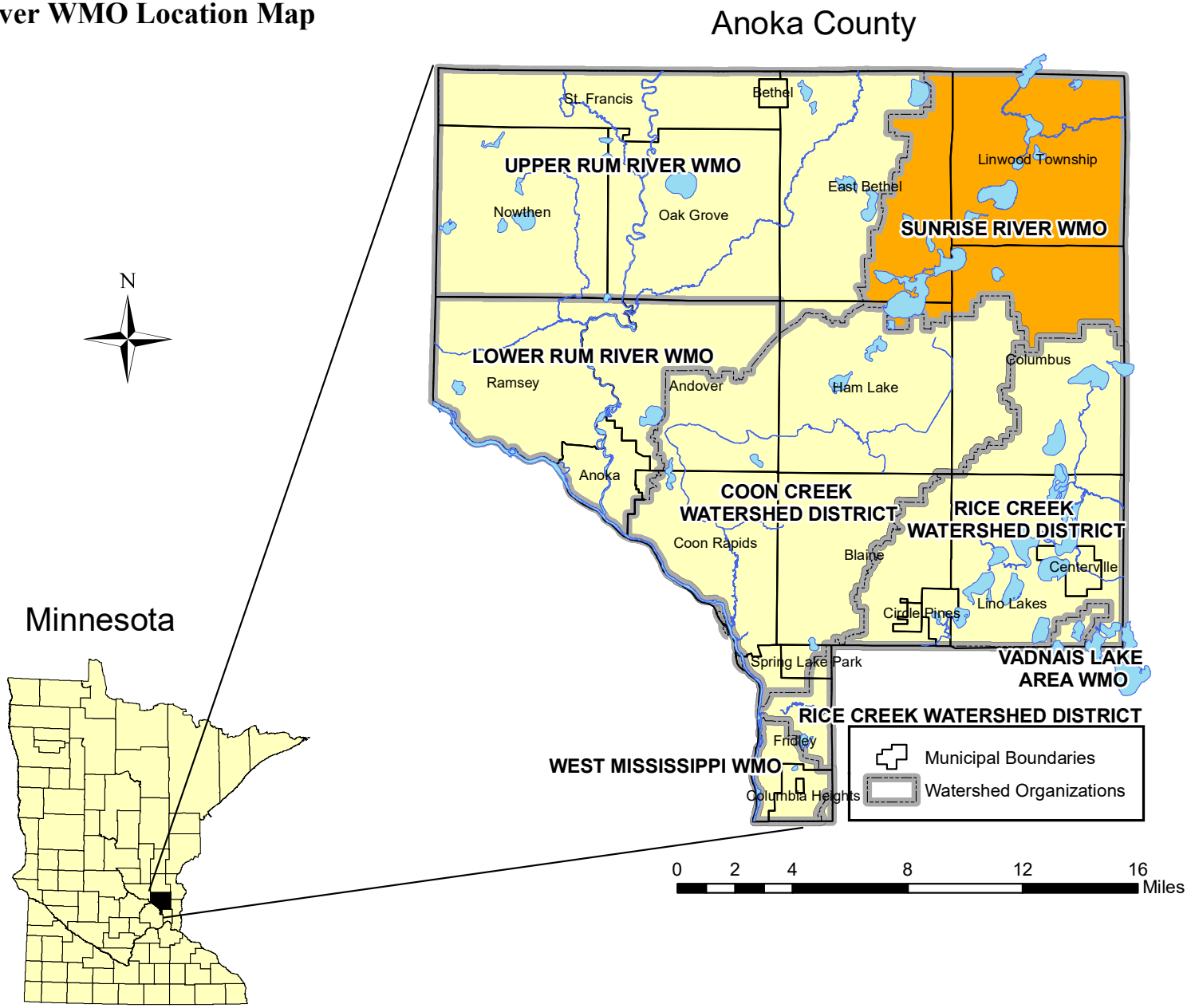
# 2021 Annual Report

## Sunrise River Watershed Management Organization

**East Bethel – Ham Lake – Linwood - Columbus**

**April 8, 2022**

# Sunrise River WMO Location Map



# Table of Contents

## I. Introduction to this Report

This report is intended for local and state oversight agencies, as well as interested citizens. At the local level, it is intended to provide member communities, their elected officials, and staff with an activity update. At the state level, this report meets the annual watershed management organization reporting requirements of Minnesota Rules 8410.0150. The report is intended to fulfill 2021 reporting requirements.

## II. About the Sunrise River WMO

The Sunrise River Watershed Management Organization (SRWMO) is a special purpose unit of government that operates as a joint powers organization under Minnesota Statutes, Section 471.59. It is comprised of Linwood Township and portions of the Cities of Columbus, Ham Lake, and East Bethel. Board members are appointed by the member communities. Financing is from member communities. The SRWMO's direction is laid out in its watershed management plan and the member municipalities' local water plans.

The SRWMO area is rich in water and natural resources. Approximately 50% of the area is water and wetlands, including 19 lakes. Four are major recreational lakes (Coon, Linwood, Martin, and Typo). 19% of the SRWMO area is high quality natural communities that have undergone little human disturbance since pre-settlement times. Many of these areas have been designated by the State as sites of biodiversity significance or regionally significant ecological areas. 27 plant and animal species that are state endangered, threatened, special concern, or rare are known to occur in the SRWMO. These water and natural resources are at the heart of the character of these north Twin Cities metro communities.


Sunrise River

Despite the overwhelming good quality of the natural resources, there are some areas of concern. Martin, Typo, and Linwood Lakes have been designated as "impaired" by the Minnesota Pollution Control Agency for excess nutrients. Several segments of the Sunrise River in Linwood Township are impaired for pH, turbidity, and the fish community. Coon

and Linwood Lakes are infested with two aquatic invasive species: curly leaf pondweed and Eurasian or hybrid water milfoil. Old, failing or improperly maintained septic systems likely have an impact on water quality. Many of these problems flow across community boundaries and cannot be effectively addressed by any one community alone. This is the reason for this joint powers watershed management organization.

**SRWMO Watershed Management**

The SRWMO is guided by its 10-year watershed management plan. The plan can be found on the SRWMO website (www.SRWMO.org).

The Sunrise River WMO Board of Managers considers its responsibilities to be overseeing the management of water resources in the watershed. The WMO serves the community by:

- Providing a forum to consider inter-community water problems.
- Collecting data and conducting resource monitoring to guide management.
- Facilitating water quality improvement projects, which often will be cooperative endeavors with others.
- Setting minimum standards for member community ordinances that consider local water resources issues. The SRWMO will not have its own permitting program.
- Providing a linkage between natural resources and land use planning decisions.
- Educating the public about water resources, and enabling or incentivizing individual action.
- Informing and engaging local elected officials about water problems, projects and the SRWMO.
- Ensuring expenditures result in corresponding benefits to the public.
- Avoiding duplication among government agencies and communities.

The SRWMO operates under the following philosophies:

- Water-related problems are community problems and not individual problems.
- Water resource management is a vital matter that cannot be effectively addressed by individual communities because watersheds cover multiple communities.
- Water resources should be managed on a watershed basis.
- Aquatic and terrestrial areas are integrally linked and cannot be effectively managed separately.

## III. Activity Report

### a. Current Board Members

CITY OF COLUMBUS

Timothy Melchior
8306 177th Lane
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651.210.6842
timothymelchior@gmail.com

Janet Hegland (Vice Chair)
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CITY OF HAM LAKE

Troy Wolen
17817 Oak Land Dr NE
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Jeff Entsminger
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CITY OF EAST BETHEL

Tim Harrington
2241 221st Ave NE
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Leon Mager
19511 East Tri Oak Circle NE
Wyoming, MN 55092-8420
763.434.9652
lam3@isd.net

LINWOOD TOWNSHIP

Ashley Millerbernd
6311 227th Ave NE
Stacy, MN 55079
763.807.0294
millerberndashley@gmail.com

Candice Kantor (Chair)
5660 South Linwood Lake Drive NE
Wyoming, MN 55092
989.289.3048
Cmholt77@gmail.com

Tim Peterson (Alternate)
23561 Fontana St NE
Stacy, MN 55079
651.233.4151
braveheart51@frontiernet.net

Current SRWMO Managers and contact information can be found at **www.SRWMO.org**

## b. Day to Day Contact

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

Jamie Schurbon, Watershed Projects Manager
Anoka Conservation District
1318 McKay Drive NE, suite 300
Ham Lake, MN 55304
763-434-2030 ext. 210

## c. Employees and Consultants

The SRWMO does not employ staff, but does utilize consulting services and enters into cooperative agreements with other government agencies. A description of contracted services is listed below:

**SRWMO consultants and partners during the reporting period:**

| Consultant/ Partner | Contact | Work Description |
|---|---|---|
| Anoka Conservation District | Jamie Schurbon<br>Watershed Projects Manager<br>1318 McKay Drive NW, #300<br>Ham Lake, MN 55304<br>763-434-2030 ext. 210<br>jamie.schurbon@anokaswcd.org | 1. **Water Monitoring** – Water quality and hydrology monitoring in lakes, streams and wetlands.<br>2. **Water Quality Improvement Projects** –Implementation of water quality improvement efforts, including administering the SRWMO water quality grant program.<br>3. **Education –** Promotion of SRWMO programs.<br>4. **Website -** Maintain SRWMO website.<br>5. **Reporting -** Assistance preparing this annual report and State Auditor reporting.<br>6. **Administration –** Serve as a limited, on-call administrator to address miscellaneous day-to-day operational issues. Reviews local water plans. |
| Cameron Blake | Cameron Blake<br>1316 Oak Street W<br>Stillwater, MN 55082<br>(763) 753-2368<br>blake257@umn.edu | **Recording secretary** for meetings, plus miscellaneous administrative assistance. |

## d. Highlighted Recent Projects and Accomplishments

Listed below from most to least recent

**West Branch of Sunrise River Removed from Impaired Waters's List** (2022)
The stream from Martin Lake to Pool 1 has been removed from the State impaired waters list. Previously, high nutrients and algal production in upstream lakes had resulted high pH. Thanks to many water quality projects at Martin and Typo Lakes (both of which have improving water quality trends, stream water quality has improved too!

**Martin Lake Shores Park Stormwater Pond Enhancement** (2021)


An existing stormwater pond treating water draining to Martin Lake was enhanced. The pond footprint was increased 55% and depth doubled to achieve greater pollutant reductions from a 41 acre drainage area.

**Martin Lake Shoreline Stabilization at 22865 W Martin Lake Dr** (2021)

Prior to the project, the lakeshore was a failing mix of concrete and railroad tie retaining walls, & mowed turf grass. Retaining wall debris was removed, the shore graded to a stable slope, and rock rip rap installed. A 612 sq ft vegetated buffer of native plants was installed. The project benefits Martin Lake water quality and near shore habitat.

**Linwood Elementary School Rain Garden** (2021)

This project corrected poor drainage and appearance in an existing rain garden while serving as a demonstration project and educational opportunity.

**4471 Channel Lane Rain Garden for Coon Lake** (2020)

A double-inlet curb cut rain garden was installed at a private residence that treats stormwater from 7.85 acres of the neighborhood. It captures and infiltrates water that would otherwise be directly discharged to Coon Lake without treatment.

**Coon Lakeshore Restoration** (2020)

A private lakeshore at Coon Lake had 41ft stabilized and 877 sq ft restored with native vegetation. The project filters runoff to benefit water quality and provides near-shore habitat.

**228th Lane and 230th Ave Stormwater Pond Enhancements** (2019)

Two stormwater ponds were renovated along West Martin Lake Dr. in Linwood Township. This renovation made them larger and deeper. These stormwater ponds will now be more effective at treating stormwater being discharged into Martin Lake.

**Lower St. Croix One Watershed, One Plan (2018-2020)**


The Sunrise River WMO participated in regional watershed planning called One Watershed, One Plan (1W1P). The plan was completed in late 2020 and the SRWMO is now partnering on implementation. The process is in collaboration with 16 other entities including counties, watershed organizations, and soil and water conservation districts. It aims to identify the highest priority regional water resources and ensure they are managed collaboratively. The process complements local water plans. It does makes the area eligible for a new State funding program called Watershed Based Implementation Funding. The process is funded by a grant from the MN Board of Water and Soil Resources. A first implementation grant of $1.2M was awarded in early 2021.

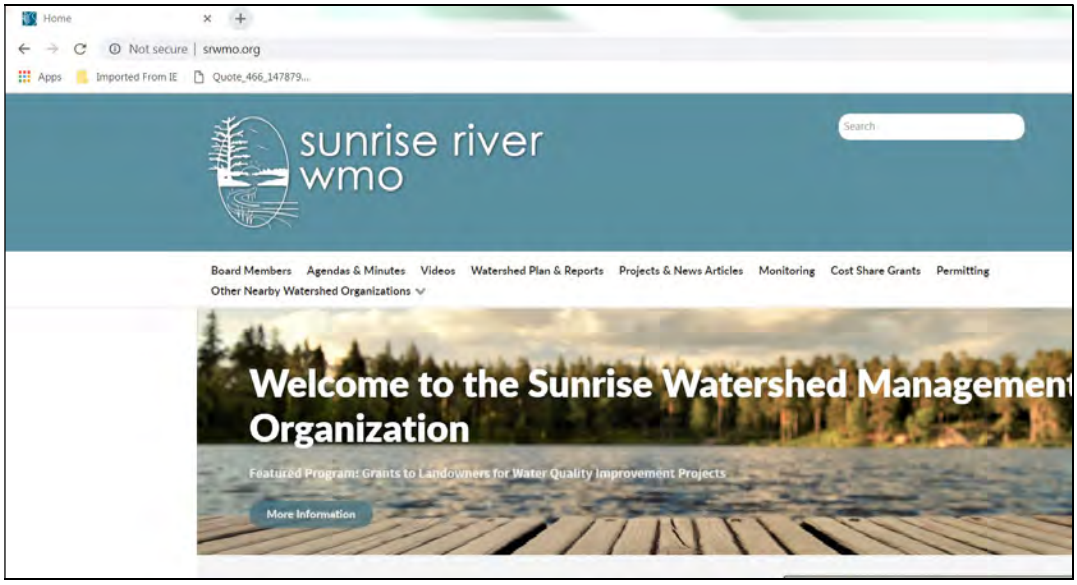
**Sunrise River Chain of Lakes Carp Project** (2020-2022)

A State Clean Water Fund grant has been secured for carp management in the chain of lakes including Linwood, Martin and Typo. The project seeks to remove 11,000 carp resulting in water quality and habitat improvements. Work will include box netting and seining. Partners include the Anoka Conservation District, SRWMO, Martin Lakers Association and Linwood Lake Improvement Association.

## e. Public Outreach

The SRWMO does regular public outreach and education projects, but the SRWMO's website serves as the primary, continuous public outreach tool. Website contents include general information about the organization, meeting agendas and minutes, water monitoring results and profiles of WMO projects. The SRWMO ensures visibility of its website by asking member cities and townships to post the SRWMO website address in their newsletters. Links to the SRWMO website are also provided through each member community's website and the Anoka Conservation District website. The SRWMO website address is http://www.srwmo.org

**Sunrise River WMO website homepage**




Additional public outreach is accomplished through newsletters, public announcements and similar work on a schedule specified in our Watershed Management Plan. The articles are distributed to member communities and lake assoications for distribution in

their newsletters. Periodic larger articles are distributed as press releases to local newspapers. In 2021 the SRWMO's printed outreach included:

- Article about the SRWMO and cost share incentive grants.
- Article and infographics about aquatic invasive species, utilizing the Stop Aquatic Hitchhikers campaign materials.
- Six infographics (shown below) about lakeshore stewardship distributed periodically for lake association newsletters.
- Full length lakeshore stewardship article for lake association newsletters.
- One infographic about septic system maintenance in city newsletters.
- One article about septic system repair grants in city newsletters.

The SRWMO also conducted the outreach efforts listed in the previous section of this report.

**SRWMO 2021 Lakeshore Stewardship Infographics**

## f. Water Quality Trends

The SRWMO has a long term water quality monitoring program that includes most larger stream and recreational lakes in the watershed. From 2000-2009 the SRWMO had a robust water monitoring program to establish a baseline of data; little water monitoring had been done previously. From 2010 to the present the amount of monitoring has moderated to a level sufficient to detect trends. Many waterbodies are monitored every 2-3 years. An important part of evaluating implementation of the watershed management plan is looking at water quality trends.

The SRWMO lakes have a range from poor to good water quality (table below). Three of the lakes (Martin, Typo and Linwood) are impaired for excess nutrients. Two of those lakes, Martin and Typo, have been a focus of SRWMO management and are improving (see figures below).

***Water quality summary for monitored SRWMO lakes as of 2021***. *Data shown are for the most recent year. Trends are based on a MANOVA with response variables of TP, chlorophyll-a and Secchi transparency.*

| Lake | Letter Grade | Total phosphorus summer average (µg/L) | Chlorophyll-a summer average (µg/L) | Secchi transparency summer average (ft) | Year of most recent data | # years of monitored | Trend |
|---|---|---|---|---|---|---|---|
| Coon – East Bay | A | 19.4 | 6.7 | 8.0 | 2018 | 22 | Improving |
| Coon – West Bay | A | 21.8 | 6.9 | 7.3 | 2018 | 13 (5 with TP and chlorophyll) | Insufficient data. No evidence of decline. |
| Boot | B | 33.8 | 9.2 | 8.3 | 2021 | 3 | Insufficient data |
| Linwood | C | 34.4 | 20.2 | 4.2 | 2018 | 18 | Stable |
| Typo | F | 150.5 | 72.5 | 1.8 | 2021 | 21 | Improving |
| Martin | C | 47.7 | 25.2 | 4.5 | 2021 | 21 | Improving |
| Fawn | A | 17.1 | 4.0 | 13.7 | 2018 | 14 | No change |
| Island | C | 33.9 | 10.6 | 4.6 | 2011 | 9 | NA |

More detailed water quality data and analysis can be found in **Appendix B** and online. Additionally, all water quality data collected by the SRWMO is on the MN Pollution Control Agency's EQuIS database, which is accessible through their website.

## g. Evaluation of Watershed Management Plan Implementation

The SRWMO Watershed Management Plan contains a schedule of tasks that the WMO should accomplish in order to realize its goals (see table on following page). The tables on the following pages compare work planned and work actually accomplished for the most recent years and upcoming year. Additionally, **Appendix B** contains a summary of progress toward all SRWMO plan goals. **Appendix C** contains member community annual reports to the SRWMO with their progress on watershed plan tasks.

# 2020-2021 SRWMO Watershed Plan tasks planned and accomplished.

| # | Plan Action | Funding* | 2020 | | 2021 | | 2022 | |
|---|---|---|---|---|---|---|---|---|
| | | | Planned | Done | Planned | Done | Planned | Underway |
| **Operating Tasks (as defined by JPA)** | | | | | | | | |
| 1 | Recording Secretary services - contractual | SRWMO | $1,400 | ✓ | $1,449 | ✓ | $1,500 | planned |
| 2 | Administrator services - contractual | SRWMO | $6,000 | ✓ | $6,210 | ✓ | $6,427 | planned |
| 3 | Fiscal mgmt assistance - E Bethel Finance Director & Treasurer | SRWMO | Provided by East Bethel, no cost to SRWMO | | | | | |
| 4 | Financial contributions calculation update | SRWMO | $320 | in 2019 | | | | |
| 5 | Financial audits | SRWMO | $3,000 | ✓ | | | | |
| 6 | Liability Insurance | SRWMO | $1,850 | ✓ | $1,550 | ✓ | $1,581 | planned |
| 7 | Reports to BWSR, State Auditor | SRWMO | $1,100 | ✓ | $1,139 | ✓ | $1,178 | planned |
| 8 | Annual written communication to member communities | SRWMO | $600 | ✓ | $621 | ✓ | $643 | planned |
| 9 | Community ordinance reviews | SRWMO | $1,920 | underway | | underway | | updates |
| 10 | Review/approve community local water plans | SRWMO | | 3/4 done | $2,240 | | | |
| 11 | Seek bids for professional services | SRWMO | | | $100 | ✓ | | |
| **Non-operating General** | | | | | | | | |
| 12 | Grant search and applications | SRWMO | $1,000 | WBIF | $1,035 | planned | $1,071 | planned |
| 13 | Undesignated reserve | SRWMO | $2,029 | spent down | | spent down | | spent down |
| 14 | Update Watershed Plan | SRWMO | | | | | | |
| **Communications with Member Communities** | | | | | | | | |
| 15 | Project reporting to member communities | SRWMO | ✓ | ✓ | ✓ | ✓ | | planned |
| 16 | Annual board member reporting to member communities | SRWMO | ✓ | ✓ | ✓ | ✓ | | planned |
| 17 | Project tours | SRWMO | $1,660 | postponed | | ✓ | | |
| **Public Outreach** | | | | | | | | |
| 18 | Lake association and community newsletter content | SRWMO | $920 | ✓ | $2,190 | ✓ | $1,168 | planned |
| 19 | Newspaper press releases | SRWMO | Included in project costs and project manager duties | | | | | |
| 20 | Lakeshore restoration guidance materials | SRWMO | | | | | $3,300 | planned |
| 21 | Shoreland stewardship display | SRWMO | $2,520 | ✓ | | | | |
| 22 | Community event displays | SRWMO | | postponed | Provided by bd | ✓ | | |
| 23 | Stakeholder event attendance | SRWMO | | postponed | Provided by bd | ✓ | | |
| 24 | Workshops promotion | SRWMO | | | | | $815 | planned |
| 25 | Engage citizen leaders | SRWMO | | ✓ | | ✓ | | |
| 26 | Websites | SRWMO | $700 | ✓ | $725 | ✓ | $750 | planned |
| 27 | Anoka Co Outreach Coordinator position | SRWMO | | ✓ | $2,500 | ✓ | $4,450 | planned |
| 29 | Advisory committees | SRWMO | | ✓ | | ✓ | | |
| 30 | Promote Well Water Wise | SRWMO | | | $50 | ✓ | $52 | planned |
| **Water Condition Monitoring** | | | | | | | | |
| 31 | Water condition monitoring | SRWMO | $8,541 | ✓ | $16,446 | ✓ | $10,369 | planned |
| **Development Reviews** | | | | | | | | |
| 32 | Development reviews | MC** | $1,000 | ✓ | $1,000 | ✓ | $1,000 | planned |
| **Multi-partner Coordination** | | | | | | | | |
| 33 | Participate in 1W1P | SRWMO | $640 | ✓ | $662 | ✓ | $686 | planned |
| **Water Improvement Projects** | | | | | | | | |
| 34 | Ag conservation planning outreach | SRWMO | | underway | $1,120 | ✓ | $1,120 | done in '21 |
| | | Grants | | | | ✓ | | |
| 35 | Cost share grant program- open to the public | SRWMO | $2,000 | ✓ | $2,500 | ✓ | $1,500 | planned |
| | | Grants | | | | | | |
| 36 | Cost share grant program - through lake associations | SRWMO | | | | | $7,500 | planned |
| | | Grants | | | | | $30,000 | |
| 37 | Carp removals | SRWMO | $10,000 | planned | $7,500 | ✓ | $7,500 | planned |
| | | Grants | $40,000 | ✓ | $30,000 | ✓ | $30,000 | planned |
| 38 | Stormwater retrofits | SRWMO | *** | ✓ | | ✓ | | |
| | | Grants | $133,580 | ✓ | | ✓ | | |
| 39 | Ditch 20 wetland restoration outreach | SRWMO | | ✓ | $320 | | | |
| | | Grants | | | | | | |
| 40 | Demonstration projects on public lands | SRWMO | | | | ✓ | | |
| | | Grants | | | | | | |
| 41 | Support carp barrier annual maintenance | SRWMO | | ✓ | | ✓ | | planned |
| | | Grants | | | | | | |
| 42 | Model projects' pollutant reductions | SRWMO | | ✓ | | ✓ | | planned |
| | | Grants | | | | | | |
| 43 | Linwood Lake weir repair request | SRWMO | $0 | ✓ | | ✓ | | |
| | | Grants | | | | | | |
| 44 | Point of Sale SSTS inspections | SRWMO | | ✓ | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 45 | | | | ✓ | | ✓ | | ✓ |
| | | | | | | ✓ | | |
| | | | | | | | | |
| 46 | | | | | | | | |
| | | | | | | | | |
| 47 | | | | ✓ | | | | |
| | | | | | | | | |

## h. 2022 Work Plan

See table above.

