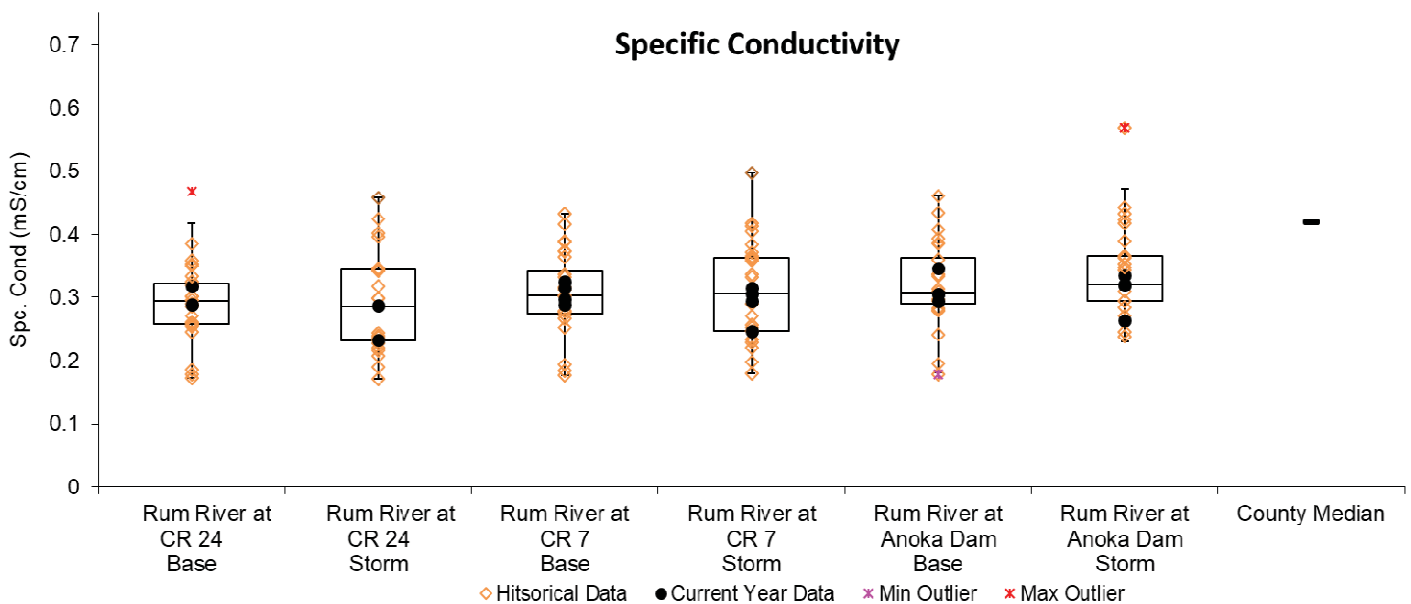
- Dissolved constituents, were measured by conductivity and chlorides. Conductivity in the Rum River is lower than other Anoka County streams. There is cause for concern however, as conductivity consistently increases moving downstream. Average conductivity for sites tested in 2017 from upstream to downstream was 0.282, 0.299 and 0.311 mS/cm respectively. This increase is likely caused by higher road and development density contributing higher loads of road salts and water softener salt. As development continues in all parts of the Rum River watershed, particular attention should be paid to minimizing road salt use, new water softening technology.
- Phosphorous in the Rum River in recent years has been near the State water quality standard of 100 µg/L at all sampled sites, but in 2017 somewhat better conditions were found. Sites exceeded this mark on two single sampling occasions in 2017, once during baseflow, and once after a storm event. 2017 total phosphorus in the Rum River in 2017 averaged 66, 74 and 69 µg/L at sampled sites moving upstream to downstream. Compared to other Anoka County streams, and even the Rum in recent years, these averages are low. Because small increases in phosphorus could cause the Rum River to exceed State standards and be declared "impaired," preventing phosphorus increases should be a focus of watershed management.
- Suspended solids and turbidity generally remained at acceptable levels in the Rum River and are lower than most other Anoka County streams. Average turbidity actually decreased from upstream to downstream in 2017 with averages of 8.0, 7.4, and 7.0 NTU respectively. TSS levels were low in the Rum River compared to other Anoka County streams with 2017 sampling site averages of 7.25, 8.0 and 5.4 mg/L upstream to downstream. Though suspended solids remain well under state impairment thresholds in the Rum, turbidity does show a moderate increase during storm events, and stormwater runoff mitigation should be a focus of management efforts.
- pH was relatively high in 2017 in the Rum River. pH should remain between 6.5 and 8.5 to support aquatic life and meet State water quality standards. On one occasion in May 2017, all three sampled sites exceeded pH 9. pH levels over 9 are quite alkaline for natural waterways. There is a variety of potential factors leading to temporary spikes in pH. What is disconcerting is the fact that the spikes over 8.5 seem to be happening more frequently in recent years. pH should continue to be monitored in the Rum River in the future to see if the spikes get worse or become even more common.
- Dissolved oxygen remained well above the state standard of 5 mg/L in 2017 and previous monitored years. The lowest concentration recorded at any of the three sites in 2017 was 6.89 mg/L.

On the following pages data are presented and discussed for each parameter. Management recommendations will be included at the conclusion of this report. The Rum River is an exceptionally important waterbody, and its protection and improvement should be a high priority.

Conductivity

Conductivity and chlorides are measures of dissolved pollutants. Dissolved pollutant sources include road runoff and industrial chemicals, among many others. Metals, hydrocarbons, road salts, and others are often of concern in a suburban environment. Conductivity is the broadest measure of dissolved pollutants we use. It measures electrical conductivity of the water; pure water with no dissolved constituents has zero conductivity. Chlorides are the measure of chloride salts, the most common of which are road de-icing chemicals and those used in water softening. Chlorides can also be present in other pollutant types, such as wastewater. These pollutants are of greatest concern because of the effect they can have on the stream's biological community. They can also be of concern because the Rum River is upstream from the Twin Cities drinking water intakes on the Mississippi River.

Conductivity during baseflow and storm conditions Orange diamonds are historical data from previous years and black circles are 2017 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).



Conductivity is acceptably low in the Rum River, but shows a consistent pattern of increasing downstream (see figure above) and is usually higher during baseflow conditions. Average conductivity from upstream to downstream of the sites monitored in 2017 (all conditions) was 0.282 mS/cm, 0.299 and 0.311 mS/cm, respectively. All three sites are lower than the historical median for 34 Anoka County streams of 0.420 mS/cm, but each site averaged slightly higher conductivity than in 2016. The 2017 maximum observed conductivity in the Rum River was 0.346 mS/cm at the Anoka Dam during baseflow conditions. This spike was still lower than the median for all other Anoka County streams.

Conductivity is lower on average during storm events (especially in the upstream sites), suggesting that stormwater runoff contains fewer dissolved pollutants than the surficial water table that feeds the river during baseflow. High baseflow conductivity has been observed in most other nearby streams as well. This occurrence has been studied extensively, and the largest cause has been found to often be road salts that have infiltrated into the shallow aquifer. Water softening salts and geologic materials also contribute, but to a lesser degree.

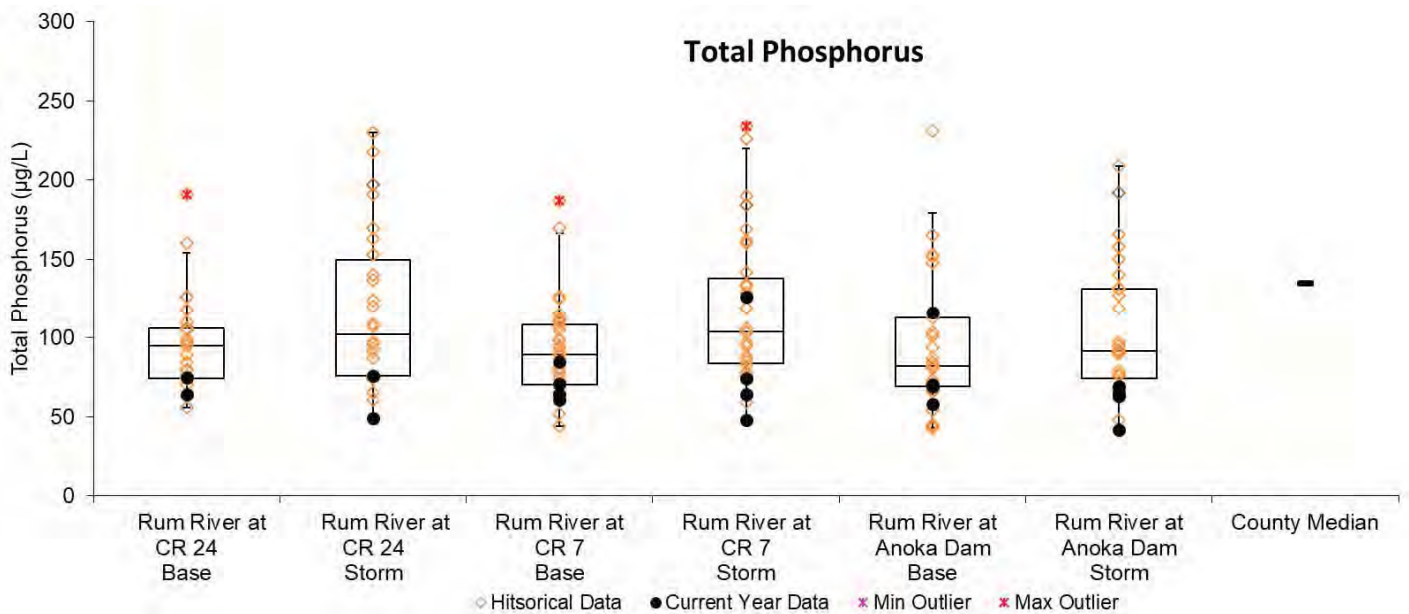
Conductivity increased from upstream to downstream. During baseflow, this increase from upstream to downstream likely reflects greater road densities and deicing salt application. During storms, the higher conductivity downstream is reflective of greater stormwater runoff and pollutants associated with the more densely developed lower portions of the watershed.

