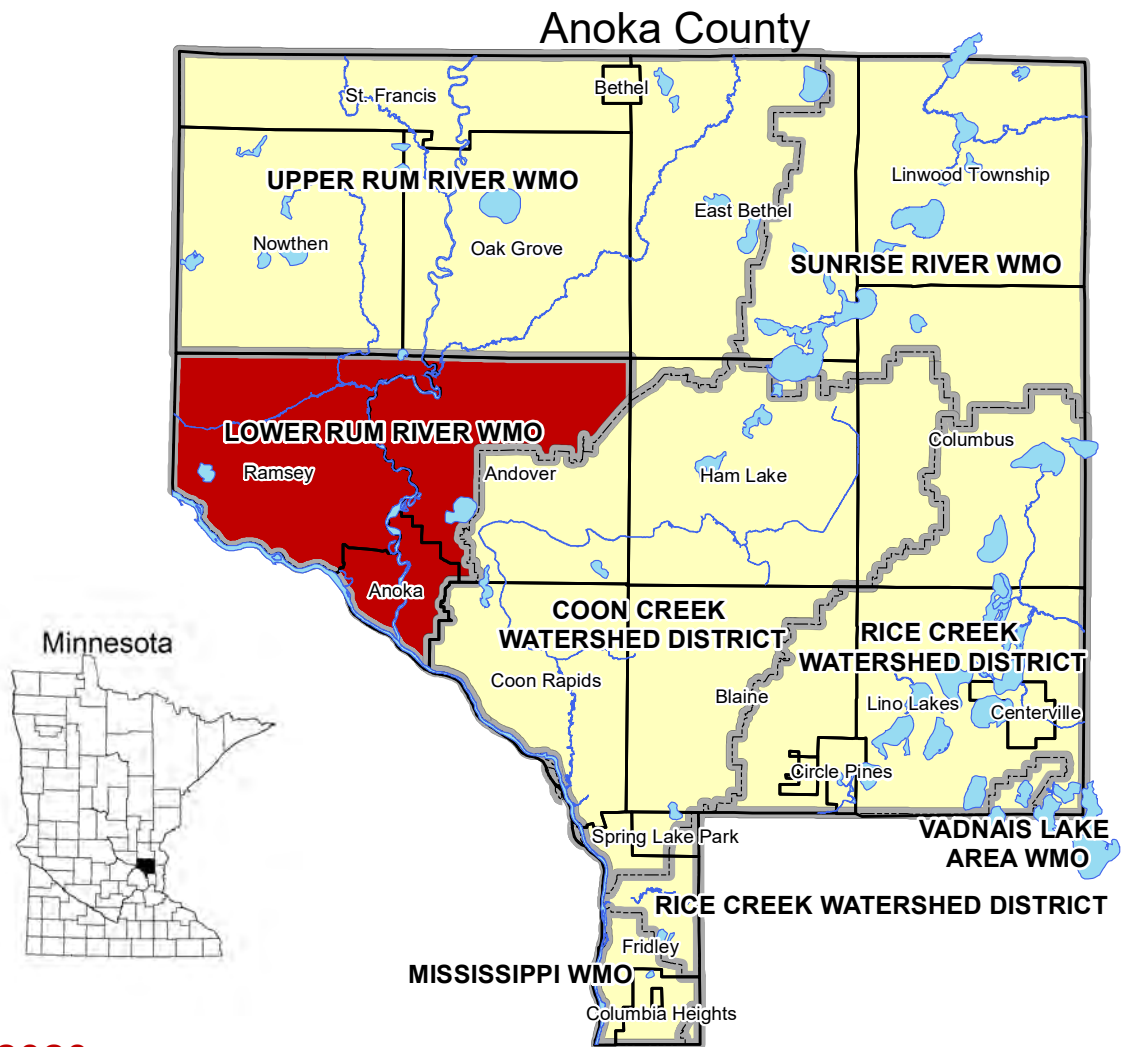


2019 Annual Report

Lower Rum River

Watershed Management Organization

Andover – Anoka – Ramsey



April 20, 2020

Intentionally Blank

Table of Contents

I. Introduction	4
II. Activity Report	5
a. Current Board Members	5
b. Day to Day Contact	6
c. Employees and Consultants	6
d. Solicitations for Services	7
e. Water Quality Trends	7
f. Impaired Waters	9
g. Evaluation of Watershed Plan Implementation	11
h. Status of Ordinances and Local Plan Implementation	12
i. Public Outreach	13
j. Permits, Variances, and Enforcement Actions	17
k. 2020 Work Plan	24
III. Financial and Audit Report	26
a. 2019 Financial Summary	26
b. Fund Balances	26
c. Financial Audit Documentation	26
d. 2020 Budget	1

Appendix A: 2019 Financial Report

Appendix B: Implementation of Watershed Management Plan Summary

Appendix C: Newsletter Articles

Appendix D: 2019 Work Results

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 2019 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 8:00 am at the Anoka City Hall.



Rum River in Andover and Ramsey

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

Valerie Holthus (Alternate)
17680 Arrowhead St NW
Andover, MN 55304
763.753.3755
cm.holthus@andovermn.gov

CITY OF ANOKA

Elizabeth Barnett (Treasurer)
1625 South 2nd Ave
Anoka, MN 55303
612-718-8433
elizabethbarnett@ci.anoka.mn.us

Mark Freeburg (Alternate)
2015 1st Ave N
Anoka, MN 55303
763.421.9244
markfreeburg@ci.anoka.mn.us

CITY OF RAMSEY

Debra Musgrove (Vice Chair)
7550 Sunwood Dr NW
Ramsey, MN 55303
763.208.6729
dmusgrove@ci.ramsey.mn.us

Mark Kuzma (Alternate)
7550 Sunwood Dr NW
Ramsey, MN 55303
763.576.4366
mkuzma@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. • Reporting assistance. • 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 Greg Williams Senior Water Resources Engineer 4700 West 77 th St Minneapolis, MN 55435-4803 952-832-2945	<ul style="list-style-type: none"> • Permit reviews. • Technical and engineering guidance. • Assistance reviewing local water plans. • Watershed management plan update.
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 Pilsbury Center Minneapolis, MN 55402 612-337-9214	<ul style="list-style-type: none"> • Legal services.
Timesaver Off Site Secretarial Service	Carla Wirth 5291 River Oak Drive Savage, MN 55378 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 2018 the LRRWMO solicited proposals for watershed management plan update 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.

LRRWMO monitored lakes and their trend analyses are in the table below.

Summary of lake water quality trends

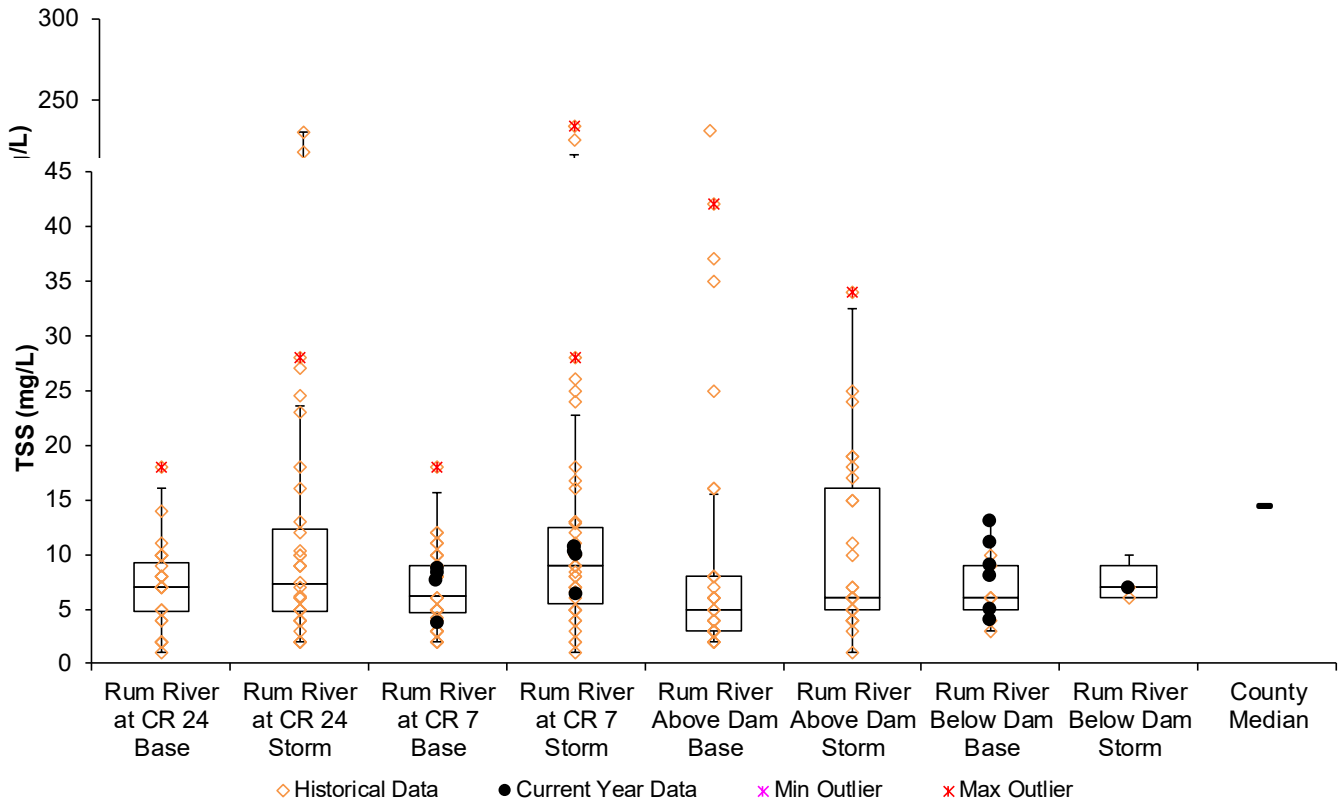
Lake	Years monitored	Most recent year monitored	Letter grade	Trend
Round	12	2019	A	No change
Sunfish	4	2018	B-	Insufficient data

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 these pollutants, 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.

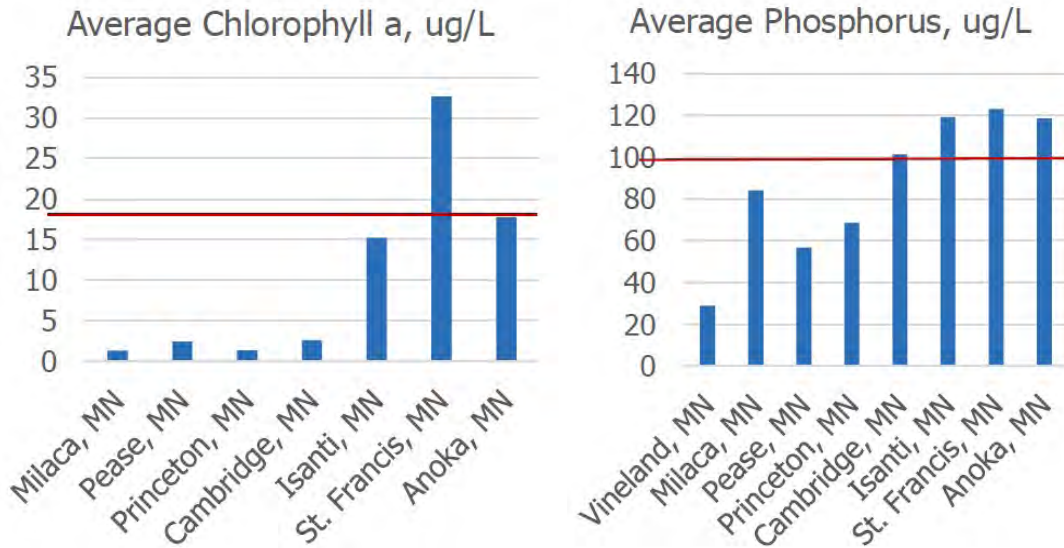
Water quality of the river does change in other areas outside the LRRWMO. Water monitoring farther upstream has been sporadic, most recently occurring in 2013-2014. There are water quality declines that generally occur within the Isanti County reaches of the river, which has the most agriculture and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

Rum River total phosphorus during baseflow and storm conditions. Orange diamonds are historical data from previous years and black circles are 2019 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentile (floating outer lines).



Total suspended solids during baseflow and storm conditions. Orange diamonds are historical data from previous years and black circles are 2019 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).

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.

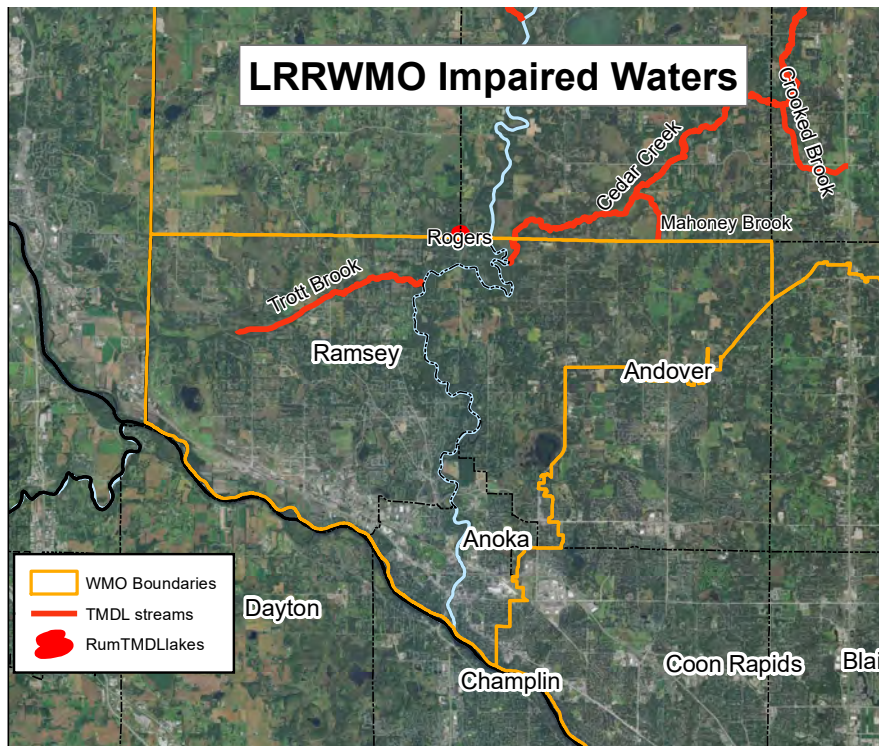
Additional water quality data is available online. Annual watershed monitoring reports are available on the LRRWMO website (www.LRRWMO.org). All water quality data collected by the LRRWMO is on the MN Pollution Control Agency’s EQUIS database, which is accessible through their website.

f. Impaired Waters

Two impaired waters are of relevance to the LRRWMO: Trott Brook and Mahoney Brook. Neither 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.

Impaired Waterbodies

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



Trotter 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 WRAPS 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, and 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 from 2013 through 2021 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 the following ways in recent years:

- | | |
|--------|---|
| 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. |
| Change | Did not monitor the Rum River at the Anoka Dam. |
| Reason | Metropolitan Council monitors this site and makes the data available to the LRRWMO. |
| Change | Added production of a brochure about the LRRWMO, programs and water resources. |
| Reason | The board felt the need to have distributable materials for public events and public places such as city hall lobbies. |
| Change | Added support of the Anoka County Water Resource Outreach Collaborative, including for groundwater and lakeshore stewardship videos. |
| Reason | The board felt this program could advance outreach and education goals of the LRRWMO and its member communities, and reduce duplication. |

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 2019 annual report to LRRWMO?	Yes
Ordinances and Local Water Plan Status	Andover’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 completed annually. • Educational outreach in 2019 reached about 3300 households. Outreach efforts included newsletters, public service announcements on storm water quality were broadcast on local television, and information provided at the North Suburban Home Show. Overall, educational outreach covered the topics of 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 2019. 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 2019 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	<ul style="list-style-type: none"> • Constructed 80 catch basins on city projects in 2019.

Implementation Accomplishments	<ul style="list-style-type: none"> • Installed boulevard rain garden. • Installed approximately 350 ft of storm sewer infiltration trenches. • 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. • Constructed a regional storm storage pond for flood storage. • Removed invasive species along the Rum River. • Educational outreach including 2 newsletter articles, 1 brochure, 4 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. • Anoka manages stormwater activities to ensure no net increase in volume, rate, sediment or nutrient loading. • Annual outfall inspections and repair as needed. • Continue to plan projects to control buckthorn. • Approved erosion and sediment control and wetland ordinances in 2017.
City of Ramsey	
Submitted 2019 annual report to LRRWMO?	Yes
Ordinances and Local Water Plan Status	<p>The City of Ramsey’s local water plan was approved by the LRRWMO September 17, 2015.</p> <p>Ramsey has all of the ordinances required by the LRRWMO.</p>
Some Recent Implementation Accomplishments	<ul style="list-style-type: none"> • Installed a regional infiltration basin in the COR development. • 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 with newsletter articles, brochures, and community event displays. Topics of education efforts included storm drains, lawn fertilizer, deicing salt, yard waste management, and groundwater protection.

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.

LRRWMO Website

Lower Rum River WMO

Protecting & managing the waters of the Lower Rum River Watershed in western Anoka County, MN

News and Announcements

New links to keep you posted on the latest with the LRRWMO

[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 8:00am at the Anoka City Hall

Administrative Support: Carla Wirth, Time Sever Off Site Secretarial, inc 2015 First Ave., Anoka, MN 55303, 612-251-8999

Meeting Schedule

Generally, the LRRWMO meets on the 3rd Thursday of the month at 8am at the Anoka City Hall. Tentative Meetings for 2020: January 16, February 20, March 19 - Cancelled, April 16, May 21, June 18, July 16, August 20, September 17, October 15, November 19, December 17

[AGENDA & MINUTES](#)

OTHER NEARBY WATERSHED ORGANIZATIONS

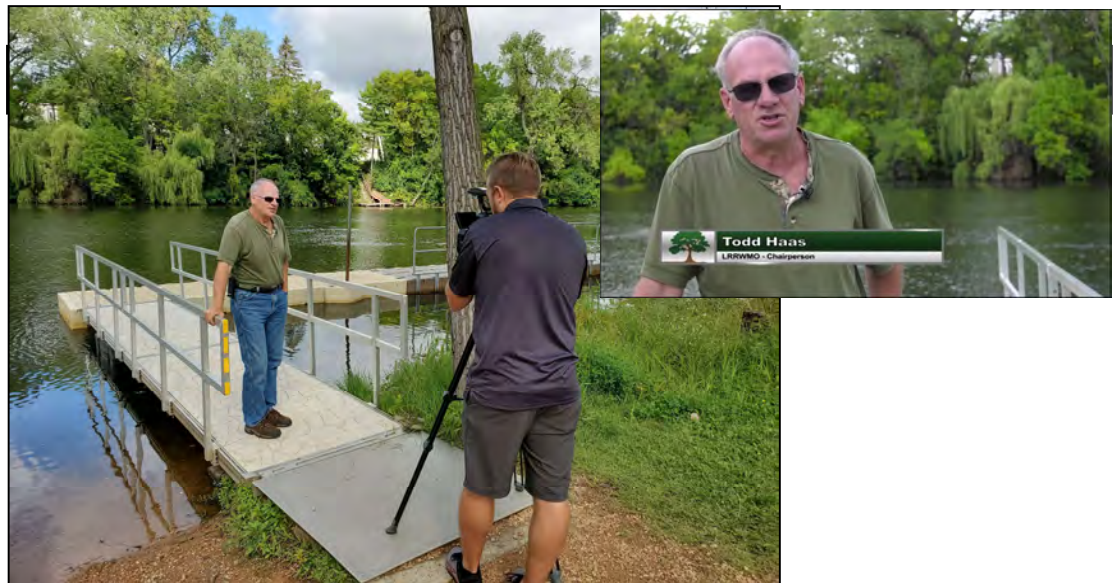
- Coon Creek Watershed District
- Rice Creek Watershed District
- Sunrise River WMO
- Upper Rum River WMO
- Vadnais Lake Area WMO

- **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
2018-19	Groundwater videos in collaboration with Anoka County Water Outreach Collaborative

- **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 September 2019 on the Rum River from the County Road 7 bridge (top of the LRRWMO) to the Anoka Dam (near the bottom of the LRRWMO).

Photos of LRRWMO Chair Todd Haas being interviewed by local QCTV after a September 2019 public officials tour of the Rum River.