## i. Status of Local Ordinances, Water Plan Adoption and Implementation

All SRWMO member communities are required to have a Local Water Plan that is consistent with the SRWMO Watershed Management Plan. The WMOs have approval authority over these Local Water Plans. Whenever a WMO plan is updated the member municipalities have two years to update their Local Water Plans, ordinances, and other control measures to be consistent with the WMO Plan. All local water plans have been approved.

To track member cities' progress on local plan implementation, the SRWMO requires a brief annual report from each city and provides a template for this report. In addition to serving as a reporting tool, the template serves as a "to do" list for our cities. These reports are provided as **Appendix C**.

## j. Solicitations for Services

State rules require watershed management organizations to solicit bids for professional services at least once every two years. Most recently the SRWMO solicited bids in early 2022 for water monitoring and management work to occur in the same year. Requests for proposals were provided to the Anoka Conservation District and member communities' consulting engineering firms. One entity, the Anoka Conservation District, provided a proposal, and was selected.

## k. Permits, Variances, and Enforcement Actions

The SRWMO does not issue permits, variances, or take enforcement actions. These responsibilities are held by the member municipalities, as outlined in each municipality's local water plan, ordinances, and policies.

# IV. Financial and Audit Report

## a. 2021 Financial Report

See Appendix A – 2021 Financial Report.

## b. Financial Audit

Per MN Statutes, section 6.756 and the MN State Auditor's minimum revenue thresholds, the SRWMO has not been required to do annual audits, but an audit or agreed upon procedures engagement once every five years is required. An agreed upon procedures engagement was completed in 2020 for 2019 finances.

## c. 2022 Budget

In 2021 the SRWMO Board approved the following 2022 budget.

| | | | Linwood | East Bethel | Columbus | Ham Lake |
|---|---|---|---|---|---|---|
| | | Cost | 47.04% | 29.99% | 19.17% | 3.80% |
| | **NON-OPERATING EXPENSES (split by percentages)** | | | | | |
| 1 | **Non-operating General** | | | | | |
| 2 | Grant Search and Applications | $1,071.00 | $503.80 | $321.19 | $205.31 | $40.70 |
| 3 | **Multi-Partner Coordination** | | | | | |
| 4 | Participate in One Watershed, One Plan (1W1P) | $686.00 | $322.69 | $205.73 | $131.51 | $26.07 |
| 5 | **Effectiveness Monitoring** | | | | | |
| 6 | Lake Water Quality | $3,950.00 | $1,858.08 | $1,184.61 | $757.22 | $150.10 |
| 7 | Stream Water Quality | $1,450.00 | $682.08 | $434.86 | $277.97 | $55.10 |
| 8 | **Diagnostic Monitoring** | | | | | |
| 9 | Lake Water Quality | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| 10 | **Surveillance Monitoring** | | | | | |
| 11 | Lake Level Monitoring | $1,500.00 | $705.60 | $449.85 | $287.55 | $57.00 |
| 12 | Secchi Transparency Lake Monitoring - volunteer coord. | $906.72 | $426.52 | $271.93 | $173.82 | $34.46 |
| 14 | Reference Wetland Hydrology Monitoring | $1,950.00 | $917.28 | $584.81 | $373.82 | $74.10 |
| 15 | **Water Quality Improvement Projects** | | | | | |
| 16 | Ag Conservation Planning Outreach | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| 17 | SRWMO Cost Share Grant Fund - open to public | $1,500.00 | $705.60 | $449.85 | $287.55 | $57.00 |
| 18 | SRWMO Cost Share Grant Fund - through lake associations | $7,570.00 | $3,560.93 | $2,270.24 | $1,451.17 | $287.66 |
| 19 | Carp Management | $7,500.00 | $3,528.00 | $2,249.25 | $1,437.75 | $285.00 |
| 20 | **Education and Public Outreach** | | | | | |
| 21 | Newsletters | $1,168.00 | $549.43 | $350.28 | $223.91 | $44.38 |
| 22 | Website | $715.00 | $336.34 | $214.43 | $137.07 | $27.17 |
| 23 | Anoka Co Outreach Coordinator Position | $4,450.00 | $2,093.28 | $1,334.56 | $853.07 | $169.10 |
| 24 | Lakeshore Restoration Guidance Materials | $3,300.00 | $1,552.32 | $989.67 | $632.61 | $125.40 |
| 25 | Workshops Promotion | $815.00 | $383.38 | $244.42 | $156.24 | $30.97 |
| 26 | Promote Well Water Wise | $52.00 | $24.46 | $15.59 | $9.97 | $1.98 |
| 27 | **Rollover Funds (used to maintain a flat budget of $50K, covering planned expenses over that amount in future years)** | | | | | |
| 28 | Rollover Funds | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| 29 | **Undesignated reserve account spend down** | | | | | |
| 30 | Reduced request to communities | -$6,452.65 | -$3,035.33 | -$1,935.15 | -$1,236.97 | -$245.20 |
| 31 | SUBTOTAL | $32,131.07 | $15,114.46 | $9,636.11 | $6,159.53 | $1,220.98 |

| | | | Linwood | East Bethel | Columbus | Ham Lake |
|---|---|---|---|---|---|---|
| | | Cost | 25.00% | 25.00% | 25.00% | 25.00% |
| | **OPERATING EXPENSES (split equally four ways)** | | | | | |
| 32 | **Operating Expenses** | | | | | |
| 33 | Recording Secretary services | $1,600.00 | $400.00 | $400.00 | $400.00 | $400.00 |
| 34 | Liability Insurance | $1,800.00 | $450.00 | $450.00 | $450.00 | $450.00 |
| 35 | Administrative fee charged to member communities, component activities/costs listed below | | | | | |
| 36 | On-call Administrative Assistance - ACD | $8,800.00 | $2,200.00 | $2,200.00 | $2,200.00 | $2,200.00 |
| 37 | Annual Written Communication to Member Communities | $643.00 | $160.75 | $160.75 | $160.75 | $160.75 |
| 38 | Annual Reports to BWSR, State Auditor | $1,178.00 | $294.50 | $294.50 | $294.50 | $294.50 |
| 39 | Advertise Bids for Pro Services (req'd in odd yrs) | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| 40 | Undesignated reserve acct spend down - reduced request to communities | -$2,272.07 | -$568.02 | -$568.02 | -$568.02 | -$568.02 |
| 41 | SUBTOTAL | $11,748.93 | $2,937.23 | $2,937.23 | $2,937.23 | $2,937.23 |
| 42 | | | | | | |
| 43 | GRAND TOTAL | $43,880.00 | $18,051.69 | $12,573.34 | $9,096.76 | $4,158.21 |

# Appendix A:

## 2021 Financial Report

# SUNRISE RIVER WATERSHED MANAGEMENT ORGANIZATION

# FINANCIAL REPORT
## FOR YEAR ENDED DECEMBER 31, 2021

**To the Chairperson, Candice Kantor, of Sunrise River Water Management Organization**

The enclosed statement has been prepared after review of the organization's financial records for 2021. I have not audited the organization's records and do not express an opinion. The enclosed information fairly reflects the Sunrise River WMO's financial position for the stated year.

April 8, 2022

Prepared by:
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Ham Lake, MN 55304
763-434-2030

**SUNRISE RIVER WATERSHED MANAGEMENT ORGANIZATION**
**2241 221st Ave NE**
**Cedar, MN 55011**

## STATEMENT OF REVENUES AND EXPENSES

For: year beginning January 1, 2021 and ending December 31, 2021

| **Expenditures** | **Amount** |
|---|---|
| **Operating** | |
| Insurance – MN Counties Intergovernmental Trust | $1,736.00 |
| Secretarial services - Cameron Blake | $1,400.00 |
| On-call admin assistance - Anoka Conservation District (ACD) | $8,450.00 |
| Annual reports to BWSR & State Auditor – ACD | $1,139.00 |
| Annual written communication to member communities - ACD | $621.00 |
| SUBTOTAL | $13,346.00 |
| | |
| **Non-Operating** | |
| Water monitoring and management - ACD 2021 | $26,847.00 |
| Anoka Conservation District - County AIS Prevention grant match | $750.00 |
| Other | $0.00 |
| SUBTOTAL | $27,597.00 |
| | |
| **GRAND TOTAL** | **$40,943.00** |
| | |
| **Revenues** | **Amount** |
| Linwood Twp | $16,544.55 |
| City of Columbus | $8,422.56 |
| City of Ham Lake | $3,943.37 |
| City of East Bethel | $11,575.77 |
| Insurance dividend | 64.00 |
| Anoka County - 2021 County AIS Prevention grant award | 3,000.00 |
| Other | 0.00 |
| | |
| **GRAND TOTAL** | **$43,550.25** |
| | |
| **Retained Cash Reserves** | **$2,607.25** |
| **Total Cash Reserves** | **$29,089.01** |

## SUNRISE RIVER WATERSHED MANAGEMENT ORGANIZATION

### BALANCE SHEET

For the year beginning January 1, 2021 and ending December 31, 2021

| **Assets** | |
|---|---|
| Cash | $29,089.01 |
| Accounts Receivable | $0.00 |
| Water quality project grant fund held at the Anoka Conservation District | $3,024.24 |
| Other | $0.00 |
| Other | $0.00 |
| Total Assets | $32,113.25 |

| **Liabilities** | |
|---|---|
| Accounts Payable - Anoka Conservation District AIS Prevention services | $3,000.00 |
| Accounts Payable - Cameron Blake, Recording Secretary Nov 2021 mtg fees | $200.00 |
| Other | $0.00 |
| Total Liabilities | $3,200.00 |

# Appendix B:

## 2021 Progress Toward Plan Goals

**SRWMO Goals Evaluation Template**
**Year: 2021**

| # | Goal | Related actions in the current year & all years | Progress Description: Not applicable - No progress was planned by this time | Progress planned, but none achieved | Progress, but less than planned | Progress-ing as planned | Ahead of plan | ✓ Goal Accomplished |
|---|---|---|---|---|---|---|---|---|
| **High Priority Issue Lake and Stream Water Quality** | | | | | | | | |
| G1 | **Complete eight conservation plans by 2022 for landowners.** Highest priority properties are those with livestock/horses and sites within impaired waters' watershed. Work to be done by the BWSR/NRCS funded Watershed Conservation Planner housed at Chisago SWCD. | Identified 42 owners of parcels 20+ acres in priority drainages (Coon, Linwood, Martin & Typo Lakes). 2 letters to each. In-person visits to 6 top priorities. 3 conservation plans completed. Watershed Conservation Planner program has ended. | | | ✓ | | | |
| G2 | **Implement projects in five conservation plans** produced by the BWSR/NRCS funded Watershed Conservation Planner housed at Chisago SWCD. Funding sources may include federal agriculture programs or other existing programs. | Watershed Conservation Planner program has ended. | | | ✓ | | | |
| G3 | **Create a new BMP incentives program to benefit lake water quality** that increases participation by increasing available funding and operating the program jointly with lake associations. The SRWMO will provide primary funding while the lake associations will, where willing, provide most promotion & outreach. Where lake associations do not participate the SRWMO will continue to directly offer cost share grants to homeowners. | | ✓ | | | | | |
| G4 | **20% or less of lakeshore will be mowed turf to the water's edge or retaining walls.** When most recently inventoried in 2004 lakes had 20% (Linwood Lake), 24% (Coon Lake), 27% (Martin Lake), 37% (Fawn Lake), 4% (Typo Lake). **Install at least two lakeshore buffer or stewardship projects per year** to work toward this goal. | 1 installed at Coon Lake (Scheiderich) | | | ✓ | | | |
| G5 | **Manage carp in Typo, Martin, Linwood and Coon Lakes recreational lakes to 100/kg per hectare**, the threshold above which they are destructive to lake health. This is equivalent to 89 lbs/acre. | Multiple carp removals. Poorer success rate than past years. Martin Lake water quality near delisting. | | | ✓ | | | |
| G6 | **Road deicing salt will be minimized** through training on effective, science-based deicing techniques. | | | | | ✓ | | |
| G7 | **Work toward 20% phosphorus reduction within the SRWMO** to help meet the multi-agency St. Croix Basin TMDL 20% reduction goal for the entire Sunrise River watershed. | Carp removals. 3 stormwater ponds, 2 rain gardens, 4 shore stabilizations. 9.38 lbs TP + carp removals. | | | | ✓ | | |
| G8 | **Achieve pollutant reductions needed to get Martin and Linwood Lakes off the impaired waters list and work toward the reductions needed for other waterbodies.** See plan text for more detail on targeted pollutant reductions management strategies. | Carp removals. Martin Lake has improving trend. | | | | ✓ | | |
| G9 | **Maintain Coon Lake water quality** through projects that offset landscape pressures that might cause eutrophication. | 1 rain garden. 1.25 lbs TP. | | | | ✓ | | |

| # | Goal | Related actions in the current year & all years | Progress Description: Not applicable - No progress was planned by this time | Progress planned, but none achieved | Progress, but less than planned | Progressing as planned | Progressing, ahead of plan | ✓ Goal Accomplished |
|---|---|---|---|---|---|---|---|---|
| **High Priority - Water Monitoring** | | | | | | | | |
| G10 | Monitor the effectiveness of installed water quality projects (**effectiveness monitoring**). | Typo and Martin Lakes monitored | | | | ✓ | | |
| G11 | Diagnose water quality problems to inform management (**diagnostic monitoring**). | | ✓ | | | | | |
| G12 | Detect changes or trends (**surveillance monitoring**). | All priority waters are on a monitoring schedule | | | | ✓ | | |
| **High Priority - Funding** | | | | | | | | |
| G13 | **SRWMO continues to have approximately 50% of its budget grant funded**. | 1 CWF grant ($157K), 1 CWF grant ($148K), Lower St. Croix WBIF collaborative ($1.2M) | | | | | ✓ | |
| G14 | **Maintain average annual budgets of local funds from member communities <$50,000 from 2020-2025 and <$60,000 from 2026-2030.** | Have spent down reserve funds for budget <$50K | | | | | ✓ | |
| G15 | **Minimize budget variations amongst years.** This requires carrying a balance forward from lower expenditure years to pay for future higher expenditure years. | | | | | ✓ | | |
| G16 | **Always have the 10% match required** to secure non-competitive Watershed Based Funding from the State Clean Water Legacy Fund. | Undesignated reserve is 15-30% of annual average expenses. | | | | ✓ | | |
| G17 | **Never ask member communities for additional funding** above an approved annual budget to cover unforeseen circumstances. | | | | | ✓ | | |
| G18 | **Solicit quotes for professional services** every two years. | | | | | ✓ | | |
| **High Priority - Communications with Member Communities** | | | | | | | | |
| G19 | **City councils know about SRWMO projects.** | 2021 projects tour | | | | ✓ | | |
| G20 | **Annually deliver a written and in person report to city councils and town board.** | Annual mini-report | | | | ✓ | | |
| G21 | **SRWMO board meetings are posted on each member community's calendar.** | | | | | ✓ | | |
| **High Priority - Outreach and Education** | | | | | | | | |
| G22 | **Personal, relevant communications** for the key messages and timeline described in the plan text (sec 7.5, goal 22). | Using outreach schedule in watershed plan | | | | ✓ | | |
| G23 | **Diversify outreach methods**, using three different methods each year. Outreach methods shall be prioritized as follows: Highest priority and frequency: member community and lake association newsletters, SRWMO website, workshops, displays and personal interactions. Lower priority and frequency: signage in public places (especially for AIS prevention), direct mailings (for neighborhood-specific issues), social media (for current events items). | Methods used in 2021: in-person tour, lake assoc and city newsletters, website, signage, direct mailings to landowners with shore erosion, social media from ACD. | | | | ✓ | | |
| G24 | **Consistent messaging across time and space**, including consistency with neighboring jurisdictions. | Supporting Anoka Co Water Resources Outreach Collaborative | | | | ✓ | | |

| | | | Progress Description | | | | | |
|---|---|---|---|---|---|---|---|---|
| # | Goal | Related actions in the current year & all years | Not applicable - No progress was planned by this time | Progress planned, but none achieved | Progress, but less than planned | Progressing as planned | Progressing, ahead of plan | ✓ Goal Accomplished |
| G25 | **SRWMO becomes a regular contributor to lake association newsletters.** | newsletter contributions submitted 3x | | | | ✓ | | |
| G26 | **Promote every completed project** in the lake associations' newsletters, website, Facebook or similar. | Lake association presentations, written reports | | | | ✓ | | |
| **Medium Priority - Aquatic Invasive Species** | | | | | | | | |
| G27 | **Identify new infestations** early. | County AIS program | | | | ✓ | | |
| G28 | **Contain or eradicate any small scale, newly discovered infestations**. | None found | ✓ | | | | | |
| **Medium Priority - Septic Systems** | | | | | | | | |
| G29 | **Locate and fix** non-functioning septic systems. | 2020-1 SSTS fixed at each Martin and Fawn Lakes 2021-1 SSTS fixed in Linwood Twp. | | | | | ✓ | |
| G30 | **Annually promote to financial assistance** available through Anoka County and Anoka Conservation District for fixing non-compliant septic systems. The SRWMO's target audience is shoreland residents. Support any efforts to increase available funding, which is far less than need. | Newsletter articles annually | | | | ✓ | | |
| G31 | **Secure grant funds to** (a) develop, and set up implementation of, point of sale septic system inspection requirements. These requirements currently do not exist in Ham Lake or Linwood; (b) inspect shoreland septic systems older than 10 years or without a certificate of compliance in the last 10 years; and (c) assist East Bethel with developing an automated SSTS maintenance tracking and reminder system. | Linwood Township adopted and began implementing SSTS POS ordinance with ACD financial assistance. Other communities understood to have it. | | | | ✓ | | |
| **Medium Priority - Development** | | | | | | | | |
| G32 | **Identify any undesirable natural resource impacts of proposed developments and recommended alternatives** early in the planning process. | Development reviews: 2020 - 1. 2021 - 0. 2022 to date - 3. | | | | ✓ | | |
| **Medium Priority - Multi-Partner Coordination** | | | | | | | | |
| G33 | **Every SRWMO water quality improvement project has support from affected stakeholders** including member communities, lake groups, adjacent water management entities, or others. | Lake groups, cities, & schools were collaborators on a Coon Lake rain garden, 3 Martin Lake ponds, Linwood Elem rain garden, and 3-lake carp mgmt. | | | | ✓ | | |
| G34 | **Attend at least two stakeholder/partner events per year.** The most common example is lake association meetings. | 2019-21 - Martin Lakers Assoc mtg. 2020 - Coon Lake Improvement Assoc. 2020-21 Linwood Twp bd mtgs. | | | ✓ | | | |
| G35 | **Partner with Anoka County Parks on shoreline or stormwater demonstration projects.** | | ✓ | | | | | |
| **Medium Priority - Stormwater Management** | | | | | | | | |
| G36 | **City stormwater regulations are consistent** with SRWMO Stormwater Standards. | City stormwater ordinance reviews underway. As of 3-2022 followup work with E Bethel and Columbus nearing completion. | | | ✓ | | | |
| G37 | **City Stormwater regulations are all found in a single place.** Currently some may be distributed amongst local water plans, storm water pollution prevention plans, ordinances making it difficult for permitting staff and permittees to properly implement. | Cities are reviewing, but reluctant to do ordinance clean up. | | ✓ | | | | |

