RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

May 2023
Board Packet

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Agenda

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RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

Regular Board Meeting Agenda

Wednesday, May 3, 2023
6:30 PM

This month's meeting will be held at the District office (2665 Noel Drive, Little Canada, MN) but also via the video conferencing platform Zoom. Board members, staff, consultants, and general public will be able to join in person OR via video and/or phone. In order to continue to be sensitive to the COVID-19 pandemic, we may need to limit the number of public in the board room. The public will be able to listen to meeting but not participate with the exception of the visitor comments portion of the agenda. Instructions for joining in on the Zoom meeting can be found after the agenda.

1. Call to Order – 6:30 PM
2. **Approval of Agenda *(pg. 3)***
3. **Consent Agenda: To all be approved with one motion unless removed from consent agenda for discussion.**
    A. Approval of Regular Meeting Minutes April 5, 2023 *(pg. 7)*
    B. Treasurer's Report and Bill List *(pg. 20)*
    C. Stewardship Grant Program
        i. 23-12 CS Salina, rain gardens *(pg. 28)*
        ii. 23-13 CS Woodlyn Ave Impervious Surface Reduction *(pg. 30)*
4. Visitor Comments (limited to 4 minutes each)
5. Permit Program
    A. Applications - NONE
    B. Enforcement Action Report *(pg. 32)*
6. Stewardship Grant Program
    A. Applications – See consent agenda
    B. Budget Status Update *(pg. 36)*
7. Action Items
    A. **Lake Owasso Shoreline Restoration Phase 2 Bid Award *(pg. 38)***
    B. **Arbogast Underground Stormwater Filter Bid Award *(pg. 39)***
    C. **District Holiday Schedule Changes for 2023 *(pg. 40)***
    D. **Accept the 2022 District Annual Financial Audit *(pg. 42)***
8. Attorney Report
9. Board Discussion Topics
    A. Adopt-A-Culvert
10. New Reports and/or Presentations
    A. 2022 District Water Monitoring Report – Presentation by Eric Korte, Monitoring Coordinator *(pg. 127)*
    B. Woodbury Target Store Retrofit – Concept Design Summary *(pg. 166)*
11. Administrator's Report *(pg. 175)*
    A. Meetings Attended
    B. Upcoming Meetings and Dates
    C. Board Action Log and Updates

(651) 792-7950
fax (651) 792-7951
office@rwmwd.org
rwmwd.org
2665 Noel Drive
Little Canada, MN 55117

D. Minnesota Watersheds Updates
E. Staffing Updates

12. Project and Program Status Reports *(pg. 179)*

Project Feasibility Studies

A. Interim Emergency Response Planning
B. Kohlman Creek Flood Risk Feasibility Study
C. Ames Lake Area Flood Risk Reduction Planning Study
D. Owasso Basin/North Star Estates Improvements
E. Carver Ponds Improvement Study
F. Resiliency Study for non-Beltline Tributary Areas
G. Street Sweeping Study
H. Wetland Workshop, Education, and Planning

Research Projects

I. Kohlman Lake Aquatic Plans and Nutrients Study
J. Shallow Lake Aeration Study

Project Operations

K. 2023 Automated Lake-Level Stations

Capital Improvements

L. Woodbury Target Store Stormwater Retrofit Projects
M. Roosevelt Homes Targeted Retrofit Project
N. Stewardship Grant Program Support
O. Arbogast Stormwater Filtration BMP
P. Pioneer Park Stormwater Reuse
Q. Double Driveway Pond and Fish Creek Tributary Improvements

CIP Project Repair and Maintenance

R. 2023 CIP Maintenance and Repair Project
S. 2023-2025 BMP Maintenance Program

Program Updates

T. Natural Resources Program
U. Public Involvement and Education Program
V. Citizen Advisory Committee

13. Manager Comments and Next Month's Meeting
14. **Adjourn**

RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

NOTICE OF BOARD MEETING
Wednesday, May 3, 2023
6:30 PM
Hybrid Meeting: In-Person and Web Conference

This month's meeting will be held at the District office (2665 Noel Drive, Little Canada, MN) AND via the video conferencing platform Zoom. Board members, staff, consultants, and general public will be able to join in person or via Zoom. The public will be able to listen to meeting but not participate with the exception of the visitor comments portion of the agenda. Visitor comment may be given in person or via Zoom. Instructions for joining in on the Zoom meeting can be found below.

To access the meeting via webcast, please use this link: https://us02web.zoom.us/j/88028202556?pwd=eFRIbkxBRGlQUmpiOTAwSUVicXBPQT09

The meeting room will open at 6:20 pm with the meeting starting at 6:30 pm. To connect to audio you may choose to use your computer audio options or you may use your mobile device to call. The phone access number is **(312) 626-6799**. The Meeting ID is **880 2820 2556**. The meeting password is **020508**. If you have any questions, please contact Tina Carstens at tina.carstens@rwmwd.org.