Total Phosphorus

Total phosphorus in the Rum River was low in 2017, but in previous years is close to exceeding State water quality standards. Phosphorus is one of the most common pollutants in this region, and can be associated with urban runoff, agricultural runoff, wastewater, and many other sources. The average phosphorus concentration in 2017 at the three monitored sites (all conditions) moving upstream to downstream was 66, 74 and 69 $\mu\text{g/L}$. Two samples events in 2017 yielded total phosphorus concentrations over 100 $\mu\text{g/L}$. In previous years, phosphorus concentrations were near the 100 $\mu\text{g/L}$ State water quality standard.

Understanding that the Rum River is close to exceeding State water quality standards for phosphorus, future monitoring should be continued and every effort should be made to prevent phosphorus increases which would likely result in the Rum River being designated a State “impaired” water. Future upgrades to wastewater treatment plants throughout the Rum River watershed may offer phosphorus reductions. At the same time, development in the lower watershed, including increased stormwater discharges, may result in phosphorus increases. Development controls that result in no net increase in phosphorus should be considered.

Total phosphorus during baseflow and storm conditions Orange diamonds are historical data from previous years and black circles are 2017 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).



Turbidity and Total Suspended Solids (TSS)

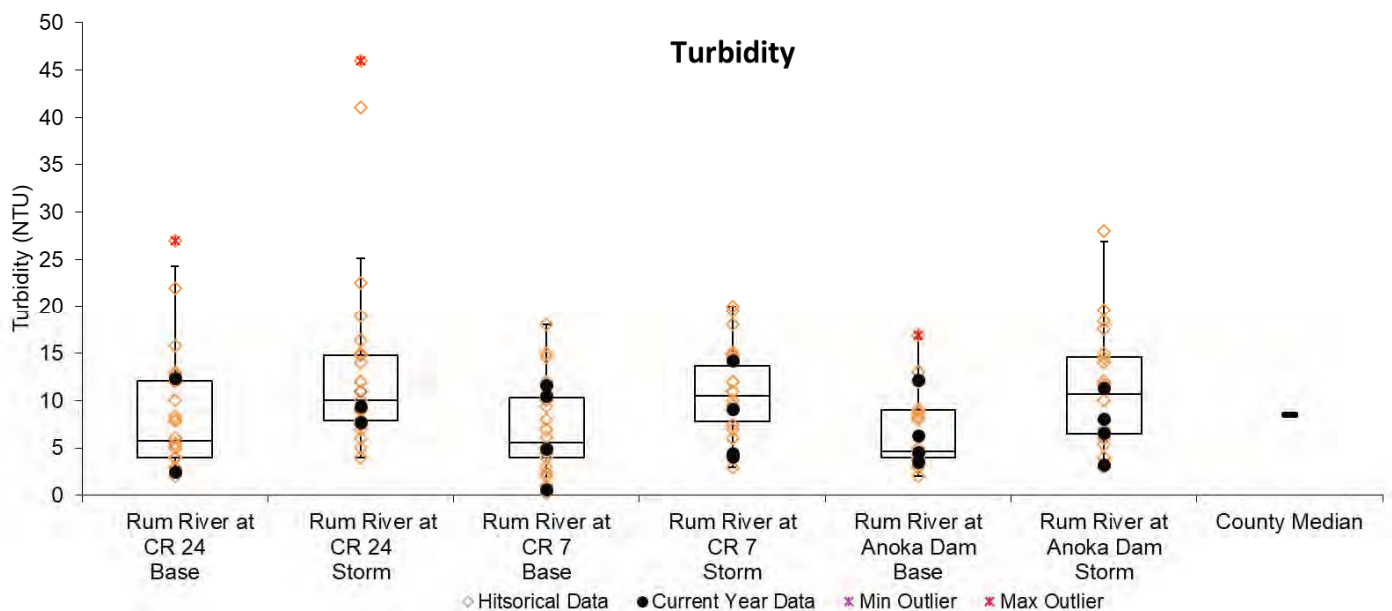
Turbidity and total suspended solids (TSS) are two different measurements of solid material suspended in the water. Turbidity is measured by the refraction of a light beam passed through a water sample and is most sensitive to large particles. Total suspended solids is measured by filtering solids from a water sample and weighing the filtered material. The amount of suspended material is important because it affects transparency and aquatic life, and because many other pollutants are attached to particles. Many stormwater treatment practices such as street sweeping, sumps, and stormwater settling ponds target sediment and attached pollutants. In 2017, turbidity and total suspended solids in the Rum River were lower than the historical median for Anoka County streams.

In the Rum River, turbidity is generally low but increases during storms. There is substantial variability (see figure below). There is no clear change in turbidity or suspended solids upstream to downstream. The average turbidity, in 2017 (storms and baseflow) for each site moving upstream to downstream was 8.0, 7.4, and 7.0 NTU. The historical median for Anoka County streams is 11.2 NTU. Turbidity was elevated on a few occasions, especially during and after storm events, though the maximum turbidity measured at County Road 7 after a storm event of 14.2 NTU is quite low for a highest annual recording.

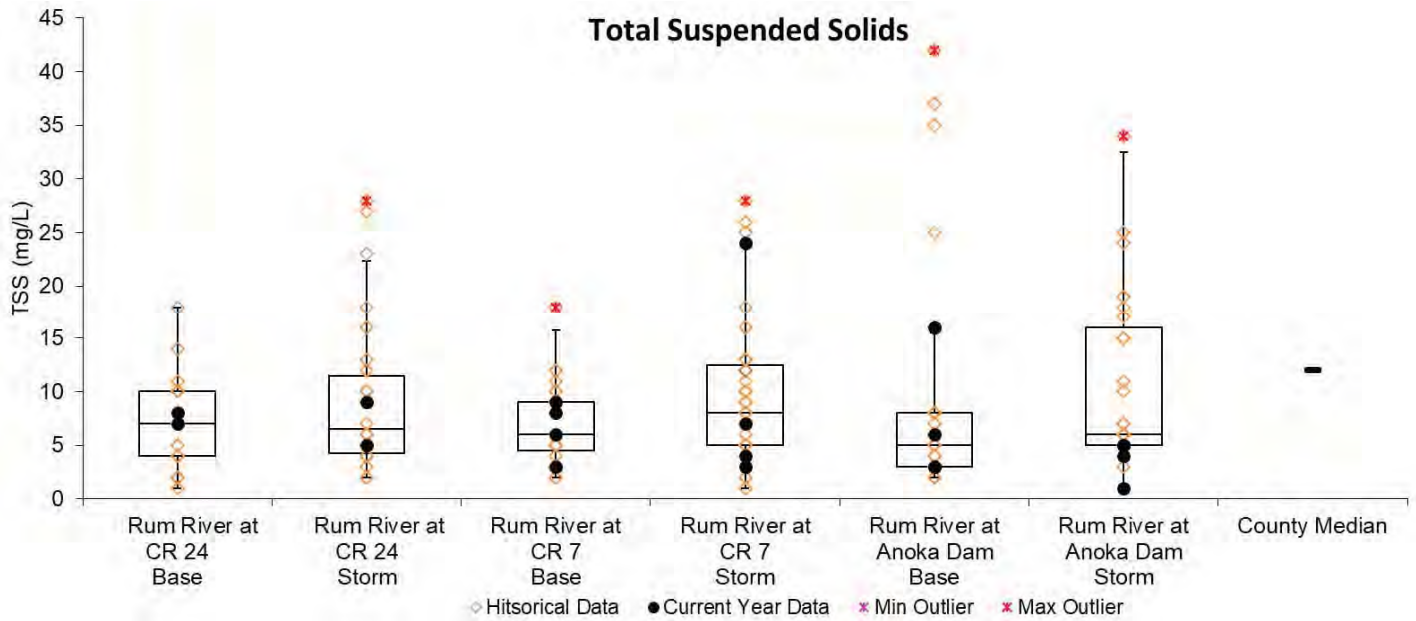
Average TSS results (all conditions) in 2017 for sites moving upstream to downstream was 7.25, 8.0 and 5.4 mg/L. These are all lower than the Anoka County stream median for TSS of 13.66 mg/L. It is important to note the suspended solids can come from sources within and outside of the river channel. Sources on land include soil erosion, road sanding, and others. Riverbank erosion and movement of the river bottom also contributes to suspended solids. A moderate amount of this “bed load” is natural and expected. The state threshold for TSS impairment in the Rum River is 10% of samples April 1-September 30 exceeding 30 mg/L TSS. The highest concentration recorded in 2017 was 24 mg/L. ACD has not collected a sample over 30 mg/L TSS since May of 2010.