| | | | Progress Description | | | | | |
|---|---|---|---|---|---|---|---|---|
| # | Goal | Related actions in the current year & all years | Not applicable - No progress was planned by this time | Progress planned, but none achieved | Progress, but less than planned | Progressing as planned | Progressing, ahead of plan | ✓ Goal Accomplished |
| **Medium Priority - Groundwater** | | | | | | | | |
| G38 | **Residents are advised to test private wells regularly for contaminants**. | Annual promo on city websites, occasional promo in city newsltrs | | | | ✓ | | |
| G39 | **All irrigation systems will be "smart" by 2040**, providing water when needed based upon soil moisture and forecasted rain. | | ✓ | | | | | |
| G40 | **Five residential or one larger "smart" irrigation systems will be installed** during the 10-years of this Plan, partially using SRWMO incentive grants. Larger irrigation systems include sporting fields, homeowner associations, schools, or other campuses. | In Lower St. Croix 1W1P, but funding anticipated in later years | ✓ | | | | | |
| G41 | **Prevent improper household hazardous waste disposal**. | Cities promote | | | | ✓ | | |
| **Medium Priority - Administrative Efficiencies** | | | | | | | | |
| G42 | **SRWMO continues to spend <20% of its local funds on administration on average across years**. Administration, for this purpose, includes the following items for which the SRWMO has some control over costs: recording secretary, reporting, and administrative assistance. | 26-30% during 2020-2023, but not because admin costs have increased. It's because other costs have decreased. | | | ✓ | | | |
| G43 | **SRWMO will have a key contact person** that can be reached by the public or agencies. | | | | | ✓ | | |
| G44 | **SRWMO meetings are efficient and occur no more than eight times per year.** | 5-6 mtgs/yr. | | | | ✓ | | |
| G45 | **Board members include representatives from key stakeholder groups** including lake residents and local elected officials. | SRWMO board includes elected officials, lake group member, residents, business owners, and natural resources pros | | | | | ✓ | |
| G46 | **Correct the SRWMO boundary.** Presently eight parcels that are part of the SRWMO are in an area that is discontinuous with the rest of the SRWMO. Corrections are needed with the Rice Creek Watershed District (RCWD) boundary. Starting in 2019 the RCWD is systematically examining hydrologic and political boundaries with the SRWMO. A petition to the state for boundary amendment is anticipated. | RCWD has initiated a boundary change that is finalized in early 2022. | | | | | | ✓ |
| **Medium Priority - Chlorides** | | | | | | | | |
| G47 | **Increase municipal snow plow drivers with level 1 MPCA Smart Salting Certification from one to 100%** of member community plow drivers. | 4 of 4 communities | | | | ✓ | | |
| G48 | **Increase the number of member communities with level 2 MPCA Smart Salting Certification from zero to four (100%).** This is an organizational certification that requires completing an organizational salt saving assessment using the online Winter Maintenance Assessment tool. | 1 of 4 communities | | | ✓ | | | |

| | | | Progress Description | | | | | |
|---|---|---|---|---|---|---|---|---|
| # | Goal | Related actions in the current year & all years | Not applicable - No progress was planned by this time | Progress planned, but none achieved | Progress, but less than planned | Progressing as planned | Progressing, ahead of plan | ✓ Goal Accomplished |
| G49 | **Member communities' will have technology on board plow trucks** that helps ensure only the amount of deicing agent required to achieve safe roads. | undercertain | | | | | | |
| **Lower Priority - Ditching/Drainage** | | | | | | | | |
| G50 | **Ditch maintenance activities, if any, will not have a negative water quality impact** on downstream streams and lakes. | | ✓ | | | | | |
| G51 | **Replace the deteriorating Linwood Lake outlet weir**, which is owned by the MN DNR. The structure is important to maintain lake levels. | SRWMO initiated conversation in 2020. County made major repairs in 2021. | | | | | | ✓ |
| **Lower Priority - Climate Change** | | | | | | | | |
| G52 | **Stormwater facilities should be designed to accommodate storm frequencies and intensities** in the most up-to-date climatological data: Atlas 14. | | | | | ✓ | | |
| **Lower Priority - Water Quantity** | | | | | | | | |
| G53 | **Hydrological systems will be managed to keep current discharge rates and volumes**. | | | | | ✓ | | |
| **Lower Priority - Fisheries** | | | | | | | | |
| G54 | **Reduce rough fish when they negatively affect water quality.** | Ongoing carp mgmt throughout W Branch Sunrise R chain of Lakes 2016-2022. | | | | ✓ | | |
| G55 | **Maintain strong pan fish populations** that will control spawning success of common carp. | 2019 Martin Lake special panfish bag limit rule change. | | | | ✓ | | |
| G56 | **Winter aeration systems will be used** where winterkills of game fish may occur. Loss of game fish affects recreational opportunities and lake water quality. | Martin and Coon Lakes aeration managed by Co Parks. | | | | ✓ | | |
| **Lower Priority - Wildlife Habitat** | | | | | | | | |
| G57 | **Private and public owners of biologically significant areas will protect, enhance and/or maintain ecological integrity.** | ACD has done buckthorn workhops, Linwood Community Forest projects, etc. | | | | ✓ | | |
| G58 | **Restore at least one wetland** in the SRWMO that benefits water quality and habitat. | 2021- One project along Ditch 20 designed, but found not cost effective for wq. Abandoned. | | | ✓ | | | |

# Appendix C:

## 2021 Community Reports to the SRWMO

Sunrise River Watershed Management Organization

# Member Community Annual Report

City or township: Columbus
Completed by: Ben Gutknecht
For year: 2021

## Member Community Responsibilities Summary

This checklist includes actions required of member community in the SRWMO 4th Generation Watershed Management Plan, excluding items that don't warrant regular reporting. It must be submitted to the SRWMO annually by each city/township. In turn, the SRWMO includes this information in its required reporting to the State.

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| | Check ✓ appropriate box | | | |
| **Local water plan approved by the SRWMO.** As of 1/17/20 SRWMO records indicate: Linwood: Tabled. Township considering resolution to adopt SRWMO plan and may revise draft comp plan. Columbus: Approved East Bethel, Ham Lake: Approved contingent upon receipt of revised plan addressing SRWMO comments. | | | ✓ | |
| **Provide a link on the community's website to the SRWMO website**. | | | ✓ | Columbus, MN |
| **Provide space in community newsletters for ¼ page minimum SRWMO articles**. | | ✓ | | Location on website for Watershed Districts and Management Organizations information currently exists. |
| **Add the SRWMO onto distribution lists for development sketch plan reviews**. Consider, but not be bound by, SRWMO comments on development proposals. | | ✓ | | Complete for development plans that are within the SRWMO and require appropriate permitting. |
| **Serve as the Local Governmental Units (LGU) administering MN Wetland Conservation Act** in SRWMO. | | | ✓ | |

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| **Fulfill the duties of MS4 permits with the State (for permitted communities only)**. Among these duties the SRWMO's priorities are: (1) inspection and maintenance of existing stormwater treatment, (2) map stormwater conveyance and treatment systems, and (3) ensure new development and redevelopment has the required stormwater treatment (4) sweep streets with curb and gutter once annually in all areas, and twice annually in priority areas. Priority areas shall be areas that drain directly to water bodies and/or natural wetlands without pretreatment of storm water runoff. | | | | N/A |
| **Operate permitting programs**. Adopt, implement, and enforce ordinances that meet or exceed the standards in Appendix B of the SRWMO Plan. Required ordinances include:<br>• Septic system ordinance<br>• Stormwater ordinance<br>• Wetland ordinance | | | ✓ | |
| **If municipal stormwater standards or rules** are spread amongst local water plans, storm water pollution prevention plans, ordinances or other documents, condensed them into a single location. | | | ✓ | |
| **Provide household hazardous waste disposal information on community websites**, ultimately directing residents to the Anoka County Household Hazardous Waste Facility. | | | ✓ | |
| **Provide Anoka County Well Water Wise private well testing program** on community websites. | | | ✓ | |
| **Obtain level 1 MPCA Smart Salting Certification for all snow plow drivers** within two years of adoption of this plan or their hire date. | | | ✓ | |
| **Obtain level 2 MPCA Smart Salting Certification** (one certification per municipality) within two years of adoption of this plan. **Maintain level 2 MPCA Smart Salting Certification** by annually submitting Best Management Practices and Salt Savings report through the MPCA Winter Maintenance Assessment tool. | ✓ | | | |

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| **Public education about the SRWMO and water resources.** Please describe efforts of your community in the last year. | Topics covered:<br>☒Hazardous waste disposal<br>☐ Water conservation<br>☒ Shoreline management<br>☐ Aquatic invasive species<br>☒ Habitat<br>☒ Water quality improvement<br>☒ Activities of the SRWMO<br>☐ Other: _____<br>Media used for public education:<br>☒Website<br>☐ Newsletters (# articles: ____)<br>☐ Workshops (# ____)<br>☐ Community events or displays (describe: _____)<br>☐ Presentations to elected officials<br>☐ Presentations to the public<br>☒ Other: Social Media<br>Audience reached:<br># of ~~households~~/**residents** (circle one): Between 200-800<br>(considering social media and website traffic) | | | |
| **Please list any other water quality improvement efforts.** | | | | |
| **Other feedback for the SRWMO.** | | | | |

Sunrise River Watershed Management Organization

# Member Community Annual Report

City or township: Ham Lake
Completed by: Tom Collins, Consulting Engineer
For year: 2021

## Member Community Responsibilities Summary

This checklist includes actions required of member community in the SRWMO 4th Generation Watershed Management Plan, excluding items that don't warrant regular reporting. It must be submitted to the SRWMO annually by each city/township. In turn, the SRWMO includes this information in its required reporting to the State.

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| | Check ✓ appropriate box | | | |
| **Local water plan approved by the SRWMO.** As of 1/17/20 SRWMO records indicate: Linwood: Tabled. Township considering resolution to adopt SRWMO plan and may revise draft comp plan. Columbus: Approved East Bethel, Ham Lake: Approved contingent upon receipt of revised plan addressing SRWMO comments. | | | ✓ | |
| **Provide a link on the community's website to the SRWMO website**. | | | ✓ | |
| **Provide space in community newsletters for ¼ page minimum SRWMO articles**. | | | ✓ | |
| **Add the SRWMO onto distribution lists for development sketch plan reviews**. Consider, but not be bound by, SRWMO comments on development proposals. | | | ✓ | |
| **Serve as the Local Governmental Units (LGU) administering MN Wetland Conservation Act** in SRWMO. | | | ✓ | |

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| **Fulfill the duties of MS4 permits with the State (for permitted communities only)**. Among these duties the SRWMO's priorities are: (1) inspection and maintenance of existing stormwater treatment, (2) map stormwater conveyance and treatment systems, and (3) ensure new development and redevelopment has the required stormwater treatment (4) sweep streets with curb and gutter once annually in all areas, and twice annually in priority areas. Priority areas shall be areas that drain directly to water bodies and/or natural wetlands without pretreatment of storm water runoff. | | | ✓ | |
| **Operate permitting programs**. Adopt, implement, and enforce ordinances that meet or exceed the standards in Appendix B of the SRWMO Plan. Required ordinances include:<br>• Septic system ordinance<br>• Stormwater ordinance<br>• Wetland ordinance | | | ✓ | |
| **If municipal stormwater standards or rules** are spread amongst local water plans, storm water pollution prevention plans, ordinances or other documents, condensed them into a single location. | ✓ | | | |
| **Provide household hazardous waste disposal information on community websites**, ultimately directing residents to the Anoka County Household Hazardous Waste Facility. | | | ✓ | |
| **Provide Anoka County Well Water Wise private well testing program** on community websites. | | | ✓ | |
| **Obtain level 1 MPCA Smart Salting Certification for all snow plow drivers** within two years of adoption of this plan or their hire date. | | | ✓ | |
| **Obtain level 2 MPCA Smart Salting Certification** (one certification per municipality) within two years of adoption of this plan. **Maintain level 2 MPCA Smart Salting Certification** by annually submitting Best Management Practices and Salt Savings report through the MPCA Winter Maintenance Assessment tool. | | | ✓ | |

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| **Public education about the SRWMO and water resources.** Please describe efforts of your community in the last year. | Topics covered:<br>☒Hazardous waste disposal<br>☒ Water conservation<br>☐ Shoreline management<br>☐ Aquatic invasive species<br>☐ Habitat<br>☐ Water quality improvement<br>☐ Activities of the SRWMO<br>☐ Other: _____<br>Media used for public education:<br>☒Website<br>☒ Newsletters (# articles: 46)<br>☒ Workshops (# 1 – Annual SWPPP public hearing)<br>☐ Community events or displays (describe: _____)<br>☐ Presentations to elected officials<br>☐ Presentations to the public<br>☒ Other: Partnerships<br>Audience reached:<br># of households/~~residents~~ (circle one): 6,629 | | | |
| **Please list any other water quality improvement efforts.** | | | | |
| **Other feedback for the SRWMO.** | | | | |

Sunrise River Watershed Management Organization

# Member Community Annual Report

City or township: Linwood Township
Completed by: Sandy Lathrop, Township Staff
For year: 2021

## Member Community Responsibilities Summary

This checklist includes actions required of member community in the SRWMO 4th Generation Watershed Management Plan, excluding items that don't warrant regular reporting. It must be submitted to the SRWMO annually by each city/township. In turn, the SRWMO includes this information in its required reporting to the State.

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| | Check ✓ appropriate box | | | |
| **Local water plan approved by the SRWMO.** As of 1/17/20 SRWMO records indicate: Linwood: Tabled. Township considering resolution to adopt SRWMO plan and may revise draft comp plan. Columbus: Approved East Bethel, Ham Lake: Approved contingent upon receipt of revised plan addressing SRWMO comments. | | | ✓ | |
| **Provide a link on the community's website to the SRWMO website.** | | | ✓ | |
| **Provide space in community newsletters for ¼ page minimum SRWMO articles.** | | | ✓ | |
| **Add the SRWMO onto distribution lists for development sketch plan reviews.** Consider, but not be bound by, SRWMO comments on development proposals. | | | ✓ | |
| **Serve as the Local Governmental Units (LGU) administering MN Wetland Conservation Act** in SRWMO. | | | ✓ | |

| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| **Fulfill the duties of MS4 permits with the State (for permitted communities only).** Among these duties the SRWMO's priorities are: (1) inspection and maintenance of existing stormwater treatment, (2) map stormwater conveyance and treatment systems, and (3) ensure new development and redevelopment has the required stormwater treatment (4) sweep streets with curb and gutter once annually in all areas, and twice annually in priority areas. Priority areas shall be areas that drain directly to water bodies and/or natural wetlands without pretreatment of storm water runoff. | | | ✓ | |
| **Operate permitting programs**. Adopt, implement, and enforce ordinances that meet or exceed the standards in Appendix B of the SRWMO Plan. Required ordinances include:<br>• Septic system ordinance<br>• Stormwater ordinance<br>• Wetland ordinance | | ✓ | | Currently:<br>No wetland ordinance<br>No stormwater ordinance<br>Township uses standards of Appendix B |
| **If municipal stormwater standards or rules** are spread amongst local water plans, storm water pollution prevention plans, ordinances or other documents, condensed them into a single location. | ✓ | | | |
| **Provide household hazardous waste disposal information on community websites**, ultimately directing residents to the Anoka County Household Hazardous Waste Facility. | | | ✓ | |
| **Provide Anoka County Well Water Wise private well testing program** on community websites. | | | ✓ | |
| **Obtain level 1 MPCA Smart Salting Certification for all snow plow drivers** within two years of adoption of this plan or their hire date. | | | ✓ | |
| **Obtain level 2 MPCA Smart Salting Certification** (one certification per municipality) within two years of adoption of this plan. **Maintain level 2 MPCA Smart Salting Certification** by annually submitting Best Management Practices and Salt Savings report through the MPCA Winter Maintenance Assessment tool. | | ✓ | | |

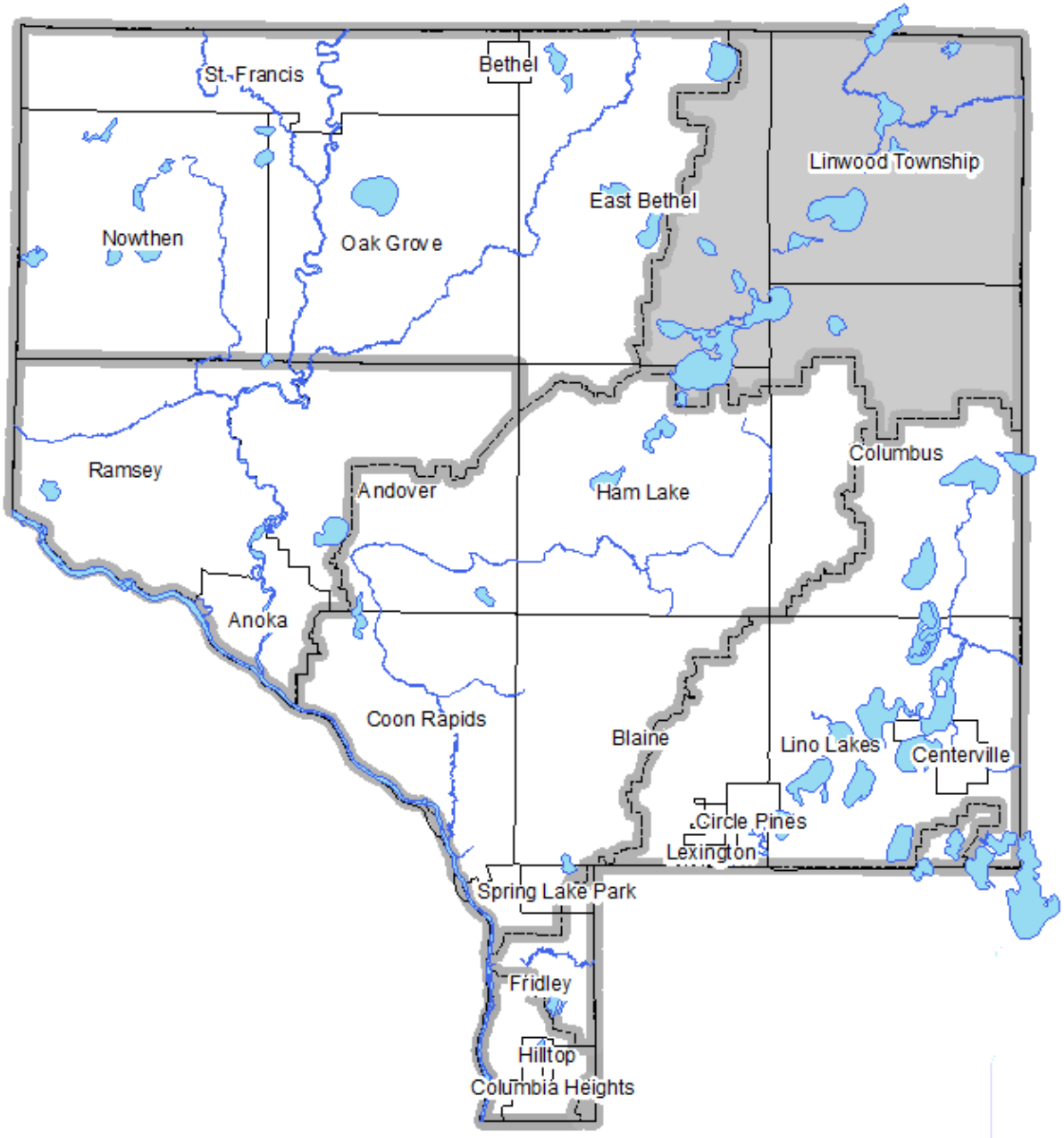
| Member Community Action | Not Completed | Partially Completed | Completed | Notes |
|---|---|---|---|---|
| **Public education about the SRWMO and water resources.** Please describe efforts of your community in the last year. | Topics covered:<br>☒Hazardous waste disposal<br>☐ Water conservation<br>☒ Shoreline management<br>☒ Aquatic invasive species<br>☐ Habitat<br>☒ Water quality improvement<br>☒ Activities of the SRWMO<br>☐ Other: _____<br>Media used for public education:<br>☒Website<br>☒ Newsletters (# articles: 3 full pages)<br>☐ Workshops (# ____)<br>☒ Community events or displays (describe: LFFD)<br>☒ Presentations to elected officials<br>☐ Presentations to the public<br>☐ Other: _____<br>Audience reached:<br># of households/residents (circle one): 2,100 households | | | |
| **Please list any other water quality improvement efforts.** | | | | |
| **Other feedback for the SRWMO.** | | | | |