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Consent Agenda

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RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

Ramsey-Washington Metro Watershed District
Minutes of Regular Board Meeting
April 5, 2023

The Regular Meeting of April 5, 2023, was held at the District Office Board Room, 2665 Noel Drive, Little Canada, Minnesota, and via Zoom web conferencing, at 6:30 p.m. A video recording of the meeting can be found at https://youtu.be/d1NSrscrpXY. Video time stamps included after each agenda item in minutes.

PRESENT:
Val Eisele, President
Matt Kramer, Treasurer
Ben Karp, Secretary
Mark Gernes, Manager

ABSENT:
Dr. Pam Skinner, Vice President

ALSO PRESENT:
Tina Carstens, District Administrator
Brandon Barnes, Barr Engineering
Nicole Soderholm, Permit Inspector
Kyle Kubitza, Water Quality Technician
Bill Bartodziej, Natural Resource Specialist
Laurann Kirschner, Attorney for District
Dustin deFelice, Bolton and Menk
Monte Hileman, Saint Paul Port Authority
Paige Ahlborg, Project Manager
Mary Fitzgerald, District Inspector
Dave Vlasin, Project Coordinator
Eric Seaburg, Bolton and Menk
Bob Barth, WSB
Greg Williams, Barr Engineering

1. CALL TO ORDER
The meeting was called to order by President Eisele at 6:30 p.m.

2. APPROVAL OF AGENDA (0:10)
Motion: Manager Kramer moved, Manager Karp seconded, to approve the agenda as presented.

A roll call vote was performed:

Manager Karp	aye
Manager Gernes	aye
Manager Kramer	aye
President Eisele	aye

Motion carried unanimously.

3. CONSENT AGENDA (1:33)
A. Approval of Minutes from March 1, 2023
B. Treasurer's Report and Bill List
C. Permit Program
   i. 23-09, Woodbury 2023 Street Improvements
   ii. 23-11, Reuter Walton Apartments II, Little Canada

iii. 23-12, Jordan Seeds Property Grading, Woodbury

D. Stewardship Grant Program

i. 23-08 CS, Jakel, Rain Garden

Motion: Manager Gernes moved, Manager Kramer seconded, to approve the consent agenda as presented.

A roll call vote was performed:

Manager Karp	aye
Manager Gernes	aye
Manager Kramer	aye
President Eisele	aye

Motion carried unanimously.

4. VISITOR COMMENTS (2:04)

No comments.

5. PERMIT PROGRAM (2:32)

A. Applications

Permit #23-08: Little Canada 2023 Street Improvements

Nicole Soderholm noted that she provided an introduction to this request at the last meeting relating to the proposed wetland impact. She hoped that the amendment wetland replacement plan answered the questions from the previous month. She provided a general overview of the proposed road project between the two cities.

Commissioner Gernes noted that he raised questions the previous month related to the evaluation of providing restoration within the District and stated that his questions were answered by the materials provided by staff and the applicant. He noted that this would be a small impact that he is comfortable with.

Commissioner Karp noted that his questions have also been addressed by the revised materials.

President Eisele stated that he had questions on water treatment and appreciated the additional details. He asked if the minimum wetland buffer of 37.5 would be maintained around the area of construction. Nicole Soderholm replied that the minimum wetland buffer of 37.5 feet is shown in yellow on the map and noted that the existing roadway is within that area therefore the minimum buffer is not met under existing conditions. She stated that the road is being narrowed but there would still be impacts from the trail. She stated that there is a related variance request proposing an average wetland buffer of 41 feet. She explained the desire to balance the existing corridor and the importance of stormwater treatment. Staff recommends approval. President Eisele commented that if staff recommends the treatment plans proposed that would also make sense to him.

Motion: Manager Karp moved, Manager Gernes seconded, to approve Permit #23-08 with special provisions, wetland replacement plan, and variance request.

A roll call vote was performed:

Manager Karp	aye
Manager Gernes	aye
Manager Kramer	aye
President Eisele	aye

Motion carried unanimously.

Permit #23-10: Oakdale Senior Living

Nicole Soderholm stated that this is a proposed senior living development which proposes to develop the southern portion of the large parcel. There are no impacts to the wetland proposed but there would be temporary wetland buffer impacts for grading. She stated that the buffer would be revegetated with a native seed mix. She noted that the average buffer would be exceeded.

Manager Gernes commented that the drawings were not clear as to the drainage plans and the direction water would flow. Nicole Soderholm provided additional details on the path drainage would follow for different areas of the site.

Brandon Barnes stated that the applicant is improving the drainage on the southeast side of the parcel to respond to offsite runoff.

Manager Gernes referenced the managed C wetland to the northwest of the parcel and asked if that would be the primary discharge location. Brandon Barnes replied that the discharge would be to the managed B wetland after treated by one of the two stormwater management areas.