Though the Rum River remains well under the impairment threshold for TSS, rigorous stormwater treatment should occur as the Rum River watershed continues to be developed, or the collective pollution caused by many small developments could seriously impact the river. Bringing stormwater treatment up to date in older developments is also important.

Turbidity during baseflow and storm conditions Orange diamonds are historical data from previous years and black circles are 2017 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).



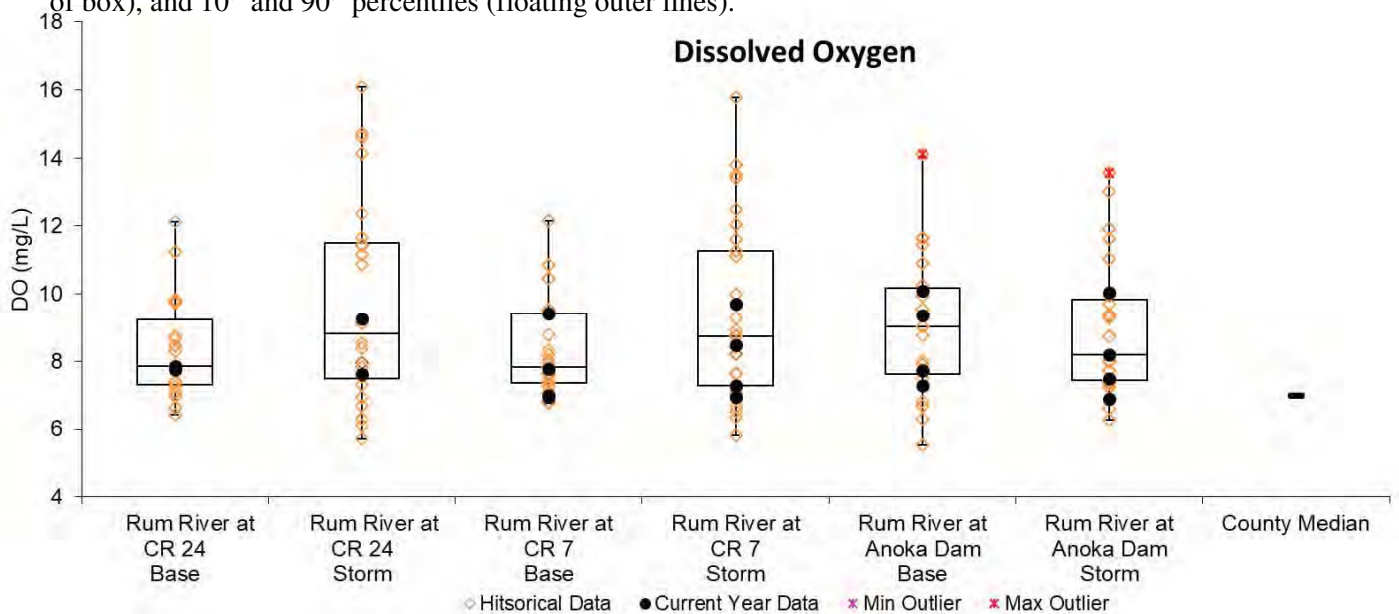
Total suspended solids during baseflow and storm conditions Orange diamonds are historical data from previous years and black circles are 2017 readings Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).



Dissolved Oxygen

Dissolved oxygen is necessary for aquatic life, including fish. Organic pollution causes oxygen to be consumed during decomposition. If oxygen levels fall below the state water quality standard of 5 mg/L, aquatic life begins to suffer. A stream is considered impaired if 10% of observations are below this level in the last 10 years. Dissolved oxygen levels are typically lowest in the early morning because of decomposition consuming oxygen at night without offsetting oxygen production by photosynthesis. In 2017, dissolved oxygen in the Rum River was always above 5 mg/L at all monitoring sites, with 6.89 mg/L being the lowest concentration recorded. ACD has never recorded a dissolved oxygen concentration below 6 mg/L in the Rum with sampling dating back to 2004.

Dissolved oxygen during baseflow and storm conditions Orange diamonds are historical data from previous years and black circles are 2017 readings Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).

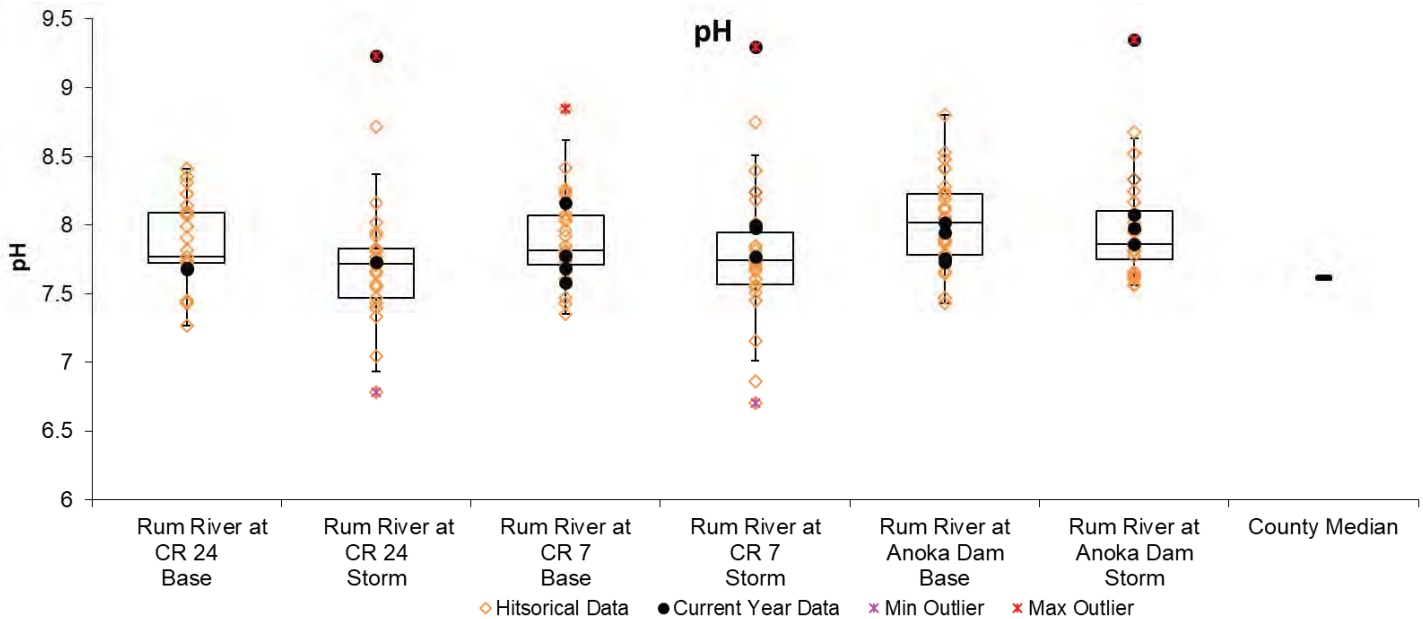


pH

pH refers to the acidity of the water. The Minnesota Pollution Control Agency's water quality standard is for pH to remain between 6.5 and 8.5. The Rum River is generally within this range, but has exceeded 8.5 on rare occasions in the past. In recent years (2015, 2017) however, exceedances of 8.5 have been commonplace at all sites. In 2017, pH levels over 9 were recorded at all three sites after a storm event on 5/18/2017. Exceedances were recorded in 2015 after a spring storm in March at the lower two sampling sites as well as at the Anoka Dam during baseflow conditions in July.

There is a variety of potential factors leading to temporary spikes in pH. What is disconcerting is the fact that the spikes over 8.5 seem to be happening more frequently in recent years. pH should continue to be monitored in the Rum River in the future to see if the spikes get worse or become even more common.

pH during baseflow and storm conditions Orange diamonds are historical data from previous years and black circles are 2017 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).



Summary and Recommendations

The Rum River's water quality in general is good. However, there is a slight increase in conductivity moving downstream, phosphorus levels are near state water quality standards, and pH spikes over 8.5 seem to be happening more frequently. Protection of the Rum River should continue to be a high priority for local officials. Large population increases are expected to continue in the Rum River's watershed within Anoka County, and this continued development has the potential to degrade water quality unless carefully planned and managed with the river in mind. Development pressure is likely to be especially high near the river because of its scenic and natural qualities. Local ordinances to preserve the scenic nature of the river, treat stormwater thoroughly before discharge, and minimizing road salting should be considered. A proposed "One Watershed, One Plan" across the entire Rum River watershed may offer a chance for multi-county planning. The recently completed Rum River Watershed Restoration and Protection Strategies (WRAPS) offers management strategies for throughout the watershed.