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 2019 permit activity is summarized in the table below.

Permit Name	Permit #	City	Summary
1565 167th Avenue N.W.	#2018-17	Andover	Wetland boundary and type was approved by the LRRWMO being the LGU administering WCA.
Riverdale Drive Trunk Sewer and Watermain Extension	#2018-23	Ramsey	The project proposed the installation of 2,600 lineal feet of 18-inch sanitary sewer and 2,600 lineal of 12-inch DIP watermain. The pipe alignment is south of T.H. 169 from Armstrong Boulevard to Llama Street. Approximately half of the pipe alignment crosses undeveloped property with no new impervious area created. A permit is required from the LRRWMO because the project will disturb more than one acre. Project approved.
C.S.A.H. 116 and 7th Avenue Stormwater Management Study	#2018-24	Anoka	A stormwater management study was completed for a 14.1 acre site located in the northwest quadrant of C.S.A.H. 116 (Bunker Lake Boulevard) and 7 th Avenue N.W. owned by the City of Anoka. The area is currently agricultural. The plan is to enlarge the existing basin on the Rum River Library site for compliance with the LRRWMO stormwater requirements (volume retention, rate control and water quality management) for future development of the property. Project was approved.
The Lock-UP	#2018-25	Anoka	A 26,000 square foot self-storage facility is proposed on a 2.4 acre site located at North Street and 11 th Avenue in Anoka. The site is currently vacant but surrounded by a wetland on the north and east and a regional stormwater basin on the west. The wetland boundary was approved by the LRRWMO in August, 2016, within the 5-year allowed time period by WCA. Stormwater management is to be provided by 1) two constructed on-site surface basins and 2) the use of permeable pavers on a portion of the proposed parking lot. Project was approved.

Permit Name	Permit #	City	Summary
ACE Solid Waste Transfer Station Expansion	#2019-01	Ramsey	The project proposed the construction of a new building, parking lot, weigh scale and associated utilities for an expansion north of the existing facility and southwest of 14 th Street N.W, and Basalt Street. Because of the land-use, the MPCA has indicated that volume retention through infiltration is not allowed. A proposed on-site "lined basin" will provide for rate control and water quality treatment. The City of Ramsey has committed to provide the required 4,849 cubic feet of volume retention off-site as part of a City project. City compliance is to be provided by 2021. Project was approved.
West Armstrong Retail	#2019-02	Ramsey	A 15,200 square foot commercial building (Phase 1) with a future (Phase 2) 3,100 square foot building to be constructed on a 2.3 acre site located in the southwest quadrant of Armstrong Boulevard and 147 th Avenue. The LRRWMO stormwater management requirements will be met by a basin constructed on the southern end of the property. The site is currently vacant with the previous buildings on the site razed. The basin will provide 10,913 cubic feet of volume retention (5,939 cubic feet required) and an annual removal efficiency of 94% for both total suspended solids and total phosphorus. Project was approved.
6021 Highway 10	#2019-03	Ramsey	This 2 acre site is a former filling station and bulk oil facility. The existing on-site convenience store is to be renovated to an auto sales and service center. A combination of 25 above and below ground storage tanks were located on the site. The tanks were removed during the period of 1989-2001. Because the potential of contamination (PCE) being mobilized to the groundwater by on-site volume retention through infiltration, a lined basin for rate control and water quality management is to be constructed on-site. The City will provide the required 5,554 cubic feet of volume retention, from 1.53 acres of impervious area, off-site within a regional basin by 2021. Project was approved.

Permit Name	Permit #	City	Summary
The Sapphire Apartments	#2019-04	Ramsey	An apartment complex is to be located in the northeast quadrant of East Town Center Drive and 145 th Avenue. The site is within a Drinking Water Supply Management Area (DWSMA) and partially within a 10-year capture zone for a municipal well. The City therefore has determined that volume retention through infiltration is not allowed on the site. The City will provide 11,035 cubic feet of volume retention within a regional basin to be constructed. Rate control and water quality management is to be provided within an existing regional basin downstream of the site. The volume retention is to be provided by 2021 by the City. Project was approved.
M&G Trailer Sales	#2019-05	Ramsey	A proposed commercial/service building and associated paved parking will add 249,900 square feet of new impervious area to the 7-acre M&G Trailer site bordered by the Burlington Northern Railroad on the north, U.S. Highway 10 to the south and a commercial property to the west. Three storm water basins to be constructed will provide rate control, 54,658 cubic feet of volume retention (20,727 cubic feet required) and an annual removal efficiency of 99% for both total suspended solids and total phosphorus. Project was approved.
Green Valley Greenhouse	#2019-06	Ramsey	The project included mass grading of approximately 33 acres for planting areas, the construction of a 100,000 square greenhouse with future expansion for up to an additional 300,000 square feet of greenhouse space on the site. Wetland boundaries and types of four wetland on the site were approved by the LRRWMO as the LGU administering WCA. Two infiltration basins for volume retention and three separate basin for water quality management are proposed. A retention volume of 81,254 cubic feet (79,828 cubic feet required) and an annual removal efficiency of 97% for total suspended solids and 88% for total phosphorous is provided. A wetland boundary and type determination were approved by the LRRWMO as the LGU. Project was approved.
Anderson Dahlen South Addition	#2019-07	Ramsey	The project located on an 8.9 acre site in the southwest quadrant of 143 rd Avenue and Jasper Street proposes the construction of a 76,000 square foot commercial building with a 44,000 square foot future addition. An on-site stormwater basin provides volume retention, rate control and water quality management to comply with the LRRWMO stormwater requirements. Project was approved.

Permit Name	Permit #	City	Summary
Delta Modtech	#2019-08	Ramsey	The project proposes the construction of an 186,000 square foot warehouse building, a two story 50,000 square foot office building and associated parking on the western 41+ acres of the parcel at Bunker Lake Boulevard and Puma Street. Two stormwater basins are to be constructed for compliance with the storm water requirements of the LRRWMO. A wetland boundary and type was approved by the LRRWMO being the LGU administrating WCA. Project was approved.
Updated Surface Water Management Plan for the City of Anoka	#2019-09	Anoka	An updated Surface Water Management Plan was submitted to the LRRWMO on May 8, 2019 by the City of Anoka to meet the requirements for a local plan as outlined in Minnesota Administrative Rules 8410.016. Correspondence dated June 24, 2019 outlining comments related to the Plan following 8410.016 was submitted to the City.
Rum River Bank Stabilization	#2019-10	Ramsey	The LRRWMO being the LGU administering WCA approved a WCA no-loss determination for the work associated with the stabilization of the Rum River bank in Rum River Central Regional Park.
Northern Natural Gas Company Valve Installation	#2019-11	Ramsey	The project proposes the installation of below grade block valves on the Elk River Branch of the Northern Natural Gas company pipe alignment located north of 173 rd Avenue N.W. and Variolite Street N.W. Temporary wetland impacts of 14,400 square feet are anticipated from construction matting and excavation. A permanent loss of 1,570 square feet of wetland area will result from the project. A WCA no-loss determination and WCA utility exemption approval were given by the LRRWMO administering WCA for the project.

Permit Name	Permit #	City	Summary
River Walk Village	#2019-12	Ramsey	The project proposes a 14-lot single family residential subdivision located west of the Rivlyn Avenue N.W. cul-de-sac, south of U.S. Highway 10/Highway 169 and north of the Mississippi River. In addition to the development, a permit was approved for the clean-up of approximately 32,000 cubic yards of debris material that had been dumped on the site from 1953 to 1970. The development proposes approximately 4,313 cubic yards of fill below elevation 847.4 M.S.L., the 100-year frequency flood elevation of the River. Compensatory floodplain volume of 4,471 cubic yards is proposed for mitigation. A wetland boundary and type determination was approved. Project was approved.
Mississippi West Roadway, Trail and Parking Lot Construction	#2019-13	Ramsey	The project proposes improvements within Mississippi West Regional Park. Existing gravel roads and grass trails are to be paved with new roadways and parking lots constructed. For compliance with the LRRWMO stormwater management requirements, eight infiltration areas are to be constructed within the limits of the improvements complying with LRRWMO requirements. Project was approved.
Ramsey Storage	#2019-14	Ramsey	The project proposes the construction of a mini-storage building with a future commercial building on a 6.2 acre site located at Ramsey Boulevard and Bunker lake Boulevard. The site is within a 10-year capture zone for a municipal well therefore volume retention through infiltration is not allowed by the City. The City is to provide 10,621 cubic feet of volume retention by August, 2021 within a regional basin being constructed. Rate control and water quality management to be provided on-site within a lined basin. The basin will provide an annual removal efficiency of 94.4% for total suspended solids and 65.6% for total phosphorous. Project was approved.
Suite Living Senior Care	#2019-16	Ramsey	The project proposes a 32-unit senior care facility located north of 139 th Lane N.W. and Jasper Street N.W. Phase 1 is 1.0 acre of the 9.3 acre site that will ultimately be a mixture of multi-family and commercial. Four stormwater basins are ultimately to be constructed but only one is to be constructed for the Suite Living Senior Care site. The stormwater management plan has been developed for the entire 9.3 acre site. Project was approved.

Permit Name	Permit #	City	Summary
Trott Brook Farm	#2019-17	Ramsey	The project is for the construction of a horse riding structure and gravel driveway on approximately 11 acres of the 79 acre Trott Brook farm parcel located at the intersection of St. Francis Boulevard N.W. and 179 th Lane N.W. The project will add 1.6 acres of new impervious area. Three basins are to be constructed to provide stormwater management complying with LRRWMO requirements. Project was approved.
Pleasureland RV Parking Lot Expansion	#2019-18	Ramsey	The existing 49,100 square foot open space (located west of the existing building and parking) is to be paved for the expansion of the on-site surface parking at 7900 Riverdale Drive. The site within a 10-year capture zone for a municipal well therefore volume retention through infiltration not allowed. The City of Ramsey is to provide 4,090 cubic feet of volume retention within an off-site regional basin. Rate control and water quality management will be provided on-site within a lined basin. The basin will provide an annual removal efficiency of 97% for total suspended solids and 93.3% for total phosphorous. Volume retention to be provided by the City by September, 2021. Project was approved.
Name Brand Self Storage	#2019-19	Ramsey	The project proposes the construction of 14, one-story slab on-grade storage units on a 8.4 acre site located along 156 th Avenue N.W. A two-cell stormwater basin will provide a retention volume of 23,091 cubic feet (19,239 cubic feet required and an annual removal efficiency of 99% for both total suspended solids and total phosphorous. Permit #2019-19 was approved with a condition that revised plans be submitted showing that all 14 storage building will be constructed at or above elevation 885.8 M.S.L. – 2 feet above the 100-year frequency flood elevation of the on-site basin. Project was approved.
Peterson Farms – Phase 2	#2019-20	Andover	Wetland boundary and type approved by the LRRWMO being the LGU administering WCA.
Green Haven Golf Course Maintenance Facility	#2018-21	Anoka	The project proposes the construction of an 18,300 square foot maintenance facility located in the northeast corner of the golf course. A proposed on-site basin will provide a retention volume of 19,142 cubic feet (4,828 cubic feet required) and an annual removal efficiency of 100% for both total suspended solids and total phosphorous. Project was approved.

Permit Name	Permit #	City	Summary
Pearson Farm South	#2019-23	Ramsey	Wetland boundary and type approved by the LRRWMO being the LGU administering WCA.
2020 Street Improvements	#2019-25	Andover	Wetland boundary and type approved by the LRRWMO being the LGU administering WCA.
Ramsey Villas	2019-27	Ramsey	Wetland boundary and type approved by the LRRWMO being the LGU administering WCA.
Prairie Oak Church	2019-29	Andover	Wetland boundary and type approved by the LRRWMO being the LGU administering WCA.

k. 2020 Work Plan

Planned 2020 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.	None in 2019	\$0
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 LRRWMO.	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.	None in 2019	\$0
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.	http://www.lrrwmo.org	\$820
Newsletter articles	To increase public awareness of water resources and the LRRWMO.	Two newsletter articles will be produced and printed in city newsletters.	Watershed-wide	\$1,120
Anoka Co Water Resources Outreach Collaborative	To create consistent water resources outreach to the public, and avoid duplication through a multi-entity collaboration. and the LRRWMO.	In 2020 the LRRWMO will provide financial support for 4 th quarter, sustaining the program after grant funding expires.	Watershed-wide	\$1,948
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 LRRWMO'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 incentives for a water quality improvement projects. Typical projects include erosion correction, lakeshore restoration, and rain gardens. The Anoka Conservation District provides administration.	Offer grants	\$2,000
LRRWMO Watershed Management Plan Update	To plan for the next 10 years.	The LRRWMO will finalize a new 10-year watershed management plan in spring 2021. Work began in early 2019.	Watershed-wide	

The LRRWMO deviated from its watershed management plan for 2019 in the following ways:

Change: Removed water quality monitoring of the Rum River at the Anoka Dam.
Reason: Metropolitan Council monitors this site and makes the data available to the LRRWMO.

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	Displays at community events will be reduced.
Reason	COVID-19 pandemic required cancellation of many public events.

III. Financial and Audit Report

a. 2019 Financial Summary

See Appendix A.

b. Fund Balances

See Appendix A.

c. Financial Audit Documentation

A 2019 financial audit has not yet been completed, but will be provided to the State by the City of Anoka once complete.

d. 2020 Budget

At its January 2019 meeting the LRRWMO Board approved the 2020 budget shown below.

RESOLUTION # 2020-01

**RESOLUTION OF THE LOWER RUM RIVER WATERSHED
MANAGEMENT ORGANIZATION (LRRWMO) FOR ADOPTING
THE BUDGET FOR YEAR 2020**

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 2019 hereby approved and adopted with appropriations for each of the various activities as follows:

REVENUE:

Assessments	
Andover	\$ 12,975
Anoka	\$ 10,514
Ramsey	\$ 23,511
	<u>\$ 47,000</u>
Permits	\$ 35,000
Grants	\$ 1,500
Interest earnings	\$ 750
TOTAL REVENUES	<u>\$ 84,250</u>

EXPENDITURES:

Engineering	\$ 6,000
Permit Review	\$ 25,000
Legal	\$ 3,000
Financial Compilation/Audit	\$ 5,000
Financial Services	\$ 2,400
Secretarial Services	\$ 9,100
Postage, Copying, etc.	\$ 1,600
Insurance	\$ 2,150
Brochure	\$ 800
LRRWMO Plan update/Reserve	\$ 12,500
Web Site maintenance/upgrade	\$ 820
Annual Report	\$ 850
Build Fund to Match Future Grants	\$ 2,000
Wetland education (2 city newsletter articles)	\$ 1,120
Lake Level Monitoring	\$ 1,260
Stream Water Quality Monitoring	\$ 1,425
Stream Biomonitoring w/ students	\$ 900
Wetland Monitoring	\$ 1,950
10% Match for Anticipated Watershed Based Funding	\$ 8,094
Miscellaneous	\$ 10,000
TOTAL	<u>\$ 95,969</u>

NET INCOME \$ (11,719)

Appendix A: 2019 Financial Report

Lower Rum River Water Management Organization
Treasurer's Statement of Cash Receipts and
Disbursements for the Period of
January 31, 2020

Checking/Savings Accounts with 4M Fund:

Balance \$ 247,515.80

Receipts:

Northern Gas	19-11		\$	699.92
City of Andover 2019 Dues	2019		\$	11,595.00
Anoka Pond Excavation	19-15		\$	875.00
Kelsey RLP Expansion	20-01		\$	800.00

Deposit from reserves for planning \$ -

Interest 274.64

Total Receipts \$ 14,244.56

Disbursements:

Check #	Payable		
2456	TimeSaver Off Site	\$	(993.14)
2457	BARR		(4,534.20)

Total Disbursements \$ (5,527.34)

Balance \$ 256,233.02

Less Permit Account Balance 42,653.75

Less 2018 4th Generation Plan Reserve = \$110,000 93,079.00

Available Balance \$ 120,500.27

Lower Rum River Water Management Organization
Treasurer's 2020 Budget Report
January 31, 2020

	January	Year to Date	2019 Budget	Budget Variance
Revenues:				
City Assessments	11,595.00	42,001.00	42,000.00	1.00
Permits	2,374.92	41,534.58	35,000.00	6,534.58
Interest		3,879.46	1,500.00	2,379.46
Grant		-	750.00	(750.00)
Misc Income		164.00	-	164.00
Total Revenue	13,969.92	87,579.04	79,250.00	8,329.04
Expenses:				
<u>Engineering</u>				
Administration	290.20	\$ 3,832.55	\$ 7,000.00	\$ 3,167.45
Wetland Conservation Act		428.68	-	(428.68)
Stormwater Plan Review		-	-	-
4th Generation Mgmt Plan	980.00	17,301.00	-	(17,301.00)
Permit Review	3,264.00	27,782.40	28,000.00	217.60
Engineering Total	4,534.20	49,344.63	35,000.00	(14,344.63)
<u>Miscellaneous</u>				
Legal		-	4,000.00	4,000.00
Financial Compilation/Audit		-	-	-
Financial Services		3,140.63	2,400.00	(740.63)
Secretarial Services	873.25	8,481.50	9,100.00	618.50
Postage, Copying, Etc.	119.89	1,346.08	1,600.00	253.92
Insurance		2,418.00	2,150.00	(268.00)
Brochure		-	-	-
LRRWMO Plan update/Reserve		-	25,000.00	25,000.00
Web Site Maintenance/upgrade		865.00	1,045.00	180.00
Annual Report		850.00	850.00	-
Build Fund to Match Future Grants		2,000.00	2,000.00	-
Lake Water Quality Monitoring		1,386.25	1,800.00	413.75
Wetland Education (2 city news articles)		1,720.00	1,120.00	(600.00)
Lake Level Monitoring		1,678.75	1,240.00	(438.75)
Stream Water Quality Monitoring		1,975.00	1,405.00	(570.00)
Wetland Monitoring		1,950.00	1,950.00	-
Stream Biomonitoring w/students		900.00	900.00	-
Rum River stabilization w/cedar trees		-	-	-
10% Match-Anticipated Watershed Funding		-	11,835.00	-
Contingencies		-	10,000.00	10,000.00
Miscellaneous Total	993.14	28,711.21	78,395.00	37,848.79
Total Expenses	\$ 5,527.34	\$ 78,055.84	\$ 113,395.00	\$ 23,504.16
Net Change in Fund Balance	\$ 8,442.58	\$ 9,523.20	\$ (34,145.00)	\$ 43,668.20

Note: The 2019 Budget consists of \$47,000 from assessments to member Cities,
\$37,250 from Permit Revenue, Grants and Interest and \$11,719 from Fund Balance.
Fiscal Year runs from February 1 through January 31.

Appendix B:
Implementation of Watershed
Management Plan Summary

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				X	X	X				X	X	X																											
b. Annual Reporting to State. Submit annual reports to BWSR and the State Auditor.																																																																	
"X" when completed	X			X			X			X		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.																																																																	
"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						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													Preparing a RFP for watershed plan update.																												
"X" when completed												X												X													X																												

Appendix C: Newsletter Articles

**Andover Today Newsletter
Summer 2019**

CLEAN WATER STARTS AT HOME

Lawn care

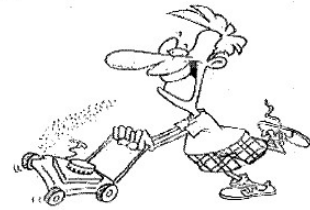
Tips from the Pros

1. Leave the clippings as you mow! Don't bag clippings because you'll remove nutrients that help the lawn.
2. While mowing, blow the clippings onto your lawn and off the street, driveway, and sidewalk. Sweep up any residual clippings from these impervious surfaces. This prevents them from running off and polluting our water ways.
3. Raise the mower blade! Adjust your mower to keep grass at least 3 inches high. Taller lawns use less water, handle heat stress better and compete with weeds better.
4. Consider getting a low-mow or no-mow grass seed mix (i.e. fine fescues) for a low-maintenance lawn. Taking it a step further, add some low growing flowers and create a bee lawn. The U of M has done and continues to do extensive research on this.

These simple practices will help minimize water pollution, conserve water and save you time and money in the long run. Please do your part; every bit helps!

Clean Streets, Clean Water

For more information on any of the above, contact Kameron Kytönen, Andover Natural Resources Technician, (763) 767-5137 or Coon Creek Watershed District: (763) 755-0975 www.cooncreekwd.org.