Manager Gernes noted that it was mentioned that there would not be any wetland impacts proposed, only the temporary buffer impact. He commented that it seems that the new pond is very near the managed B wetland. Nicole Soderholm explained that the diagonal hatching is the delineated buffer, not the wetland.

Motion: Manager Gernes moved, Manager Kramer seconded, to approve Permit #23-10 with special provisions and variance request.

A roll call vote was performed:

Manager Karp	aye
Manager Gernes	aye
Manager Kramer	aye
President Eisele	aye

Motion carried unanimously.

B. Monthly Enforcement Report

During March, two notices were sent to address: install/repair construction entrance (1) and install/repair inlet protection (1).

President Eisele referenced the apartments in Oakdale mentioned in the report and asked if the water management was not established, causing the pooling water, and whether that was typical to occur. Nicole Soderholm stated that the site is temporarily graded and temporary containment of water. Mary Fitzgerald replied that this was an existing pond that was converted to the temporary basin. She stated that they were not anticipating the water level to bounce to the level it did.

Manager Karp stated that his question was also in regard to that site. He asked if District staff is present to conduct an inspection during the dewatering to ensure the water is not silty. Mary Fitzgerald replied that she attempts to be onsite for at least part of the dewatering and then photos are required of the water discharged showing the date and times. Nicole Soderholm stated that the MPCA is looking to add more specific dewatering requirements and staff is attempting to get contractors used to that practice of active monitoring.

C. Hillcrest Golf Course Redevelopment – Wetland Replacement Plan Information

Nicole Soderholm stated that Saint Paul Port Authority is the developer for this site and a general presentation was provided to the Board in December 2020 for their mixed-use development. She recognized that many managers were not part of the Board at that time and provided background information on the closed golf course and development intentions. She stated that this is a unique site because of the mercury contamination and remediation that would be necessary. She reported that a grading permit has been submitted to the District and staff is reviewing that. The City of Saint Paul is the LGU for administering WCA and therefore is reviewing the wetland replacement plan which has been noticed for comments. She stated that close to one acre of temporary impact is proposed for contamination removal, and three acres of permanent impact as a result of contamination removal. She stated that one-to-one mitigation would be provided onsite. She stated that a number of agencies have provided input on the wetland replacement plan, and she would also plan to provide written comments.

President Eisele asked the total project area. Nicole Soderholm replied that the site is 112 acres. President Eisele asked what would prevent full replacement of the wetland acreage that would be lost. Tina Carstens replied that one to one replacement would be provided onsite and the additional wetland credits would be required as a two to one rate of replacement is required for permanent impacts.

Manager Karp asked if there is reasoning why the full two to one replacement is not proposed on site with such a large site. Monte Hileman, applicant from the Port Authority, stated that the Port Authority purchased the site for the purpose of redevelopment and realized that would need to be done through mixed use. He provided general background on the process and parameters that were placed on the purchase of the site by the City of Saint Paul. He stated that agreement required 1,000 jobs to be created onsite, 1,000 housing units, 20 acres of parkland and open space; noting that the City only wanted to own and maintain five acres and the Port Authority agreed to own and maintain in perpetuity as publicly available park and open space area. He also noted the trails and stormwater that would be necessary. He provided details on the progress they have made in their design development. He noted that each parcel has been programed with hypothetical buildings in order to meet all the parameters placed on the site. He stated that part of their mission is to advance sustainable development and they have done their best to incorporate that into all the public sector goals for the property. He commented that every turn lane, setback, easement has been strongly considered and they have tried to strike the best balance. He stated that this is not a conservation project but a restoration project because of the mercury that was used on the golf course. He stated that there are practicalities of what is feasible and practical for all aspects of the site. He commented that they have tried to accommodate all the goals within the site. He explained that they are a public entity, and their end goal is public benefit rather than maximization of profits. He noted that there will likely be a variance request in the future related to wetland buffers that will be pinched. He believed that the wetlands and stormwater system will be an amenity that will be an opportunity for education and would love to speak with the District about that when they get to that point.

President Eisele asked the type of wetlands and proposed changes that would come. Tina Carstens noted that would be included in the next review.

Manager Gernes stated that he lives in that area and is curious about the soil remediation. He asked where that material would be going. Monte Hileman commented that would be part of the bid with the contractor but confirmed it would be hauled offsite. Bob Barth provided additional details on the amount of material that is anticipated to be removed from the site and the steps that would be followed to monitor that activity. Monte Hileman noted that there would be two state agencies monitoring that process.

Manager Gernes commented that the majority of the wetlands lie on the east side of the property with a fair amount of topography which could create challenges for drainage. He commented that wetlands to the east of the site have been stressed. Monte Hileman commented that they would be improving the status of this site which would positively impact adjacent properties.

Nicole Soderholm provided details on the wetlands that would be impacted and the remediation that would be proposed onsite. She stated that the purpose of this discussion was to bring this to the Board to review the mitigation that would be proposed both onsite and offsite.