Stream Water Quality – Biological Monitoring

Description: This program combines environmental education and stream monitoring. Under the supervision of ACD staff, high school science classes collect aquatic macroinvertebrates from a stream, identify their catch to the family level, and use the resulting numbers to gauge water and habitat quality. These methods are based upon the knowledge that different families of macroinvertebrates have different water and habitat quality requirements. The families collectively known as EPT (Ephemeroptera, or mayflies; Plecoptera, or stoneflies; and Trichoptera, or caddisflies) are generally pollution intolerant. Other families can thrive in low quality water. Therefore, a census of stream macroinvertebrates yields information about stream health.

Purpose: To assess stream quality, both independently as well as by supplementing chemical data. To provide an environmental education service to the community.

Location: Rum River behind Anoka High School, south side of Bunker Lake Blvd, Anoka

Results: Results for each site are detailed on the following pages.

Tips for Data Interpretation

Consider all biological indices of water quality together rather than looking at each alone, because each gives only a partial picture of stream condition. Compare the numbers to county-wide averages. This gives some sense of what might be expected for streams in a similar landscape, but does not necessarily reflect what might be expected of a minimally impacted stream. Some key numbers to look for include:

Families Number of invertebrate families. Higher values indicate better quality.

EPT Number of families of the generally pollution-intolerant orders Ephemeroptera (mayflies), Plecoptera (stoneflies), Trichoptera (caddisflies). Higher numbers indicate better stream quality.

Family Biotic Index (FBI) An index that utilizes known pollution tolerances for each family. Lower numbers indicate better stream quality.

FBI	Stream Quality Evaluation
0.00-3.75	Excellent
3.76-4.25	Very Good
4.26-5.00	Good
5.01-5.75	Fair
5.76-6.50	Fairly Poor
6.51-7.25	Poor
7.26-10.00	Very Poor

Population Attributes Metrics

% EPT: This measure compares the number of organisms in the EPT orders (Ephemeroptera - mayflies; Plecoptera - stoneflies; Trichoptera - caddisflies) to the total number of organisms in the sample. A high percent of EPT is good.

% Dominant Family: This measures the percentage of individuals in the sample that are in the sample's most abundant family. A high percentage is usually bad because it indicates low evenness (one or a few families dominate, and all others are rare).

Biomonitoring

RUM RIVER

Behind Anoka High School, Anoka
 STORET SiteID = S003-189

Last Monitored

By Anoka High School in 2017

Monitored Since

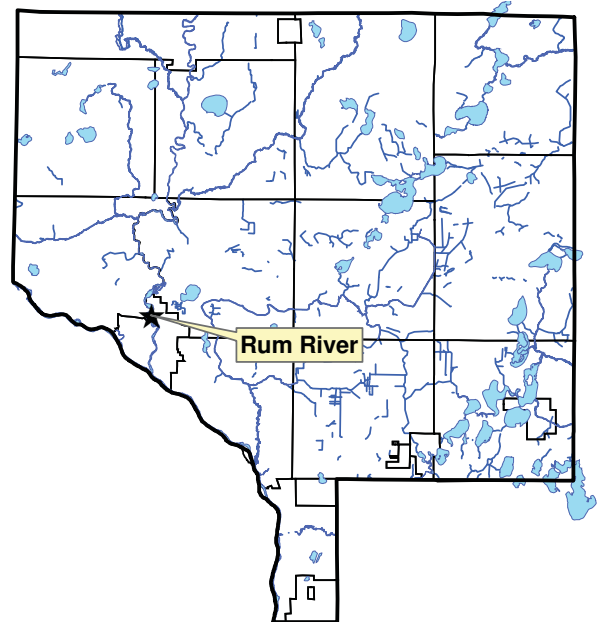
2001

Student Involvement

About 130 students in 2017, over 1,100 total since 2001

Background

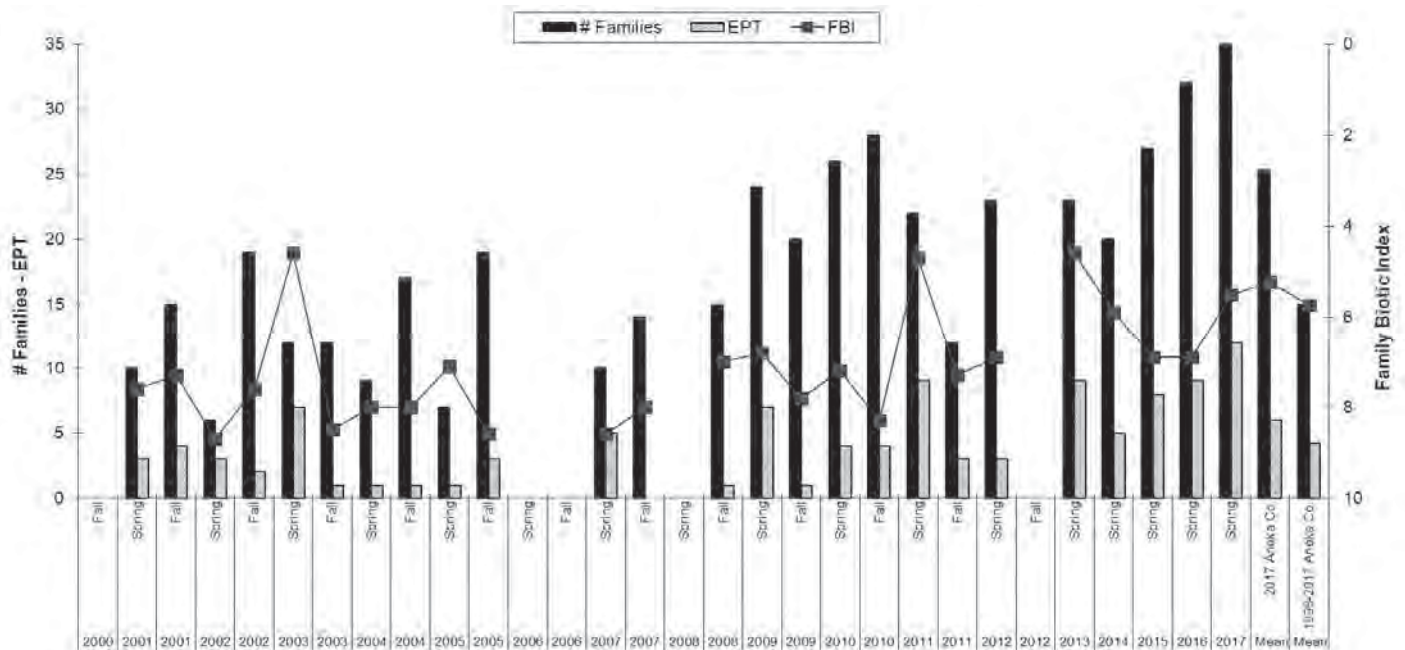
The Rum River originates from Lake Mille Lacs, and flows south through western Anoka County where it joins the Mississippi River in the City of Anoka. In Anoka County the river has both rocky riffles (northern part of county) as well as pools and runs with sandy bottoms. The River's condition is generally regarded as excellent. Most of the Rum River in Anoka County has a state "scenic and recreational" designation. The sampling site is near the Bunker Lake Boulevard bridge behind Anoka High School. Most sampling has been conducted in a backwater rather than the main channel.



Results

Anoka High school classes monitored the Rum River in spring of 2017 with Anoka Conservation District (ACD) oversight. The results for spring 2017 were better than previous years. The most families ever collected in 20 years of student biomonitoring by ACD, 41 in total, were collected. The most sensitive taxa (Ephemeroptera, Plecoptera, and Trichoptera; EPT), 12, ever collected at this site were found in 2017. The past two years have now consecutively been the best two years at this site in terms of family and EPT family numbers.

Historical Biomonitoring Results for Rum River behind Anoka High School



Biomonitoring Data for the Rum River behind Anoka High School - Most Recent Five Years

Year	2013	2014	2015	2016	2017	Mean	Mean
Season	Spring	Spring	Spring	Spring	Spring	2017 Anoka Co.	1998-2017 Anoka Co.
FBI	4.60	5.90	6.90	6.90	5.50	5.2	5.7
# Families	23	20	27	32	41	25.3	15.0
EPT	9	5	8	9	12	6.0	4.2
Date	14-May	20-May	11-May	17-May	15-May		
sampling by	AHS	AHS	AHS	AHS	AHS		
sampling method	MH	MH	MH	MH	MH		
Mean # individuals	357	350	767	3363	1439		
# replicates	4	4	2	1	2		
Dominant Family	Perlodidae	Siphonuridae	Siphonuridae	Siphonuridae	Pelecypoda		
% Dominant Family	42.1	33.4	69.3	74.9	26.6		
% Ephemeroptera	19.4	57.8	78.9	78.7	14.9		
% Trichoptera	0.2	0.1	1.4	0	0.1		
% Plecoptera	42.6	0.5	0	0.4	26		
% EPT	62.2	58.4	80.3	79.1	41		

Discussion

Both chemical and biological monitoring indicate the good quality of this river. Habitat is ideal for a variety of stream life, and includes a variety of substrates, plenty of woody snags, riffles, and pools. Water chemistry monitoring done at various locations on the Rum River throughout Anoka County found that water quality is also good. Both habitat and water quality decline, but are still good, in the downstream reaches of the Rum River where development is more intense and the Anoka Dam creates a slow moving pool.