# Appendix D:

## 2021 Water Monitoring and Management Work Results

# Excerpt from the 2021 Water Almanac

## Chapter 2: Sunrise River Watershed




**Prepared by the Anoka Conservation District**

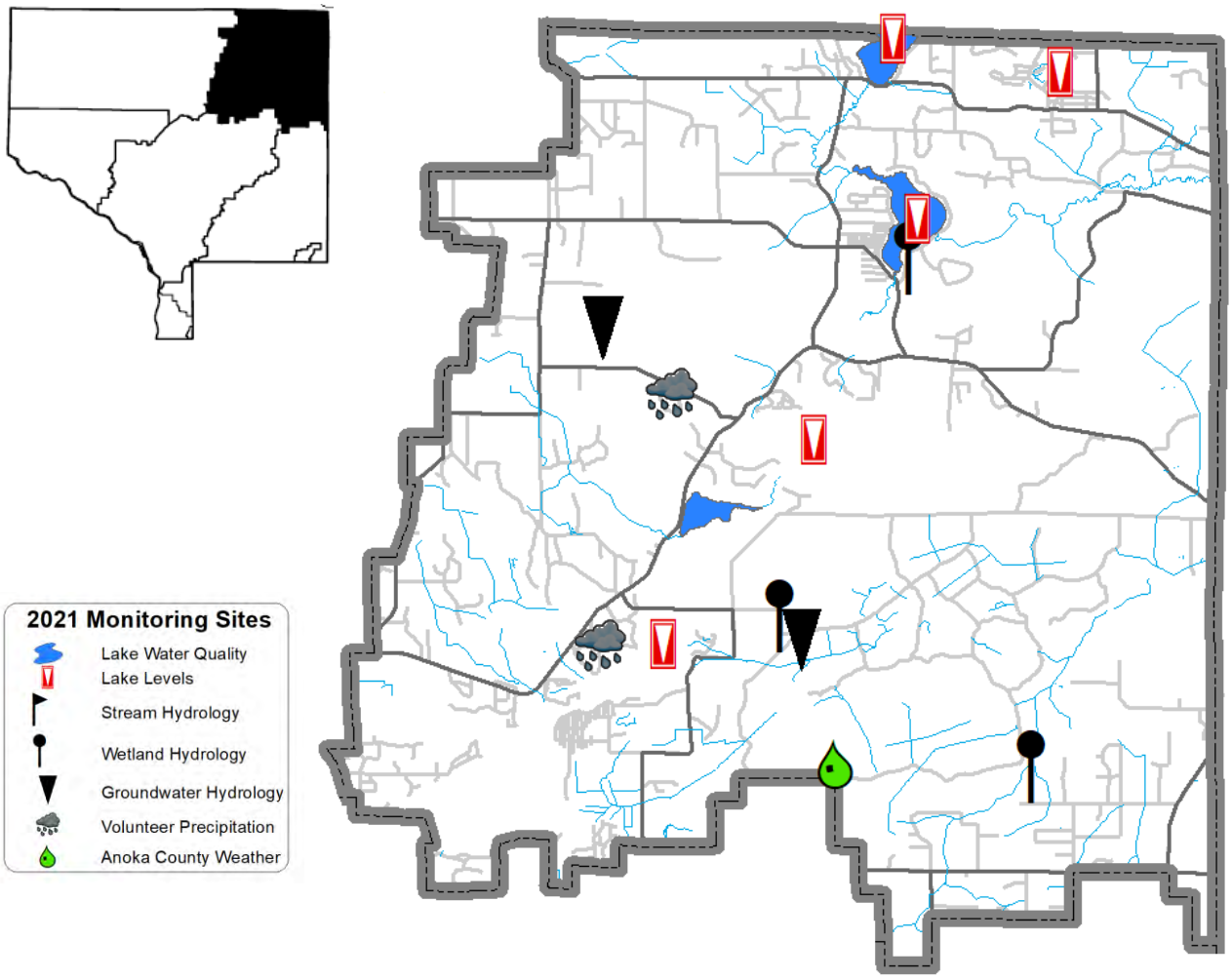
# Table of Contents

# Recommendations

- **Implement the SRWMO Watershed Management Plan that was approved in 2019.** The plan reflects the latest science and includes schedules for various projects.
- **Continue improving Martin Lake water quality towards State standards with the goal of removing its impairment.** The last five years of data support delisting.
- **Request Watershed Based Funding from the Lower St. Croix One Watershed, One Plan group.** Priority projects include a Linwood Lake subwatershed assessment study, wetland restoration at Ditch 20, and internal loading study for Linwood, Typo, or Martin Lake.
- **Collaborate with the Anoka County Outreach Coordinator.** Modest SRWMO funding can serve as match for WBIF or other funding, which results in more work in the SRWMO.
- **Target outreach** to key audiences rather than community-wide messaging. Lakeshore landscaping messaging to lakeshore owners is one priority.
- **Work through lake associations to promote lakeshore stewardship practices. Use cost share grants to remove financial barriers.** The SRWMO Watershed Management Plan sets a goal of three lakeshore restorations per year. The Anoka Conservation District mapped lakeshores in 2019 and 2020 so that future outreach can be targeted to specific parcels.
- **Update the SRWMO joint powers agreement** to address out of date material and the lack of a dispute resolution mechanism.
- **Continue prioritizing water quality monitoring** to assess baseline conditions, diagnose problems and determine the effectiveness of new water quality projects. This data helps with strategically implementing grant funds and local funds to provide the largest water quality benefit possible at the lowest cost.
- **Promote Septic System Fix-up Grants to landowners,** particularly in shoreland areas.
- **Install the already-designed rain garden on East Front Blvd at Coon Lake as designed in 2021.** The project's cost effectiveness is only moderate, but other means to treat runoff in the neighborhood are not available. Estimated cost is $20,500. Cost effectiveness is $4,848 per pound of phosphorus over a 10-year life.

# Map: 2021 Water Monitoring Sites –

# Sunrise River WMO Area



# Lake Level Monitoring

**Partners**: SRWMO, ACD, MN DNR, Local volunteers

**Description:** Weekly water level monitoring using lake gages placed in each lake. The past five and twenty-five years of data for each lake 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:** Surveillance 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.

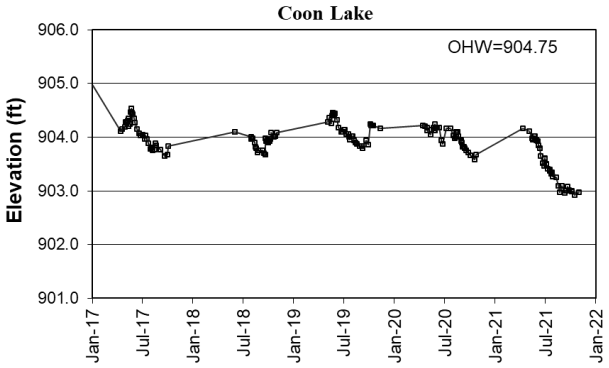
**Locations:** Coon, Fawn, Linwood, Martin, and Typo Lakes

**Results:** Lake gages were installed by the Anoka Conservation District and surveyed by the MN DNR. In 2021, lake levels started near average and declined throughout the season. The rebound often seen in the fall was not observed. This was due to infrequent rain events throughout the season. 2021 was the 11th driest season on record, and Anoka County was in a state of drought beginning in June, with most of the growing season spent in a severe drought condition.

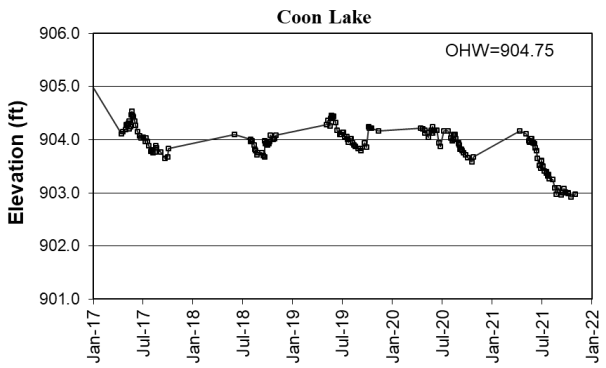
Individual lakes varied. Typo, Fawn, and Martin Lake levels fluctuated at a similar scale to previous years. Coon and Linwood Lake seemed to be most affected by the drought conditions. Coon Lake dropped 1.2 feet during 2021, but lower water levels have been observed in other years including 1988-1990, 2000, and 2009. Linwood Lake dropped over 1.5 feet during the course of the season and had its second lowest ever recorded water level, just 0.05 feet higher than the record low observed in 1988. As shown in the tables below, all five lakes were lower on average in 2021 than the four years prior.

All lake level data can be downloaded from the MN DNR website's LakeFinder feature (https://www.dnr.state.mn.us/lakefind/index.html). 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.

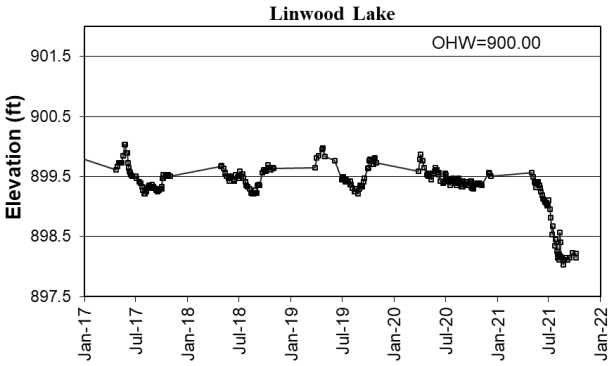
**Coon Lake Levels – last 5 years**



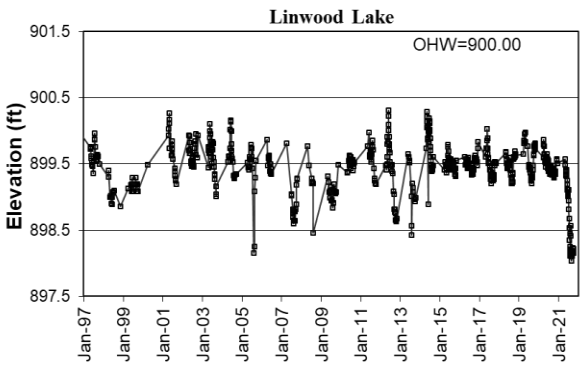

**Coon Lake – last 25 years**



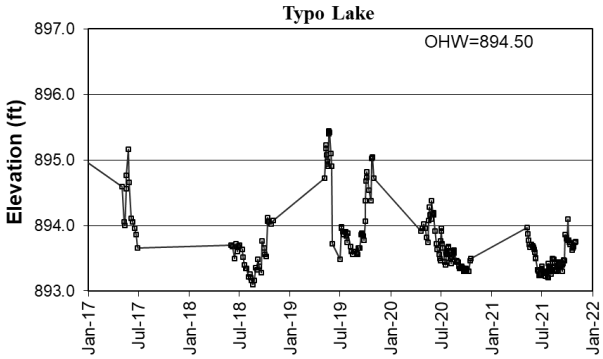
## Linwood Lake – last 5 years



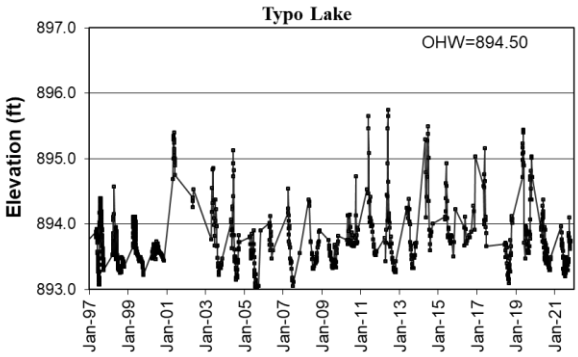

## Linwood Lake – last 25 years



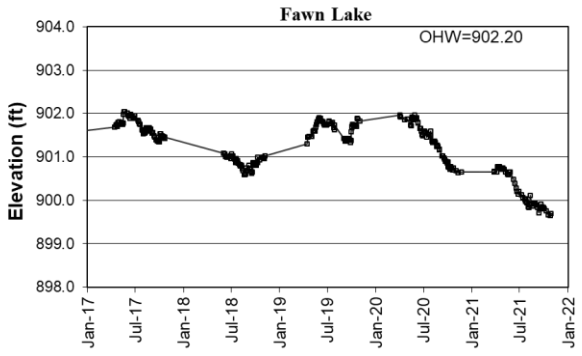

## Typo Lake – last 5 years



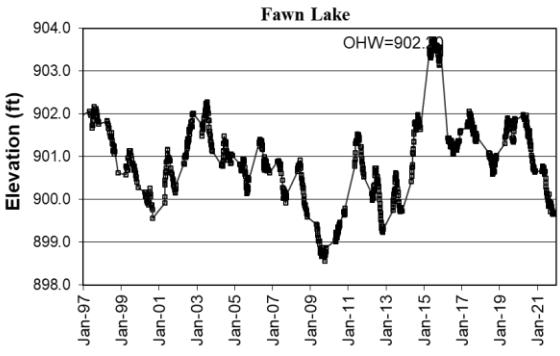

## Typo Lake – last 25 years



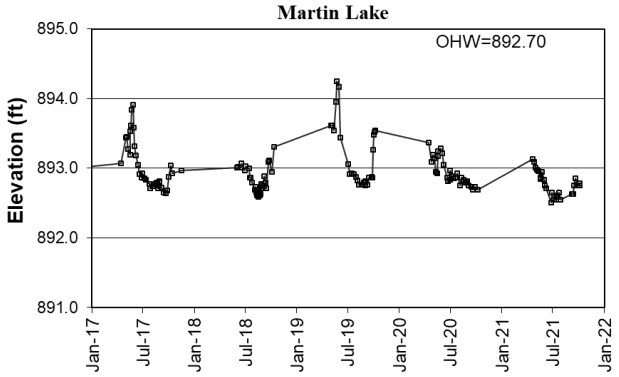

## Fawn Lake – last 5 years



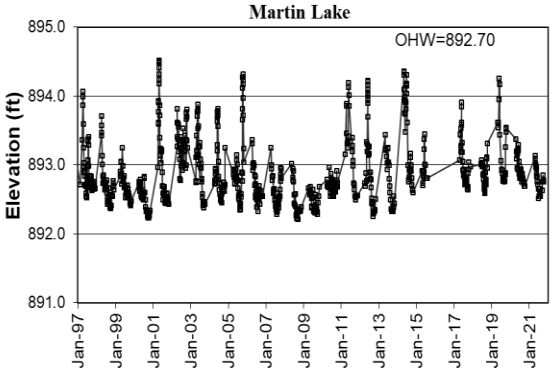

## Fawn Lake – last 25 years



**Martin Lake – last 5 years**




**Martin Lake – last 25 years**




| Lake | Year | Average | Min | Max |
|---|---|---|---|---|
| COON | 2017 | 904.09 | 903.65 | 904.53 |
| | 2018 | 903.92 | 903.68 | 904.1 |
| | 2019 | 904.14 | 903.8 | 904.46 |
| | 2020 | 904.01 | 903.58 | 904.24 |
| | 2021 | 903.52 | 902.92 | 904.16 |

| Lake | Year | Average | Min | Max |
|---|---|---|---|---|
| LINWOOD | 2017 | 899.49 | 899.21 | 900.03 |
| | 2018 | 899.46 | 899.21 | 899.69 |
| | 2019 | 899.54 | 899.21 | 899.97 |
| | 2020 | 899.47 | 899.29 | 899.87 |
| | 2021 | 898.73 | 898.03 | 899.57 |

| Lake | Year | Average | Min | Max |
|---|---|---|---|---|
| TYPO | 2017 | 894.29 | 893.66 | 895.16 |
| | 2018 | 893.55 | 893.1 | 894.12 |
| | 2019 | 894.30 | 893.48 | 895.44 |
| | 2020 | 893.66 | 893.3 | 894.38 |
| | 2021 | 893.49 | 893.2 | 894.1 |

| Lake | Year | Average | Min | Max |
|---|---|---|---|---|
| FAWN | 2017 | 901.68 | 901.35 | 902.05 |
| | 2018 | 900.87 | 900.59 | 901.09 |
| | 2019 | 901.64 | 901.31 | 901.9 |
| | 2020 | 901.35 | 900.64 | 901.97 |
| | 2021 | 900.21 | 899.65 | 900.77 |

| Lake | Year | Average | Min | Max |
|---|---|---|---|---|
| MARTIN | 2017 | 893.03 | 892.64 | 893.91 |
| | 2018 | 892.85 | 892.59 | 893.31 |
| | 2019 | 893.32 | 892.75 | 894.25 |
| | 2020 | 892.95 | 892.69 | 893.37 |
| | 2021 | 892.77 | 892.51 | 893.13 |

# Lake Water Quality

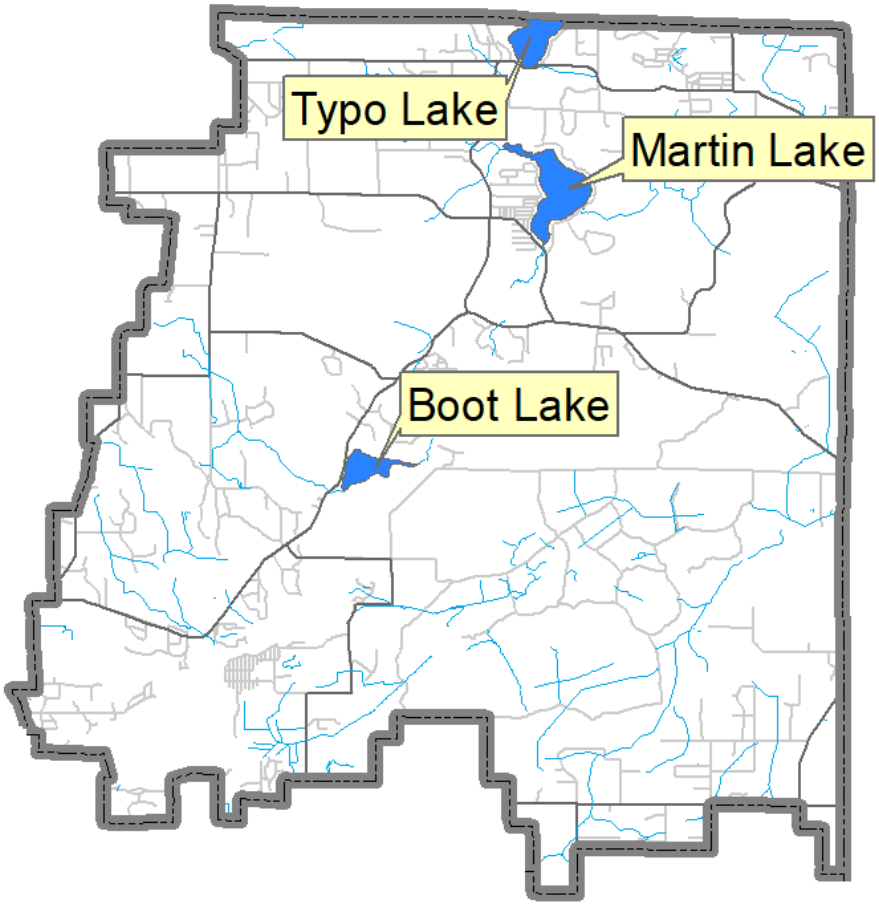
**Description:** Lake water quality monitoring was conducted ten times between May and September, approximately every two weeks. The monitoring parameters include total phosphorus, chlorophyll-a, Secchi transparency, dissolved oxygen, turbidity, temperature, specific conductance, pH, and salinity.

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

**Locations:** Typo, Martin, and Boot Lakes.

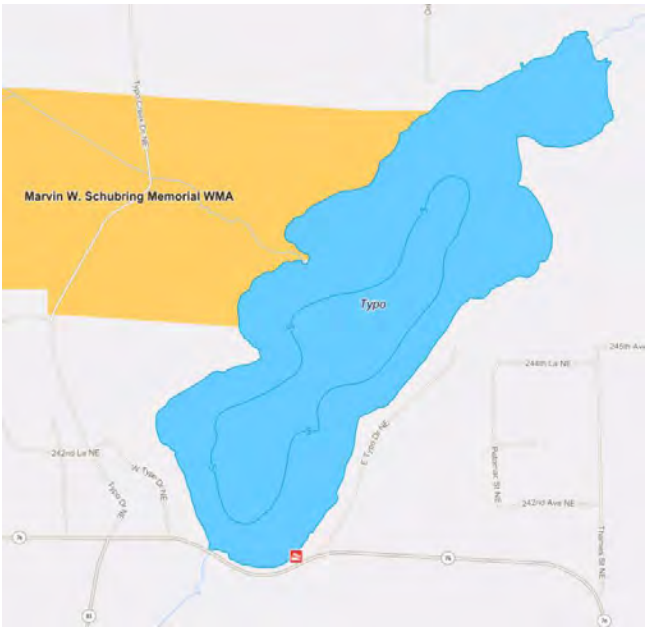
**Results:** Detailed data for each lake are provided on the following pages, including summaries of historical conditions and trend analysis. Previous years' data are available on the Minnesota Pollution Control Agency (MPCA) electronic data access (EDA) website or from ACD. Refer to Chapter 1 for additional information on lake dynamics and interpreting the data.

**2021 Sunrise River Watershed Lake Water Quality Monitoring Sites**



## *TYPO LAKE*
**Linwood Township, Lake ID # 30-0009**

### Background




Typo Lake is located in northeast Anoka County and southeast Isanti County. It has a surface area of 290 acres and maximum depth of 6 feet (1.82 m), though most of the lake is about 3 feet deep. The lake has a mucky, loose, and unconsolidated bottom in some areas, while other areas have a sandy bottom. The public access is located at the south end of the lake along Fawn Lake Drive. The lake is used little for fishing or recreational boating because of the shallow depth and extremely poor water quality. The lake's shoreline is mostly undeveloped, with only 21 homes within 300 feet of the lakeshore. The lake's watershed of 11,520 acres is 3% residential, 33% agricultural, and 28% wetlands, with the remainder forest or grassland. Typo Lake is on the MPCA's list of impaired waters for excess nutrients. Typo Lake is being monitored for Best Management Practices (BMP) effectiveness.

The MN DNR conducted a fisheries survey of this lake in 2016. Walleye, Black Crappie, White Crappie, Northern Pike, and Bluegill was the most abundant gamefish found in Typo Lake. Walleye are the primary management species on Typo Lake with 295,000 fry stocked in odd numbered years.

### 2021 Results

In 2021, Typo Lake had poor water quality compared to other lakes in this region (NCHF Ecoregion), but did show improvement from 2020, receiving an overall D letter grade. Average total phosphorus (TP) was 150.5 µg/L, which was a decrease from the 2020 average of 220.0 µg/L. While total phosphorus levels continue to far exceed the 60 µg/L state standard for shallow lakes, average concentrations appear to be decreasing over the past two decades (average 270 µg/L during 2000-09, and 174 µg/L 2012-2020).

Chlorophyll-a (Cl-a) levels in 2021 averaged 72.5 µg/L. This is similar to 2020 (73.5 µg/L) and other previous years (average 70 µg/L 2015-20). Cl-a concentrations have stayed below the historical average for the lake (99 µg/L 1993-2020) but are still many times higher than the State standard for Cl-a in shallow lakes of 20 µg/L.

Average Secchi transparency in 2021 was 1.8 feet, which tied for the second-highest average on record (1974-2021 n=22). Transparency has improved throughout the last decade, but remains poorer than the State standard for shallow lakes transparency of 1 meter (3.3 feet).