President Eisele asked for details on the process. Tina Carstens commented that the stormwater review is under review. Nicole Soderholm stated that the WCA process is different and will be wrapped up before they go into more detail on the other elements. President Eisele commented that he likes the onsite mitigation. Monte Hileman credited District staff for the onsite mitigation as they were alerted early on that is very important to the Board and the District. He commented that they will hopefully award a contract in March and the contractor would mobilize in June.

President Eisele thanked Monte Hileman and his team for providing this information tonight.

6. STEWARDSHIP GRANT PROGRAM (41:00)

A. Applications

Permit #22-08 CS: Battle Creek Middle School – Request for additional funds

Paige Ahlborg provided details on the additional fund request for this project to fund the construction of a filtration basin and native planting to assist with drainage problems. She commented that the project was delayed and has incorporated additional elements requested by staff. She noted that an additional $30,000 is being requested towards the project. She stated that revised plans were submitted the previous day along with MIDS calculations and staff will follow up with some questions. She stated that if the Board recommends approval it should be contingent upon the applicant working with staff to ensure the project meets the guidelines of the grant program.

President Eisele referenced the increase amount noting that it goes above the maximum limit. He asked how much of that is due to the ask of the District for changes, versus other things. Paige Ahlborg estimated about $15,000 was for the plants and the remainder was for soil work and overall construction cost increases. President Eisele stated that this would be a 30 percent increase over the maximum limit and asked the sense on the return of investment for the project. Paige Ahlborg replied that she would review the cost benefit. She stated that school projects have been funded through this program at higher amounts. She commented that there are a lot of eyes reviewing this as other grant funds are involved. She stated that the total project cost was about $260,000 which included outdoor classroom areas, noting that changes were made to that to reduce to around $230,000.

Manager Gernes commented that he was curious as to whether this would set precedent on exceeding the $100,000 mark for this program. Paige Ahlborg commented that while this is a significant request, the Board has approved additional funds for projects for similar reasons. She stated that she felt this was suitable because a large portion of the increase was a result of the District request for changes to the planting plan. She stated that there have been residential, commercial, and school projects that have gone above the maximum threshold.

Manager Gernes asked how long those maximums have been in place and whether it should be adjusted due to the status of the economy. Paige Ahlborg replied that they review the program each year and have had the same maximums for the past three years. She stated that the additional fund requests are not often received or encouraged, unless staff deem it appropriate. She confirmed that they would review those numbers again this year.

Manager Karp asked if staff has reviewed the planting plans closely and determined where there could be more cost-effective choices to lessen the increase. Paige Ahlborg replied that the plan is reviewed with Ramsey Soil and Water and advised that part of the plantings are being funded through BWSR/DNR grants and those agencies will also be reviewing the plans. She stated that they balance costs with ongoing maintenance and proper establishment.

President Eisele asked what would happen if the additional funds were not approved. Paige Ahlborg did not believe the project would move forward as the school has limited funds and the other grants from other agencies are already maximized. Tina Carstens noted that the grants are reimbursed and therefore it would be possible that the applicant would not reach the maximum approved.

Manager Karp asked if there are other potential projects known that would help determine if these funds would be available in the budget. Paige Ahlborg stated that there is sufficient funding available. She noted that there are some large projects in the early planning stages but did not feel that allocating these additional funds would prevent another project from moving forward.

Manager Gernes asked the size of the site being restored. He commented that it seemed that this site is in an underserved area and asked if this would be a priority area. It was confirmed that this is located in a priority area for the District. Paige Ahlborg stated that the actual project size is about one-half acre.

President Eisele felt that the Board should be transparent in why it allowed additional funding to ensure this would not set precedent in going over the maximum threshold. He acknowledged that this is a priority area and a school. Tina Carstens commented that the cost-share program does state that additional funds can be requested and would be considered at the discretion of the Board. She stated that staff has provided input on the planting, using the example of plugs providing a more successful outcome for the plantings.

Manager Gernes commented that the switch from seeding to containerized is a large cost that was a request of the District to increase the likelihood of success.

President Eisele stated that he would feel more comfortable with a more specific cost breakdown of the funding request. He asked if delaying this by one month would have an impact on the project timeline. Paige Ahlborg replied that the work would be started once school is out. Tina Carstens stated that the school would also need to let the project for bid prior to that time.

President Eisele asked the justification and/or liability if the Board were to approve this request but deny a future request from another applicant that wanted to go over the maximum threshold. Laurann Kirschner commented that if the Board is going to vary from the standard table, the Board would follow this exact process in having this discussion that is reflected in the minutes along with the decision. She stated that the basis for the decision should be noted and if a similar scenario arises in the future, it would likely be good to follow a similar decision. She stated that she is not concerned with liability as the District has discretion in whether or not it awards the grant as well as whether or not additional funds are allocated.