**Andover Today Newsletter
Summer 2019**

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 all 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 (Andover Ordinance: 10-7-6).
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 lawncare 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.
 - People find that if they mulch their clippings and leaves, they often don't need to fertilize!
 - Test your soil at UMN Extension by contacting them at 612-625-3101, or at <http://soiltest.cfans.umn.edu/>
4. **If you use herbicides, fall is the best time to treat for perennial broadleaf weeds.** However, these chemicals can be pollutants if applied improperly.



<http://turf.cals.cornell.edu/lawn/lawn-care-the-easiest-steps-to-an-attractive-environmental-asset/advanced-care/soil-compaction/>

Healthy lawns can look great and be good for water quality by absorbing rainfall!

For more information contact the Lower Rum River WMO, www.lrrwmo.org, or the Coon Creek Watershed District at 763.755.0975 or email: info@cooncreekwd.org.

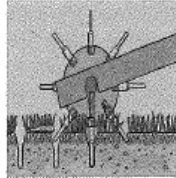
CLEAN WATER STARTS AT HOME: Tip #6 Fall Lawn Care

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 all 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 (Andover Ordinance: 10-7-6).

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 lawncare 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](http://soiltest.cfans.umn.edu/) by contacting them at (612) 625-3101; or at <http://soiltest.cfans.umn.edu/>

4. **If you use herbicides, fall is the best time to treat for perennial broadleaf weeds.** However, these chemicals can be pollutants- see page 7 of the July/August City newsletter for tips about saving on herbicide use.

Healthy lawns can look great and also be good for water quality by absorbing rainfall!

For more information contact the Lower Rum River WMO, www.lrrwmo.org or the Coon Creek Watershed District at (763) 755-0975 or email: info@cooncreekwd.org.

Clean, Drain, Dispose – It's the Law!

Most anglers and boaters follow Minnesota's Clean, Drain, Dispose laws to help prevent the spread of aquatic invasive species.

- **Clean** all aquatic plants, zebra mussels and other prohibited invasive species from watercraft, trailers and other water-related equipment before leaving any water access or shoreline.
 - It is illegal to transport prohibited invasive species - including zebra mussels, dead or alive.
- **Drain** water-related equipment (boat, ballast tanks, bait containers, motor) and drain bilge, live well and bait well by removing drain plugs before leaving any water access.
 - Keep drain plugs out while transporting watercraft.
- **Dispose** of unwanted bait, minnows, leeches and worms in the trash.
 - It is illegal to release bait into a waterbody or release aquatic animals from one waterbody to another.
 - It is illegal to release worms in the state; worms are not native to Minnesota.
 - If you want to keep your live bait, you must drain all the lake or river water and refill the bait container with bottled or tap water.

Recommended Actions

To further decontaminate your watercraft or equipment, it's important to spray, rinse and dry everything before going into another waterbody. Do one or more of the following:

- Dry for at least five days.
- Spray with high-pressure water.
- Rinse with very hot water. To reduce the risk of spreading zebra mussels, use water over 120°F and spray each area for at least two minutes or 140°F water for at least 10 seconds.

For additional information, visit mndnr.gov/aia

Please – A Titch Less Salt

Salt is so good...tasty on food, keeps roads safe, and softens hard water. Yet salt, measured by chlorides, is a growing problem in your local lakes and streams. Water softeners are one place where

you can fine-tune your salt use to keep area waterbodies healthy and save yourself money.

Softeners use salt when they regenerate, a process that washes accumulated minerals from their ion exchange resin beads. Think of this as a filter that takes out your water's hardness, but needs to be rinsed with saltwater when it gets gunked up. The frequency of regeneration can be based on either water used or time since the last regeneration. In either case, you need to tell the softener what your water's hardness is. If you don't, you may be wasting salt or failing to soften your water sufficiently.

Water hardness tests are readily available. Test kits can be purchased at hardware stores or online. Test strips are free from some companies, like Morton Salt, through their websites. If you are on city water, the city can tell you the hardness. Water softener control panels are generally pretty simple, allowing you to enter your water's hardness.

Salt used by water softeners doesn't disappear. It is discharged to your septic system or to the wastewater treatment plant, but it cannot be removed in those facilities. Salt from your water softener is eventually discharged to the ground or rivers.

The Lower Rum River Watershed Management Organization (LRRWMO) thanks you for helping protect your lakes and streams. The LRRWMO is formed by the cities of Anoka, Andover and Ramsey to manage local water resources. For more information, visit LRRWMO.org or call 763-434-2030.

J&A GLASS INC.

- Glass Shower Doors
- Mirrors
- Residential & Commercial Window Replacement
- Broken Glass Replacement
- Foggy Window Repair
- Automatic Doors - Service & Installation
- Commercial Storefronts

jaglassinc.com • 763.633.9694

1418 Northdale Blvd., Rogers

10% OFF
 YOUR PURCHASE WITH THIS COUPON
 Not valid with any other discounts or specials.

Providing customers with the highest quality whole hemp & CBD products to help improve your health and well-being.

botanicaCBDstore.com • 9125 Quaiway Ave NE, Suite 107, Chicago

Your Lawn Doesn't Need More Phosphorus

Minnesota law prohibits the use of phosphorus lawn fertilizers in most cases. The reason is simple - there is already adequate phosphorus in your soil. Extra phosphorus will run off and make lakes and streams green with algae. If your lawn is unhealthy, a lack of phosphorus probably is not the problem.



Suggestions for a healthy lawn:

- **Aerate:** This allows water, nutrients, and oxygen to penetrate down to where needed.
- **Mow taller:** In summer a 2.5"-3" height promotes deeper root growth and drought resistance.
- **Water mindfully:** 1" per week the rest of irrigation is sufficient. More is wasteful and contributes to nutrient runoff.
- **Get a soil test:** Find out what fertilizer or time, if any, you really need. Multi-in tests are available through the University of MN soil testing laboratory for less than \$20.
- **Match:** Leaving grass clippings on the lawn provides the equivalent of one fertilizer application per year.
- **Shop smart:** When purchasing fertilizers look at the three number sequence on the bag. A middle number of "0" indicates that it contains no phosphorus.

Thank you for helping the Lower Rum River Watershed Management Organization (LRRWMO) keep local waterbodies healthy. The LRRWMO is formed by the cities of Anoka, Andover and Ramsey to manage local water resources. For more information visit LRRWMO.org.

Kids & Co Child Care
 - since 1992

Full-Time & Part-Time
 Preschool and
 Childcare Programs

Ages 18 months - 11 years
LOW WEEKLY RATES!

850 South St. Anoka | 763-421-0633 | KidsCo92.com

Anoka City View Newsletter Fall 2019

Information from Public Services

Downtown Sidewalk Snow Removal

Downtown businesses are reminded to please remove all business-related items (benches, planters, dumpsters, etc.) from the sidewalks to ease snow removal. The city will assist businesses with snow removal from sidewalks when two or more inches of snow has fallen. However, the city is not responsible for any damage that may occur to items on the sidewalk. Let's work together to keep our sidewalks safe for your customers and pedestrians.



Hot Water Heater Problems

Many complaints about water are due to problems that originate in the home. If you detect an odor in your hot water, it could be due to your water heater. A harmful type of bacteria can contaminate a water heater and convert natural sulfur to hydrogen sulfide gas, which has a pungent odor. This problem is more severe if you are away from home for long periods of time and the water heater starts to leak. Flushing the water heater can help control your concern about the water issue. Other remedies include replacing the magnesium anode with an aluminum one or increasing the temperature setting to 180 degrees (high setting) for a few hours. **CAUTION: Make sure the water tank has an operable pressure relief valve before attempting this remedy and remember to lower the setting after these hours.**

If you notice small white particles in your faucet aerators, check to see if they float. If they do, your water heater dip tube may have disintegrated into small pieces. The dip tube is an extension of the cold water, extending nearly to the bottom of the tank. This prevents the incoming cold water from diluting the temperature of the hot water. Few homeowners have the tools to know how to replace a dip tube. It is best to have a plumber perform this repair.

Winterizing Your Home's Water System

- Fill in foundation cracks.
 - Wrap exposed pipes with insulation.
 - Keep basement or crawlspace warm enough to prevent freeze-ups.
 - Detach hoses from outside faucets.
 - Shut lawn faucets more than three feet from utility meters.
 - Clear leaves away from nearby fire hydrants.
- Please call the Anoka Water Department at 763-576-2923 with any questions.

BE PREPARED—Sanitary Sewer Backup Information

Are you prepared AND insured against a sewer backup?

- ALWAYS call the City of Anoka FIRST if you are experiencing a sewer backup affecting all of your home's drains or if you do not have water. During business hours, call 763-576-2923 or 763-576-2880. After hours, call 763-576-2860.
- Get Insurance for a Sewer Backup - If you have concerns regarding the damage a sewer backup could do to your property, contact your insurance carrier and review your coverage.
- DO NOT dispose of any inappropriate items into the sewer system.

Visit ci.anoka.mn.us for more sanitary sewer information.

Lower Rum River Water Management Organization

Meetings are held the third Thursday of each month at 8:30 a.m. in the committee room at Anoka City Hall. News and surface water issues are discussed. Meetings are open to the public. Contact City Manager Greg Lee at 763-576-2751 with any questions.

YOU ARE NOT ALONE

If you are homeless or at risk and: **Get a Place to Stay • Food Shelf • Clothing • Laundry • Job Training • Case Management Services • Computers & Internet Access • Personal Hygiene Items • Storage Lockers • Mail Drops**

DROP-IN CENTER HOURS
Monday-Friday 12-7pm
960 4th Ave N, Suite 407
Anoka, MN 55303
763.323.2046
MCRHousing.org

HOPE FOR YOUTH
reaching back means to survive. Getting back to three.

Ramsey Resident Newsletter June 2019

Your Lawn Doesn't Need More P!

Minnesota law prohibits the use of phosphorus lawn fertilizers in most cases. The reason is simple—there's already adequate phosphorus in your soil. Extra phosphorus will runoff and make lakes and streams green with algae. If your lawn is unhealthy, a lack of phosphorus probably isn't the problem.



- Suggestions for a healthy lawn:
- **Aerate.** This allows water, nutrients and oxygen to penetrate down to where they're needed.
 - **Grow taller.** In summer 2.5"–3" height promotes deeper root growth and drought resistance.
 - **Water modestly.** 1" per week by rain or irrigation is sufficient. More is wasteful and contributes to nutrient runoff.
 - **Get a soil test.** Find out what fertilizer lime, if any, you really need. Mail-in tests are available through the University of MN soil testing laboratory for less than \$20.
 - **Mulch.** Leaving grass clippings on the lawn provides the equivalent of one fertilizer application per year.
 - **Shop smart.** When purchasing fertilizers look at the three number sequence on the bag. A middle number of "0" indicates that it contains no phosphorus.

Thank you for helping the Lower Rum River Watershed Management Organization (LRRWMO) keep local waterbodies healthy. The LRRWMO is formed by the Cities of Anoka, Andover and Ramsey to manage local water resources. For more information see www.LRRWMO.org.

The Draw Summer Event Series

The Ramsey Foundation, in partnership with the City of Ramsey, invites you to the ninth year of The Draw 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 13 to August 22, and is paired with free Art in the Park classes for kids ages 5–15 on select dates. Performances include a variety of genres from Roadhouse Blues and The Beatles to the '70s and rock 'n' roll.

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

Parking on Public Streets

Remember, parking is generally allowed on any public street, but prohibited between the hours of 2:00–6:00 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.

August 2019

Win a \$75 Credit off your Utility Bill

Complete one of the two items listed below between July 22 and August 30, 2019, and be automatically entered into a random drawing for a \$75 credit on your utility account. Any currently billed Ramsey resident or business will be eligible for automatic entry by:

- 1) Signing up for automatic/recurring payments, OR
- 2) Signing up for paperless billing (e-billing)

You can access these options by going to our website, www.cityoframsey.com, and clicking on "Pay Utility Bill" for the link to Invoice Cloud, where you can register your account and sign up for one or both of these services. (Doing both will provide you two chances to win!)

A random selection will be made on or around September 3. The winner will be notified by September 15 and the credit will be placed onto the utility account before September 30.

The contest opens Monday, July 22 and is open through Friday, August 30. For more information, visit www.cityoframsey.com or call 763-433-9823.

This contest is managed by the City's Finance and Utility Billing departments to encourage a paperless process for environmental benefits, as well as to increase savings on postage and printing costs.

This Storm Drain is Part of Your River

Storm drains lead directly to your lakes, streams, and rivers—not to water treatment facilities! Many drain directly to natural waterways, while others first lead to stormwater ponds where some pollutants, but not all, are captured. Please keep your storm drains clean—if you wouldn't dump it in the river, don't dump it in the storm drain.



Lower Rum River Watershed Management Organization
www.LRRWMO.org

PULL THE PLUG ON AQUATIC HITCHHIKERS

Actions Required by MN Law

To prevent the spread of aquatic invasive species:

- Clean aquatic plants, sedo, rocks, and other prohibited items, remove all watercraft, trailers, and equipment before leaving the water area.
- Drain water from boat, ballast tanks, portable fuel containers, and motor before leaving a water access. Use drain bags. Never drain plugs on public waterways.
- Dispose of unwanted bait in the trash. It is illegal to release bait into the water, or to dump worms on the ground.

mn.gov/dnr
www.dnr.state.mn.us

Ramsey Resident • May/June 2019

Enjoy Golf!

The Links Gives you Driving Options!

Play At Your Convenience!
We Have "Holes" To Fit Your Schedule!
Choose From 8, 6, 9, 12, 18 or 21 Holes.

THE LINKS AT NORTH FORK
Golf Course & Banquet Center

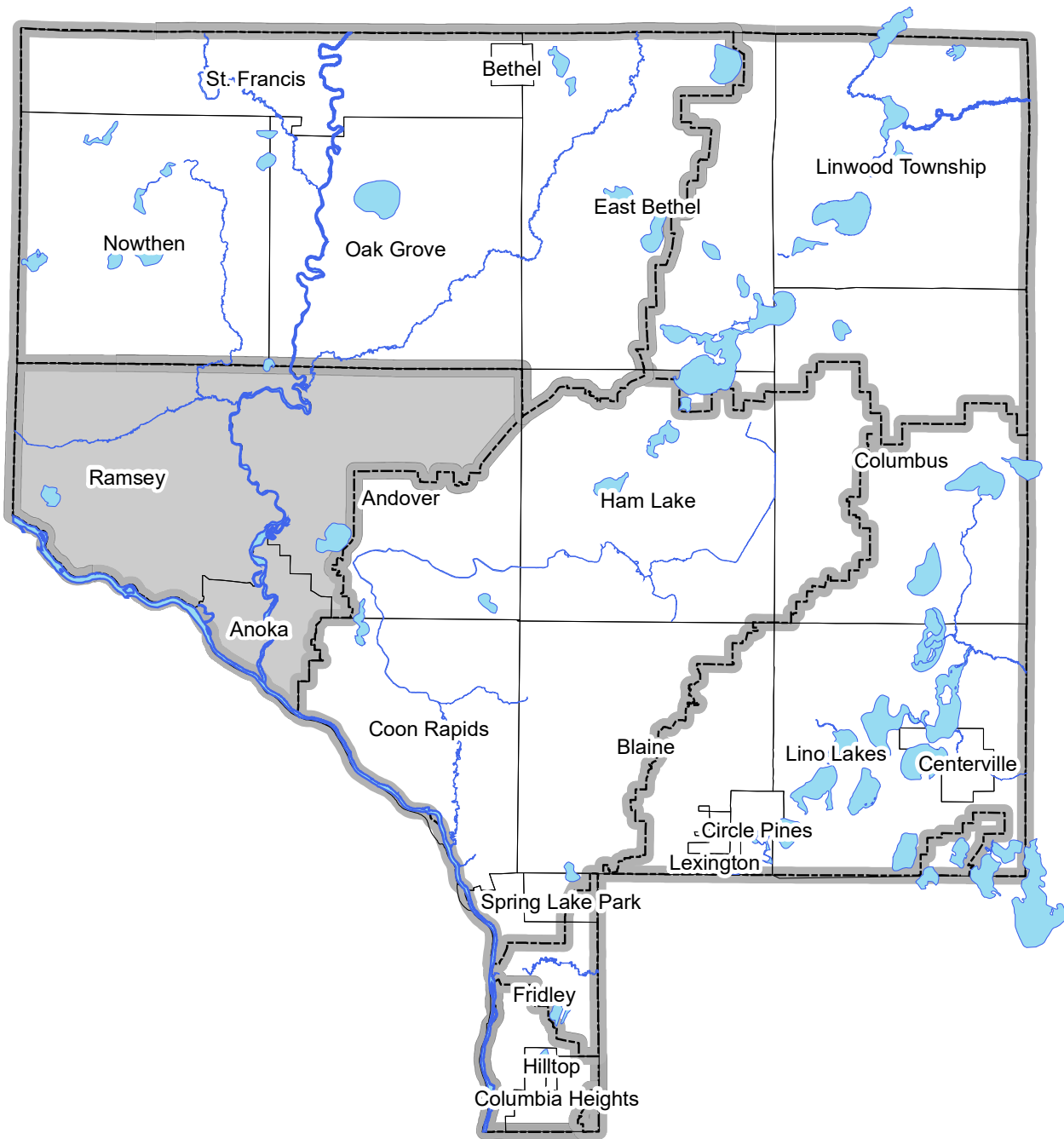
9333 Alpine Drive NW, Ramsey, MN 55303
(Just off Hwy 10 between Anoka and Elk River)

www.facebook.com/linksatnorthfork
www.GolfTheLinks.com • 763-241-0506

Ramsey Resident • July/August 2019

Appendix D: 2019 Work Results

Excerpt from the 2019 Water Almanac *Chapter 4: Lower Rum River Watershed*

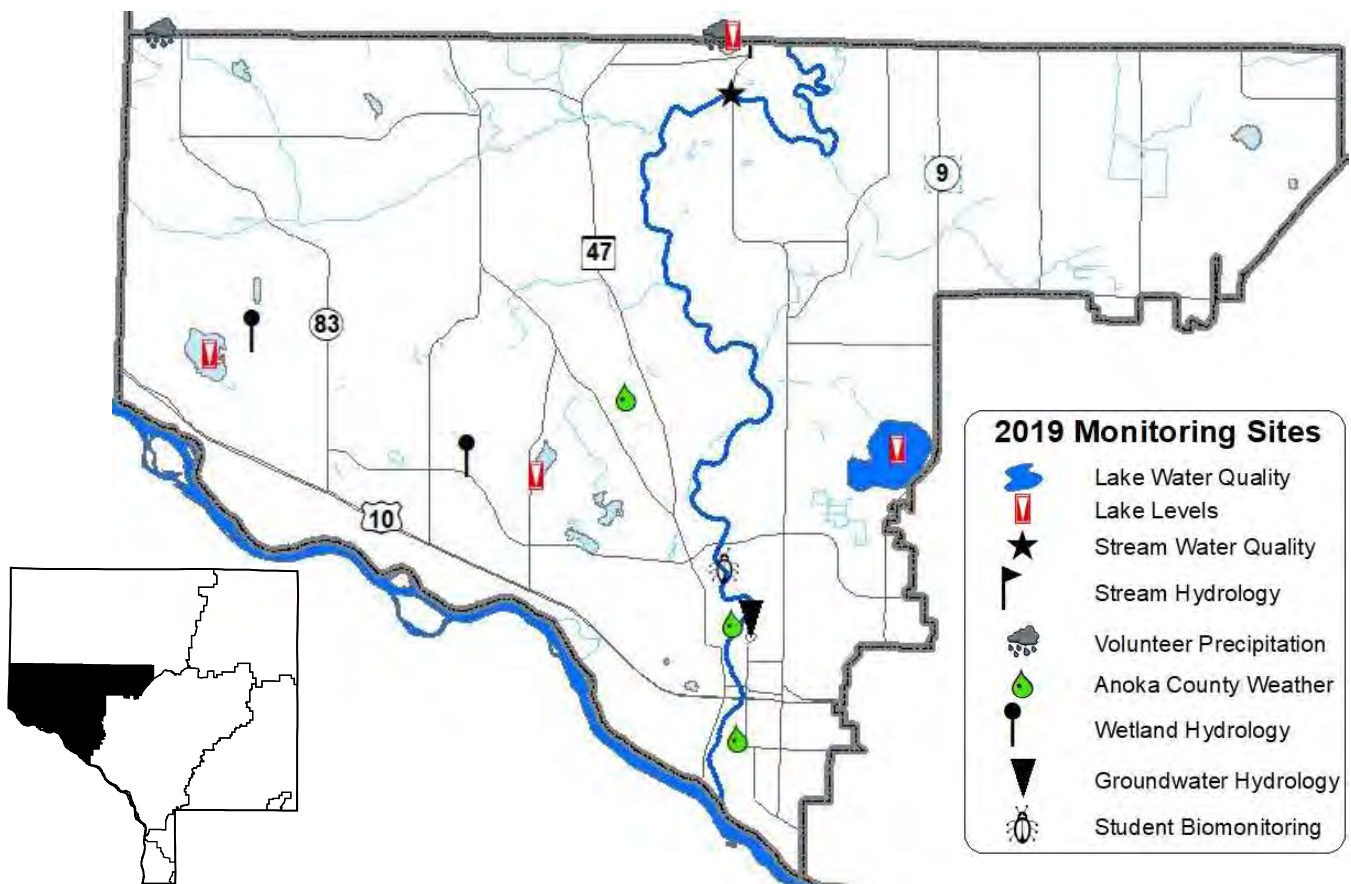


Prepared by the Anoka Conservation District

Chapter 4: Lower Rum River Watershed

Table of Contents

Lake Level Monitoring.....	4-150
Lake Water Quality	4-152
Stream Water Quality - Chemical Monitoring	4-155
Stream Water Quality – Biological Monitoring	4-165
Wetland Hydrology	4-168
Water Quality Grant Fund.....	4-172
Rum River Bank Stabilizations	4-173
Rum River Bank Erosion Inventory	4-174
Anoka Rain Gardens.....	4-175
Newsletter Articles	4-176
LRRWMO Website.....	4-177
Financial Summary.....	4-178
Recommendations	4-179
Groundwater Hydrology (ob wells).....	Chapter 1
Precipitation.....	Chapter 1



Lake Level Monitoring

Partners: LRRWMO, ACD, MN DNR, volunteers

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).