### Trend Analysis

The MPCA (1993, '94, and '95) and the Anoka Conservation District (1997-2001, '03, '05, '07, '09, '12, 2014-2021) have conducted twenty-one years of water quality monitoring. Overall, water quality has improved from 1993 to 2021 in a statistically significant way (repeated measures MANOVA with response variables TP, Cl-a, and Secchi depth; $F_{2, 18}=5.98$, $p<0.01$). When we tested these response variables individually with one-way ANOVAs, TP shows no significant change across this time period. A superficial look at graphs of these parameters suggests that total phosphorus is generally stable between 150 µg/L and 250 µg/L with an overall decreasing trend that is not significant at this time. Cl-a, however, is showing a statistically significant decline ($p<0.001$). Secchi transparency is showing a statistically significant increase ($p<0.05$) when high nutrient years of 2007 and 2009 are excluded. The major driver of improved water quality is decreasing Cl-a concentration, but improving seechi transparency is also a positive driving factor.

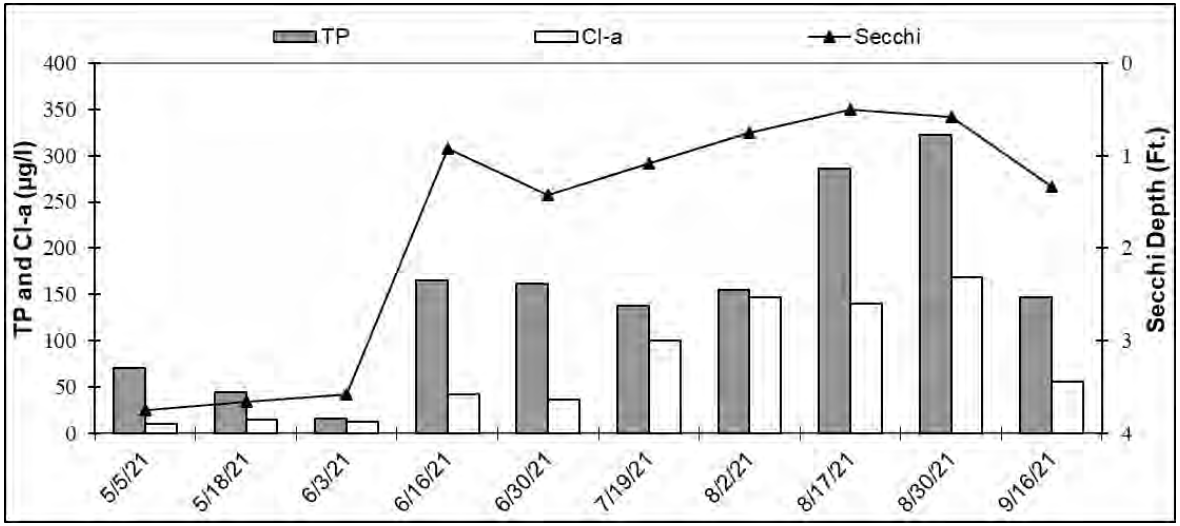
**Discussion**

Typo Lake, along with Martin Lake downstream was the subject of a Total Maximum Daily Load (TMDL) study by the Anoka Conservation District, which was approved by the State and EPA in 2012. This study documented the sources of nutrients to the lake, the magnitude of each, and put forth lake rehabilitation strategies. Some factors affecting water quality in Typo Lake include rough fish, ditched wetland west of the lake, and lake sediment. Recent work has included installation of carp barriers (completed in 2016), carp removals (2017-2019 and 2021), and a feasibility study of ditched wetland restorations upstream of Typo Lake (2018). The feasibility study identified four potential projects along Ditch 20 upstream of Typo Lake. It also recommends that dredging of Ditch 20 not occur. Current shoreline conditions on Typo Lake were inventoried during a 2020 shoreline survey. This inventory will assist in identifying future cost-effective lakeshore projects. Recent water quality monitoring results suggest these management approaches are improving conditions in the Sunrise River chain of lakes, but reaching goals will require additional effort and time.

## *TYPO LAKE*

**Linwood Township, Lake ID # 30-0009**

## 2021 Results



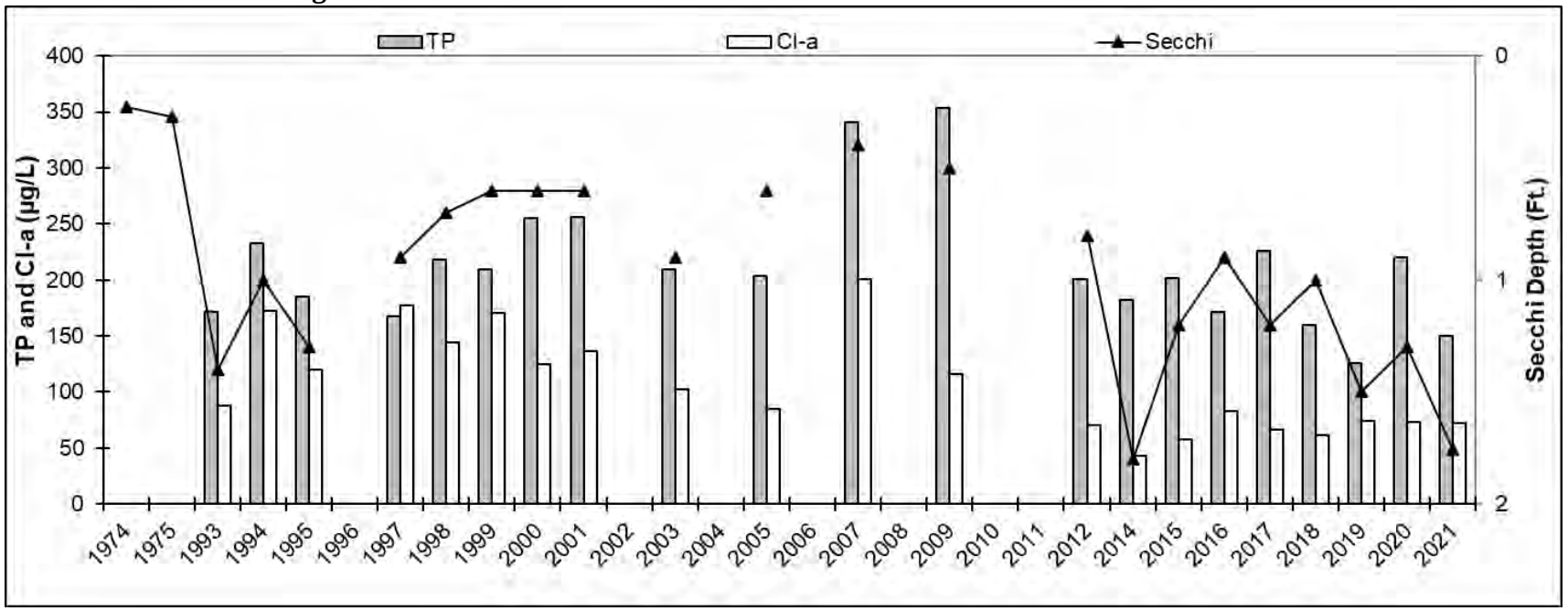

**2021 Median Values**

| | | |
|---|---|---|
| pH | | 8.37 |
| Specific Conductance | mS/cm | 0.30 |
| Turbidity | FNRU | 53.65 |
| D.O. | mg/l | 9.93 |
| D.O. | % | 108.95 |
| Temp. | °F | 73.09 |
| Salinity | % | 0.11 |
| Cl-a | µg/l | 48.50 |
| T.P. | µg/l | 151.00 |
| Secchi | ft | 1.21 |

| **Typo Lake** | | Date | 5/5/2021 | 5/18/2021 | 6/3/2021 | 6/16/2021 | 6/30/2021 | 7/19/2021 | 8/2/2021 | 8/17/2021 | 8/30/2021 | 9/16/2021 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2021 Water Quality Data** | | Time | 11:13 | 10:35 | 10:36 | 10:54 | 9:59 | 10:50 | 9:52 | 10:20 | 10:39 | 10:10 | | | |
| | Units | R.L.* | | | | | | | | | | | Average | Min | Max |
| pH | | 0.1 | 8.32 | 8.46 | 8.30 | 8.05 | 8.20 | 8.41 | 9.04 | 9.00 | 7.81 | 8.85 | 8.44 | 7.81 | 9.04 |
| Specific Condu | mS/cm | 0.01 | 0.287 | 0.310 | 0.325 | 0.342 | 0.333 | 0.232 | 0.223 | 0.198 | 0.417 | 0.189 | 0.286 | 0.189 | 0.417 |
| Turbidity | FNRU | 1 | 24.90 | 8.30 | 13.80 | 77.10 | 61.90 | 77.10 | 106 | 15.50 | 129.00 | 45.40 | 73 | 8 | 129 |
| D.O. | mg/l | 0.01 | 11.69 | 11.75 | 10.56 | 6.55 | 9.29 | 8.90 | 12.12 | 7.44 | 7.22 | 14.15 | 9.97 | 6.55 | 14.15 |
| D.O. | % | 1 | 105.2 | 127.2 | 107.4 | 82.6 | 115.4 | 110.5 | 144.6 | 91.7 | 87.6 | 126.2 | 109.8 | 82.6 | 144.6 |
| Temp. | °C | 0.1 | 13.46 | 19.93 | 21.59 | 24.24 | 25.27 | 25.27 | 23.03 | 24.01 | 22.62 | 19.10 | 21.85 | 13.46 | 25.27 |
| Temp. | °F | 0.1 | 56.2 | 67.9 | 70.9 | 75.6 | 77.5 | 77.5 | 73.5 | 75.2 | 72.7 | 66.4 | 71.3 | 56.2 | 77.5 |
| Salinity | % | 0.01 | 0.14 | 0.15 | 0.16 | 0.17 | 0.10 | 0.11 | 0.11 | 0.10 | 0.10 | 0.09 | 0.1 | 0.1 | 0.2 |
| Cl-a | µg/l | 1 | 9.80 | 14.20 | 12.50 | 41.80 | 36.50 | 100.00 | 147.00 | 140.00 | 168.00 | 55.20 | 72.5 | 9.8 | 168.0 |
| T.P. | mg/l | 0.005 | 0.070 | 0.044 | 0.016 | 0.165 | 0.162 | 0.138 | 0.155 | 0.286 | 0.322 | 0.147 | 0.151 | 0.016 | 0.322 |
| T.P. | µg/l | 5 | 70 | 44 | 16 | 165 | 162 | 138 | 155 | 286 | 322 | 147 | 151 | 16 | 322 |
| Secchi | ft | 0.10 | 3.75 | 3.66 | 3.58 | 0.92 | 1.42 | 1.08 | 0.75 | 0.50 | 0.58 | 1.33 | 1.8 | 0.5 | 3.8 |
| Secchi | m | 0.10 | 1.14 | 1.12 | 1.09 | 0.28 | 0.43 | 0.33 | 0.23 | 0.15 | 0.18 | 0.41 | 0.5 | 0.2 | 1.1 |
| Physical | | | 3.0 | 2.0 | 3.0 | 2.0 | 4.0 | 3.00 | 4.00 | 4.0 | 4.0 | 3.0 | 3.2 | 2.0 | 4.0 |
| Recreational | | | 3.0 | 2.0 | 3.0 | 2.0 | 3.0 | 3.00 | 5.00 | 3.0 | 4.0 | 3.0 | 3.1 | 2.0 | 5.0 |

*reporting limit

## Historical Annual Averages




## Historical Report Card

| Year | TP | Cl-a | Secchi | **Overall** |
|---|---|---|---|---|
| 1974 | | | F | **F** |
| 1975 | | | F | **F** |
| 1993 | F | F | F | **F** |
| 1994 | F | F | F | **F** |
| 1995 | F | F | F | **F** |
| 1997 | F | F | F | **F** |
| 1998 | F | F | F | **F** |
| 1999 | F | D | F | **F** |
| 2000 | F | F | F | **F** |
| 2001 | F | F | F | **F** |
| 2003 | F | F | F | **F** |
| 2005 | F | F | F | **F** |
| State Standards | 60 ug/L | 20 ug/L | >3.3 ft | |

| Year | TP | Cl-a | Secchi | **Overall** |
|---|---|---|---|---|
| 2007 | F | F | F | **F** |
| 2009 | F | F | F | **F** |
| 2012 | F | D | F | **F** |
| 2014 | F | C | F | **D** |
| 2015 | F | D | F | **F** |
| 2016 | F | F | F | **F** |
| 2017 | F | D | F | **F** |
| 2018 | F | D | F | **F** |
| 2019 | D | D | D | **D** |
| 2020 | F | D | F | **F** |
| 2021 | D | D | F | **D** |
| State Standards | 60 ug/L | 20 ug/L | >3.3 ft | |

## *MARTIN LAKE*
**Linwood Township, Lake ID # 02-0034**

### Background


Martin Lake is located in northeast Anoka County. It has a surface area of 223 acres and maximum depth of 20 ft. The public access is located on the southern end of the lake. The lake is used moderately by recreational boaters and anglers, and would likely be used more if water quality improved. Martin Lake is almost entirely surrounded by private residences. The 5,402-acre watershed is 18% developed; the remaining 82% is vacant, agricultural, or wetlands. The non-native, invasive plant curly-leaf pondweed is present in Martin Lake but not at nuisance levels. Martin is on the MPCA's list of impaired waters for excess nutrients. Martin Lake is being monitored for BMP effectiveness.

The MN DNR conducted a fisheries survey of this lake in 2015. The lake is primarily managed for Walleye, with Bluegill and Black Crappie as secondary management species. Walleye fry are stocked at a rate of 2,000 fish per littoral acre (280,000 fry) annually in the spring. An aeration system designed to prevent winter kills was installed in 1993.

**2021 Results**

In 2021, Martin Lake had an overall C letter grade with a record low average for total phosphorus concentrations, 47.7 µg/L. In 2021, chlorophyll-a averaged 25.2 µg/L, similar to the 2020 average of 31.4 µg/L and other years since 2012. While the most recent 5-year average for chlorophyll-a of 28.4 µg/L is much lower than the 2005-2009 average of 108.3 µg/L, chlorophyll-a remains above the state impairment standard of 20 µg/L. Average Secchi transparency in 2021 was 4.5 feet, a substantial increase from 3.0 feet in 2020. The average Secchi transparency in 2021 was above the state standard of 3.3 feet.

**Trend Analysis**

Twenty-one years of water quality data have been collected by the MPCA (1983), Metropolitan Council (1998, 2008), and ACD (1997, 1999-2001, 2003, 2005, 2007, 2009, 2012-2021). Citizens monitored Secchi transparency 17 other years. Anecdotal notes from DNR fisheries data indicate poor water quality dating back to at least 1954. Although still poor, water quality in Martin Lake has shown an improvement from 1983 to 2021 that is statistically significant (repeated measures MANOVA with response variables TP, Cl-a, and Secchi depth; $F_{2, 17}=6.54$, $p < 0.05$). This is especially true for the last decade. Further examination of the data shows that while TP and Secchi transparency have not changed in a statistically significant way since 1983, chlorophyll-a concentrations have shown a statistically significant decrease ($p < 0.01$) over this time. Water quality in Martin Lake declined through the late 1990s and reached its worst quality in 2007. In the 11 years sampled since 2007, both TP and Secchi transparency have improved on a statistically significant basis ($p < 0.01$).

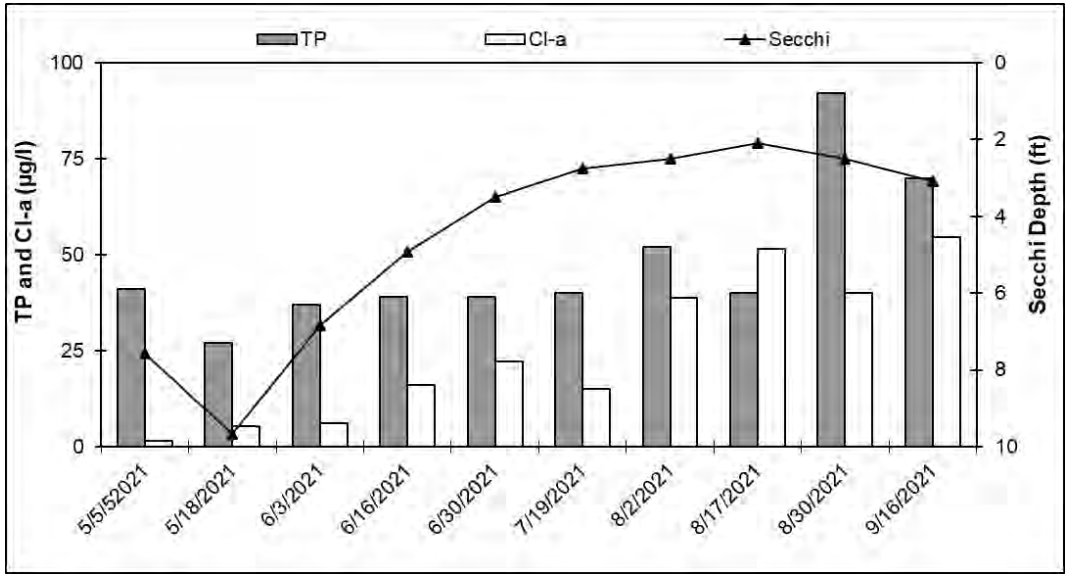
**Discussion**

Martin Lake, along with Typo Lake upstream, was the subject of a TMDL study by the Anoka Conservation District that was approved by the State and EPA in 2012. This study documented the sources of nutrients to the lake, the degree to which each is impacting the lake, and put forward lake rehabilitation strategies. Water entering from Typo Lake and internal loading (carp, septic systems, sediment, etc.) are two of the largest negative impacts on Martin Lake water quality. Carp management efforts, septic system replacements, and storm water retrofits have been implemented in recent years. Shoreline conditions on Martin Lake were inventoried during a 2019/2020 shoreline survey, resulting in the installation of multiple lakeshore restoration projects in 2021. Outreach for additional lakeshore projects will occur in 2022. Recent water quality monitoring results suggest these management approaches are improving conditions in the lake. Results have been positive, and future efforts should be made to continue these improvements. Because many of the most cost effective watershed projects and carp management have been implemented, an alum treatment should be considered to continue the restoration of water quality in this lake.

## *MARTIN LAKE*

**Linwood Township, Lake ID # 02-0034**

**2021 Results**




**2021 Median Values**

| | | |
|---|---|---|
| pH | | 8.19 |
| Specific Conductance | mS/cm | 0.31 |
| Turbidity | FNRU | 20.00 |
| D.O. | mg/l | 10.46 |
| D.O. | % | 116.35 |
| Temp. | °F | 74.68 |
| Salinity | % | 0.15 |
| Cl-a | ug/L | 19.15 |
| T.P. | ug/l | 40.00 |
| Secchi | ft | 3.29 |