President Eisele reviewed the benefits of approving the additional funds noting that this project site is within a priority area for the District, is within an equity area for the District, is located at a school so there would be benefit to children and education and is largely due to a request from the District staff. He reviewed negative impacts to consider related to budget impacts and that the request is significantly over the maximum threshold.

Manager Gernes asked how frequently the District has experienced other overages within the program. He recognized that these are estimates and the funds are reimbursed. He asked how likely it would be that the end cost would come in higher. Tina Carstens stated that typically this type of project would go through the targeted retrofit program where there would not be this type of cap.

President Eisele asked if this could be recategorized into the targeted retrofit program. Tina Carstens explained that in a targeted retrofit project the District would bid and construct the project, which is not occurring in this project.

President Eisele asked if the Board is comfortable moving forward with the request.

Manager Kramer commented that he is comfortable moving forward.

Manager Gernes asked how often projects go over the estimated amounts awarded. Paige Ahlborg stated that at times a project will go over but that is not typical as contractors stay within their bids. She commented that this contractor has been involved in the process. She noted that this is a not to exceed award from the District.

Manager Karp commented that he is comfortable moving forward because this is a priority area and equity area for the District. He noted that there are also other grant funds that have been awarded towards the project and was comfortable with the increased allocation.

Manager Gernes asked if this is phase two of a three phase project. Paige Ahlborg commented that the entire project will be completed this year.

President Eisele stated that he is comfortable moving forward for the reasons discussed.

Manager Gernes stated that although he has some pause, he would be comfortable with the conditional motion.

Motion: Manager Gernes moved, Manager Karp seconded, to approve an additional $30,000 for application #22-08CS contingent upon the applicant working with staff to ensure the project meets the guidelines of the grant program.

Further discussion: President Eisele asked if the Board be alerted to any major changes. He also asked that a summary of the revisions to the planting plan be provided to the Board for review once available.

A roll call vote was performed:

Manager Karp	aye
Manager Gernes	aye
Manager Kramer	aye
President Eisele	aye

Motion carried unanimously.

B. Budget Status Update

No comments.

7. ACTION ITEMS (1:09:31)

A. Owasso Shoreline Restoration Phase 2 Advertise for Bid

Paige Ahlborg noted that this is phase two of the Owasso shoreline restoration which includes six residential properties. She stated that pending approval tonight the project would go out to bid Friday and staff would bring back the recommendation for the contractor at the May meeting.

President Eisele asked if there was a sense as to why more homeowners did not want to participate. Paige Ahlborg was unsure, noting that they did a large outreach effort with mailers, social media posts, and shared information with the lake association. She noted that if more homeowners are interested in the future, that could be done through the stewardship grant program.

Motion: Manager Kramer moved, Manager Karp seconded, to approve the preliminary design, estimated costs, and proposed project schedule and direct staff to finalize the design and bidding documents and advertise the project for bid. Motion carried unanimously.

B. Arbogast Underground Stormwater Filter Advertise for Bid

Paige Ahlborg stated that this is for the construction of an underground filtration project near Lake Emily in Shoreview. She explained that the project was identified through the feasibility study, and this will go through the targeted retrofit programto be constructed this summer. She stated that BWSR clean water grant funds have been allocated for this project as well. She noted that pending approval this would go out to bid and also come back to the Board for contractor selection in May.

Manager Karp stated that he was interested in the difference between the iron enhanced sand and CC17, noticing that staff chose to select the CC17. He asked if this type of project would ever be feasible using iron enhanced sand as a secondary treatment option. Brandon Barnes replied that the 30 percent design did include iron enhanced sand as part of the design, but the filter media was switched because of the longer prolonged flows. He stated that the CC17 can stay inundated for a longer time. He stated that it would not be cost-effective to add a secondary treatment in this location.

Manager Gernes asked how long the CC17 would be effective. Brandon Barnes replied that the lifespan would be dependent on the phosphorus concentration. He commented that this would not be something that would need to be replaced annually. Manager Gernes asked if a dryer season would advance the age of the material. Brandon Barnes stated that the maximum capacity is driven by loading. He stated that whether it is a wet or dry season, the phosphorus would continue to be removed. Manager Gernes asked for details on maintenance costs. Brandon Barnes replied that CC17 is used in the Kohlman Weir, although this would be a slightly different application. He stated that there would be less maintenance costs because it is an aggregate material. He noted that they would conduct inspections but there would be less maintenance with CC17 than iron enhanced sand. He explained that the stop logs will assist with flow adjustment through the system and provided additional details on how the system is designed.

Tina Carstens stated that maintenance is factored into the cost benefit. She confirmed that the District would inspect the project. Brandon Barnes stated that the District would complete maintenance for the first two years and then the City would take over maintenance.

Motion: Manager Karp moved, Manager Kramer seconded, to approve the preliminary design, estimated costs, and proposed project schedule and direct staff to finalize the design and bidding documents and solicit bid proposals.