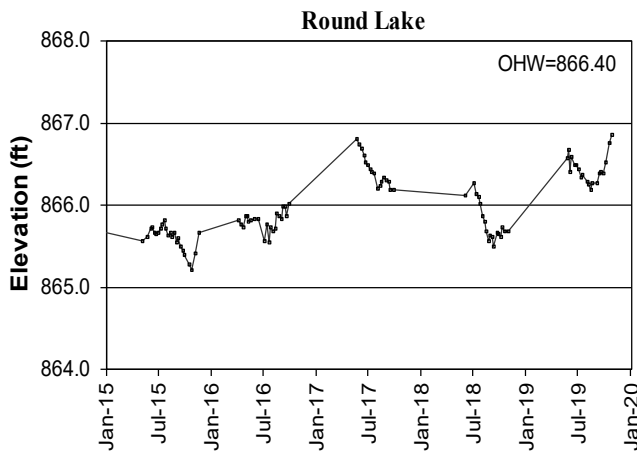
Purpose: To understand lake hydrology, including the impacts of climate or other water budget changes. These data are useful for regulatory, building/development, and lake management decisions.

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

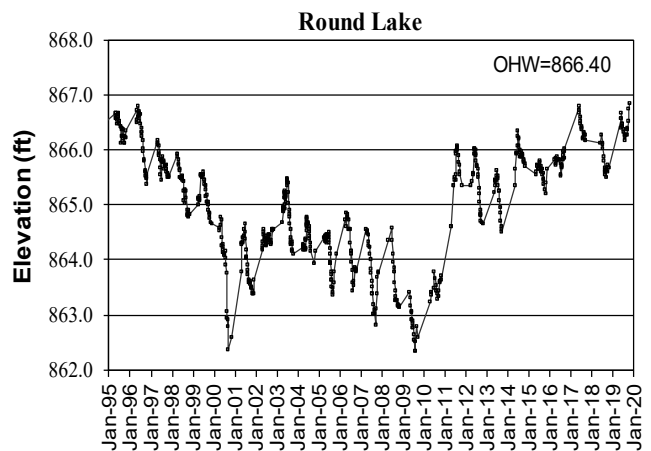
Results: Lake levels were measured by volunteers throughout the 2019 open water season. Lake gauges were installed and surveyed by the Anoka Conservation District and MN DNR. 2019 levels were higher than 2018 levels, and historical levels in general. Lake levels followed the expected pattern of higher levels in the spring with declining levels through summer. A wet summer, and very wet fall caused levels to drop less than usual into late summer, and then to increase dramatically through October. Most lakes ended the season at very high levels for the time of year. Sunfish Lake appears to be rising over the past 25 years with all of 2019 staying above the OHW. Round Lake has 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.

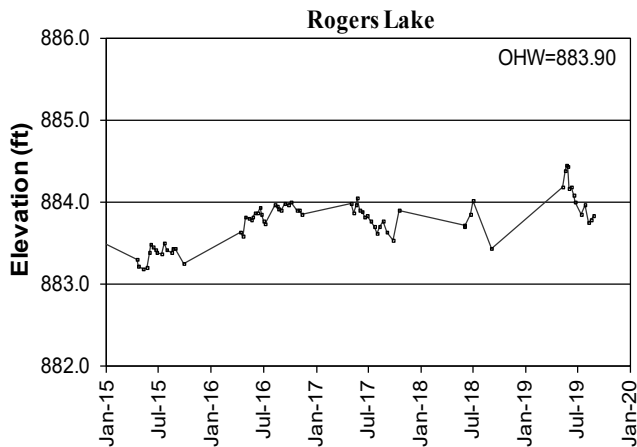
Round Lake Levels – last 5 years



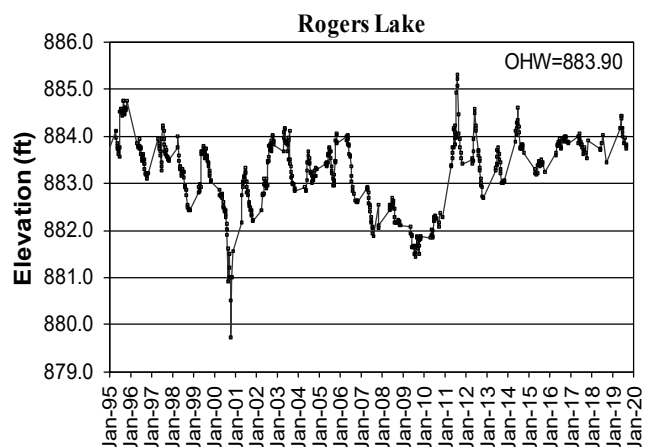
Round Lake Levels – last 25 years



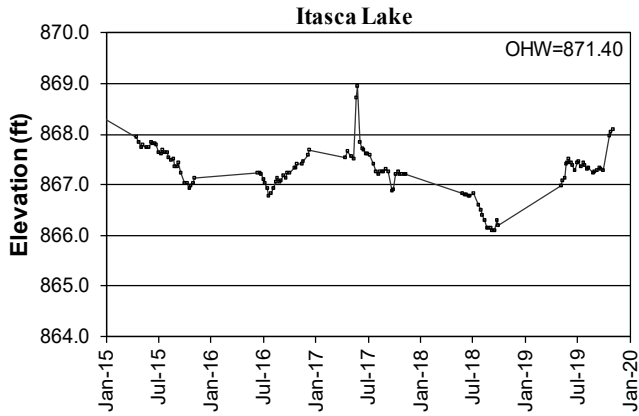
Rogers Lake Levels – last 5 years



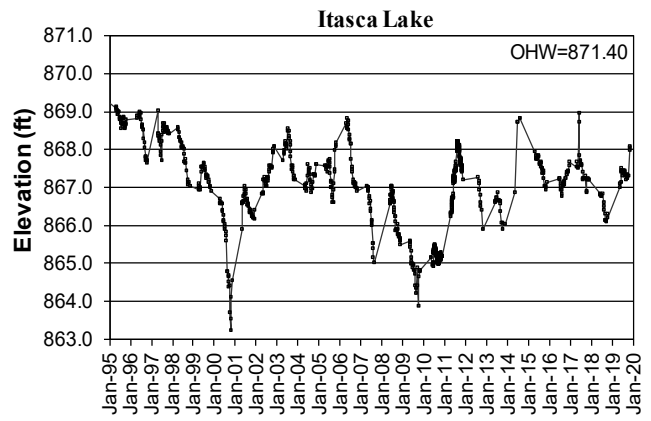
Rogers Lake Levels – last 25 years



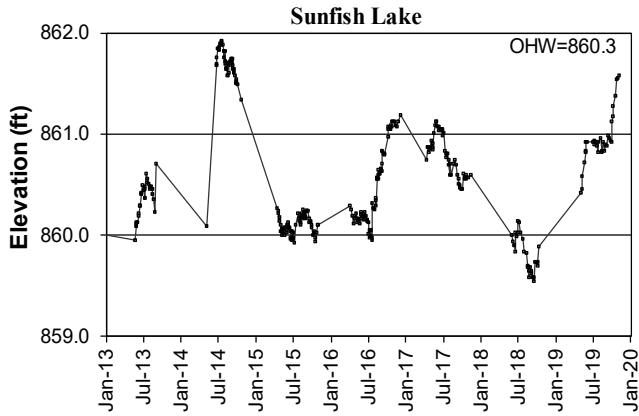
Itasca Lake Levels – last 5 years



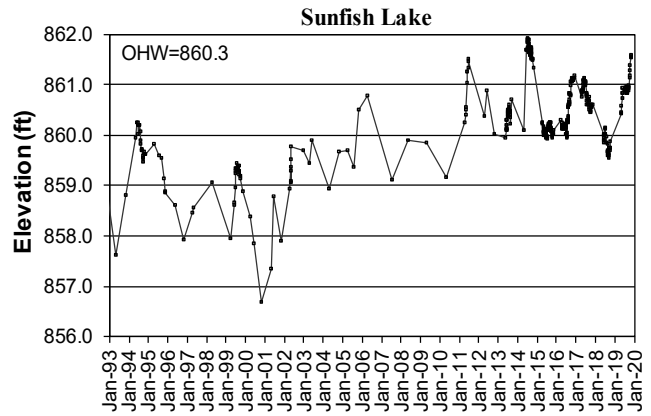
Itasca Lake Levels – last 25 years



Sunfish/Grass Lake Levels – last 5 years



Sunfish/Grass Lake Levels – last 25 years



Lake Water Quality

Partners: ACD, LRRWMO, Anoka County Ag Preserves Program

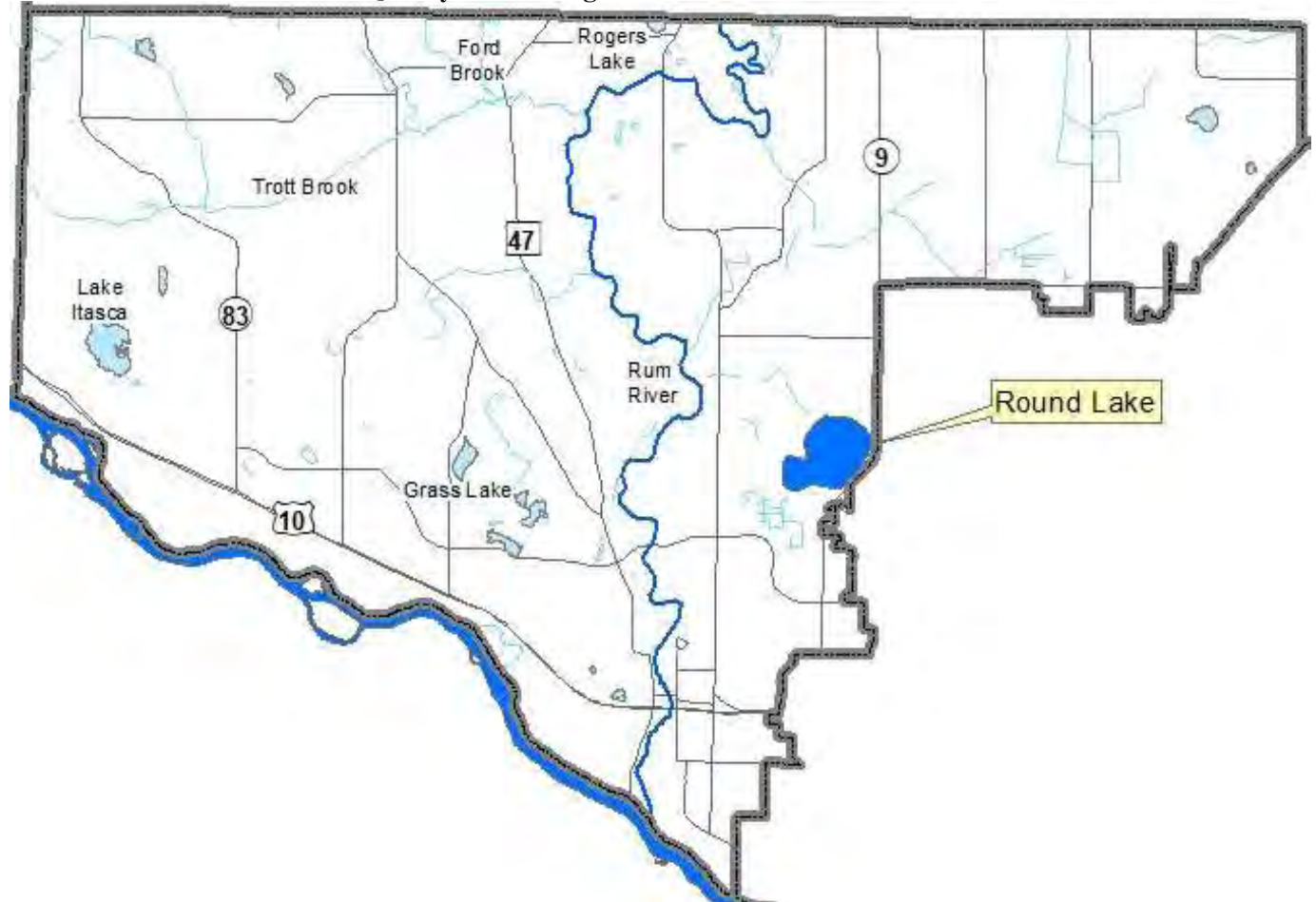
Description: May through September, every-other-week, monitoring is conducted for the following parameters: total phosphorus, chlorophyll-a, Secchi transparency, dissolved oxygen, turbidity, temperature, conductivity, pH, and salinity.

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

Locations: Round 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.

2019 LRRWMO Lake Water Quality Monitoring Sites



Round Lake

City of Andover, Lake ID # 02-0089

Background

Round Lake is located in southwest Anoka County. It has a surface area of 220 acres and maximum depth of 19 feet, though the majority of the lake is less than 4 feet deep. The lake is surrounded by cattails and has submerged vegetation interspersed throughout the basin. This lake has a small watershed and is not subject to many of the negative impacts that occur on more developed lakes. Public access is from a dirt ramp on the lake's southeast side. Recreation is minimal primarily consisting of canoeing, kayaking, and wintertime fishing.

2019 Results

In 2019, Round Lake's water quality was very good compared with other lakes in this region (NCHF Ecoregion) receiving an overall A letter grade. The average of both total phosphorus (22.7 µg/L) and chlorophyll-a (5.1 µg/L) slightly increased from 2016, when the lake was last monitored. Both were still well below the state standards for shallow lakes (60 µg/L and 20µg/L respectively). Average Secchi transparency was 9.6 feet which is greater than the historical average of 8.5 feet. Phosphorus and algae concentrations were fairly consistent with a slight seasonal increase during July. Total phosphorus (29 µg/L), Cl-a (11.6 µg/L), and Secchi transparency (7.92 ft.), all had their poorest result during July. Even these "worst case" results during the middle of summer are quite good for a lake in this region and well within state standards for each parameter.

Trend Analysis

Twelve years of water quality monitoring has been conducted by the Anoka Conservation District (1998-2000, 2003, 2005, 2007, and 2009-2010, 2012, 2014, 2016-2019), which is a marginal number of years for trend analysis. In 2010, the results of the analysis indicated a significant trend of declining water quality across the years studied to that point (repeated measures MANOVA with response variables TP, Cl-a, and Secchi depth, $F_{2,5} = 9.6065$, $p = 0.0194$). When the analysis is run on all data to date, including the exceptional water quality observed since 2012, no significant water quality changes are apparent ($F_{2,9} = 0.63$, $p = 0.55$). We examined each of the response variables separately using a one-way ANOVA to gain insight into which parameters could be influencing current water quality conditions. TP and Cl-a show non-significant downward trends, but lake level fluctuations are likely main drivers of TP and Cl-a concentrations in the lake due to dilution factors.

Discussion

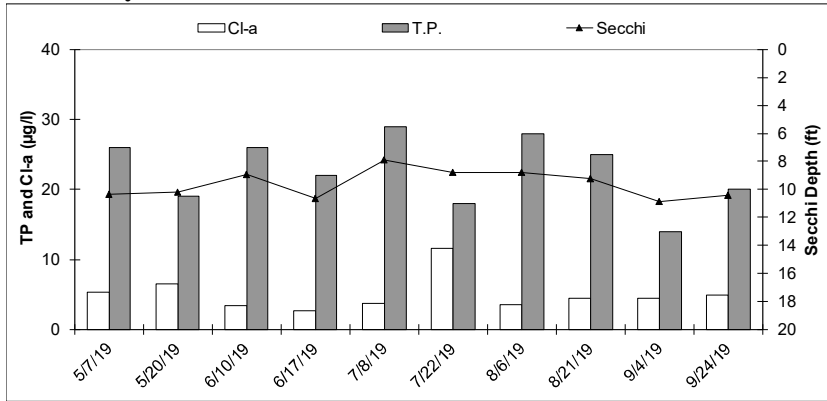
In 2019, exceptional water quality was observed in Round Lake for the fourth consecutive monitored year since 2012, earning the lake an A letter grade each year. There was growing concern about a trend toward poorer water quality, and continually falling lake levels from the mid-1990s through 2010. During this period, lake levels decreased by more than 4 feet on average. There was speculation that in-lake nutrient sources, driven by sediment mixing, were a contributor of phosphorus. During low water level conditions, there is more wind mixing due to shallow water depths, and in these years, there was also a conspicuous reduction of chara (a plant-like algae) carpeting the bottom. Since 2012, water levels have recovered substantially and water quality has dramatically improved. It does seem that low water levels in Round Lake have a correlation with poorer water quality.

The lake has few surface water inputs, so groundwater is important to lake hydrology. There have been concerns that local surficial groundwater levels, and hence the lake, are negatively impacted by a variety of causes including irrigation, residential groundwater use, and stormwater management. Groups including the MN DNR, ACD, watershed organizations, and cities have studied these potential causes. None has been found to cause lower-than-expected lake levels. Several lakes, including Round Lake and Bunker Lake, are potentially affected by groundwater overuse. Conservation of groundwater must become a regional and local priority as it will most likely become an increasing issue as development and population in the county continue to grow.