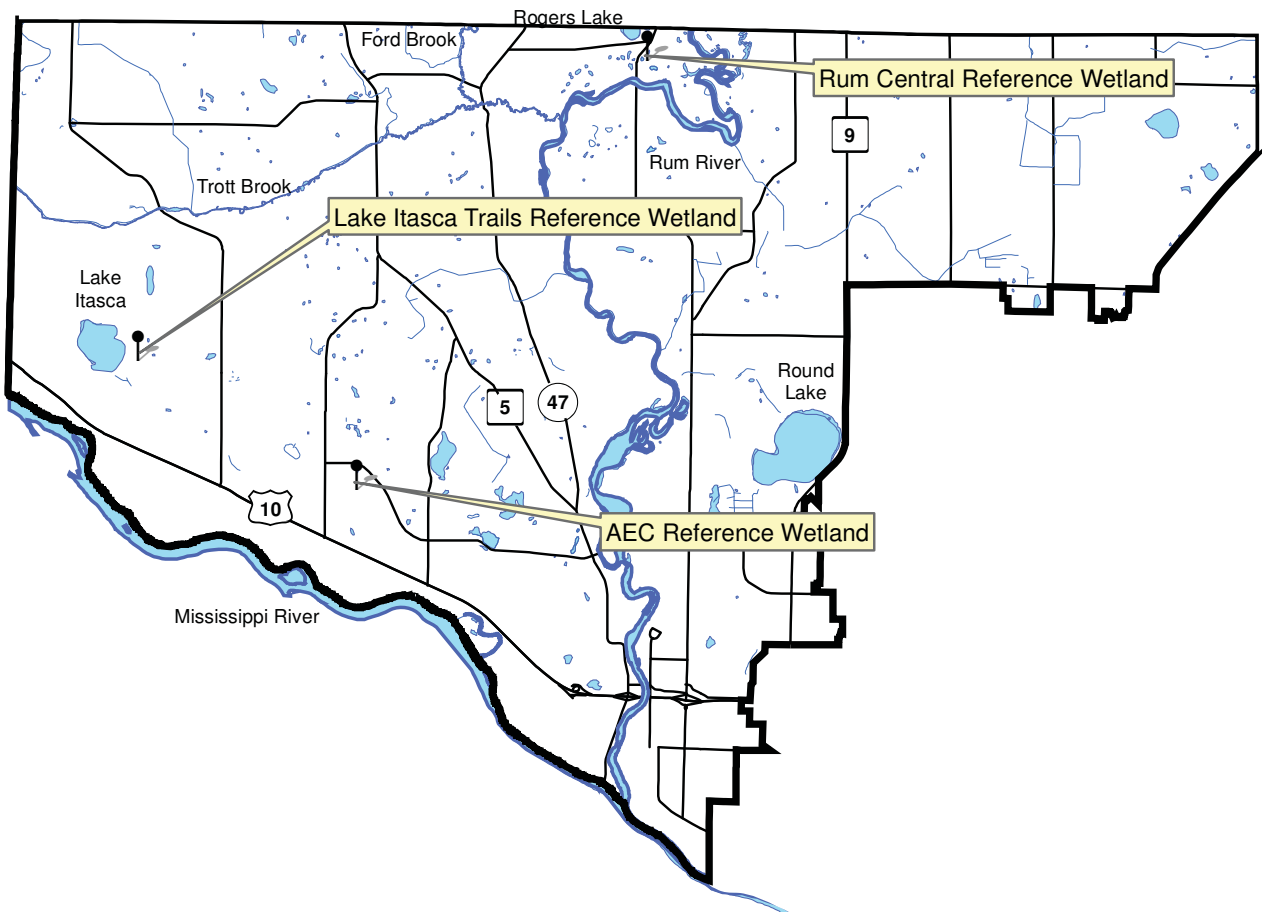
Historically, biomonitoring near Anoka was conducted mostly in a backwater area that, during periods of low water level, has a mucky bottom and does not receive good flow. During those conditions the area was unlikely to be occupied by families which are pollution intolerant. Recent monitoring has included sampling the main channel during an extremely low water level condition, followed by multiple years of very high water levels. The main channel and higher water levels offer opportunities for a more diverse habitat. These changes in sampling likely explain the apparent improvement in the invertebrate community in recent years.



Wetland Hydrology

- Description:** Continuous groundwater level monitoring at a wetland boundary. Countywide, the ACD maintains a network of 23 wetland hydrology monitoring stations.
- Purpose:** To provide understanding of wetland hydrology, including the impacts of climate and land use. These data aid in delineation of nearby wetlands by documenting hydrologic trends including the timing, frequency, and duration of saturation.
- Locations:** AEC Reference Wetland, Connexus Energy Property on Bunker Lake Blvd, Ramsey
Rum River Central Reference Wetland, Rum River Central Park, Ramsey
Lake Itasca Trail Reference Wetland, Lake Itasca Park, Ramsey
- Results:** Depicted on the following pages.

Lower Rum River Watershed Wetland Hydrology Monitoring Sites



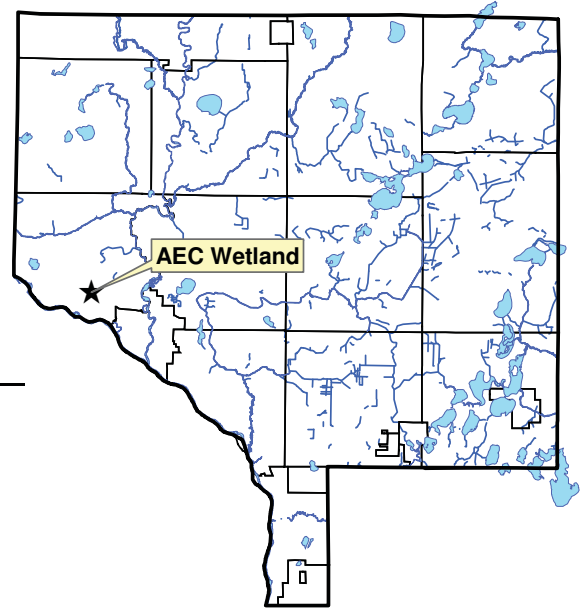
Wetland Hydrology Monitoring

AEC REFERENCE WETLAND

Cottonwood Park, adjacent to Connexus Energy Offices (formerly Anoka Electric Coop), Ramsey

Site Information

Monitored Since: 1999
Wetland Type: 3
Wetland Size: ~18 acres
Isolated Basin? No, probably receives storm water
Connected to a Ditch? No



Soils at Well Location:

Horizon	Depth	Color	Texture	Redox
A	0-15	10yr2/1	Sandy Loam	-
Bw	15-40	10yr3/2	Gravelly Sandy loam	-

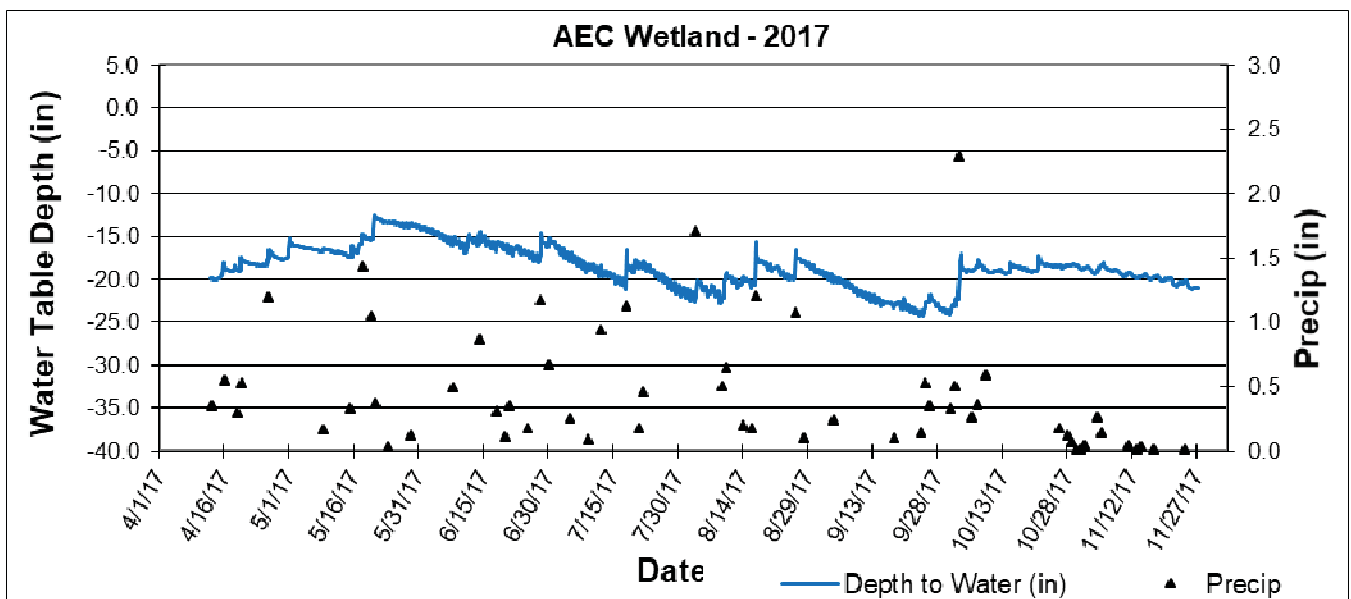
Surrounding Soils: Hubbard coarse sand

Vegetation at Well Location:

Scientific	Common	% Coverage
Populus tremuloides	Quaking Aspen	30
Salix bebbiana	Bebb Willow	30
Carex Spp	Sedge undiff.	30
Solidago canadensis	Canada Goldenrod	20

Other Notes: Well is located at the wetland boundary.