A roll call vote was performed:

Manager Karp	aye
Manager Gernes	aye
Manager Kramer	aye
President Eisele	aye

Motion carried unanimously.

C. 2023-2025 BMP Maintenance Program Selection of Contractors

Paige Ahlborg stated that this is the BMP maintenance program which would cover 2023 through 2025. She stated that staff has chosen the three contractors specified in the report and provided details on the experience of each, noting that two of the contractors have been involved in the maintenance program before.

Manager Gernes asked if the selection was based more on cost, experience or other factors. Paige Ahlborg confirmed that all of those things were factored in, noting that two contractors were ruled out because their prices were very high. She stated that the office locations were also factored to ensure quick response could be given,

along with experience. Manager Gernes asked if input was solicited from the partners involved in the projects. Tina Carstens noted that these are all District projects that are being maintained.

Paige Ahlborg provided details on the shoreline restoration projects that are having maintenance completed by the contractors for those projects, while Snail Lake has now transitioned to this program.

Motion: Manager Kramer moved, Manager Karp seconded, to award the 2023-2025 BMP Maintenance contract to Rock Leaf Water Environmental, Davey Resource Group, and Sandstrom Land Management for the projects specified and direct staff to prepare the necessary documents and work with the selected contractor.

A roll call vote was performed:

Manager Karp	aye
Manager Gernes	aye
Manager Kramer	aye
President Eisele	aye

Motion carried unanimously.

8. ATTORNEY REPORT (1:27:27)

Laurann Kirschner welcomed the new Board members as this is her first meeting back. She did not have a specific report.

President Eisele commented that currently a roll call vote is completed and asked if the Board could transition back to voice votes. Laurann Kirschner commented that if the Board is all present in the room, a voice vote would be sufficient. She stated that if there was an opposing vote, a roll call vote could follow. She stated that if a member is attending virtually, a roll call vote would be needed. President Eisele confirmed consensus of the Board to return to voice votes at future meetings.

9. BOARD ISSUES, POLICIES, AND OPERATION (FOR DISCUSSION AT MEETING) (1:30:10)

A. Spring Flood Risk Assessment

President Eisele stated that he has been asked by residents about the plan for potential flooding and information was provided in response within the project summary report. Brandon Barnes commented that flooding is a big concern of residents and can be disruptive. He stated that the models are updated and rerun several times as the season progresses.

Tina Carstens confirmed that staff would be available to respond to resident concerns. Brandon Barnes noted that the information learned from the models will be shared with the member cities. He provided additional details on when modeling would be updated.

Manager Gernes asked if there would be value in having presence on the website related to flooding to share more broadly with the public. Tina Carstens stated that the lake level stations are posted on the website. She stated that the more specific flooding information would be a lot to digest for the average website user and therefore it is easier to respond one on one when residents call with questions or concerns.

President Eisele stated that the intention in placing this item on the agenda is partially to make this information accessible to the general public.

Manager Karp acknowledged that this is not a simple subject to disclose. He noted that perhaps some basic information could be provided. Tina Carstens stated that staff could develop a newsletter article that talks more about the process. The Board agreed.

B. Adopt-A-Culvert

President Eisele asked that this item be postponed to the next meeting.

C. Agenda Changes

President Eisele highlighted a few changes that have or will be made to the agenda.

10. NEW REPORTS AND/OR PRESENTATIONS (1:42:22)

Manager Kramer left the meeting.

A. District Wetland Management Strategies

Greg Williams stated that there was a request for more information on the District involvement with wetland management, how that aligns with other entities in the metro area, and whether adjustments should be made to those strategies. He provided background information on wetlands as well as details related to the wetlands inventory and classification, the current RWMWD wetland management roles, and wetland management roles of other WMOs and WDs. He reviewed possible revisions to the RMMWD roles and bounce and inundation standards.

Tina Carstens asked how that type of requirement could impact developers. Brandon Barnes commented that it would depend and reviewed some of the factors that would be considered. He stated that in some cases developers have integrated into their design process, while in others it can be a lot of effort if attempting to address it at the end.

President Eisele used Hillcrest as an example and asked how this regulation would impact that development as proposed. Brandon Barnes noted that Hillcrest is unique because of the size and mass grading and wetland mitigation, therefore this type of regulation may not be applicable to that development.

President Eisele stated that he would be curious as to maintenance. Tina Carstens explained that this would only apply to development or redevelopment through the rules program.

Manager Gernes asked if some responsibilities would be pushed onto the cities in those instances mentioned. Tina Carstens explained the difference between a WMO and WD. Greg Williams noted that even in the case of a WMO, the regulation would only be triggered through development or redevelopment.

Manager Karp commented that it is a lot to digest, especially with the downstream effects.