Round Lake

City of Andover, Lake ID # 02-0089

2019 Daily Results



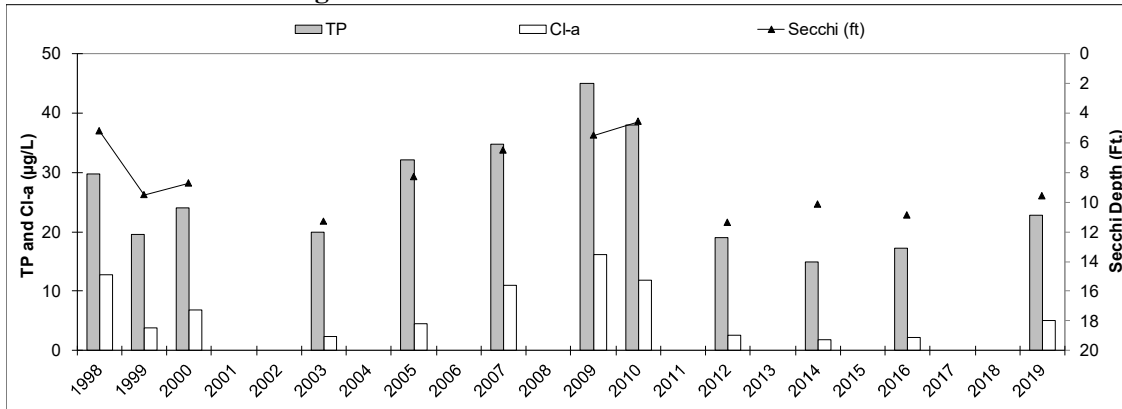
2019 Median Results

pH		8.11
Specific Conductivity	mS/cm	0.34
Turbidity	NTU	1.15
D.O.	mg/l	10.99
D.O.	%	128.2
Temp.	°F	71.84
Salinity	%	0.16
Cl-a	µg/L	5.1
T.P.	µg/l	23.5
Secchi	ft	2.96

Historical Report Card

Year	TP	Cl-a	Secchi	Overall
1998	B	B	C	B
1999	A	A	B	A
2000	B	A	B	B
2003	A	A	A	A
2005	B	A	B	B
2007	C	B+	C	C
2009	C	B	C	C
2010	C	B	C	C
2012	A	A	A-	A
2014	A	A	A	A
2016	A	A	A	A
2019	A	A	B	A
State Standards	60 ug/L	20 ug/L	>3.3 ft	

Historical Annual Averages



Round Lake

2019 Water Quality Data

Date:	5/7/2019	5/20/2019	6/10/2019	6/17/2019	7/8/2019	7/22/2019	8/6/2019	8/21/2019	9/4/2019	9/24/2019
Time:	1:15	1:30	10:10	12:30	12:15	12:15	12:30	12:00	12:15	12:20

Units	R.L.*	Results	Results	Results	Results	Results	Results	Results	Results	Results	Average	Min	Max		
pH		0.1	8.29	8.02	8.11	8.11	8.36	8.10	8.33	7.98	7.86	7.95	8.11	7.86	8.36
Specific Conductivity	mS/cm	0.01	0.363	0.376	0.336	0.313	0.324	0.348	0.350	0.324	0.335	0.316	0.339	0.313	0.376
Turbidity	FNURU	1	N/A	0.00	1.20	1.10	3.10	1.40	0.00	1.20	0.60	0.80	1	0	3
D.O.	mg/l	0.01	12.51	9.51	8.22	9.08	11.80	10.36	12.53	10.94	11.03	12.48	10.85	8.22	12.53
D.O.	%	1	126.6	93.0	96.5	105.7	152.4	130.2	134.3	129.8	122.6	146.6	123.8	93.0	152.4
Temp.	°C	0.1	15.15	13.12	22.11	22.16	26.60	25.65	26.89	23.92	20.58	20.45	21.7	13.1	26.9
Temp.	°F	0.1	59.3	55.6	71.8	71.9	79.9	78.2	80.4	75.1	69.0	68.8	71.0	55.6	80.4
Salinity	%	0.01	0.17	0.18	0.16	0.15	0.16	0.17	0.17	0.16	0.16	0.15	0.16	0.15	0.18
Cl-a	ug/L	0.5	5.4	6.5	3.4	2.7	3.7	11.6	3.6	4.5	4.4	4.9	5.1	2.7	11.6
T.P.	mg/l	0.010	0.026	0.019	0.026	0.022	0.029	0.018	0.028	0.025	0.014	0.020	0.023	0.014	0.029
T.P.	ug/l	10	26	19	26	22	29	18	28	25	14	20	22.7	14	29
Secchi	ft	0.1	10.33	10.16	8.92	10.66	7.92	8.75	8.8	9.3	10.8	10.4	9.6	7.9	10.8
Secchi	m	0.1	3.1	3.1	2.7	3.2	2.4	2.7	2.7	2.8	3.3	3.2	2.9	2.4	3.3
Physical			1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Recreational			1	1.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	1.9	1.0	3.0

*reporting limit

Stream Water Quality - Chemical Monitoring

Partners: MPCA, ACD, LRRWMO

Description: Two sites on the Rum River were monitored in 2019. The locations of the river monitoring sites were located near the approximate upstream and downstream extents of the Lower Rum River Watershed. A site near the northern boundary of the Upper Rum River Watershed in St. Francis has been additionally monitored in previous years, but was not monitored in 2019. Monitoring near the southern extent of the Lower Rum Watershed was completed by the Metropolitan Council (Met Council) downstream of the Anoka Dam. Collectively, this data allows for an upstream to downstream water quality comparison within Anoka County, as well as within each watershed.

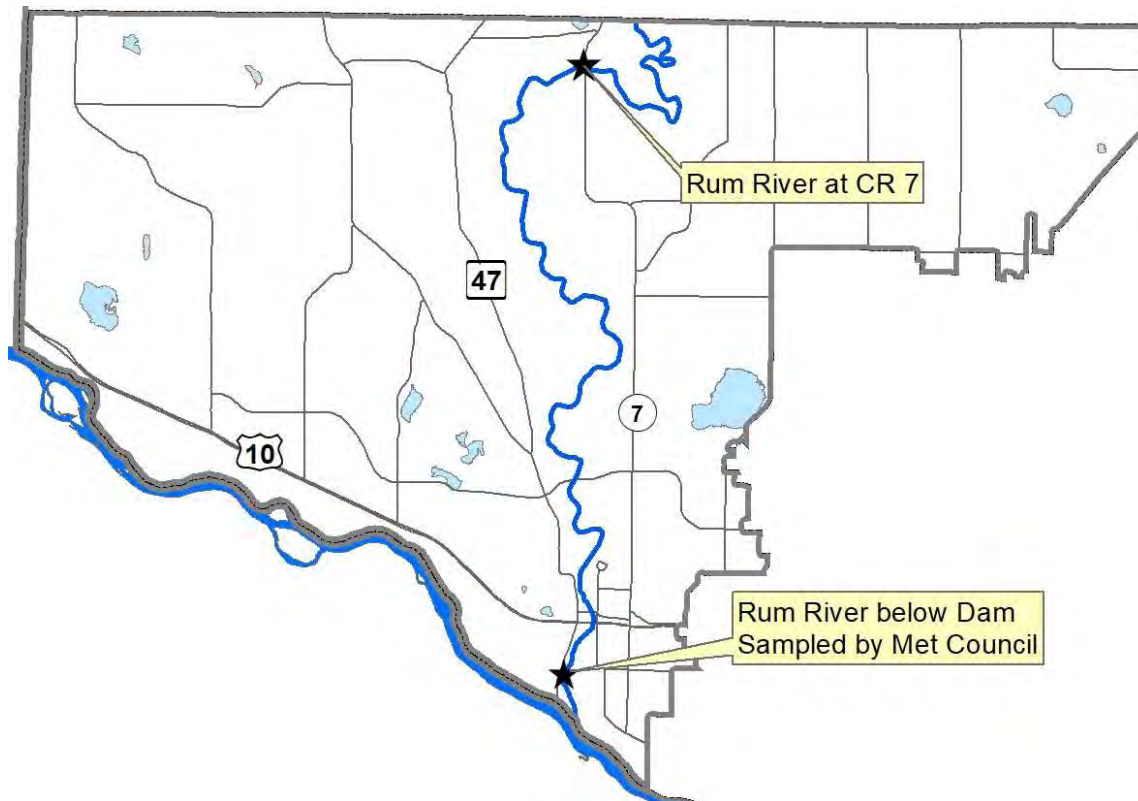
Monitoring by Anoka Conservation District occurred in May through October for each of the following parameters: total suspended solids, total phosphorus, Secchi tube transparency, dissolved oxygen, turbidity, chlorides, temperature, specific conductivity, pH, and salinity. Metropolitan Council monitoring occurred weekly March to October. The Met Council monitors all the parameters listed above, plus several more. Met Council monitoring data can be found on their Environmental Information Management Systems (EIMS) website (<https://eims.metc.state.mn.us/>). Data from both sources are summarized in this report.

Purpose: To detect water quality trends, diagnose and identify the source of any problems, and guide management.

Locations: **2019:** Rum River at County Road 7 (ACD), Rum River at Anoka Dam (Met Council)
Past: Rum River at County Road 24 (ACD)

Results: Results are presented on the following pages.

2019 Rum River Monitoring Sites



Stream Water Quality Monitoring

RUM RIVER

Rum River at Co. Rd. 24 (Bridge St), St. Francis	STORET Site ID = S000-066
Rum River at Co. Rd. 7 (Roanoke St), Ramsey	STORET Site ID = S004-026
Rum River at Anoka Dam, Anoka ¹	STORET Site ID = S003-183

¹monitored by the Metropolitan Council

Years Monitored

At Co. Rd. 24 – 2004, 2009-2011, 2014-2018 (ACD)

At Co. Rd. 7 – 2004, 2009- 2011, 2014-2018, **2019** (ACD)

At Anoka Dam – 1996-2011(MC WOMP), 2015-2018, **2019** (Met Council)

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, and is heavily used for recreation. Subwatersheds that drain to the Rum in Anoka County include Seelye Brook, Ford Brook, Cedar Creek and Trott Brook. The Rum River watershed is quite large and extends to the north through most of Isanti and Mille Lacs Counties, and encompassing Lake Mille Lacs where it originates. The Rum River also has a West Branch tributary, which flows through portions of Morrison and Benton Counties.

Because its watershed is so large, the degree to which Rum River water quality improves or is degraded as it flows through Anoka County is hard to calculate, and is highly influenced by factors further upstream. 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 and exits Anoka County. Monitoring water quality at upstream sites has occurred only in more recent years. Water quality changes might be expected from upstream to downstream because predominant land use changes dramatically from forested and undeveloped upstream of Anoka County, rural residential in the upstream areas of Anoka County, and to suburban in the downstream areas.

Methods

In 2004, 2009-2011, and 2014-2019 monitoring was conducted to determine if Rum River water quality changes through Anoka County, and if so, generally where do these changes occur. The data is reported for all sites together for a more comprehensive analysis of the river from upstream to downstream.

In 2019, the river was monitored during both storm and baseflow conditions by taken grab samples at County Road 7, located at the top of the Lower Rum River Watershed. Eight water quality samples were taken; half during baseflow conditions and half following storm events. Storms are generally defined as one-inch or more of rainfall in 24 hours, or a significant snowmelt event combined with rainfall. In some years, particularly drought years, smaller storm events were used for sampling. Downstream of the Anoka Dam, the river was monitored by the Metropolitan Council using a different schedule. Data from six Met Council sampling events that occurred within 48 hours of an ACD monitoring event were included in the graphs and analysis below. County Road 24 (furthest upstream) was not sampled in 2019 but historical data is included in the analysis.

At County Road 7, parameters tested with portable meters included pH, specific conductivity, turbidity, temperature, salinity, and dissolved oxygen. Parameters tested by water samples sent to a state-certified lab included total phosphorus, total suspended solids, and chlorides. The Metropolitan Council monitored additional parameters at the Anoka Dam.

Water level and flow data are available 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 at all sites, and only similar dates that samples were collected in 2019. 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 available through the Minnesota Pollution Control Agency's EQUIS database (<https://www.pca.state.mn.us/data/environmental-quality-information-system-equis>).

Results Summary

This report includes data from 2019 and an overview of previous year's data. The following is a summary of results.

- Specific conductivity is an indicator of dissolved constituents. Specific conductivity in the Rum River is lower than other Anoka County streams. Specific conductivity generally increases mildly moving downstream. Average specific conductivity at County Road 7 in 2019 was 0.247 mS/cm.
- Chlorides averaged 9.36 mg/L at County Road 7 in 2019, which is low. As development continues in the Rum River watershed, efforts should include minimizing road deicing salt use and utilizing new water softening technology. Other streams near the Rum River do have significant high chlorides problems. The chronic State standard for chlorides is 230 mg/L which needs to be exceeded two or more times in a three-year period for a stream to be considered impaired.
- Phosphorus concentrations in the Rum River have a tendency to straddle the 100 µg/L State standard at ACD sampled sites. The site at County Road 7 averaged 86.6 µg/L and exceeded the standard on two sampling occasions in 2019, once during baseflow, and once after a storm event. Interestingly, concentrations below the Anoka Dam as measured by Met Council averaged just 56.8 µg/L. It is likely that the pool above the dam itself is providing settling treatment of water quality to the Rum River. These artificially low concentrations downstream of the dam do not minimize the reality that the Rum River is straddling the impairment threshold for phosphorus, and even small increases could cause the Rum River to be listed as impaired.
- Suspended solids and turbidity generally remained low in the Rum River in 2019 compared to State standards and to other Anoka County streams. Average turbidity was similar to previous years. ACD results garnered an eight-sample average of 8.55 NTU turbidity 8.22 mg/L TSS for 2019. Even lower turbidity and TSS concentrations measured by Met Council downstream of the Anoka Dam are likely due to settling in the pool created by the dam. Though suspended solids remain well under state impairment thresholds in the Rum, both TSS and turbidity show a moderate increase during storm events, and stormwater runoff mitigation should be a focus of management efforts, especially as other pollutants may be associated with suspended solids.
- Dissolved oxygen remained above the State standard of 5 mg/L in 2019 and previous monitored years. The lowest concentration recorded in 2019 was 6.58 mg/L at Rum River at C.R. 7. This was similar to the minimums recorded over the last several years.
- pH remained near neutral levels in the Rum River in 2019 after being elevated on some occasions in 2015 and 2017. pH should remain between 6.5 and 8.5 to support aquatic life and meet state water quality standards.

Below the data are presented and discussed for each parameter in greater detail. 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.

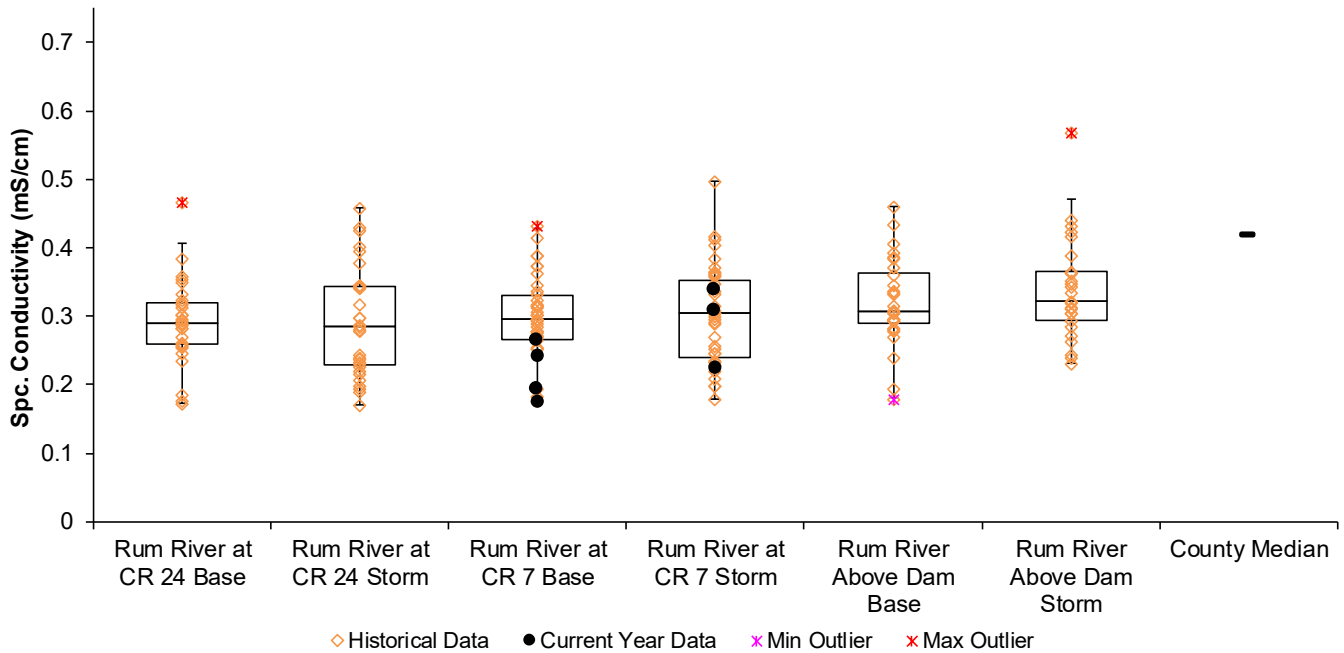
Specific Conductivity

Specific conductivity is an indicator of dissolved pollutants. Dissolved pollutant sources include road runoff and industrial chemicals, among many others. Metals, hydrocarbons, and road salts are often of concern in a suburban environment. Specific 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 specific conductivity.

Specific conductivity is acceptably low in the Rum River, but does show a tendency to increase slightly moving downstream. Conductivity is measured in different units by Met Council below the Dam than the units used by ACD above the dam. Because of this, the results cannot be compared for this parameter for that site. Average specific conductivity in 2019 (all conditions) was 0.247 mS/cm at County Road 7. This is lower than the historical median for Anoka County streams of 0.420 mS/cm. The 2019 maximum observed specific conductivity in the Rum River was 0.347 mS/cm at County Road 7 following a storm event.

Specific conductivity has historically been consistent between storm flow conditions and baseflow conditions in the Rum River. High baseflow specific conductivity has been observed in most other nearby streams and tributaries to the Rum. This occurrence has been studied extensively, and the largest cause has often been found to be road deicing salts that have infiltrated into the shallow aquifer. Water softening salts and geologic materials also contribute, but to a lesser degree. Many of these streams contribute to the Rum River.

Specific Conductivity during Baseflow and Storm Conditions. Orange diamonds are historical data from previous years and black circles are 2019 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).

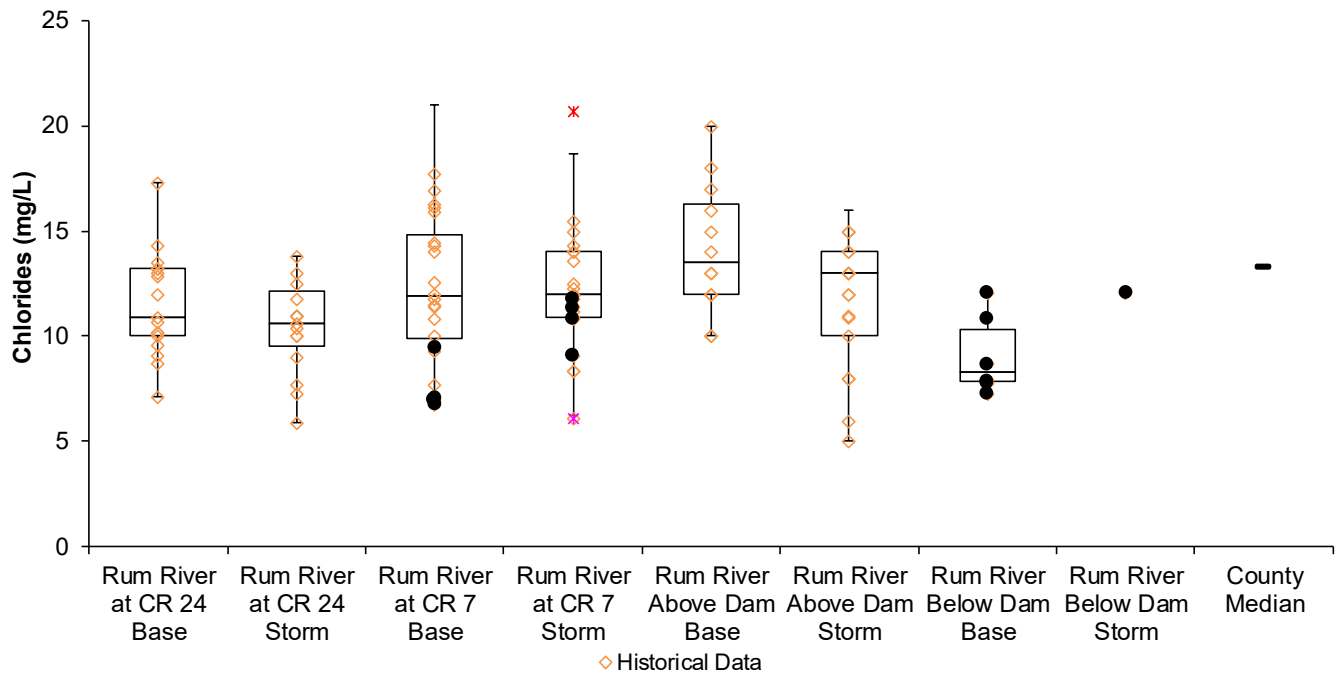


Chlorides

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 concern because of the effect they can have on the stream's biological community. They are also of concern in this case because the Rum River is upstream from the Twin Cities drinking water intakes on the Mississippi River. Specific Conductivity data, reported above, is commonly a reflection of chlorides, with higher specific conductivity generally corresponding to higher chlorides.