2017 Hydrograph



Wetland Hydrology Monitoring

RUM RIVER CENTRAL REFERENCE WETLAND

Rum River Central Regional Park, Ramsey

Site Information

Monitored Since: 1997
Wetland Type: 6
Wetland Size: ~0.8 acres
Isolated Basin? Yes
Connected to a Ditch? No

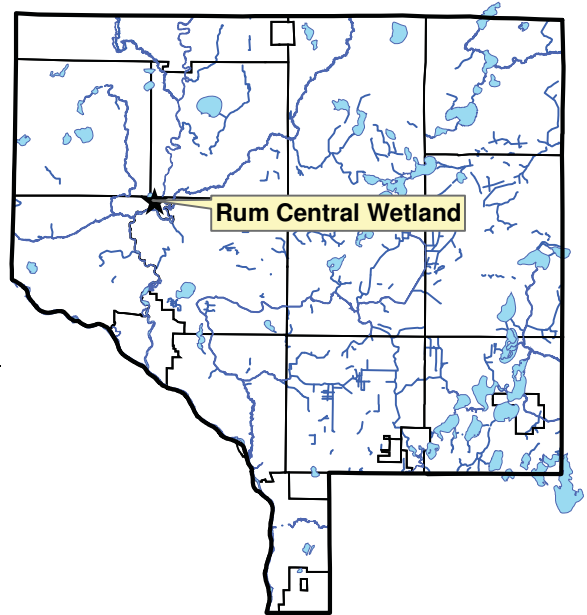
Soils at Well Location:

Horizon	Depth	Color	Texture	Redox
A	0-12	10yr2/1	Sandy Loam	-
Bg1	12-26	10ry5/6	Sandy Loam	-
Bg2	26-40	10yr5/2	Loamy Sand	-

Surrounding Soils: Zimmerman fine sand

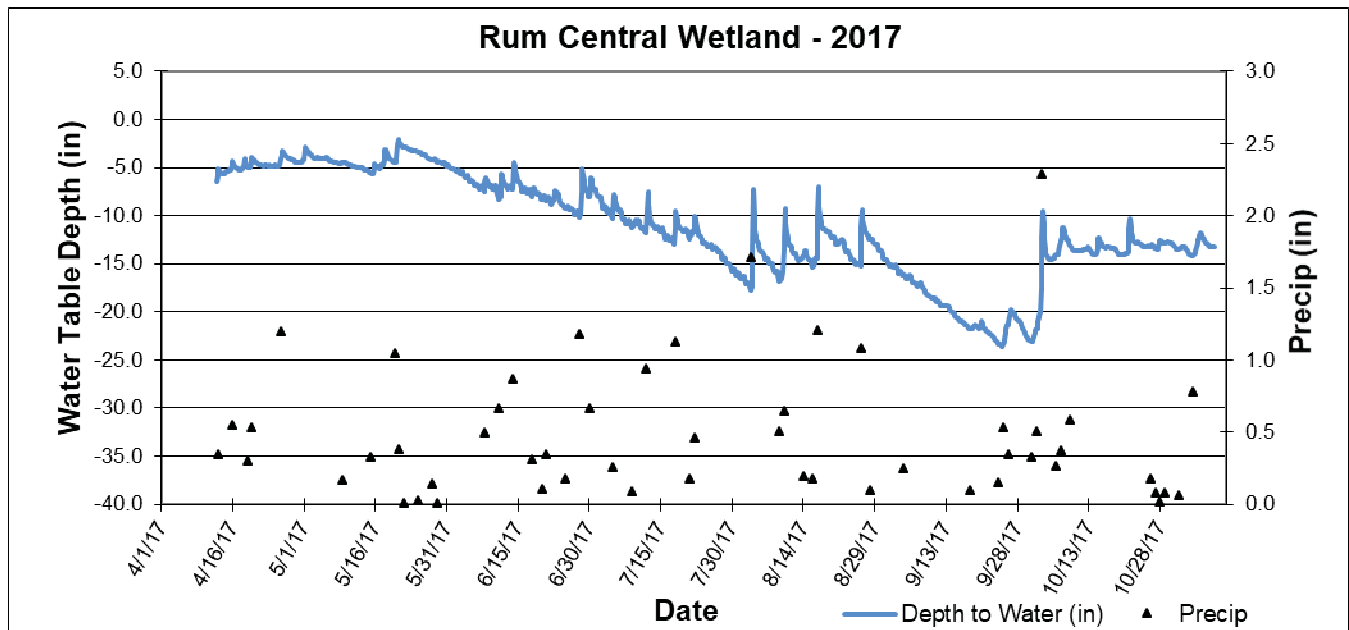
Vegetation at Well Location:

Scientific	Common	% Coverage
Phalaris arundinacea	Reed Canary Grass	40
Corylus americanum	American Hazelnut	40
Onoclea sensibilis	Sensitive Fern	30
Rubus strigosus	Raspberry	30
Quercus rubra	Red Oak	20



Other Notes: Well is located at the wetland boundary.

2017 Hydrograph



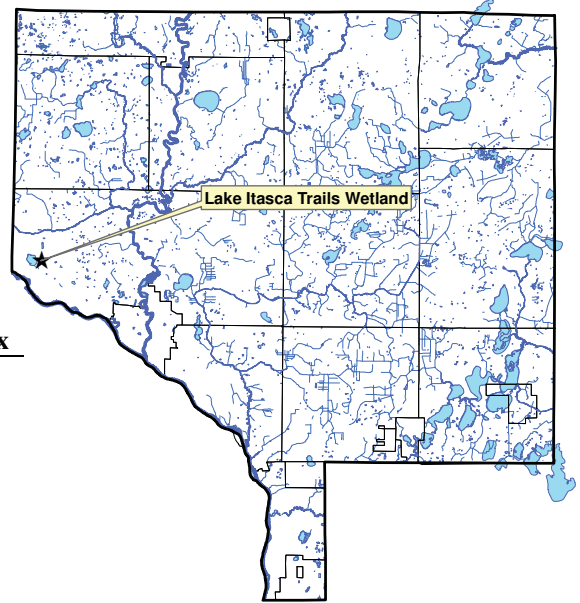
Wetland Hydrology Monitoring

LAKE ITASCA TRAILS REFERENCE WETLAND

Lake Itasca Trails Park, Ramsey

Site Information

Monitored Since: 2013
Wetland Type: 2/6
Wetland Size: ~10 acres
Isolated Basin? Yes
Connected to a Ditch? No



Soils at Well Location:

Horizon	Depth	Color	Texture	Redox
A1	0-12	10yr2/0	Mucky sand	-
A2	12-20	10ry2/1	Sand	-
B1	20-36	10yr4/1	Sand and fine gravel	-
B2	36-48	10yr6/1	Sand and fine gravel	-

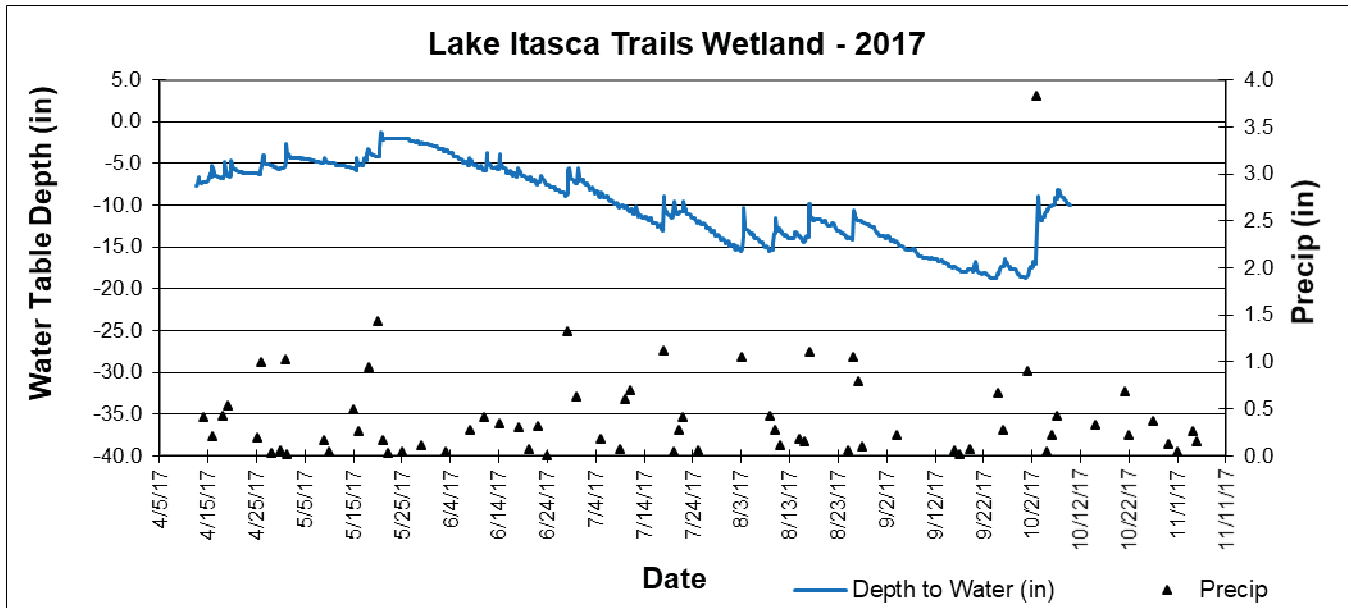
Surrounding Soils: Hubbard coarse sand

Vegetation at Well Location:

Scientific	Common	% Coverage
Carex stricta	Hummock Sedge	80
Phalaris arundinacea	Reed Canary Grass	20
Salix sp.	Willow	20
Rubus sp.	Bristle-berry	5

Other Notes: Well is located about 10 feet east and about 6 inches downslope of the wetland boundary. DNR Public Water Wetland 2-339.