President Eisele used a flood event when the bounce and inundation standard cannot be met and asked what would happen. Tina Carstens replied that nothing would happen as it is meant to be a design standard and a flood event cannot be controlled. Manager Gernes noted that rate control would seem to better address flood events.

Greg Williams provided additional input on the experience of organizations that have implemented bounce and inundation regulations.

Manager Gernes recognized that the five- and ten-year events would tend to be more frequent, which would make sense as to why the regulations apply to those events rather than the larger events.

Greg Williams provided potential revisions to consider related to buffer standards, noting that the District rules are already quite strong.

Laurann Kirschner stated that landowners tend to not like easement agreements, and usually those need to be paid for because it remains on the land in perpetuity. She commented that sometimes more informal agreements tend

to go over better. Nicole Soderholm stated that the signage requirements for buffers tend to provide the necessary education when properties change hands.

Greg Williams reviewed potential revisions related to wetland monitoring that could be considered. Tina Carstens stated that the District has over 1,000 wetlands. She noted that an updated MNRAM assessment could be done on a representation of those many wetlands to gauge the level of change.

President Eisele agreed that it would be cost prohibitive to do monitoring every year on every wetland but perhaps some type of rotation schedule could be developed.

Nicole Soderholm noted that BWSR may be moving away from MNRAM assessment and therefore perhaps a full assessment would not make sense.

President Eisele agreed that it would not make sense to monitor too often and perhaps there is a trigger for inspection.

Nicole Soderholm stated that there is a process an applicant can follow if they believe the MNRAM assessment is incorrect.

Greg Williams reviewed potential revisions related to wetland restoration.

President Eisele stated that in a previous workshop they discussed the role banking plays and asked how this would relate to capital projects. Tina Carstens replied that this would be related to projects that the District would pursue. President Eisele asked if the District could require payment into a fund that would be used by the District to restore wetlands. Tina Carstens replied that the applicant would follow the WCA process, and the District would not want to be in the middle, creating credits that could be used for applicants. She noted that there were no sites identified that would create a wetland bank within the District boundaries.

Manager Karp stated that he likes the idea of water quality and asked how much thought has been put into underground filters at inflow/outflow areas or how water quality could be improved in other areas that previously provided treatment. Tina Carstens stated that the capital improvement funds are used for water quality projects, providing examples of those different programs. She commented that while wetland restoration would enhance that it would not be the primary tool for achieving water quality goals and would fall more under ecological restoration. Manager Karp asked how that would rate versus a targeted retrofit project. Tina Carstens commented that funds have been allocated in the budget for wetland restoration, but if the Board wants to be stronger in that area that should be identified as a higher priority in the next generation plan, or the current plan could be amended. She explained how the prioritization tool is used to rank different projects and concepts.

Manager Gernes noted past wetland restoration projects the District has been involved in. Tina Carstens confirmed and explained that those projects have gone through other programs of the District.

Greg Williams stated that the intention for tonight was to provide this information to the Board and gain any input on the potential revisions mentioned within the presentation. He also provided information on project review and documentation. He stated that based on the discussion thus far it seems that the buffer standards are sufficient and confirmed consensus of the Board.

President Eisele stated that he would love to see the best cost benefit relating to bounce and inundation standards.

Manager Karp agreed, noting that he would like to see more information as well as implications on development. Tina Carstens confirmed that staff could bring back something for the Board to consider and if it was determined that should move forward, a larger rule revision would be needed.

Manager Gernes confirmed that he would also want to see more information on the bounce standards and could see value in restoration. He stated that he would also be interested in information on wetland monitoring.

The Board agreed that it would like more information on bounce and inundation, wetland restoration and wetland monitoring. It was noted that monitoring should be intentional, and action driven rather than over burdensome.

Bill Bartodziej noted that maintenance is a large element of wetland restoration that should be considered as that would be a long-term responsibility.

B. Owasso Basin Area & North Star Estates Flood-Risk Reduction Scope Summary
No comments.

C. Targeted Retrofits – Roosevelt Homes, St. Paul Scope Summary
No comments.

11. ADMINISTRATOR'S REPORT (2:49:30)

A. Meetings Attended
No comments.

B. Upcoming Meetings and Dates
No comments.

C. Board Action Log and Updates
No comments.

D. Minnesota Watersheds Updates
No comments.

E. Staff Changes and Organizational Chart
Tina Carstens noted that the retirement of Bill Bartodziej is fast approaching, and staff will alert the Board once a recognition event is planned. She noted that she will not be present at the next meeting and Paige Ahlborg will be present in her place to assist with leading the meeting.