In 2019, water samples for chloride analysis were taken from the Rum River at C.R. 7 and below the Anoka Dam. At these locations, average chlorides concentrations were 9.2 mg/L and 9.54 mg/L respectively. Chloride concentrations in general in 2019 were on the low end of results gathered since 2004, but were slightly elevated during storm samples. May factors can contribute to variation in chloride concentrations year to year, not least of which is annual weather patterns that affect road salting. Practices like cities providing Smart Salt training to staff, improved water treatment process, and high efficiency water softeners can help reduce the chloride load to streams. Higher density housing and paved streets, and very snowy or icy winters can increase the chloride load to a stream. The chronic state water quality standards for chloride concentration in streams is 230 mg/L. The Rum has historically been well below that standard, and remains there in 2019.

Chlorides during Baseflow and Storm Conditions. Orange diamonds are historical data from previous years and black circles are 2019 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).



Total Phosphorus

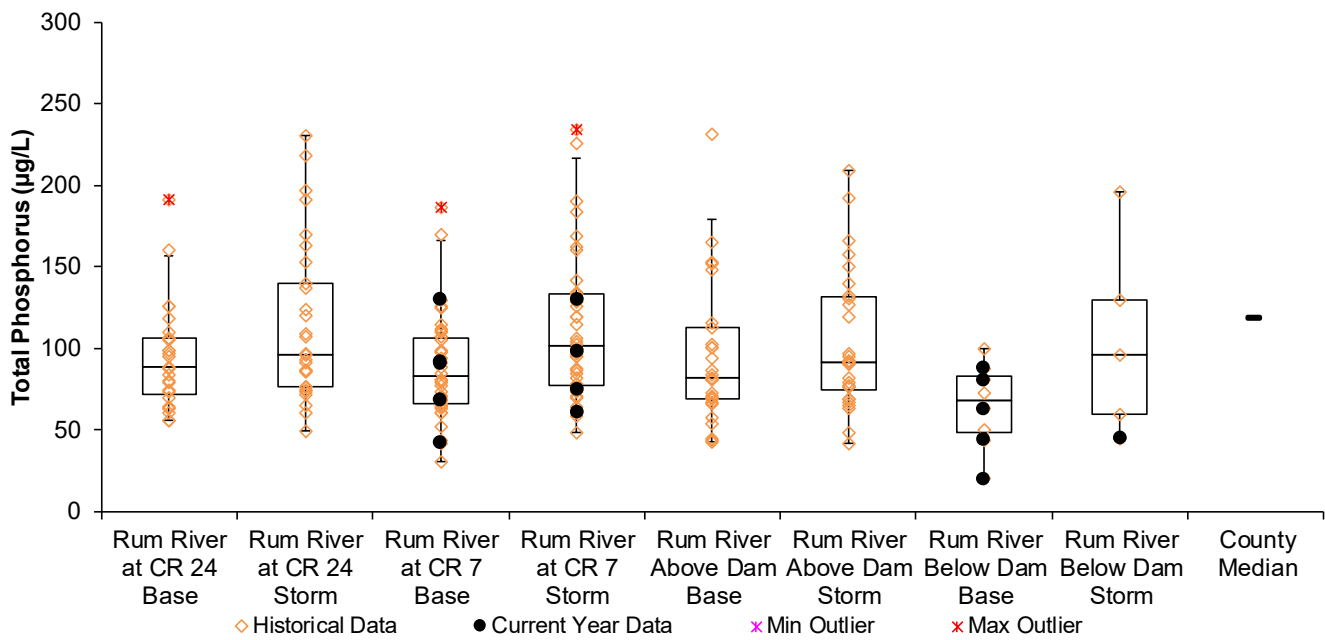
The nutrient phosphorus is one of the most common pollutants in our region, and can be associated with urban runoff, agricultural runoff, wastewater, and many other sources. It causes excessive algal growth and a number of other associated problems for aquatic life and recreation. Phosphorus concentrations in the Rum River are near the state impairment threshold.

In 2019, as in most years prior, total phosphorus averaged near the State water quality standard at 86.6 µg/L at County Road 7. Two of eight samples collected by ACD yielded total phosphorus concentrations over the state standard of 100 µg/L. One exceedance occurred after a storm event and one during baseflow conditions. Interestingly, results from Met Council monitoring below the dam showed lower concentrations at baseflow than any previous monitoring conducted upstream of the dam in the past. From the 6 representative samples used for analysis, total phosphorus averaged just 56.83 µg/L below the dam in 2019. The pool caused by the dam may be causing nutrient laden particles to settle out of the water column as the river slows down and widens upstream of the dam. The dam may be causing water quality improvements in the Rum River due to this settling action that haven't been accounted for in the past. Looking at all data collected at all sites, phosphorus concentrations tend to be higher during storm flows than base flows. Since the Rum River is close to exceeding the phosphorus state standard upstream, efforts should be made to prevent any additional phosphorus loading which may result in the

Rum River being designated as “impaired” for nutrients. Future upgrades to wastewater treatment plants throughout the Rum River watershed may offer phosphorus reductions. At the same time, development should include current stormwater treatment in order to maintain nutrient loading levels and hopefully reduce overall phosphorus levels. Larger reduction strategies will be necessary to offset the increasing loading that will likely occur with increasing development, more frequent and intense precipitation events, upstream ditch cleaning and other factors.

According to the Rum River WRAPS report, preventing additional nutrient loading to the Rum River should be a high priority throughout the watershed. Additionally, current loading sources differ throughout the watershed based on landuse differences. In the lower reaches of the Rum River in Anoka County, stabilization of streambank erosion is identified as the number one strategy for reducing loading in this portion of the watershed. ACD has partnered with Anoka County Parks and the Upper and Lower Rum River WMOs to secure \$1.4 Million in grant and matching funds to implement bank stabilization practices along eroding banks in the Rum River over the next three years. These projects will reduce the direct loading of sediment and nutrients to the river from these banks into the future.

Total Phosphorus during Baseflow and Storm Conditions. Orange diamonds are historical data from previous years and black circles are 2019 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentile (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 are 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, such as phosphorus, are attached to particles. Many stormwater treatment practices such as street sweeping, sumps, and stormwater settling ponds, target sediment and these attached pollutants. In 2019, median 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 usually increases during storms, though there is substantial variability (see figure below). There is no clear change in turbidity or suspended solids upstream to downstream at ACD monitoring sites above the Anoka Dam. The average turbidity, in 2019 (all conditions) at County Road 7 was 8.55 NTU. The historical median for Anoka County streams is 11.39 NTU. Turbidity was only elevated on one occasion, after a storm event, where it reached 24.2 NTU. Even though turbidity is no longer used by the state to determine if a stream is impaired, it should continue to be monitored as an indicator of increasing pollutant levels.

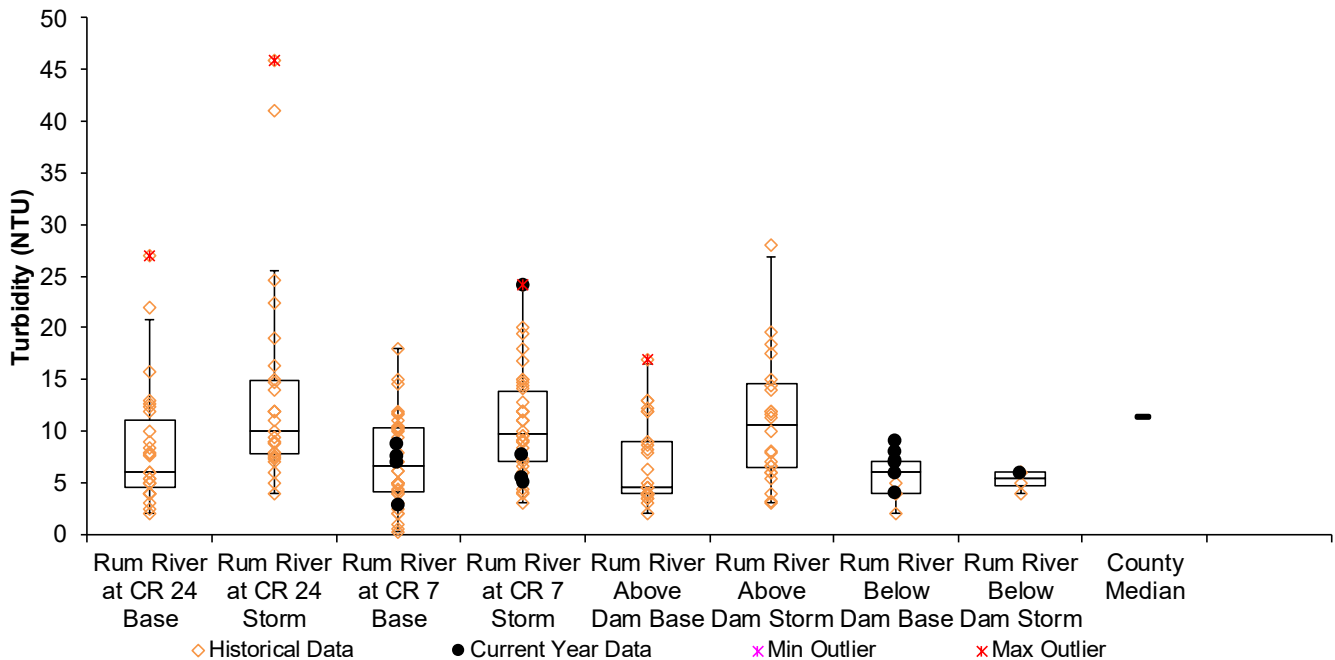
The average TSS concentration (all conditions) in 2019 at County Road 7 was 8.22 mg/L, lower than the Anoka County stream median for TSS of 14.37mg/L. It is also lower than state water quality standard. The state threshold for TSS impairment in the Rum River is 10% of samples April 1-September 30 exceeding 30 mg/L. The highest concentration recorded in 2019 was 10.6 mg/L. ACD has not collected a sample in the Rum River over 30 mg/L TSS since May of 2010.

Like total phosphorus concentrations, samples collected by Met Council below the Anoka Dam had decreased turbidity and TSS. It is likely that the same settling effect that is reducing phosphorus concentrations is also reducing the concentration of suspended particles in the water column. Additionally, like total phosphorus, storm flows increase the concentration of suspended solids within the water column vs. baseflow conditions.

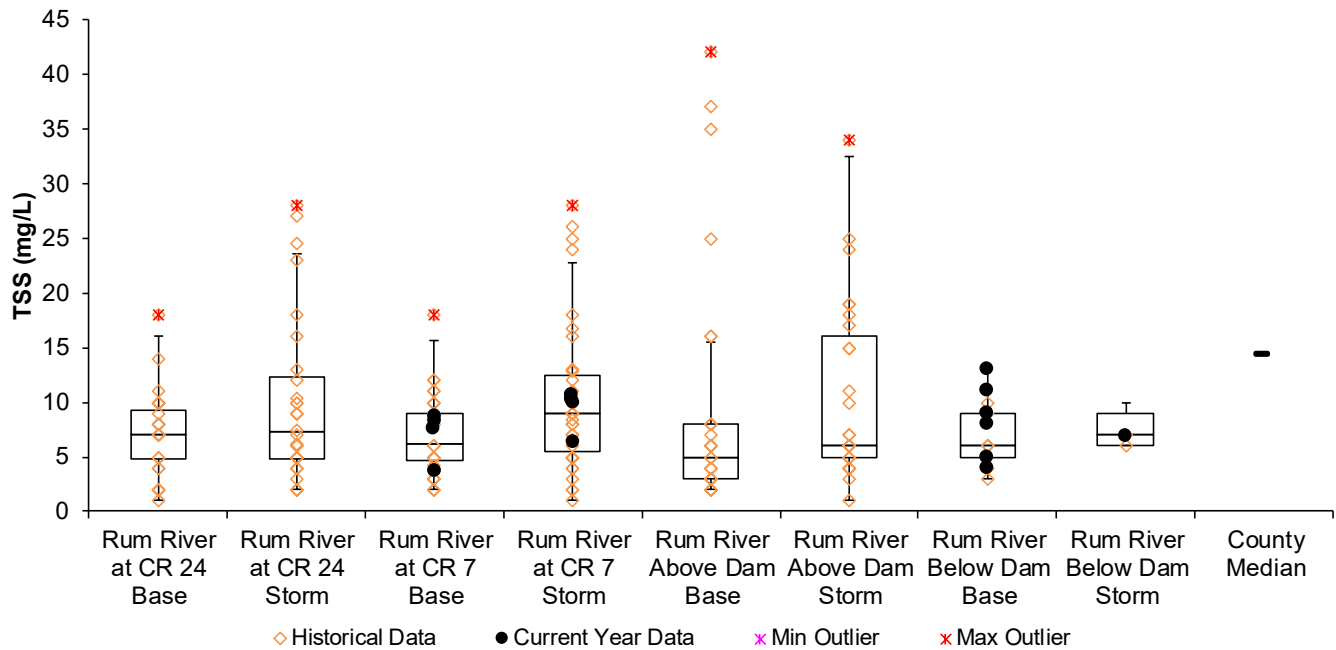
Suspended solids can come from within and outside of the river channel. Sources on land include soil erosion, road sanding, and others. Riverbank erosion and movement of the river bottom also contributes to suspended solids. A moderate amount of this “bed load” is natural and expected.

Though the Rum River remains well under the impairment threshold for TSS, rigorous stormwater treatment should occur as the Rum River watershed continues to develop. Increasing development in the watershed could seriously impact the river, especially given that stormwater carries many pollutants in addition to suspended sediments. There should also be an effort to bring stormwater treatment up-to-date in older developments throughout the watershed.

Turbidity during Baseflow and Storm Conditions. Orange diamonds are historical data from previous years and black circles are 2019 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 2019 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).



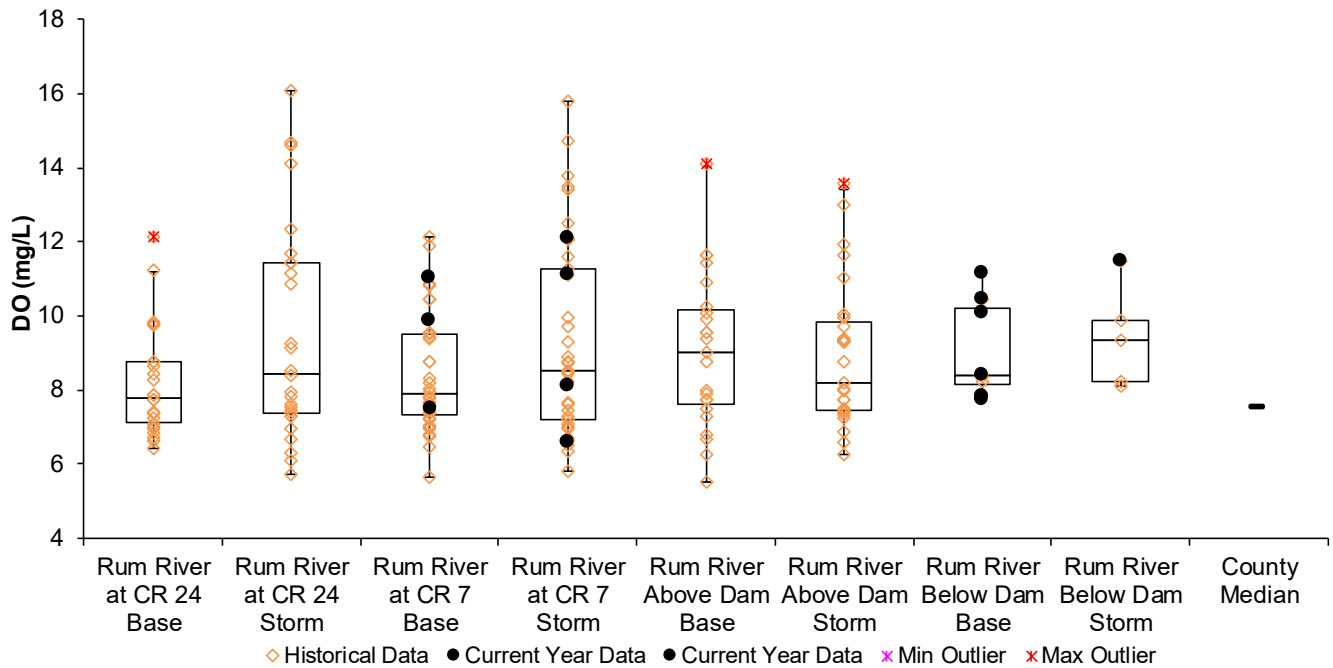
Dissolved Oxygen

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 2019, dissolved oxygen in the Rum River was always above 5 mg/L at all monitoring sites.

The lowest dissolved oxygen observed in the Rum River in 2019 was 6.58 mg/L. Only on five occasions has dissolved oxygen readings been below 6.0 mg/L in the Rum River throughout the monitoring record, with the 3 most recent readings occurring during a single storm in 2011. The low dissolved oxygen result this year was recorded during a storm in July when water temperatures were above 77° F. Warm water holds less oxygen, therefore this low reading is likely a result of low water on a hot day, rather than pollution.

Decreases in dissolved oxygen may result from an increase in the level of nutrients in the stream. Making sure that phosphorus and nitrogen inputs to the stream are maintained or decreased is important for healthy dissolved oxygen levels. The principle sources of these nutrients are fertilizer and wastewater.

Dissolved Oxygen during Baseflow and Storm Conditions. Orange diamonds are historical data from previous years and black circles are 2019 readings. Box plots show the median (middle line), 25th and 75th percentile (ends of box), and 10th and 90th percentiles (floating outer lines).

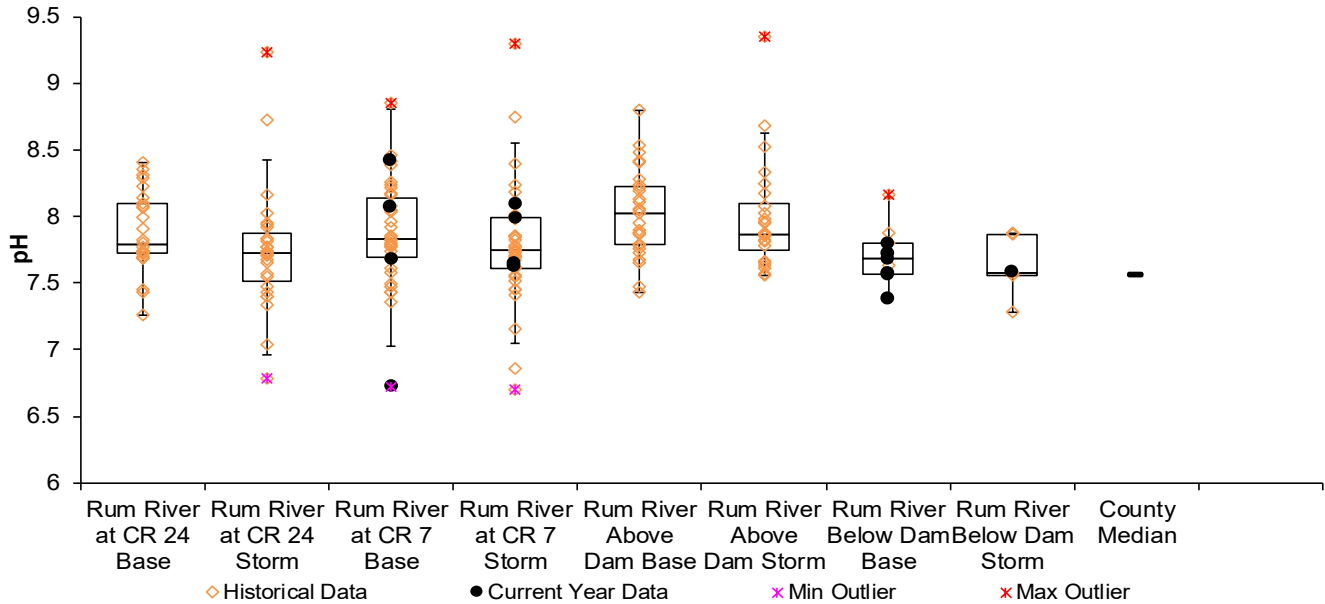


pH

pH refers to the acidity of the water. The state standard is for pH levels 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 and has become more common in recent years (2015, 2017). In these years, exceedances of 8.5 were observed at all sites. 2018-2019 saw a positive change with no sampling events exceeding 8.5.