2017 Hydrograph



Water Quality Grant Fund

- Description:** The LRRWMO provides cost share for projects on either public or private property that will improve water quality, such as repairing streambank erosion, restoring native shoreline vegetation, or rain gardens. This funding is administered by the Anoka Conservation District. Projects affecting the Rum River are given the priority because it is viewed as an especially valuable resource.
- Purpose:** To improve water quality in lakes, streams and rivers by correcting erosion problems and providing buffers or other structures that filter runoff before it reaches the water bodies.
- Results:** Projects reported in the year they are installed.

LRRWMO Cost Share Fund Summary

2006 LRRWMO Contribution	+	\$1,000.00
2008 Expense – Herrala Rum Riverbank stabilization	-	\$ 150.91
2008 Expense – Rusin Rum Riverbank stabilization	-	\$ 225.46
2009 LRRWMO Contribution	+	\$1,000.00
2009 Expense – Rusin Rum Riverbank bluff stabilization	-	\$ 52.05
2010 LRRWMO Contribution	+	\$ 0
2010 LRRWMO Expenses	-	\$ 0
2011 LRRWMO Contribution	+	\$ 0
2011 Expense - Blackburn Rum riverbank	-	\$ 543.46
2012 LRRWMO Contribution	+	\$1,000.00
2012 Expense – Smith Rum Riverbank	-	\$1,596.92
2013 LRRWMO Contribution	+	\$1,000.00
2013 Expense – Geldacker Mississippi Riverbank	-	\$1,431.20
2014 LRRWMO Contribution	+	\$2,050.00
2015 LRRWMO Contribution	+	\$1,000.00
2015 Expense – Smith Rum Riverbank	-	\$ 533.65
2016 LRRWMO Contribution	+	\$1,000.00
2016 Expense – Brauer Rum Riverbank	-	\$ 1,150.00
2017 LRRWMO Contribution	+	\$1,000.00
2017 Expense – Rum River Revetments	-	\$1,000.00
Fund Balance		\$2,366.35

Rum River 360° Photo Inventory

Description: The Anoka Conservation District performed a full 360° photo inventory of bank conditions on the Rum River throughout Anoka County in the spring of 2017. This photo inventory was uploaded to Google Maps and is available to the public.

Purpose: To create a photo inventory of bank conditions to be used to guide future restoration projects and track bank condition changes in the future.

Location: Rum River through Anoka County

Results: 360° images are available on Google Maps Street View. The user is able to zoom down to water level and pan around the full 360° to view river and bank conditions.



Rum River Bank Stabilizations

Description: 12 riverbank stabilization projects were installed on the Rum River in Anoka and Isanti Counties in 2017. At these sites, cedar tree revetments and willow stakes were used to stabilize eroding banks. The projects were installed in partnership with the Conservation Corps Minnesota (CCM). Funding for the 9 Anoka County projects came from the Conservation Partners Legacy Grant Program from the Outdoor Heritage Fund, a Clean Water Fund CCM crew labor grant, cost share from the URRWMO and LRRWMO, and a landowner contribution. Funding for 3 additional revetments in Isanti County came from the Lessard-Sams Outdoor Heritage Council, a Clean Water Fund CCM crew labor grant and landowner contribution.

Purpose: To stabilize areas of riverbank with mild to moderate erosion, in order to reduce sediment loading in the Rum River, as well as to reduce the likelihood of a much larger and more expensive corrective project in the future.

Location: Rum River Central Regional Park, 8 residential properties in Anoka County, City of Isanti, and 2 residential properties in Isanti County.

Results: Stabilized 2,223 linear feet of riverbank on the Rum River in Anoka and Isanti Counties.



Anoka Rain Gardens

Description: In 2015 and 2016 a stormwater retrofit analysis (SRA) was done on selected areas in the Cities of Ramsey and Anoka. Many potential projects were modelled with cost-benefit analyses performed. Two of the identified projects, both residential curb-cut rain gardens, were installed in Anoka in 2017. Funding was from Clean Water Funds through the Anoka Conservation District (ACD) and a Metropolitan Council Grant to the Lower Rum River WMO. ACD managed the project.



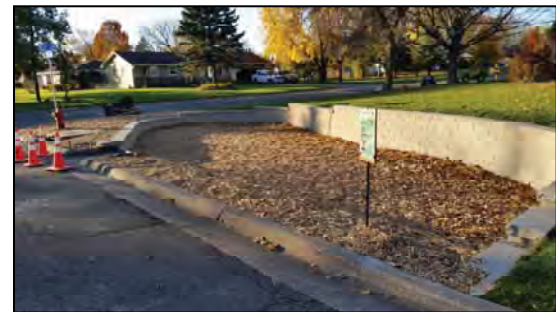
Purpose: To improve water quality in the Rum and Mississippi Rivers.

Location: Selected areas in the Cities of Ramsey and Anoka.

Results: Two curb-cut rain residential gardens were constructed on 38th lane in Anoka.



807 38th Lane, Anoka



3900 8th Lane NW, Anoka

Newsletters

- Description:** The Lower Rum River Watershed Management Organization (LRRWMO) contracts the Anoka Conservation District (ACD) to create public education materials. The LRRWMO is required to distribute an annual publication under State Rules. This requirement is met through newsletters or infographics in city newsletters. This method ensures wide distribution at minimal cost.
- Purpose:** To improve public understanding of the LRRWMO, its functions, and accomplishments.
- Location:** Watershed-wide
- Results:** In 2017, the Anoka Conservation District (ACD) drafted three newsletter infographics and sent them to cities for inclusion in their newsletters. Two of the 2017 infographics focus on reducing water wasted during lawn irrigation. The third focuses on keeping curbside gutters clean as they are conveyances to rivers and lakes.

2017 Newsletter Infographics

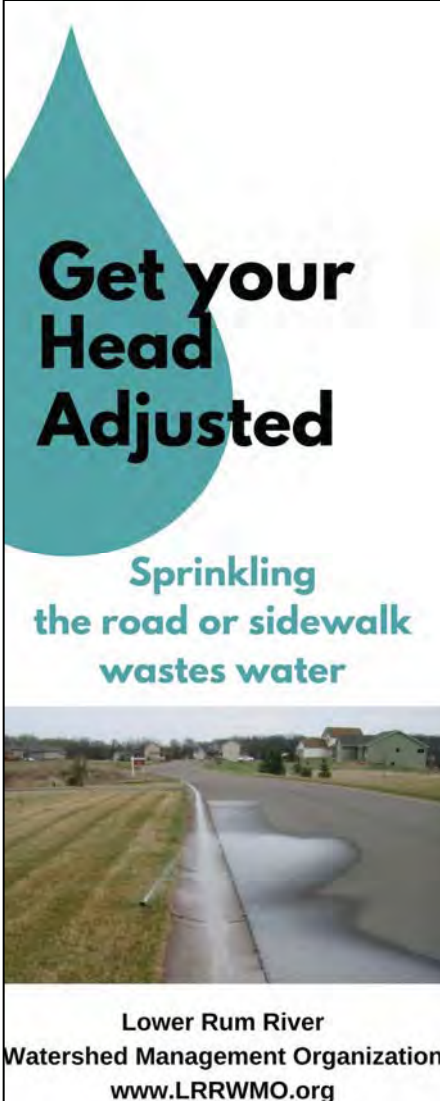


Your lawn have a Drinking Problem?

Know when to say 'when'
An inch is enough

Whether from rain or watering, a healthy lawn doesn't need more per week, but many of us keep serving up the water. Save your money, save some water. Consider a soil moisture sensor for your irrigation system to make it automatic.