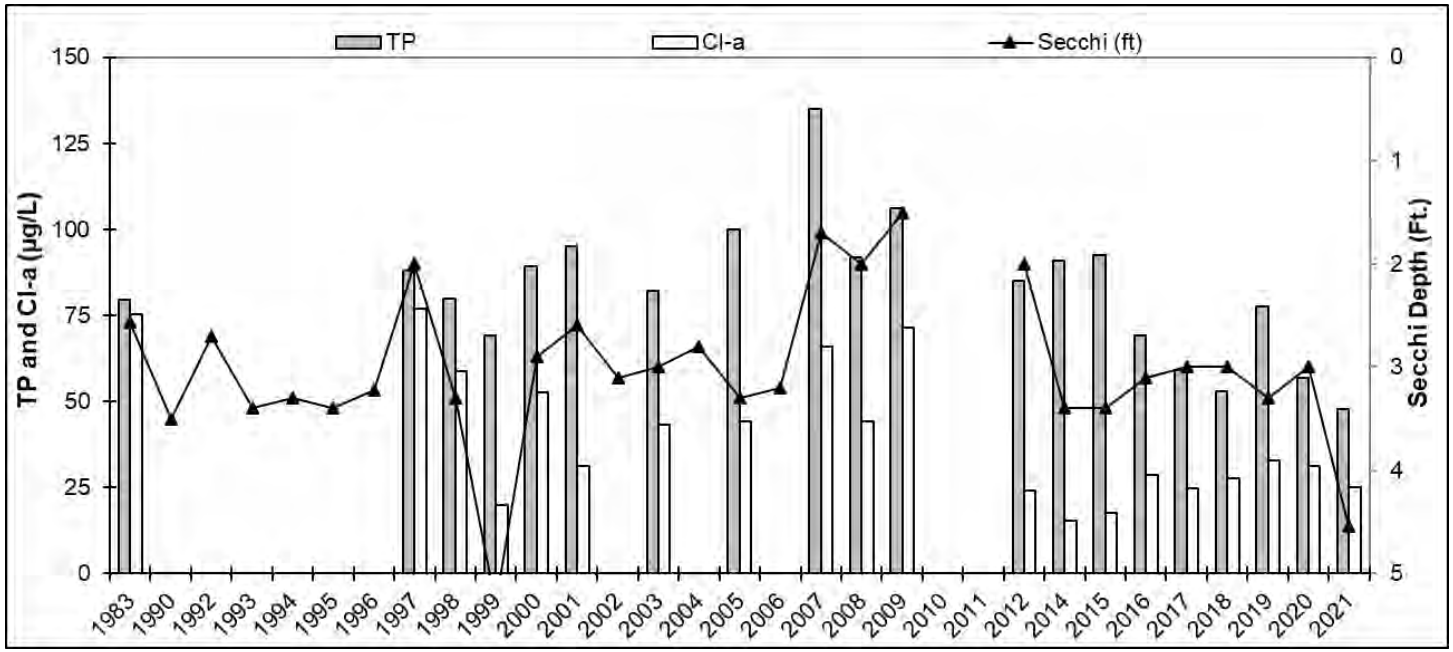
**Martin Lake**

**2021 Water Quality Data**

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Date: | 5/5/52021 | 5/18/2021 | 6/3/2021 | 6/16/2021 | 6/30/2021 | 7/19/2021 | 8/2/2021 | 8/17/2021 | 8/30/2021 | 9/16/2021 | | | |
| | | Time: | 10:28 | 9:54 | 9:44 | 10:07 | 9:22 | 10:17 | 9:19 | 9:35 | 10:07 | 9:35 | | | |
| | Units | R.L.* | | | | | | | | | | | Average | Min | Max |
| pH | | 0.1 | 8.31 | 8.27 | 8.10 | 8.49 | 8.69 | 7.91 | 8.02 | 7.94 | 7.93 | 8.30 | 8.20 | 7.91 | 8.69 |
| Specific Cond | mS/cm | 0.01 | 0.297 | 0.294 | 0.313 | 0.324 | 0.315 | 0.302 | 0.319 | 0.317 | 0.320 | 0.289 | 0.309 | 0.289 | 0.324 |
| Turbidity | FNRU | 1 | 8.40 | 3.10 | 5.00 | 38.20 | 20.30 | 8.80 | 24.10 | 28.00 | 19.70 | 22.30 | 17.58 | 3.10 | 38.20 |
| D.O. | mg/l | 0.01 | 11.92 | 12.18 | 10.11 | 9.45 | 12.22 | 10.45 | 10.46 | 8.68 | 6.07 | 10.51 | 10.21 | 6.07 | 12.22 |
| D.O. | % | 1 | 115.2 | 128.5 | 117.5 | 114.3 | 136.2 | 133.2 | 111.9 | 106.9 | 74.5 | 121.2 | 115.9 | 74.5 | 136.2 |
| Temp. | °C | 0.1 | 12.9 | 18.59 | 20.95 | 25.15 | 24.84 | 26.61 | 24.52 | 24.07 | 23.35 | 20.24 | 22.1 | 12.9 | 26.6 |
| Temp. | °F | 0.1 | 55.2 | 65.5 | 69.7 | 77.3 | 76.7 | 79.9 | 76.1 | 75.3 | 74.0 | 68.4 | 71.8 | 55.2 | 79.9 |
| Salinity | % | 0.01 | 0.14 | 0.14 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.14 | 0.15 | 0.14 | 0.15 |
| Cl-a | ug/L | 1 | 1.60 | 5.30 | 6.20 | 16.00 | 22.30 | 15.10 | 38.70 | 51.60 | 40.100 | 54.70 | 25.2 | 1.6 | 54.7 |
| T.P. | mg/l | 0.005 | 0.041 | 0.027 | 0.037 | 0.039 | 0.039 | 0.040 | 0.052 | 0.040 | 0.092 | 0.070 | 0.048 | 0.027 | 0.092 |
| T.P. | ug/l | 5 | 41 | 27 | 37 | 39 | 39 | 40 | 52 | 40 | 92 | 70 | 47.7 | 27 | 92 |
| Secchi | ft | 0.1 | 7.58 | 9.66 | 6.83 | 4.92 | 3.50 | 2.75 | 2.50 | 2.1 | 2.5 | 3.1 | 4.5 | 2.1 | 9.7 |
| Secchi | m | 0.1 | 2.31 | 2.94 | 2.08 | 1.50 | 1.07 | 0.84 | 0.76 | 0.64 | 0.76 | 0.94 | 1.4 | 0.6 | 2.9 |
| Physical | | | 2.0 | 1.0 | 3.0 | 3.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | 2.0 | 2.8 | 1.0 | 4.0 |
| Recreational | | | 1.0 | 1.0 | 1.0 | 3.0 | 4.0 | 2.0 | 4.0 | 2.0 | 3.0 | 2.0 | 2.3 | 1.0 | 4.0 |

*reporting limit

## Historical Annual Averages




## Historical Report Card

| Year | TP | Cl-a | Secchi | Overall |
|---|---|---|---|---|
| 1996 | | | D | **D** |
| 1997 | D | D | F | **D** |
| 1998 | D | D | D | **D** |
| 1999 | C | B | C | **C** |
| 2000 | D | C | D | **D** |
| 2001 | D | C | D | **D** |
| 2002 | | | D | **D** |
| 2003 | D | C | D | **D** |
| 2004 | | | D | **D** |
| 2005 | D | C | D | **D** |
| 2006 | | | D | **D** |
| 2007 | D | D | F | **D** |
| State Standards | 60 ug/L | 20 ug/L | >3.3 ft | |

| Year | TP | Cl-a | Secchi | Overall |
|---|---|---|---|---|
| 2008 | D | C | F | **D** |
| 2009 | D | D | F | **D** |
| 2012 | D | C | F | **D** |
| 2014 | D | B | D | **C** |
| 2015 | D | B | D | **C** |
| 2016 | C | C | D | **C** |
| 2017 | C | C | D | **C** |
| 2018 | C | C | D | **C** |
| 2019 | D | C | D | **D** |
| 2020 | C | C | D | **C** |
| 2021 | C | C | C | **C** |
| State Standards | 60 ug/L | 20 ug/L | >3.3 ft | |

## *BOOT LAKE*
**Linwood Township, Lake ID # 02-0028**

### Background


Boot Lake is located in the northeast portion of Anoka County and has a surface area of 92 acres. While nearly all of the lake is shallow with aquatic vegetation growing to the surface, there is one small area with a depth of 23 ft. (7 m) where water quality monitoring occurs.

Boot Lake is within a restricted access Scientific and Natural Area (SNA) owned and administered by the Minnesota Department of Natural Resources. The Boot Lake SNA is 660 acres and includes the entire lake as well as the undeveloped shoreline. Access, including for ACD to conduct water quality monitoring, requires a special permit from the MN DNR.

Boot Lake has one primary stream inlet and one outlet. The inlet drains upstream lands that include undeveloped, sod fields and large-lot residential usage. The outlet stream goes to Linwood Lake.

Diagnostic monitoring at Boot Lake is important for two reasons. First, Boot Lake is a contributing water source to Linwood Lake, which is impaired for excess nutrients. Monitoring Boot Lake's water quality allows us to determine whether Boot Lake is degrading Linwood Lake's water quality. Secondly, Boot Lake is relatively undisturbed, and it is desirable to see what water quality conditions are in a rare, undeveloped lake in Anoka County.

### 2021 Results

Boot Lake's nutrient levels are typical of shallow lakes in the area. The average total phosphorus level in 2021 was 33.8 µg/L, average chlorophyll-a was 9.2µg/L, and average Secchi transparency was 8.3 ft. (2.5 m). These are better than the state water quality standard for shallow lakes (total phosphorus <60 µg/L, chlorophyll-a <20 µg/L, Secchi transparency >1m), and earn Boot Lake an overall B letter grade on Met Council's grading scale for metro area lakes. This is an improvement from the C letter grade Boot Lake received in 2018. Boot Lake supports a diverse plant community, and attracts abundant waterfowl.

### Trend Analysis

2021 was only the third year of water quality monitoring for Boot Lake. Trend analysis is not yet possible. The earliest data about the lake is from a 1979 resource inventory that was completed to assess the site as a potential Scientific and Natural Area. The inventory did not include water quality monitoring.

**Discussion**

While Boot Lake is not subject to many of the potential negative impacts that occur on unprotected and/or developed lakes, its water quality is far from the pristine condition one might expect. Viking Boulevard runs near the western shore of the lake and may directly contribute pollutants. The contributing subwatershed includes some agriculture and scattered residential housing, which may also affect water quality in Boot Lake. In-lake nutrients can also contribute to algal growth.

ACD monitored the water quality of the inlet to Boot Lake at Viking Boulevard in 2001 and 2003. Average total phosphorus in the inlet across both years was 117 µg/L, which is typical for the area, but exceeds the state water quality standard for streams of 100 µg/L, and is likely contributing to the nutrient load into Boot Lake.

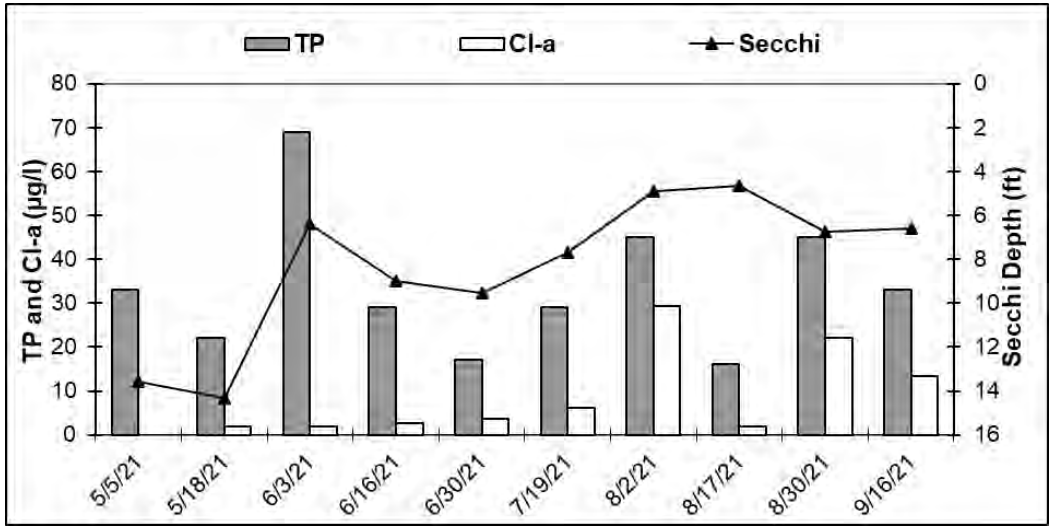
Carp can negatively impact lake health, though their population appears low in Boot Lake. This is significant because carp reduction is a management goal for Linwood Lake. Boot Lake could be a source of carp, or spawning area for them. Dead common carp were observed in 2018 when ACD staff were monitoring water quality. However, in 2018, a trap netting survey for carp was done in Boot Lake resulting in zero being caught.

Boot Lake's impact on Linwood Lake downstream appears neutral, as its nutrient concentrations are similar. However, efforts to improve impaired Linwood Lake should be made with Boot Lake in mind. It often makes sense to manage the whole watershed, and especially upstream contributing waters.

## *BOOT LAKE*

**Linwood Township, Lake ID # 02-0028**

**2021 Results**




**2021 Median Values**

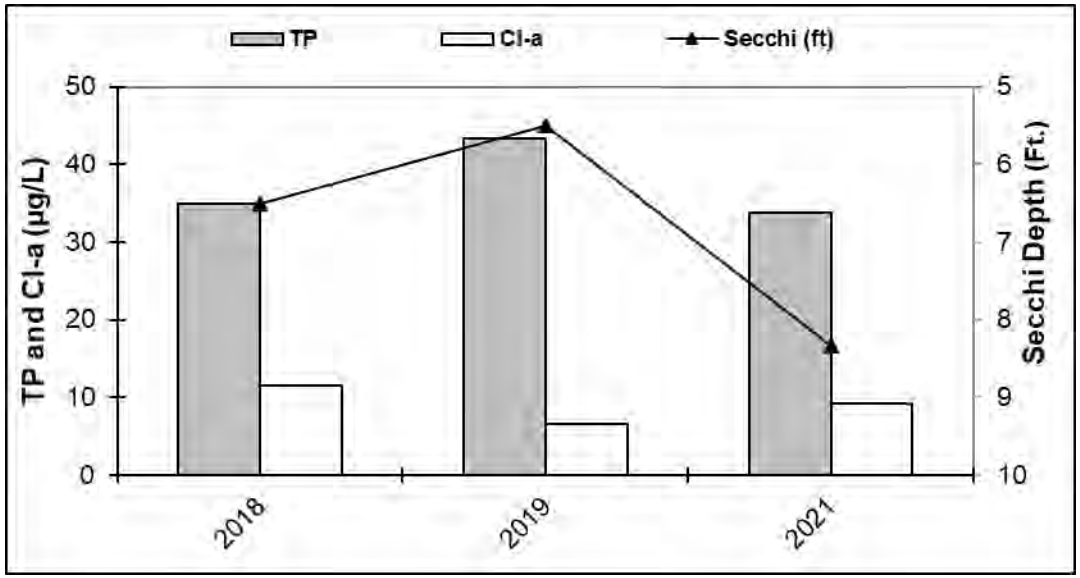
| | | |
|---|---|---|
| pH | | 7.93 |
| Specific Conductance | mS/cm | 0.26 |
| Turbidity | NTU | 9.25 |
| D.O. | mg/l | 9.58 |
| D.O. | % | 109.35 |
| Temp. | °F | 73.41 |
| Salinity | % | 0.12 |
| Cl-a | µg/L | 3.60 |
| T.P. | µg/l | 31.00 |
| Secchi | ft | 7.21 |

**Boot Lake 2021 Water Quality Data**

| | Units | R.L.* | Date: 5/5/2021 | 5/18/2021 | 6/3/2021 | 6/16/2021 | 6/30/2021 | 7/19/2021 | 8/2/2021 | 8/17/2021 | 8/30/2021 | 9/16/2021 | Average | Min | Max |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Time: 9:28 | 9:10 | 9:01 | 8:58 | 8:41 | 9:30 | 8:43 | 8:40 | 9:23 | 8:54 | | | |
| pH | | 0.1 | 7.88 | 7.91 | 8.54 | 8.51 | 8.73 | 8.21 | 7.56 | 7.72 | 7.95 | 7.67 | 8.1 | 7.56 | 8.73 |
| Specific | mS/cm | 0.01 | 0.258 | 0.261 | 0.242 | 0.223 | 0.208 | 0.223 | 0.254 | 0.269 | 0.280 | 0.257 | 0.2 | 0.21 | 0.28 |
| Turbidit | NTU | 1 | | 2.60 | 2.20 | 23.60 | 25.10 | 1.900 | 10.30 | 14.90 | 8.20 | 3.60 | 10.3 | 1.90 | 25.10 |
| D.O. | mg/l | 0.01 | 10.43 | 10.97 | 11.19 | 9.39 | 9.77 | 14.37 | 5.90 | 6.35 | 8.54 | 7.97 | 9.5 | 5.90 | 14.37 |
| D.O. | % | 100 | 103.9 | 120.8 | 131.4 | 114.8 | 119.5 | 118.3 | 71.9 | 76.1 | 70.1 | 88.2 | 101.5 | 70.10 | 131.40 |
| Temp. | °C | 0.1 | 14.51 | 19.78 | 21.17 | 24.81 | 24.42 | 25.00 | 23.54 | 23.57 | 22.47 | 19.18 | 21.8 | 14.51 | 25.00 |
| Temp. | °F | 0.1 | 58.1 | 67.6 | 70.1 | 76.7 | 76.0 | 77.0 | 74.4 | 74.4 | 72.4 | 66.5 | 71.3 | 58.12 | 77.00 |
| Salinity | % | 0.01 | 0.12 | 0.12 | 0.11 | 0.11 | 0.10 | 0.11 | 0.12 | 0.13 | 0.13 | 0.12 | 0.1 | 0.10 | 0.13 |
| Cl-a | µg/L | 1 | <1 | 1.80 | 1.80 | 2.7 | 3.6 | 6.2 | 29.4 | 1.8 | 22.2 | 13.4000 | 9.2 | 1.80 | 29.40 |
| T.P. | mg/l | 0.005 | 0.033 | 0.022 | 0.069 | 0.029 | 0.017 | 0.029 | 0.045 | 0.016 | 0.045 | 0.033 | 0.03 | 0.02 | 0.07 |
| T.P. | µg/l | 5 | 33 | 22 | 69 | 29 | 17 | 29 | 45 | 16 | 45 | 33 | 33.8 | 16.00 | 69.00 |
| Secchi | ft | | 13.58 | 14.33 | 6.41 | 9.00 | 9.53 | 7.67 | 4.9 | 4.7 | 6.8 | 6.6 | 8.3 | 4.66 | 14.33 |
| Secchi | m | | 4.1 | 4.4 | 2.0 | 2.7 | 2.9 | 2.3 | 1.5 | 1.4 | 2.1 | 2.0 | 2.5 | 1.42 | 4.37 |
| Physical | | | 1.0 | 1.0 | 3.0 | 2.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.2 | 1.00 | 3.00 |
| Recreational | | | 1.0 | 1.0 | 2.0 | 3.0 | 4.0 | 4.0 | 4.0 | 2.0 | 3.0 | 3.0 | 2.7 | 1.00 | 4.00 |

*reporting limit

## Historical Annual Averages




## Historical Report Card

| Year | TP | Cl-a | Secchi | **Overall** |
|---|---|---|---|---|
| 2018 | C | B | C | **C** |
| 2019 | C | A | C | **B** |
| 2021 | C | A | B | **B** |
| State Standards | 60 ug/L | 20 ug/L | >3.3 ft | |

# Wetland Hydrology

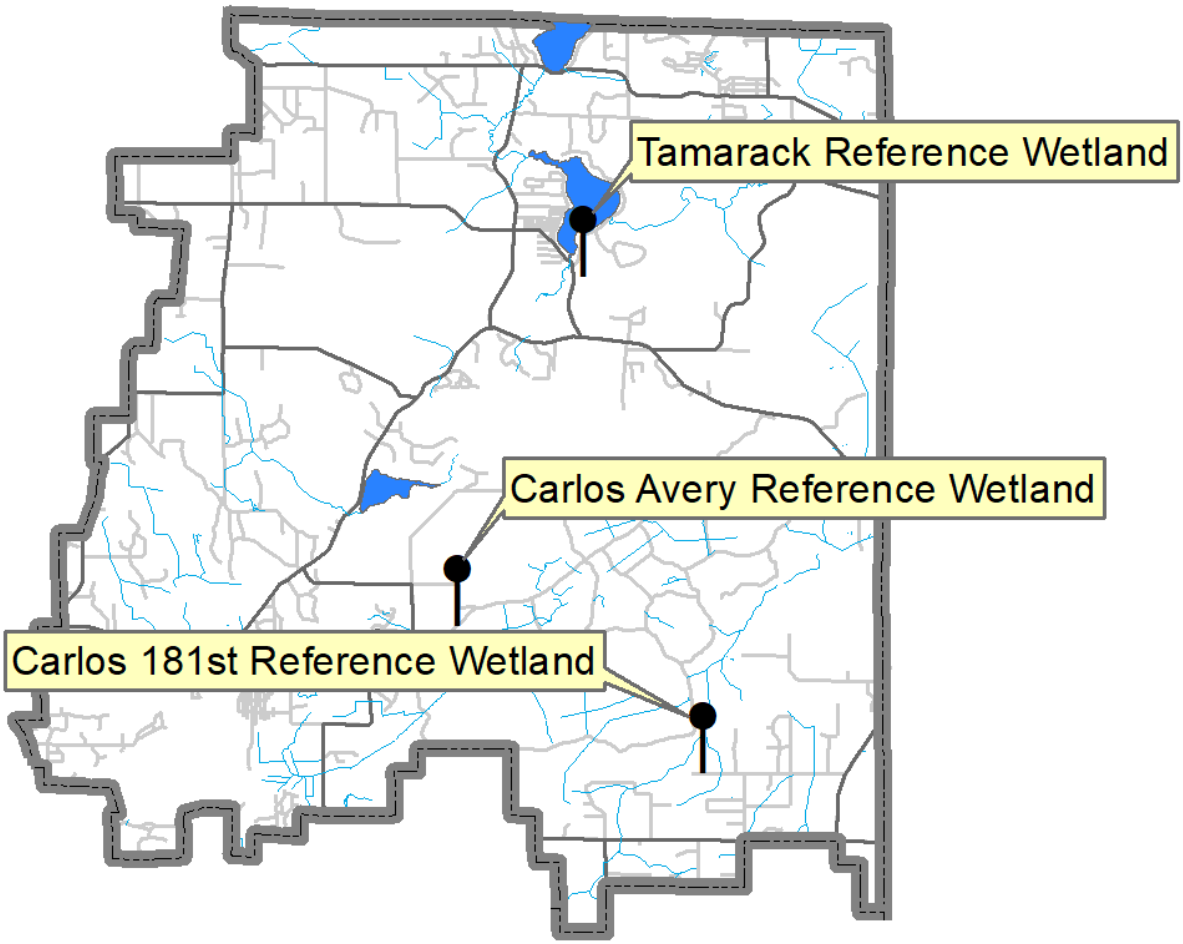
**Description:** Continuous groundwater level monitoring at a wetland boundary to a minimum depth of 40 inches. Countywide, ACD maintains a network of 23 wetland hydrology monitoring stations.

**Purpose:** To provide understanding of wetland hydrology, including the impacts of climate and land use change. These data aid in delineation of nearby wetlands by documenting hydrologic trends including the timing, frequency, and duration of saturation.

**Locations:** Carlos Avery Reference Wetland, Carlos Avery Wildlife Management Area, City of Columbus Carlos;
Carlos 181st Reference Wetland, Carlos Avery Wildlife Management Area, City of Columbus;
Tamarack Reference Wetland, Linwood Township.