There are a variety of potential factors leading to temporary spikes in pH in water quality. Although it is a positive development that they did not occur in the past couple years, pH should be continued to be monitored in the Rum River due to the previous spikes.

pH during Baseflow and Storm Conditions. Orange diamonds are historical data from previous years and black circles are 2019 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

In general, water quality in the Rum River is good. However, there is typically a slight increase in specific conductivity moving downstream, phosphorus levels are near State water quality standards, and pH over 8.5 has occurred in recent years, although they did not occur in 2019. Making this a local priority and increasing protection on the river will help avoid much costlier restoration efforts that may be required later on if no action is taken.

In addition to comparing water quality in the Rum River upstream to downstream, water quality should continue to be monitored/compared between Rum River tributaries and the Rum River main stem to help target where pollutant loading is occurring. Based on historical monitoring of direct tributaries in Anoka County, water quality in the Rum River is degraded by most of these smaller systems. Many of the tributaries experience frequent exceedances of State standards, especially for total phosphorus. This is important since the Rum River is already nearing exceedance of the total phosphorus standard.

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 watershed and future developments have the potential to degrade water quality if the river is not included in the local planning process. Specifically, new development should aim to follow more protective stormwater standards, which are designed to maintain, and preferably reduce, phosphorus discharge to the river. Road deicing locally, which has become more sophisticated in recent years, should focus on minimizing salt application while still keeping roads safe.

The Rum River’s scenic and natural qualities are also what bring additional developmental pressure to these key protection areas. Local ordinances to preserve scenic nature areas along the Rum River exist but sometimes sufficient enforcement is lacking. Additionally, preservation of riparian parcels with high natural resource quality should be considered with easement or fee title acquisition.

Watershed-wide (Mille Lacs Lake to the Anoka Dam) coordination of Rum River management is increasing. A Watershed Restoration and Protection Strategies (WRAPS) was completed in 2017. It is a scientific study that identifies recommended management strategies. A “One Watershed, One Plan” (1W1P) in 2019-2020 offers multi-county planning. This plan will prioritize and coordinate action. After completion of the 1W1P a new State funding source will become available – Watershed Based Funding – to implement water quality improvement projects. Additionally, ACD has partnered with Anoka County Parks and the Rum River WMOs in Anoka County to secure large sums of grant and match funds to continue stabilizing eroding banks along the river.

Stream Water Quality – Biological Monitoring

Partners: LRRWMO, ACD, Anoka High School

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 health and supplement chemical water quality monitoring 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, this will give a more comprehensive summary of stream conditions. 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 2018

Monitored Since

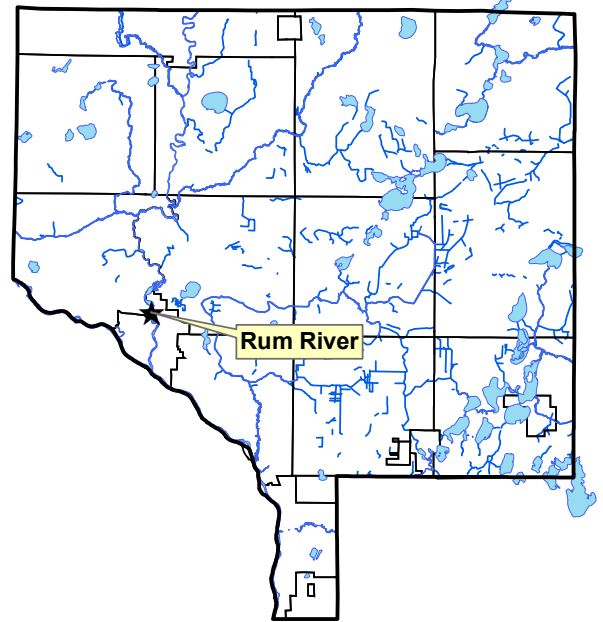
2001

Student Involvement

Over 100 students in 2019, over 1,300 total since 2001

Background

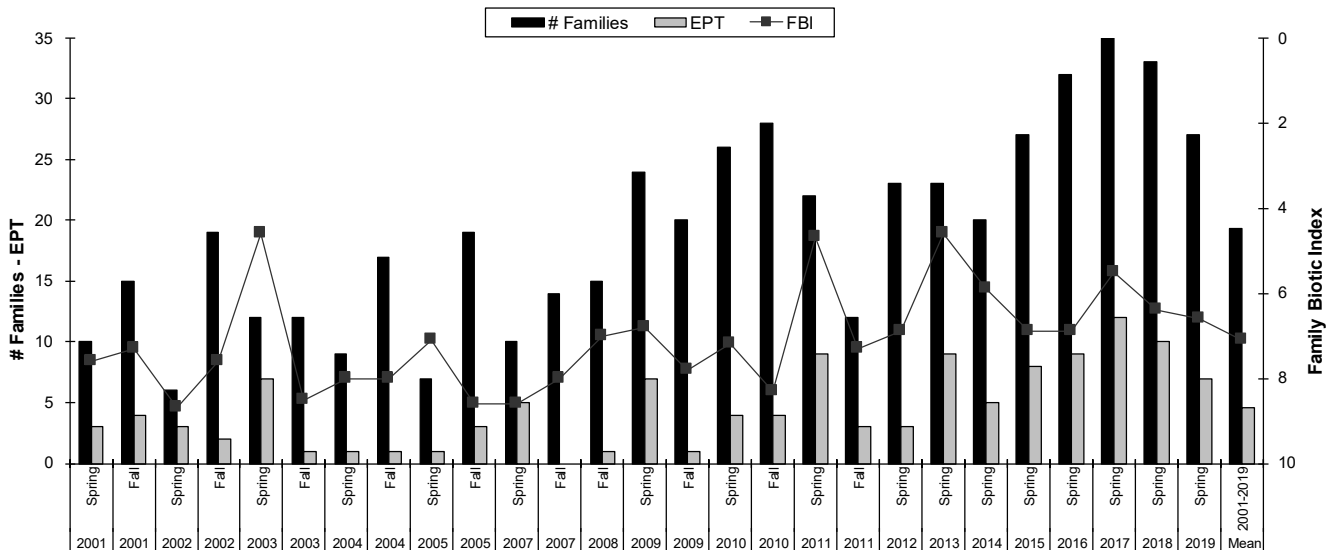
The Rum River originates from Lake Mille Lacs, and flows south through western Anoka County where it joins the Mississippi River in the City of Anoka. In Anoka County the river has both rocky riffles (northern part of county) as well as pools and runs with sandy bottoms. The River's condition is generally 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 2019 with Anoka Conservation District (ACD) oversight. The results for spring 2019 were better than the overall historical average but continue a now two year decline since 2017, which had the best results on record. Students collected 27 different families of invertebrates, a mark only achieved each year since 2015. Seven unique families of the most sensitive taxa (Ephemeroptera, Plecoptera, and Trichoptera; EPT), were collected in 2019. The last three years of monitoring at this site (2016, 2017, and 2018) are the best three years on record, with 2019 and 2015 being slightly lower.

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	2015	2016	2017	2018	2019	Mean
Season	Spring	Spring	Spring	Spring	Spring	2001-2019
FBI	6.90	6.90	5.50	6.40	6.60	7.1
# Families	27	32	41	33	27	19.4
EPT	8	9	12	10	7	4.6
Date	11-May	17-May	15-May	14-May	10-May	
Sampled By	AHS	AHS	AHS	AHS	AHS	
Sampling Method	MH	MH	MH	MH	MH	
Mean # Individuals/Rep.	767	3363	1439	1648	1341	
# Replicates	2	1	2	3	1	
Dominant Family	Siphonuridae	Siphonuridae	Pelecypoda	Siphonuridae	Siphonuridae	
% Dominant Family	69.3	74.9	26.6	48.1	66.8	
% Ephemeroptera	78.9	78.7	14.9	65.1	74.4	
% Trichoptera	1.4	0	0.1	0.1	0.7	
% Plecoptera	0	0.4	26	1.9	0.8	
% EPT	80.3	79.1	41	67.1	75.9	

Discussion

Both chemical and biological monitoring indicate the good quality of this river. Its 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 monitoring in both the shallow backwater pool and the main channel. 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

Partners: LRRWMO, ACD

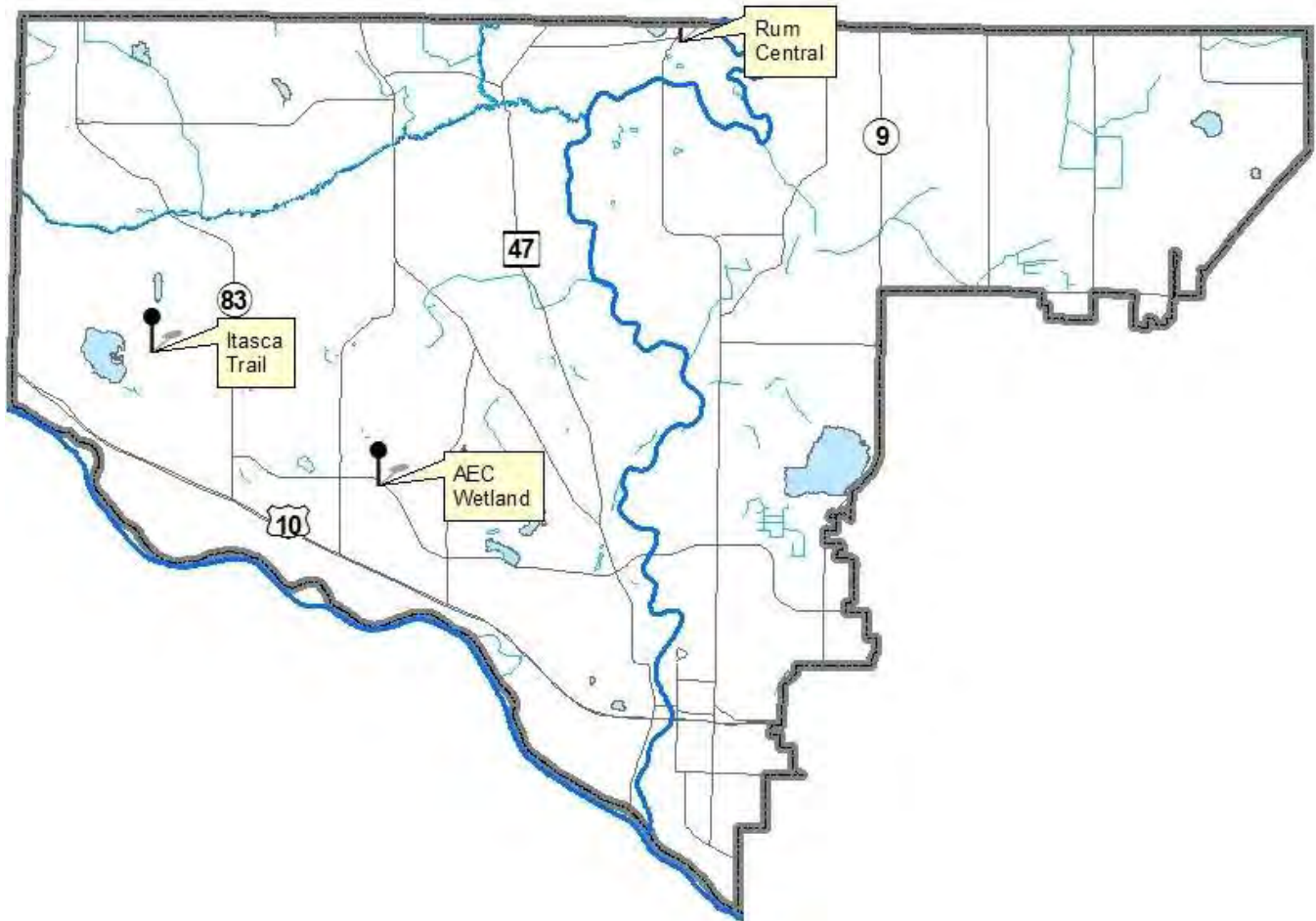
Description: Continuous groundwater level monitoring at a wetland boundary. Countywide, the ACD maintains a network of 23 wetland hydrology monitoring stations.

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:

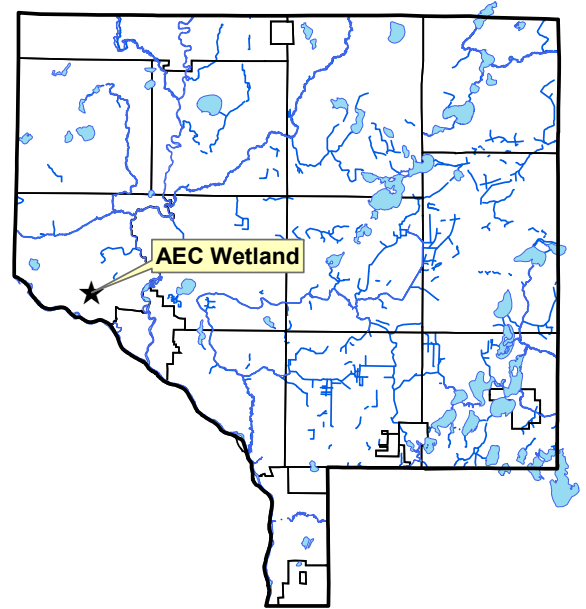
Horizon	Depth	Color	Texture	Redox
A	0-15	10yr2/1	Sandy Loam	-
Bw	15-40	10yr3/2	Gravelly Sandy loam	-

Surrounding Soils: Hubbard coarse sand

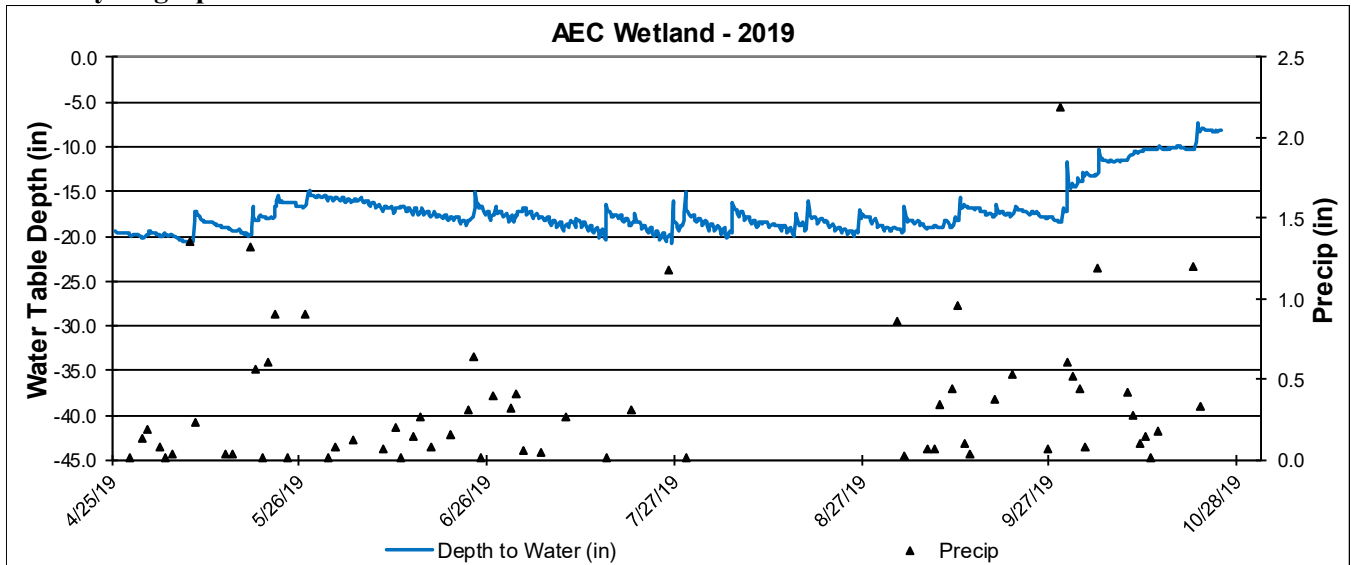
Vegetation at Well Location:

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.



2019 Hydrograph



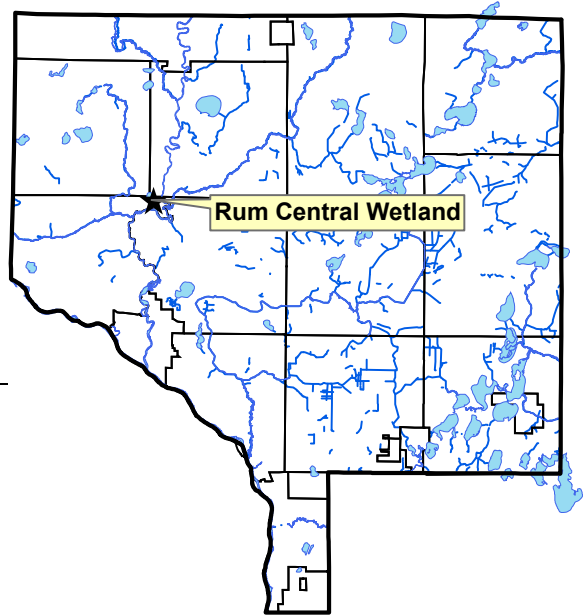
Wetland Hydrology Monitoring

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	-

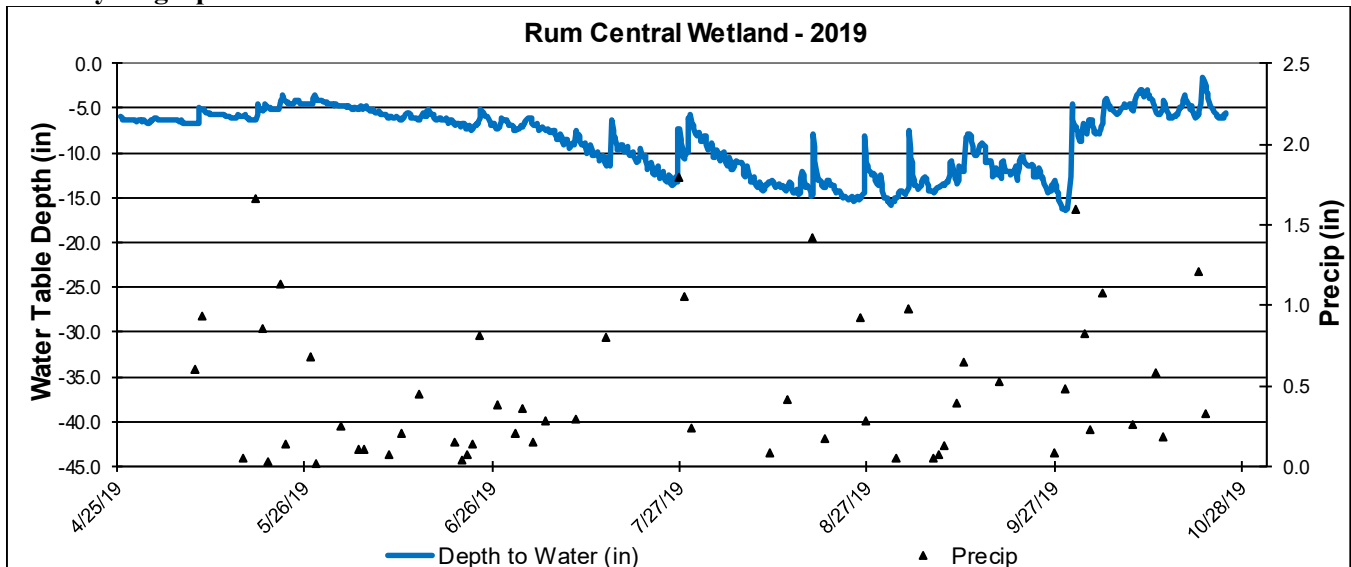
Surrounding Soils: Zimmerman fine sand

Vegetation at Well Location:

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

Other Notes: Well is located at the wetland boundary.