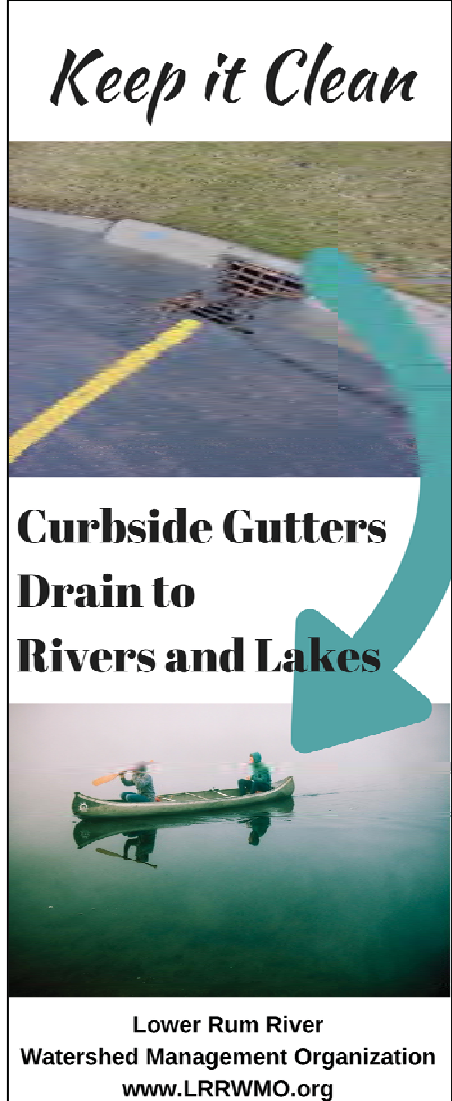
Lower Rum River Watershed Management Organization
www.LRRWMO.org



Get your Head Adjusted

Sprinkling the road or sidewalk wastes water

Lower Rum River Watershed Management Organization
www.LRRWMO.org



Keep it Clean

Curbside Gutters Drain to Rivers and Lakes

Lower Rum River Watershed Management Organization
www.LRRWMO.org

LRRWMO Website

Description: The Lower Rum River Watershed Management Organization (LRRWMO) contracts the Anoka Conservation District (ACD) to design and maintain a website about the LRRWMO and the Lower Rum River watershed. The website has been in operation since 2003.

Purpose: To increase awareness of the LRRWMO and its programs. The website also provides tools and information that helps users better understand water resources issues in the area.

Location: LRRWMO.org

Results: Regular website updates occurred throughout the year. The LRRWMO website contains information about both the LRRWMO and about natural resources in the area. Information about the LRRWMO includes:

- a directory of board members,
- meeting minutes and agendas,
- watershed management plan and annual reports,
- descriptions of work that the organization is directing,
- highlighted projects.

LRRWMO Website Homepage

Lower Rum River Watershed Management Organization

Main Menu

- Home
- Board Members
- Minutes & Agendas
- Cost Share Grants
- Monitoring
- Permits & Contacts
- Plans & Reports
- Projects
- Videos
- Wetlands Information

Other Watershed Organizations

- Coon Creek Watershed District
- Rice Creek Watershed District
- Sunrise River WMO
- Upper Rum River WMO
- Vadnais Lake Area Water Management WMO

Welcome
News and Announcements

The LRRWMO is considering a minor amendment to Appendices B and E of its watershed management plan.

- Notice of plan amendment and public hearing
- Amended Appendix B
- Amended Appendix E

[League of Women Voters Meeting Video about Water and the Rum River](#)

The Lower Rum River Watershed Management Organization (LRRWMO) is a joint powers special purpose unit of government including the cities of Ramsey, Anoka, and portions of Andover. The WMO Board is made up of representatives from each of these cities. This organization seeks to protect and improve lakes, rivers, streams, groundwater, and other water resources across municipal boundaries. These goals are pursued through

- water quality and flow monitoring
- investigative studies of problems
- coordinating improvement projects
- education campaigns
- a permitting process
- others at the WMO's discretion

All of the WMO's activities are guided by their Watershed Management Plan.

Resources of particular importance to the LRRWMO include the Rum River, Trott Brook, numerous ditches that drain to the Rum River, Round Lake, Lake Itasca, and numerous wetlands. The Mississippi River is also notable, as it borders the southern edge of the WMO's jurisdictional area. Because little of the land area in the LRRWMO drains directly to the Mississippi, but rather to the Rum River, the Mississippi receives protection from the WMO primarily through management of the Rum.

Most projects that may directly or indirectly affect water resources are required to have a permit from the LRRWMO. If you are considering a construction project or projects in or around wetlands, streams, rivers, or lakes, you should further research permit requirements on this website, or contact a LRRWMO representative: 763-767-5131, 2015 First Avenue, Anoka, MN 55303

Meetings: 3rd Thursday 8:30am at the Anoka City Hall
Administrative Support: Carla Wirth, Time Saver Off Site Secretarial, Inc 2015 First Ave., Anoka, MN 55303, 612-251-8999

Financial Summary

The ACD accounting is organized by program and not by customer. This allows us to track all of the labor, materials and overhead expenses for a program. We do not, however, know specifically which expenses are attributed to monitoring which sites. To enable reporting of expenses for monitoring

conducted in a specific watershed, we divide the total program cost by the number of sites monitored to determine an annual cost per site. We then multiply the cost per site by the number of sites monitored for a customer.

Lower Rum River Watershed Financial Summary

Lower Rum River Watershed	LRRWMO Admin/Reporting/Grant Search	County, City, SWCD Asst (no charge)	WMO Asst (no charge)	Rum River 1W1P	LRRWMO Promo/Website	Volunteer Precip	Reference Wetlands	DNR Groundwater Wells	Lake Levels	Lake Water Quality	Stream Water Quality	WOMP	Biomonitoring	Rum River Revets	Rum River Stabilization	LRRWMO Retrofits	Targeted BMP Promotion & Design	Rum River WRAPP	Inventory - Rum River Erosion	Project Tech Asst	Total
Revenues																					
LRRWMO	850				2165		1950		1200	1750	2240		825	1000		32442					44422
State - Other								70													6857
MPCA																		6691			9147
DNR OHF														9148							9148
DNR CPL																					0
BWSR Cons Delivery	105	577	416					74											51		2701
BWSR Capacity Staff				2763												17548	373		1910	295	33323
BWSR Capacity Direct																					137
BWSR Cost Share																					0
BWSR Cost Share TA																					0
BWSR Local Water Planning	112		175			73				82			76						161		679
Metro ETA & NPEAP															10176						10176
Metro AWQCP																					2009
Regional/Local	0				0		0			0	0	880	0	19189		0					24953
Anoka Co. General Services		464	416	366										5400		3137					25167
County Ag Preserves/Projects													547		2571						3478
Service Fees														6261							6425
Investment Dividend																					0
Rents																					0
Product Sales																					0
TOTAL	1067	1041	1006	3129	2165	73	1950	144	1200	1832	2240	880	1448	40998	12747	53128	373	6852	1961	295	178621
Expenses-																					
Capital Outlay/Equip	33	26	59	73	80	3	50	10	39	70	32	20	68	629	486	690	13	91	11	2	3909
Personnel Salaries/Benefits	958	939	874	2817	1520	60	1421	115	928	1155	635	682	1169	26638	9812	18290	389	1815	2143	324	111191
Overhead	41	37	41	74	76	4	107	10	55	78	45	36	84	1481	456	865	18	83	87	10	5470
Employee Training	1	4	3	20	4	0	12	1	5	9	3	3	4	226	40	74	0	2	1	0	598
Vehicle/Mileage	12	12	5	24	15	1	43	2	17	24	15	15	23	463	92	249	7	19	50	5	1588
Rent	22	23	24	82	38	2	75	6	33	58	28	26	42	816	257	517	11	44	63	7	3255
Project Installation														5479	945	32442					38867
Project Supplies				39	306	2	17		10	439	406		76	1382	660				4799		10755
McKay Expenses																					0
TOTAL	1067	1041	1006	3129	2039	73	1726	144	1087	1832	1164	783	1464	37113	12747	53128	438	6852	2355	349	175631
NET	0	0	0	0	126	0	224	0	113	0	1076	97	-17	3886	0	0	-65	0	-394	-54	2990

Recommendations

- **Continue to install projects identified in the stormwater retrofitting studies for the Cities of Anoka and Ramsey.** Projects have been identified and ranked that would improve stormwater runoff before it is discharged to the Rum or Mississippi River.

A Metropolitan Council grant for construction was secured for 2017-18. Two rain gardens were constructed in 2017. Sufficient funding remains for a third project in 2018. Future funding requests should be considered.

- **Engage with upstream entities in the Rum River One Watershed, One Plan,** if funded by BWSR.
- **Implement the MPCA Rum River WRAPP (Watershed Restoration and Protection Plan).** This WRAPP was an assessment of the entire Rum River watershed. It outlines regional priorities and management strategies, and attempts to coordinate them across jurisdictions.

- **Maintain or reduce Rum River phosphorus.** Phosphorus levels are close to exceeding State water quality standards. It may be appropriate to review development and stormwater discharge ordinances to ensure no phosphorus increases in coming years.
- **Implement water conservation measures** throughout the watershed and promote it metro-wide. Depletion of surficial water is a concern region-wide.
- **Continue lake level monitoring, especially on Round Lake** where residents have expressed concerns with levels. Other nearby lakes should be monitored for comparison and to potentially detect problems.
- **Consider chloride sampling at all sites on a rotating basis.** Chloride sampling has not been done in recent years. Conductivity levels are rising in the entire county, and this may be due to chlorides.