**Results:** See the following pages.

**2021 Sunrise River Watershed Wetland Hydrology Monitoring Sites**



# CARLOS AVERY REFERENCE WETLAND

Carlos Avery Wildlife Management Area, City of Columbus

## Site Information

**Monitored Since:** 1997

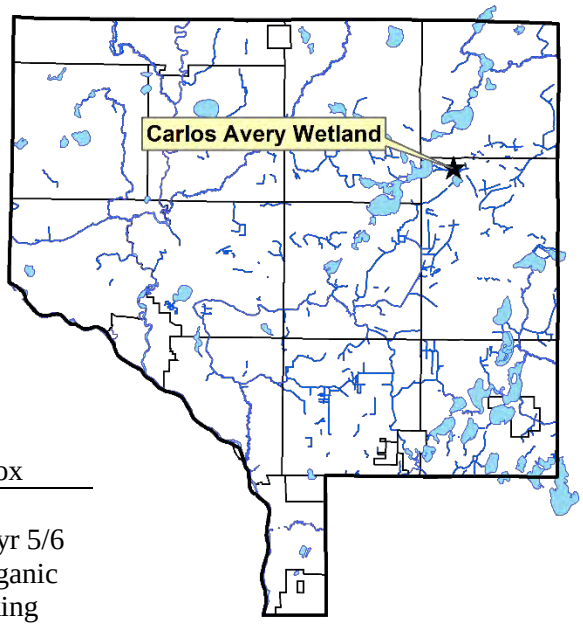
**Wetland Type:** 3

**Wetland Size:** >300 acres

**Isolated Basin:** No

**Connected to Ditch:** Yes

**Surrounding Soils:** Lino loamy fine sand




**Soils at Well Location:**

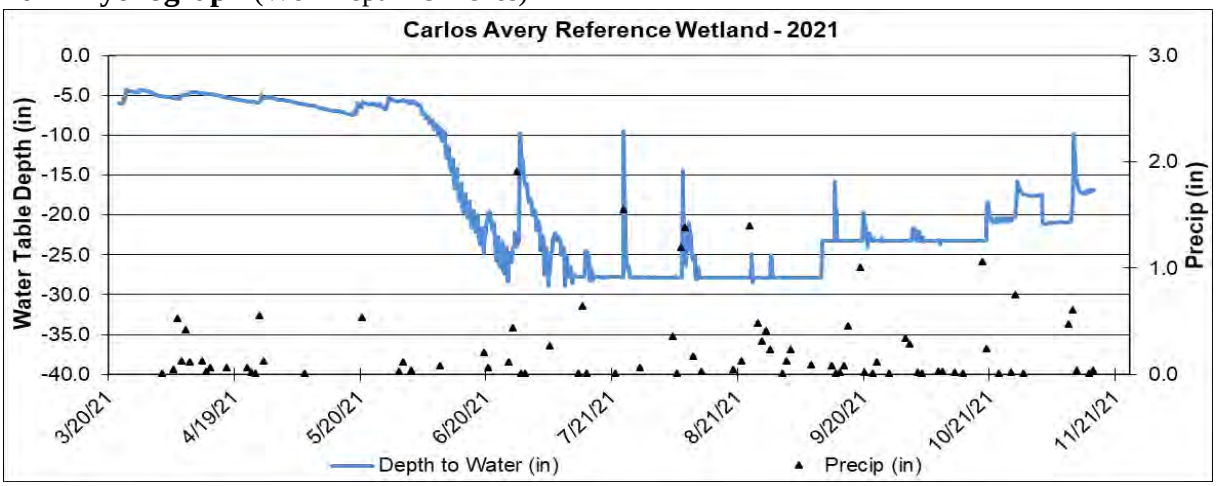
| Horizon | Depth | Color | Texture | Redox |
|---|---|---|---|---|
| Oa | 0-4 | N2/0 | Organic | - |
| Bg | 4-25 | 10yr 5/2 | Sandy Loam | 25% 10yr 5/6 with organic streaking |

**Vegetation at Well Location:**

| Scientific | Common | % Coverage |
|---|---|---|
| Phalaris arundinacea | Reed Canary Grass | 80 |
| Carex Spp | Sedge undiff. | 40 |
| Quercus macrocarpa | Bur Oak | 40 |
| Sagitaria latifolia | Broad-leaf Arrowhead | 20 |
| Cornus stolonifera | Red-osier Dogwood | 20 |

**Other Notes:** This is a broad, expansive wetland within a state-owned wildlife management area. Cattails dominate within the wetland. Anoka County was in a state of drought starting in June, with most of the growing season spent in a severe drought condition, which caused some monitoring wells to go dry. This monitoring well typically does not go dry and has taken readings lower than 28 inches in past years. The well depth will be assessed in 2022.

**2021 Hydrograph** (Well Depth 28 inches)



# CARLOS 181st REFERENCE WETLAND

Carlos Avery Wildlife Management Area, City of Columbus

## Site Information

**Monitored Since:** 2006

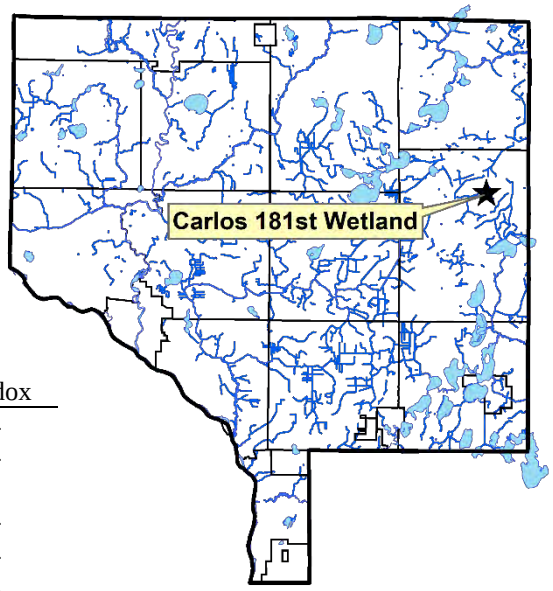
**Wetland Type:** 2-3

**Wetland Size:** Approx. 3.9 acres

**Isolated Basin:** Yes

**Connected to Ditch:** Roadside swale only

**Surrounding Soils:** Soderville fine sand




**Soils at Well Location:**

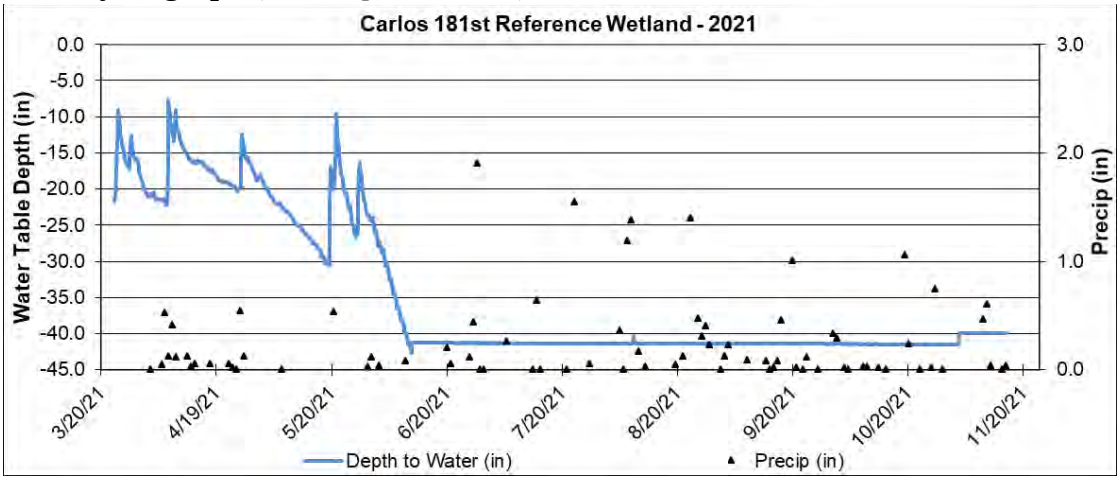
| Horizon | Depth | Color | Texture | Redox |
|---|---|---|---|---|
| Oa | 0-3 | N2/0 | Sapric | - |
| A | 3-10 | N2/0 | Mucky Fine Sandy Loam | - |
| Bg1 | 10-14 | 10yr 3/1 | Fine Sandy Loam | - |
| Bg2 | 14-27 | 5Y 4/3 | Fine Sandy Loam | - |
| Bg3 | 27-40 | 5y 4/2 | Fine Sandy Loam | - |

**Vegetation at Well Location:**

| Scientific | Common | % Coverage |
|---|---|---|
| Phalaris arundinacea | Reed Canary Grass | 100 |
| Rhamnus frangula (S) | Glossy Buckthorn | 40 |
| Ulmus american (S) | American Elm | 15 |
| Populus tremulodies (T) | Quaking Aspen | 10 |
| Acer saccharum (T) | Silver Maple | 10 |

**Other Notes:** This site is owned and managed by the MN DNR. Access is from 181st Avenue. Anoka County was in a state of drought starting in June, with most of the growing season spent in a severe drought condition, which caused some monitoring wells to go dry.

**2021 Hydrograph** (Well Depth 40 inches)



# TAMARACK REFERENCE WETLAND

Carlos Avery Wildlife Management Area, City of Columbus

## Site Information

**Monitored Since:** 1999

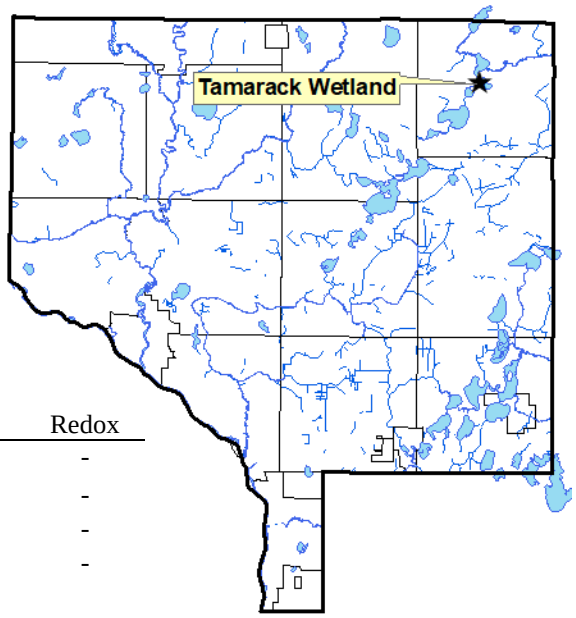
**Wetland Type:** 6

**Wetland Size:** Approx. 1.9 acres

**Isolated Basin:** Yes

**Connected to Ditch:** No

**Surrounding Soils:** Sartell fine sand




**Soils at Well Location:**

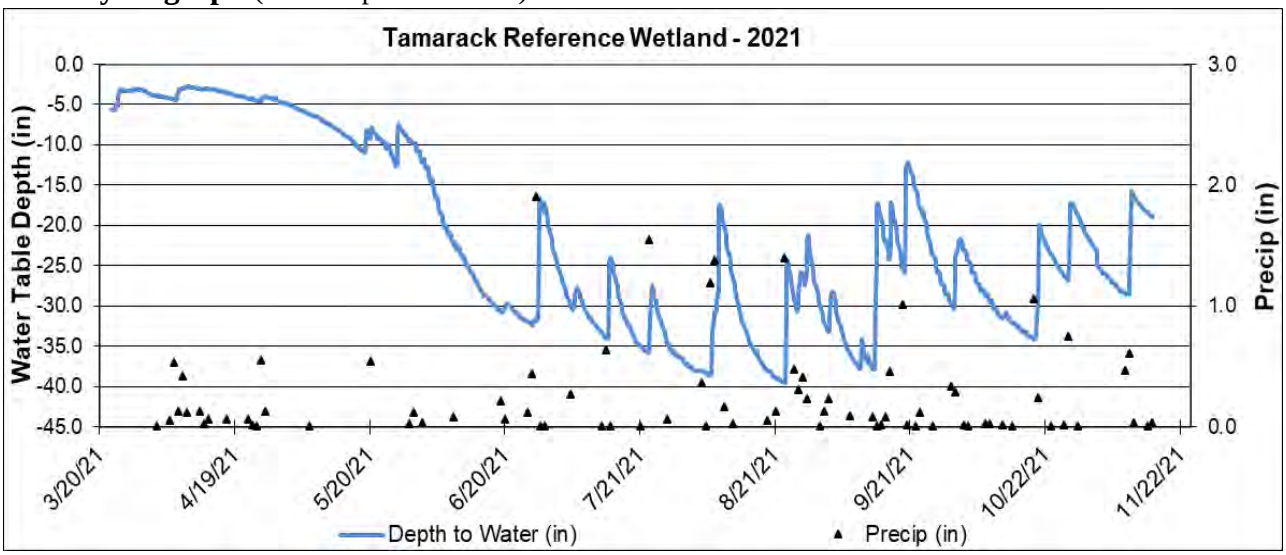
| Horizon | Depth | Color | Texture | Redox |
|---|---|---|---|---|
| A | 0-6 | N2/0 | Mucky Sandy Loam | - |
| A2 | 6-21 | 10yr 2/1 | Sandy Loam | - |
| AB | 21-29 | 10yr3/2 | Sandy Loam | - |
| Bg | 29-40 | 2.5y5/3 | Medium Sand | - |

**Vegetation at Well Location:**

| Scientific | Common | % Coverage |
|---|---|---|
| Rhamnus frangula | Common Buckthorn | 70 |
| Betula alleghaniensis | Yellow Birch | 40 |
| Impatiens capensis | Jewelweed | 40 |
| Phalaris arundinacea | Reed Canary Grass | 40 |

**Other Notes:** The site is owned and managed by Anoka County Parks. Decodon verticillatus (Water willow), a MN State Special Concern species, was found on the north side of the wetland in 2020.

**2021 Hydrograph** (Well Depth 40 inches)



# Secchi Transparency Lake Monitoring – Volunteer Coordination

**Description:** Anoka Conservation District identified and enrolled new volunteers into the Minnesota Pollution Control Agency's Citizen Monitoring Program. These volunteers will monitor Secchi transparency during the open water season and report their data to the State. The MPCA provides equipment, coordinates data collection, and trains volunteers as needed.

**Purpose:** To gain transparency data for lakes within the watershed that currently do not have active volunteers.

**Location:** Coon (East and West bay), Linwood, Martin, Fawn, Typo, Island

**Results:** In 2021, 85 letters were mailed to all property owners on Typo, Rice, Tamarack, Pet, Island, and Linwood Lakes. Outreach on certain lakes has proven difficult due to the limited number of homes on many of the smaller lakes. Rice Lake, for example, only has six residents.

In 2021, Secchi transparency volunteers were secured on Linwood, Typo, and Island Lakes.

Volunteers were not successfully secured on Pet, Rice, South Coon, Skunk, and Tamarak Lakes.

Volunteers were already established on Fawn, Martin, and Coon (East and West Bay) Lakes.

Anoka Conservation District
1318 McKay Drive NE, Suite 300
Ham Lake, Minnesota 55304
Ph: 763-434-2030 Fax: 763-434-2094
www.AnokaSWCD.org

The Anoka Conservation District is looking for a volunteer to join the Minnesota Pollution Control Agency's (MPCA) Citizen Lake Monitoring Program (CLMP) on Linwood Lake. Bei a CLMP volunteer requires only a small amount of time and helps protect local lakes.

The volunteer visits a designated monitoring location, a minimum of twice a month, and takes Seechi disk reading. An example of what a Seechi Disk looks like, is shown below. The Seech disk is lowered into the water and the depth is recorded at the point where the disk disappears the volunteer. This reading represents the clarity of the water which is one of the main drivers water quality in a lake. Additional information is also recorded including; weather conditions, water color, physical condition, recreational suitability, and anything noteworthy for that day.

The volunteer then shares their readings with the MPCA, where the data is uploaded onto a database used by residents and professionals throughout the State.

Helping the State of Minnesota get lake transparency data is a quick and easy way to help kee lakes healthy! The MPCA provides all of the equipment and training you will need to be a successful volunteer. Please contact me if you have interest in becoming the MPCA's next CLMP volunteer.

Thank you!

Anoka Conservation District
1318 McKay Drive NE, Suite 300
Ham Lake, Minnesota 55304
Ph: 763-434-2030 Fax: 763-434-2094
www.AnokaSWCD.org

Pet Lake needs your help! I know you have received a few letters from us but The Anoka Conservation District is still searching for a new Secchi volunteer on Pet Lake. Being a volunteer requires only a small amount of time and provides crucial data to help protect local lakes.

All the volunteer needs to do is take a Seechi reading twice a month. These readings represent the clarity of the water in the lake which is one of the main drivers of water quality. The volunteer shares their readings and the data is uploaded onto a database used by residents and professionals throughout the State.

Seechi disk being used by a volunteer to take transparency readings.

Helping get lake transparency data is a quick and easy way to help keep lakes healthy! We will provide you all the equipment and training you need. Please contact me if you have interest in becoming the volunteer for Pet Lake.

Thank you!

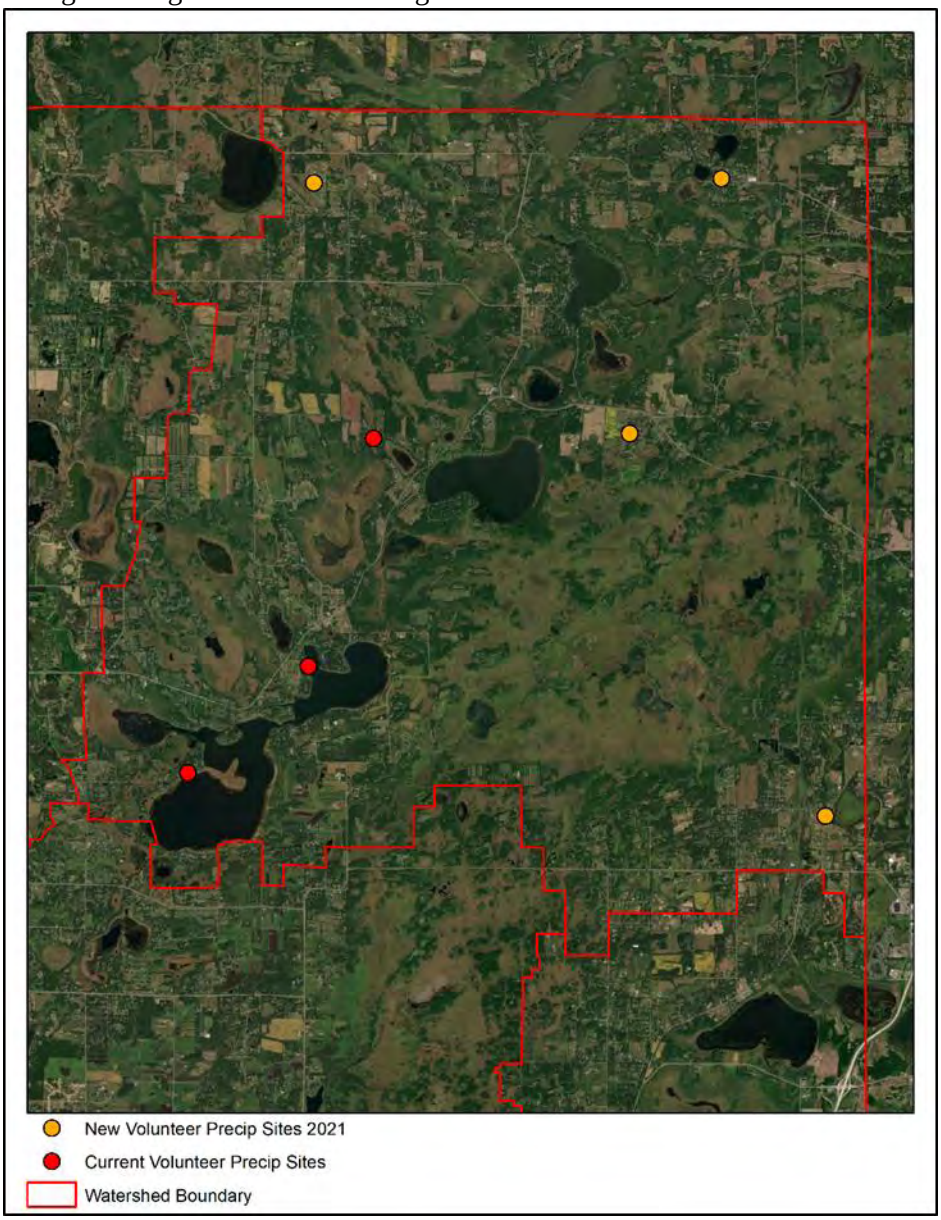
# Precipitation Monitoring

**Description:** Anoka Conservation District secured four volunteers and enrolled them in the State Climatology Office Backyard-Monitoring Network. ACD coordinated data collection, provided training, and reported data to the State Climatology office on a monthly basis.

**Purpose:** To gain additional precipitation data within the watershed

**Location:** Target areas of the watershed

**Results:** Four volunteers were enrolled in the State Climatology Office backyard-monitoring network. Three of these volunteer have received equipment and training and are ready to begin during the 2022 monitoring season.



# Water Quality Grant Funds

**Description:** The Sunrise River Watershed Management Organization (SRWMO) offers cost share grants to encourage projects that will benefit lake and stream water quality. These projects include lakeshore restorations, rain gardens, erosion control, and others. These grants, administered by ACD, offer cost sharing of the materials needed for a project. The landowner is responsible for some expenses. ACD assists interested landowners with design, materials acquisition, installation, and maintenance.

**Purpose:** To improve water quality in area lakes, stream, and rivers.

**Locations:** Throughout the watershed.

**Results:** Projects reported in the year they were installed.

### SRWMO Cost Share Fund Summary

| | |
|---|---|
| 2005 SRWMO Contribution | $1,000.00 |
| 20006 SRWMO Contribution | $1,000.00 |
| 2006 Expense – Coon Lake, Rogers Property Project | $570.57 |
| 2007 – No expenses or contributions | $0.00 |
| 2008 SRWMO Contribution | $2,000.00 |
| 2008 Expense – Martin Lake, Moos Property Project | $1,091.26 |
| 2009 SRWMO Contribution | $2,000.00 |
| 2010 SRWMO Contribution | $1,840.00 |
| 2011 SRWMO Contribution | $2,000.00 |
| 2012 SRWMO Contribution | $2,000.00 |
| 2012 Expense – Linwood Lake, Gustafson Property Projects | $29.43 |
| 2012 Expense – Transfer to Martin – Typo Lakes Carp Barriers | $4,300.00 |
| 2013 – No expense or contributions | $0.00 |
| 2014 SRWMO Contribution | $2,000.00 |
| 2015 SRWMO Contribution | $0.00 |
| 2016 SRWMO Contribution | $0.00 |
| 2016 Expense – Voss Rain Garden | $1,229.31 |
| 2017 SRWMO Contribution | $654.50 |
| 2017 Expense – Voss Rain Garden Plants | $1,000.00 |
| 2018 Surplus Funds Returned from ACD to SRWMO Gen Fund | $2,000.00 |
| 2018 Expense – Gunnink Coon Lakeshore Restoration | $1,148.40 |
| 2019 SRWMO Contribution | $0.00 |
| 2020 SRWMO Contribution | $2,000.00 |
| 2020 Expense – Scheiderich Coon Lakeshore Restoration | $3,395.86 |
| 2021 Expense – Linwood Elementary Rain Garden | $1,030.00 |
| **Fund Balance** | **$1,390.47** |

# Sunrise River Chain of Lakes Carp Removal Project

**Description:** Linwood, Martin and Typo Lakes fail to meet state water quality standards due to excessive phosphorus, which fuels algae blooms. As a result, the lakes are often strongly green or brown, and the game fishery is depressed. Carp are one cause of poor water quality in these lakes, diminishing their value for swimming, boating, and fishing. Efforts to manage and reduce carp are being undertaken to improve water quality, habitat, and the fishery.