2019 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:



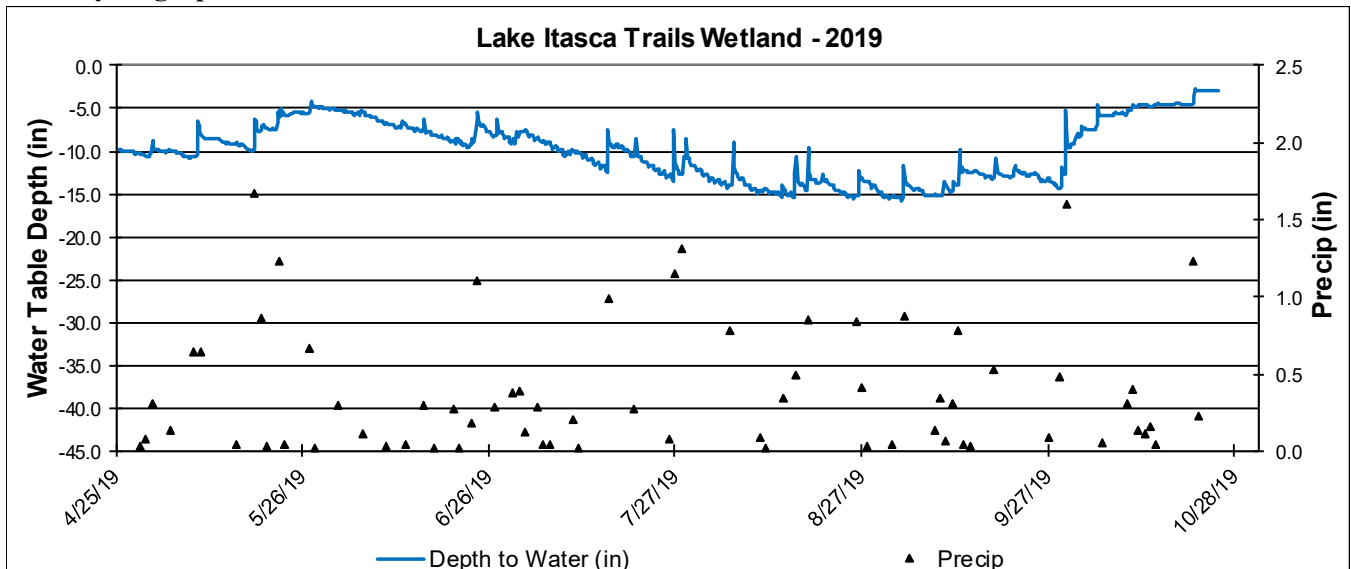
Horizon	Depth	Color	Texture	Redox
A1	0-12	10yr2/0	Mucky sand	-
A2	12-20	10ry2/1	Sand	-
B1	20-36	10yr4/1	Sand and fine gravel	-
B2	36-48	10yr6/1	Sand and fine gravel	-

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.

2019 Hydrograph



Water Quality Grant Fund

Partners: LRRWMO, ACD

Description: The LRRWMO provides cost share grants 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
2013 LRRWMO Contribution	+	\$1,000.00
2013 Expense – Geldacker Mississippi Riverbank	-	\$1,000.00
2014 LRRWMO Contribution	+	\$2,050.00
2006-14 Expense – Smith Rum Riverbank stabilization	-	\$ 2,561.77
2015 LRRWMO Contribution	+	\$1,000.00
2016 LRRWMO Contribution	+	\$1,000.00
2016 Expense – Brauer Rum Riverbank	-	\$1,150.00
2018 LRRWMO Contribution	+	\$2,000.00
2014-16 Expense – Anoka rain garden plants	-	\$ 916.59
2019 LRRWMO Contribution	+	\$2,000.00
Fund Balance		\$5,449.76

Rum River Bank Stabilizations

- Partners:** LRRWMO, URRWMO, ACD, MN DNR Conservation Partners Legacy Grant Program, Lessard-Sams Outdoor Heritage Council grant, landowners
- Description:** 6 riverbank stabilization projects were installed on the Rum River in Anoka and Isanti Counties in 2019. At these sites, cedar tree revetments and willow stakes were used to stabilize eroding banks. The projects were installed with labor from Conservation Corps Minnesota (CCM) work crews. Funding for the 5 revetments installed in Anoka County came from the Conservation Partners Legacy Grant Program from the Outdoor Heritage Fund, a Clean Water Fund CCM crew labor grant, the URRWMO and LRRWMO, and landowner contributions. Funding for 1 additional revetment 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 to reduce sediment loading in the Rum River, as well as to reduce the likelihood of much larger and more expensive corrective projects in the future.
- Location:** Rum River Central Regional Park, Rum River North County Park, 3 residential properties in Anoka County, and the River Bluff Preserve in Isanti County
- Results:** Stabilized 650 linear feet of riverbank on the Rum River in Anoka and Isanti Counties.



Rum River Bank Erosion Grants


Partners: ACD, Anoka County Parks, LRRWMO, URRWMO

Description: The Anoka Conservation District (ACD) prepared an inventory of Rum River bank erosion using 360° photos of the riverbanks of the Rum throughout Anoka County. The photos are available through Google Maps using the Street View feature. An inventory report identifying 80 stretches of riverbank with moderate to very severe erosion is available on ACD's website. Estimated project cost and annual sediment load reduction to the river were calculated. ACD used this inventory to apply for grant funding for stabilization projects to correct some of these eroding banks. These applications, and matching money from Anoka County and the Rum River WMOs resulted in \$1.4 Million to be used over the next three years for stabilization projects.

Purpose: To identify and prioritize riverbank stabilization sites and be used by ACD and other entities to pursue grant funds to restore or stabilize eroding stretches of Rum Riverbank.

Location: Rum River conveyance throughout Anoka County

Results: Inventory of 80 stretches of moderate to very severe erosion on banks of the Rum River. \$1.4 Million has been secured so far in grant and matching funds to implement stabilization projects.




PROJECT JUSTIFICATION

- Rum River bank stabilization projects are recommended in the 2017 Rum River Watershed Restoration and Protection Strategy (WRAPS) report by state and local agencies and stakeholders.
- The Anoka Conservation District (ACD) identified 80 eroding stretches totaling seven miles of riverbank.
- Critical riparian-littoral transitional habitat is missing along these seven miles, and 7,838 tons of sediment is delivered to the river annually, smothering habitat for mussels, invertebrates, and spawning fish.
- LSOHC, CPL, and Clean Water Fund grants will be pursued to address sites based on scale and severity.
- Two phases are planned for LSOHC requests for Rum River habitat-building bioengineering projects in Anoka County over five years. Additional requests with upstream partners may be possible in the future.


PROJECT SUMMARY


- Stabilization and habitat enhancement of four to eight sites over three years during Phase 1 with \$952,200 LSOHC -OHF funds
- Enhanced opportunity for fishing, hunting, and recreation on a key public water resource
- Project partners: ACD, Anoka County, and landowners
- Support from: Upper Rum River WMO, Lower Rum River WMO, and MN Waterfowl Association



LONG-TERM STRATEGY

- Anoka County approved \$442,000 in grant match over the next five years.
- Future LSOHC requests will be made for additional habitat building bioengineering projects.
- Clean Water Fund grants will be pursued for projects requiring substantial hard armoring.
- CPL funds will be pursued for smaller projects addressable by cedar tree revegetation projects.






PROJECT BENEFITS


- Habitat enhancement (up to three acres) for game fish, waterfowl, and non-game wildlife
- Reconnection of fragmented riparian habitat along up to a half mile of riverbank
- Water quality and clarity improvement downstream by reducing up to 750 tons of sediment annually
- Projects will protect both public and private land currently being lost to erosion.
- Wildlife-friendly approaches will be developed or tested to advance bioengineering practices for wildlife benefit.

BIOENGINEERING


- Relies on natural materials to stabilize banks while providing transitional habitat that is traversable by wildlife
- May include light grading and toe armor, native plants, woody materials, and rock vanes
- Stabilizes soils to prevent sediment loading to river, improving water quality, fish spawning beds, and mussel habitat
- Reconnects currently fragmented riparian-littoral habitat along the river




BEFORE



AFTER





BEFORE






AFTER

MINNESOTA'S RUM RIVER

- State Outstanding Resource Value Water
- State Wild, Scenic, and Recreational River
- State Water Trail
- World-class smallmouth bass fishery
- Key reach for Spedes in Greatest Conservation Need (SGCN); Several mussels, Blanding's turtle

Application illustration for the Lessard-Sams Outdoor Heritage Council to do Rum River stabilization projects utilizing bioengineering approaches. The LSOHC recommended funding these projects at \$952,000 over the next three years, which will be matched with \$236,000 in local funds from Anoka County and the Upper and Lower Rum River WMOs.

Anoka Rain Gardens

Partners: City of Anoka, ACD

Description: A street resurfacing project in the 38th Lane neighborhood in the City of Anoka is scheduled for summer of 2020. This neighborhood has two previously installed rain gardens that are performing well, and protecting water quality in the Rum River by treating stormwater that was otherwise piped through the storm sewer system to the river. The City of Anoka hired ACD to design three more rain gardens in this neighborhood that will be installed in conjunction with the street resurface project. Collectively, these rain gardens will remove about 80% of the pollutant load from 4.5 acres in this neighborhood. Design work was completed in January of 2020, and installation will happen during the summer of 2020.

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

Location: 38th Lane Neighborhood, Anoka

Results: Three more rain gardens were designed for installation in 2020. Two rain gardens were installed in this same neighborhood in 2017.

Map of installed and planned rain gardens



Newsletter Articles

Partners: LRRWMO, ACD

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 2019, the Anoka Conservation District (ACD) drafted three newsletter infographics and sent them to cities for inclusion in their newsletters. The three brief articles are shown below.

2019 Newsletter Articles

This Storm Drain is Part of Your River



Storm drains lead directly to your lakes, streams, and rivers—not to water treatment facilities! Many drain directly to natural waterways, while others first lead to stormwater ponds where some pollutants, but not all, are captured. **Please keep your storm drains clean** – if you wouldn't dump it in the river, don't dump it in the storm drain.

Lower Rum River Watershed Management Organization
www.LRRWMO.org

A titch less salt, please

Salt is ~~sooo~~ good. Tasty on food. Keeps roads safe. Softens hard water. Yet salt, measured by chlorides, is a growing problem in your local lakes and streams. Water softeners are one place where you can fine tune your salt use to keep area waterbodies healthy and save yourself money.

Softeners use salt when they regenerate, a process that washes accumulated minerals from their ion exchange resin beads. Think of this as a filter that takes out your water's hardness, but needs to be rinsed with saltwater when it gets ~~gunked~~ up. The frequency of regeneration can be based on either water used or time since the last regeneration. In either case, you need to tell the softener what your water's hardness is. If you don't, you may be wasting salt or failing to soften your water sufficiently.

Water hardness tests are readily available. Test kits can be purchased at hardware stores or online. Test strips are free from some companies, like Morton Salt, through their websites. If you are on city water, the city can tell you the hardness. Water softener control panels are generally pretty simple, allowing you to enter your water's hardness.

Salt used by water softeners doesn't disappear. It is discharged to your septic system or to the wastewater treatment plant, but it cannot be removed in those facilities. Salt from your water softener is eventually discharged to the ground or rivers.

The Lower Rum River Watershed Management Organization (LRRWMO) thanks you for helping protect your lakes and streams. The LRRWMO is formed by the cities of Anoka, Andover and Ramsey to manage local water resources. For more information see www.LRRWMO.org.

Your lawn doesn't need more P.

Minnesota law prohibits the use of phosphorus lawn fertilizers in most cases. The reason is simple—there's already adequate phosphorus in your soil. Extra phosphorus will runoff and make lakes and streams green with algae. If your lawn is unhealthy, a lack of phosphorus probably isn't the problem.

Suggestions for a healthy lawn:

- ✓ **Aerate.** This allows water, nutrients, and oxygen to penetrate down to where they're needed.
- ✓ **Mow taller.** In summer 2.5"-3" height promotes deeper root growth and drought resistance.
- ✓ **Water modestly.** 1" per week by rain or irrigation is sufficient. More is wasteful and contributes to nutrient runoff.
- ✓ **Get a soil test.** Find out what fertilizer or lime, if any, you really need. Mail-in tests are available through the University of MN soil testing laboratory for less than \$20.
- ✓ **Mulch.** Leaving grass clippings on the lawn provides the equivalent of one fertilizer application per year.
- ✓ **Shop smart.** When purchasing fertilizers look at the three number sequence on the bag. A middle number of "0" indicates that it contains no phosphorus.



Thank you for helping the Lower Rum River Watershed Management Organization (LRRWMO) keep local waterbodies healthy. The LRRWMO is formed by the cities of Anoka, Andover and Ramsey to manage local water resources. For more information see 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.

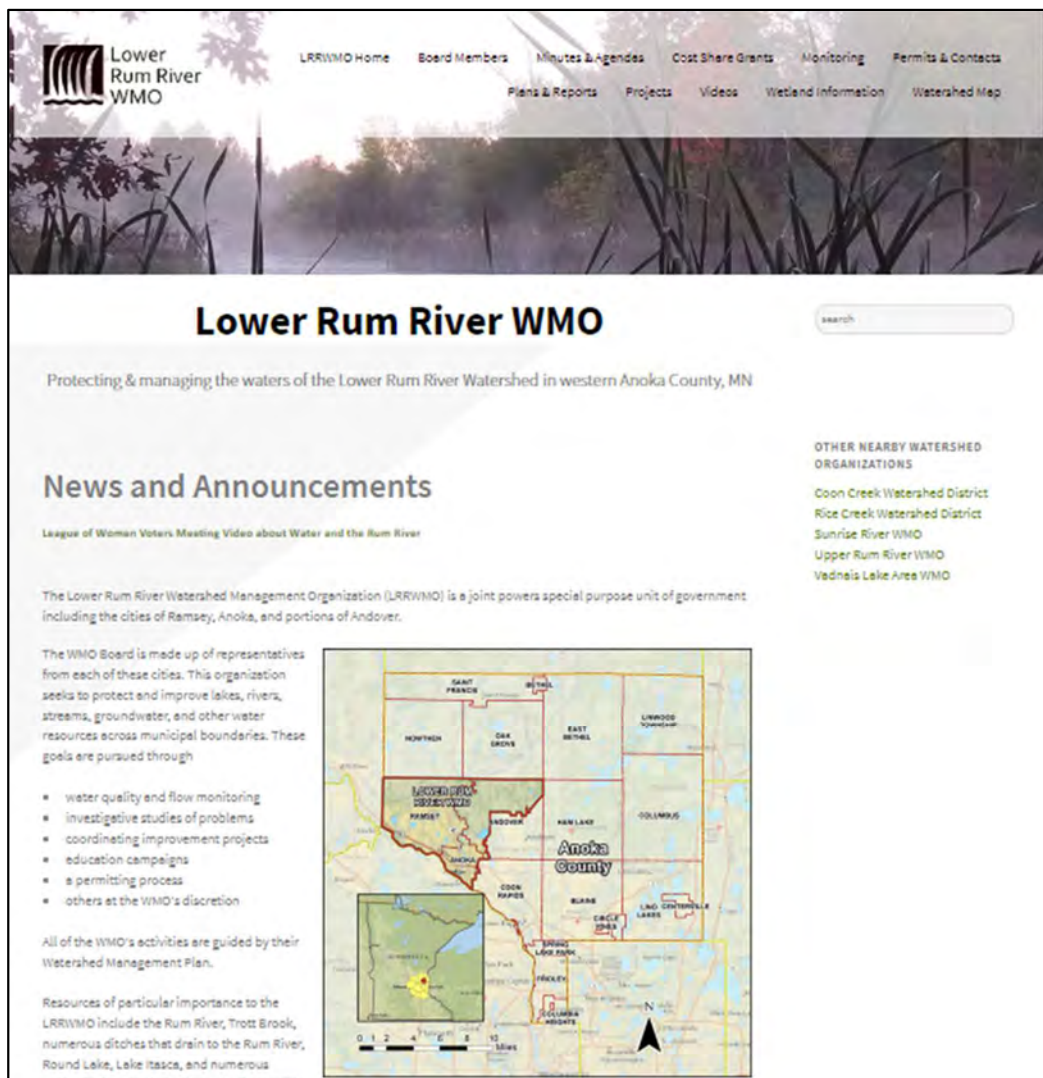
Purpose: To increase awareness of the LRRWMO and its programs. The website also provides tools and information that helps users better understand water resources issues in the area.

Location: LRRWMO.org

Results: In 2019 the LRRWMO’s new website, which was launched in 2018, was maintained. The website includes:

- Directory of board members,
- Meeting minutes and agendas,
- Watershed management plan and annual reports,
- Descriptions of work that the organization is directing,
- Highlighted projects,
- Informational videos,
- Maps of the URRWMO.

LRRWMO Website Homepage



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.

2019 Financial Table

Lower Rum River Watershed	Volunteer Precip	DNR Groundwater Wells	Wetland Levels	Lake Levels	Lake Water Quality	Stream Water Quality	Biomonitoring	Rum River Small Watersheds Grant	1WIP Rum River Planning	Planning Assistance	Admin/Reporting/Grants	City of Anoka Rain Gardens	Rum River Revetments	Rum River Stabilization - Rum Central Park	LRRWMO Retrofits	Mississippi River Park Stabilization	Website	Education/Newsletter	Outreach Collaborative	Total	
Revenues																					
LRRWMO			1950	1240	1825	1975	900				850				417		865	1720			11742
State - Other	138												935							12101	12239
DNR OHF														5588							935
BWSR Capacity Direct																					5588
BWSR Local Water Planning					223																223
Metro ETA & NPEAP														1579	885						2464
Regional/Local									884			9126	8754			2485				764	22012
Anoka Co. General Services	239	79		43				160	4420	204	317	84					727			2075	8348
County Ag Preserves/Projects				367			475						1862	22712							25416
Service Fees							250						1149								1464
TOTAL	376	2029	1240	2459	1975	1625	160	5304	204	1167	9210	12699	29879	1302	2485	1592	1720	15006		90431	
Expenses-																					
Capital Outlay/Equip	1	2	1	4	1	0			9		0	9	42	4		7	1			15	97
Personnel Salaries/Benefits	347	1739	739	1656	896	1102	146	4899	237	1157	10234	9591	3741	814	2262	1082	1294	9369		51306	
Overhead	19	85	40	84	52	68	12	271	12	51	493	404	199	51	95	61	90	529		2613	
Employee Training	1	6	3	4	3	4	1	16	2	3	65	32	16	2	5	4	3			37	205
Vehicle/Mileage	5	24	10	24	11	13	1	64	3	18	125	146	47	10	36	14	15			117	682
Rent	17	74	32	87	43	47	7	238	6	51	298	511	151	41	123	50	67			423	2267
Program Participants													699	26144							26843
Program Supplies		126		585	411	80			64			6	566		417		458			1324	4035
TOTAL	390	2056	824	2444	1417	1314	167	5561	259	1279	11229	11991	30303	1334	2528	1669	1468	11813		88048	
NET	-14	-27	416	15	558	311	-7	-257	-55	-112	-2020	708	-424	-32	-43	-78	252	3193		2383	

Recommendations

- **Identify and prioritize projects for water quality improvement in the new LRWRMO Watershed Management Plan** being developed in 2020. New non-competitive State Watershed Based Funding may be used for these projects, as well as competitive grants.
- **Continue to install projects identified in the stormwater retrofit 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. Metropolitan Council grant funds were used to construct three projects in 2017-2018. Three more projects are being installed by the City of Anoka in 2020. Additional cost-effective projects exist, however landowner willingness and buried utilities are obstacles in many areas.
- **Engage with upstream entities creating a collaborative Rum River One Watershed, One Plan (1W1P).** As the receiving entity at the bottom of the watershed for all water flowing downstream, it is especially important to collaborate on, and prioritize, projects benefitting the river. 1W1P planning continues through 2020.
- **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. The primary project type identified in Anoka County is the stabilization of eroding banks along the Rum River.
- **Maintain or reduce Rum River phosphorus.** Phosphorus levels are close to State water quality standards. It may be appropriate to review development and stormwater discharge ordinances to ensure phosphorus does not increase in coming years.
- **Implement groundwater conservation measures** throughout the watershed and promote them metro-wide. Depletion of shallow groundwater is a concern region-wide.
- **Continue surveillance water monitoring** at a frequency sufficient to detect changes and trends.
- **Continue chloride sampling at all sites on a rotating basis.** Chloride sampling was conducted at County Road 7 in 2018 and 2019. Because this pollutant can have such a profound impact on aquatic life and drinking water, continuing to periodically include it in the monitoring regime is prudent.
- **Continue to support and fund riverbank stabilization projects.** \$1.4 Million has been secured by ACD and local matching partners for the next three years, but over 7 miles of eroding bank was identified during our 2018-2019 inventory. Another round of Watershed Based Implementation funding will be coming in 2020. These funds can support additional projects identified in that inventory.