**Purpose:** To improve water quality in Linwood Typo and Martin Lakes, as well as downstream waterways.

**Location:** Sunrise River Chain of Lakes including Linwood, Island, Martin, and Typo lakes.

**Results:** In 2021, the following work was completed:

- PIT tags were added to 192 carp in Typo Lake. These carp and PIT tag antennas around box nets helped us understand when carp were aggregating at the nets and to spring the nets accordingly.
- 1,009 carp were removed from Typo Lake through box netting efforts.
- 71.8 lbs. of carp were removed from Linwood Lake. This under-ice seine effort had a number of radio-tagged carp in the net indicating a large catch until the net caught on an obstacle, resulting in the net tearing and presumed escape of these carp.
- Debris was removed from the NE bay on Linwood Lake to allow successful future seine netting.
- 12 new radio tags were implanted into carp in Martin Lake to guide commercial seines to schooled carp.
- 1 commercial seine at Martin Lake. One carp captured.
- A carp fishing clinic was taught by the owner of Carp Solutions, LLC, Dr. Przemek. He provided instruction and techniques used in his homeland of Poland. Participants, who were mostly Martin Lake residents, went home with a carp fishing rig and bait.

Under ice seine effort on Linwood Lake on left. Radio tagging by Carp Solutions, LLC. on Martin Lake, center. Carp fishing clinic at Martin Lake on right.

## On–call Administrative Services

**Description:** The Anoka Conservation District Watershed Projects Manager provides on-call administrative assistance to the SRWMO. Tasks are limited to those defined in a contractual agreement.

**Purpose:** To ensure day-to-day operations of the SRWMO are attended to between regular meetings.

**Location:** Watershed wide

**Results:** In 2021, administrative assistance provided to the SRWMO by the Anoka Conservation District included:

- Assisted the SRWMO Board with day-to-day operational items
- Prepared an annual budget
- Advised or represented the WMO on water management issues
- Boundary adjustment
- Joint powers agreement updates
- Prepared and oversaw the publication of public notices, including those seeking bids on work plan tasks every other year (this will not include publication fees)
- Served as a contact for inquiries about the SRWMO and its programs from agencies and the public
- Assisted with preparation of meeting agendas and distributing meeting materials
- Facilitated discussion at board meetings, including preparing meeting packets
- Ordered annual audits and provided the auditor with requested information (with assistance from the treasurer)

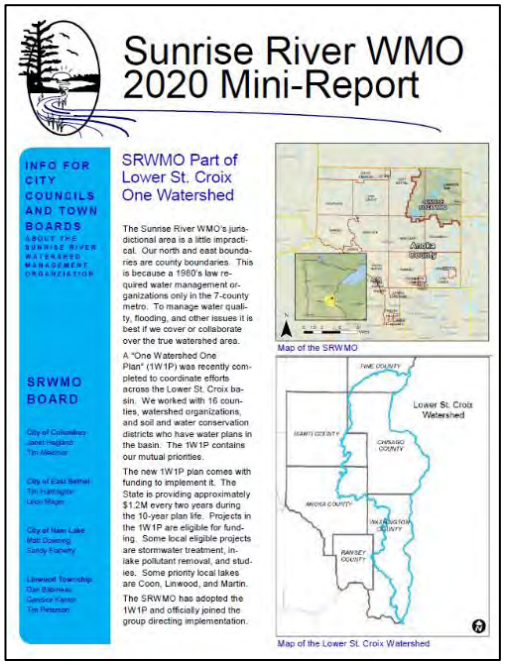
## Annual Written Communication to Member Communities

**Description:** The Anoka Conservation District provides a summary of activities completed in the preceding years.

**Purpose:** To create a summary for board members to use during annual reporting.

**Location:** Watershed wide

**Results:** A one page, double-sided summary of SRWMO activities for the preceding years was prepared by ACD. This summary included work accomplished, finances, leveraged funds, and current events. Board members will use it during annual reporting to their city councils and town boards in January-March.


Sunrise River WMO
2020 Mini-Report

INFO FOR CITY COUNCILS AND TOWN BOARDS

ABOUT THE SUNRISE RIVER WATERSHED MANAGEMENT ORGANIZATION

SRWMO BOARD

SRWMO Part of Lower St. Croix One Watershed

The Sunrise River WMO's jurisdictional area is a little impractical. Our north and east boundaries are county boundaries. This is because a 1980's law required water management organizations only in the 7-county metro. To manage water quality, flooding, and other issues it is best if we cover or collaborate over the true watershed area.

A "One Watershed One Plan" (1W1P) was recently completed to coordinate efforts across the Lower St. Croix basin. We worked with 16 counties, watershed organizations, and soil and water conservation districts who have water plans in the basin. The 1W1P contains our mutual priorities.

The new 1W1P plan comes with funding to implement it. The State is providing approximately $1.2M every two years during the 10-year plan life. Projects in the 1W1P are eligible for funding. Some local eligible projects are stormwater treatment, in-lake pollutant removal, and studies. Some priority local lakes are Coon, Linwood, and Martin.

The SRWMO has adopted the 1W1P and officially joined the group directing implementation.

Map of the SRWMO

Lower St. Croix Watershed

Map of the Lower St. Croix Watershed

# SRWMO Annual Report to BWSR and State Auditor

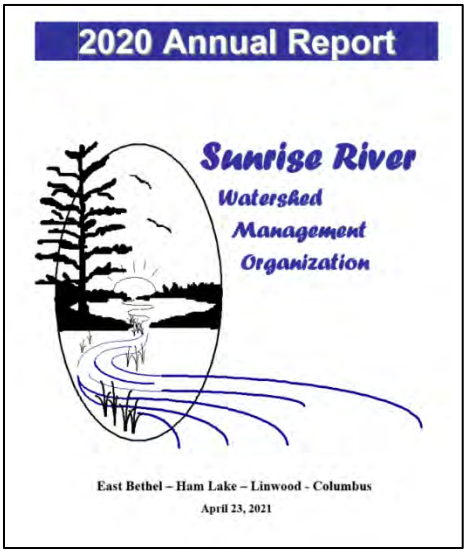
**Description:** The Sunrise River Watershed Management Organization (SRWMO) is required by law to submit an annual report to the Minnesota Board of Water and Soil Resources (BWSR), the state agency with oversight authority. This report consists of an up-to-date listing of SRWMO Board members, activities related to implementing the SRWMO Watershed Management Plan, the status of municipal water plans, financial summaries, and other work results. The SRWMO bolsters the content of this report beyond the statutory requirements so that it also serves as a comprehensive annual report to SRWMO member communities. The report is due annually, 120 days after the end of the SRWMO's fiscal year (April 30th).

The SRWMO must also submit an annual financial report to the State Auditor. They accept unaudited financial reports for financial districts with annual revenues less than $185,000.

**Purpose:** To document progress toward implementing the SRWMO Watershed Management Plan and to provide transparency of government operations.

**Location:** Watershed-wide.

**Results:** Anoka Conservation District assisted the SRWMO with preparation of the annual Sunrise River WMO Annual Report. ACD drafted the report and cover letter. After SRWMO Board review, the final draft was forwarded to BWSR. A sufficient number of copies were sent to each member community to ensure that each city council person and town board member would receive a copy. The report is available to the public on the SRWMO website.



# Grant Search and Applications

**Description:** The Anoka Conservation District (ACD) partners with the SRWMO for the preparation of grant applications. Several projects in the SRWMO Watershed Management Plan need outside funding in order to be accomplished.

**Purpose:** To provide funding for high priority local projects that benefit water resources.

**Results:** In 2021 the SRWMO pursued several grants and positioned itself for others**.**

Since 2014, the following grants have been secured for SRWMO projects through the assistance of ACD:

| Project | Grant Source | Amount |
|---|---|---|
| 2014 Martin and Typo Lake Carp Barriers, site 2 | MN DNR CLP | $35,770 |
| 2014 Martin and Typo Lake Carp Barriers, sites 1,3,4 | MN DNR CLP | $399,983 |
| 2014 Coon Lake Area Stormwater Retrofits | BWSR CWF | $42,987 |
| 2015 Ditch 20 Wetland Restoration Feasibility Study | BWSR CWF | $72.400 |
| 2017 Martin and Typo Lake Carp Harvests | MN DNR CLP | $99,000 |
| 2017 Septic System Fix Up Fund* | MPCA | $23,040 |
| 2018 Watershed Based Funding – stormwater retrofits & more | BWSR WBIF | $156,750 |
| 2018 Septic System Fix Up Fund* | MPCA | $27,055 |
| 2019 Septic System Fix Up Fund* | MPCA | $40,000 |
| 2019-20 Surface Water Monitoring Grant, Sunrise R | MPCA | $5,102 |
| 2019 Sunrise River Chain of Lakes Carp Mgmt | BWSR CWF | $148,000 |
| 2020 Septic System Fix Up Fund* | MPCA | $25,447 |
| 2021 Lower St. Croix WBIF –internal loading analyses | BWSR WBIF | Pending |
| 2021 Septic System Fix Up Fund* | MPCA | $34,876 |
| TOTAL | | $1,110,410 |

*Countywide Grant

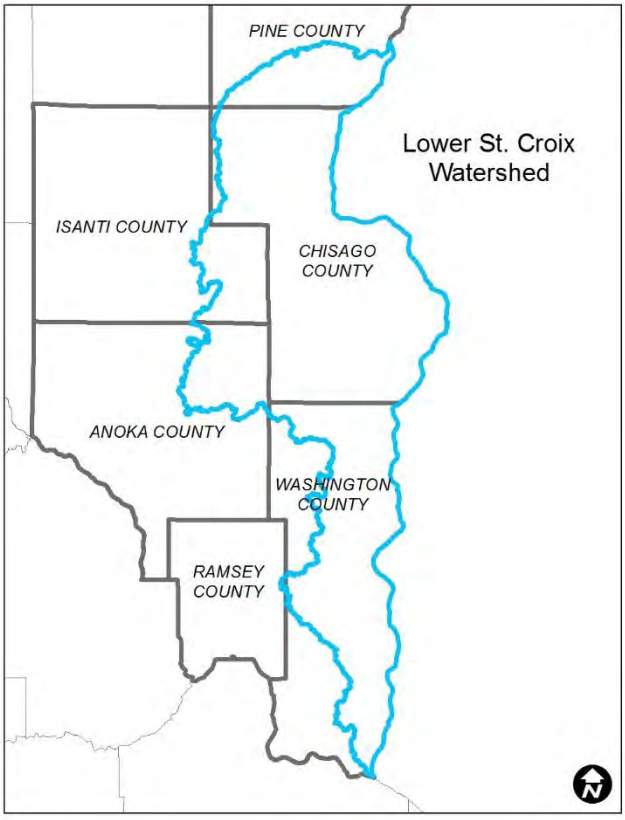
# Participate in 1W1P

**Description:** An Anoka Conservation District staff member will serve as the staff representative of the SRWMO on the Lower St. Croix One Watershed One Plan Advisory Committee.

**Purpose:** Seek to advance SRWMO priorities and associated funding.

**Results:** In 2021, an ACD staff member attended eight 1W1P meetings and advocated for SRWMO priorities. SRWMO priorities included in the 1W1P as a result include internal loading analyses at Linwood, Martin and Typo Lakes; subwatershed assessment study for Linwood Lake; carp management; agricultural outreach, stormwater retrofits, and more.

| County | Total Acres Watershed | Percentage of Watershed |
|---|---|---|
| Anoka County | 45,192 | 7.7% |
| Chisago County | 277,185 | 47.3% |
| Isanti County | 42,929 | 7.3% |
| Pine County | 50,207 | 8.6% |
| Ramsey County | 335 | 0.1% |
| Washington County | 169,889 | 29.0% |



# Ag Conservation Planning Outreach

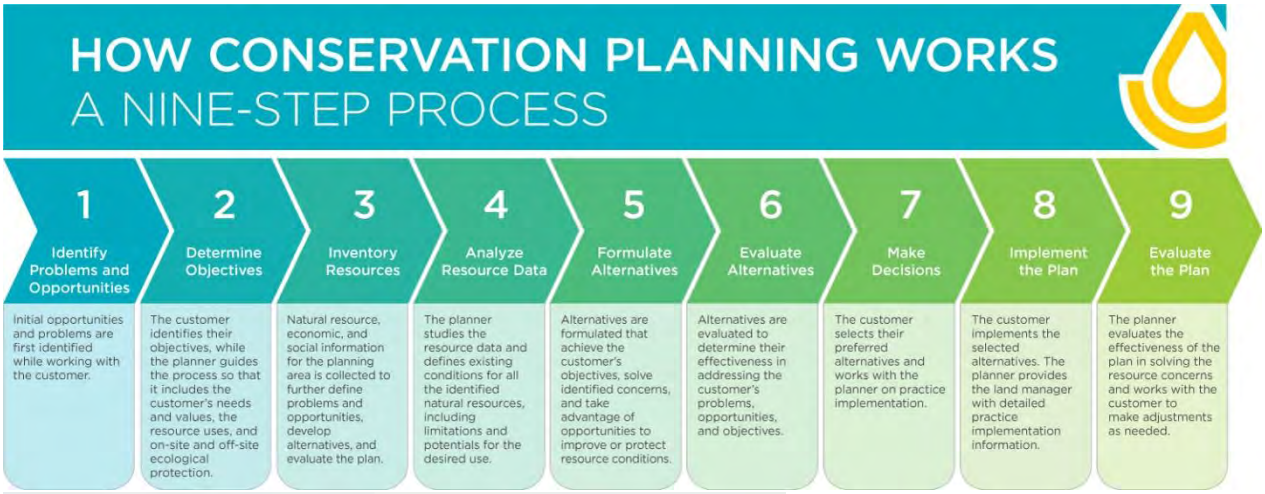
**Description:** Anoka Conservation District assisted with identification, prioritization, and outreach to parcels where conservation plans are feasible by a BWSR/NRCS funded Watershed Conservation Planner housed at Chisago SWCD.

**Location:** Watershed wide

**Results:** ACD staff worked with the Watershed Conservation Planner housed at Chisago SWCD. Together, we identified 42 owners of parcels 20+ acres in size that were in drainages to priority lakes (Coon, Linwood, Martin, and Typo). We reached out to these owners with two letters offering free USDA/NRCS conservation planning, which is a prerequisite to obtaining federal funding for conservation project funds for their property. Thereafter, we made in-person visits to the six top priority landowners. These top priority landowners had >40 acres including lands adjacent to waterways and draining to priority waters. The outcomes of this effort were:

- 42 landowner reached by mail
- Six in-person site visits
- Three conservation plans completed

The USDA-NRCS will continue to work with these landowners to enroll them in conservation programs or complete conservation projects.


# Outreach and Education

## *NEWSLETTERS*

**Description:** Anoka Conservation District created outreach pieces for the city and lake association newsletters. Topics included lakeshore stewardship, financial assistance for fixing failing septic systems, native aquatic plants, and the existence and purpose of the SWRMO.

**Purpose:** To provide information and education to the public through lake association and city newsletters.

**Location:** Watershed-wide

**Results:** In 2021, ACD created & distributed outreach articles and infographics for city and lake association newsletters.

City newsletter content included:

- Septic system maintenance
- Septic system fix up grants
- Aquatic invasive species

Lake association newsletter content included:

- Septic system maintenance
- Septic system fix up grants
- Lakeshore stewardship
- Series of 12 infographics about lakeshore stewardship

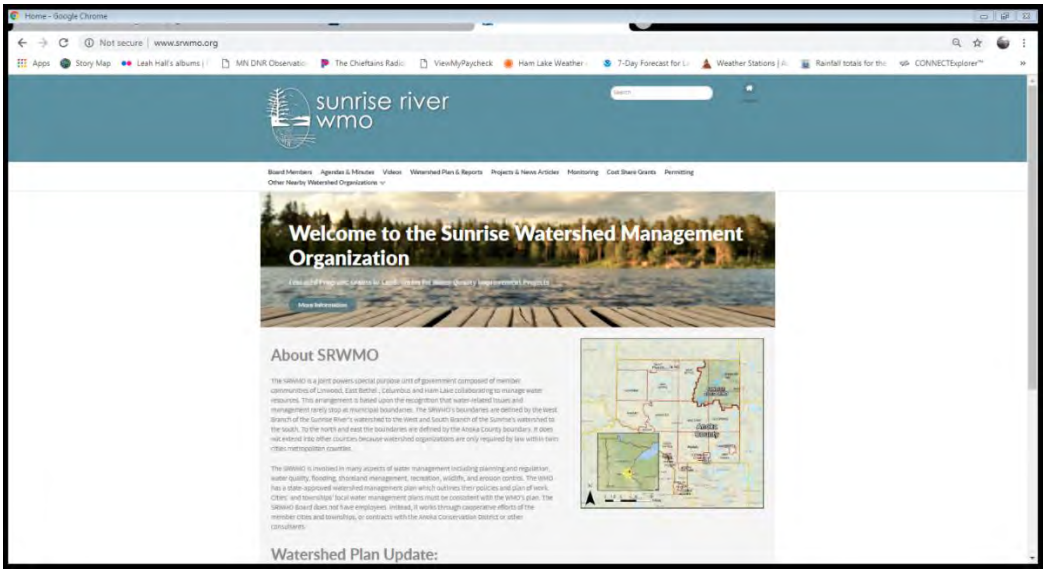

## *WEBSITE*

**Description:** The Sunrise River Watershed Management Organization (SRWMO) contracts the Anoka Conservation District (ACD) to maintain a website about the SRWMO and the Sunrise River watershed. This will include promotion of the Anoka County Well Water Wise private well testing program on the website.

**Purpose:** To increase awareness of the SRWMO and its programs. The website also provides tools and information that helps users better understand water resource issues in the area. The website serves as the SRWMO's alternative to a state-mandated newsletter.

**Location:** [www.srwmo.org](http://www.srwmo.org)

**Results:** In 2021, ACD maintained the SRWMO website and posted board minutes and agendas.



## *ANOKA COUNTY OUTREACH COORDINATOR POSITION*

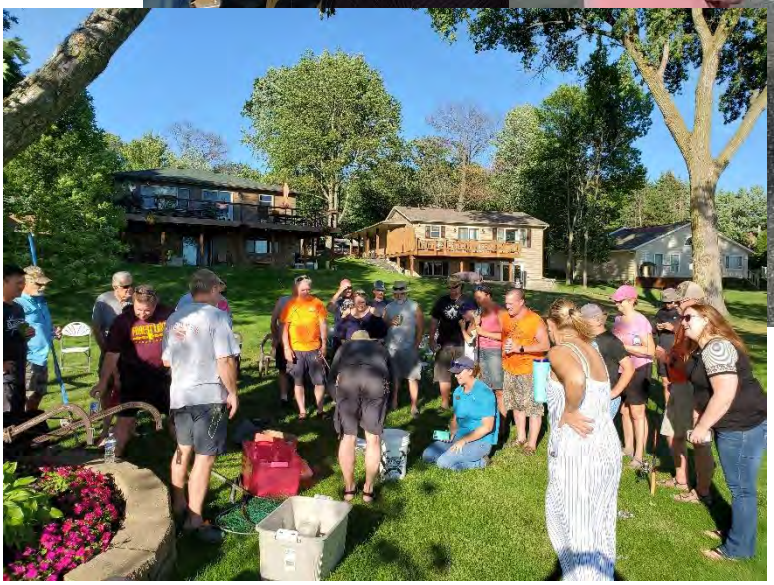
**Description:** Anoka Conservation District provided consistent, reliable outreach throughout the county and in the SRWMO, which benefits SRWMO water resources.

**Purpose:** Provide outreach and reduce work that would otherwise be required of the SRWMO and cities.

**Location:** County wide

**Results:** ACD's Outreach Coordinator accomplished the following in the SRWMO in 2021:

- Martin Lake carp fishing clinic
- Assistance with SRWMO public officials tour
- Video about the SRWMO public officials' tour (posted on SRWMO website)
- Social media announcements of SRWMO accomplishments and events including the Linwood Elementary rain garden, public official's tour, and other projects & events.
- Linwood Family Fun Day booth
- East Bethel open house booth (staffed by SRWMO board member)
- Buckthorn treatment clinic
- And others

## *PUBLIC OFFICIALS TOUR*

**Description:** Anoka Conservation District facilitated and hosted a tour of SRWMO natural resources and projects to public officials. This tour was postponed from 2020 due to the Covid-19 pandemic.

**Locations:** Martin Lake Stormwater ponds, 22847 W Martin Lake Dr. NE

Linwood Elementary School Rain Garden, 21900 Typo Creek Dr. NE

Coon Lakeshore Restoration, 3642 Edmar Lane NE

Coon Lake Rain Garden, 4417 Channel Lane NE

**Results:** The tour took place September 2021 with 13 attendees including city council members, town board supervisors, a county commissioner, and SRWMO board members. Tour visits included a stormwater pond enhancement, curb cut rain garden, lakeshore restoration, and infiltration basin. At three of the sites, the owner was present to talk about the problems they had been experiencing and how the project has worked for them. Key information shared included costs, funding sources, and measurements of success.