12. PROJECT AND PROGRAM STATUS REPORTS (2:15:23)

A. Barr's Approach to Assessing the Risk of Spring Flooding

Project Feasibility Studies

B. Interim Emergency Response Planning
C. Kohlman Creek Flood Risk Feasibility Study
D. Kohlman Creek/Wakefield Lake Diversion Feasibility Study
E. County Ditch 17 Improvements Feasibility Study
F. Phalen Village Feasibility Study
G. Ames Lake Area Flood Risk Reduction Planning Study
H. Owasso Basin/North Star Estates Improvements
I. Carver Ponds Improvement Study
J. South Metro Mississippi River TSS TMDL
K. Resiliency Study for Non-Beltline Tributary Areas
L. Street Sweeping Study

Research Projects

M. Kohlman Lake Aquatic Plans and Nutrients Study

Capital Improvements

N. Woodbury Target Store Stormwater Retrofit Projects
O. Targeted Retrofit Projects
P. Stewardship Grant Program Support
Q. Arbogast Stormwater Filtration BMP
R. Pioneer Park Stormwater Reuse
S. Double Driveway Pond and Fish Creek Tributary Improvements

CIP Project Repair and Maintenance

T. 2023 CIP Maintenance and Repair Project
U. 2023-2025 BMP Maintenance Program

Program Updates

V. Natural Resources Program
W. Public Involvement and Education Program

13. MANAGER COMMENTS AND NEXT MONTH'S MEETING (2:52:12)

No comments.

14. ADJOURN

Motion: Manager Gernes moved, Manager Karp seconded, to adjourn the meeting at 9:22 p.m. Motion carried unanimously.

RWMWD BUDGET STATUS REPORT
Administrative & Program Budget
Fiscal Year 2023
4/30/2023

Budget Category	Budget Item	Account Number	Original Budget	Budget Transfers	Current Month Expenses	Year-to-Date Expenses	Current Budget Balance	Percent of Budget
Manager	Per diems	4355	$7,000.00	-	-	375.00	$6,625.00	5.36%
	Manager expenses	4360	3,000.00	-	-	-	3,000.00	0.00%
Committees	Committee/Bd Mtg. Exp.	4365	3,500.00	-	470.96	1,455.13	2,044.87	41.58%
	Sub-Total: Managers/Committees:		**$13,500.00**	**$0.00**	**$470.96**	**$1,830.13**	**$11,669.87**	**13.56%**
Employees	Staff salary/taxes/benefits	4010	1,860,000.00	-	129,486.36	561,910.44	1,298,089.56	30.21%
	Employee expenses	4020	15,000.00	-	777.69	1,423.38	13,576.62	9.49%
	District training & education	4350	75,000.00	-	-	1,347.49	73,652.51	1.80%
	Sub-Total: Employees:		**$1,950,000.00**	**$0.00**	**$130,264.05**	**$564,681.31**	**$1,385,318.69**	**28.96%**
Administration/ Office	GIS system maint. & equip.	4170	10,000.00	-	1,257.25	1,257.25	8,742.75	12.57%
	Data Base/GIS Maintenance	4171	20,000.00	-	-	-	20,000.00	0.00%
	Equipment maintenance	4305	2,000.00	-	-	-	2,000.00	0.00%
	Telephone	4310	2,000.00	-	-	178.02	1,821.98	8.90%
	Office supplies	4320	7,000.00	-	554.74	1,980.41	5,019.59	28.29%
	IT/Internet/Web Site/Software Lic.	4325	85,000.00	-	6,954.87	28,107.26	56,892.74	33.07%
	Postage	4330	2,000.00	-	-	143.55	1,856.45	7.18%
	Printing/copying	4335	5,000.00	-	773.28	2,059.28	2,940.72	41.19%
	Dues & publications	4338	15,000.00	-	-	12,500.00	2,500.00	83.33%
	Janitorial/Trash Service	4341	15,000.00	-	1,961.88	6,360.86	8,639.14	42.41%
	Utilities/Bldg.Contracts	4342	30,000.00	-	401.27	1,672.35	28,327.65	5.57%
	Bldg/Site Maintenance	4343	125,000.00	-	40,622.04	54,338.72	70,661.28	43.47%
	Miscellaneous	4390	5,000.00	-	-	-	5,000.00	0.00%
	Insurance	4480	60,000.00	-	44,347.00	44,347.00	15,653.00	73.91%
	Office equipment	4703	100,000.00	-	1,198.56	1,696.56	98,303.44	1.70%
	Vehicle lease, maintenance	4810-40	20,000.00	-	375.74	1,390.88	18,609.12	6.95%
	Sub-Total: Administration/Office:		**$503,000.00**	**$0.00**	**$98,446.63**	**$156,032.14**	**$346,967.86**	**31.02%**
Consultants/ Outside Services	Auditor/Accounting	4110	75,000.00	-	5,464.65	12,584.85	62,415.15	16.78%
	Engineering-administration	4121	132,000.00	-	6,482.50	24,250.43	107,749.57	18.37%
	Engineering-permit I&E	4122	10,000.00	-	-	-	10,000.00	0.00%
	Engineering-eng. review	4123	70,000.00	-	3,799.00	14,325.50	55,674.50	20.47%
	Engineering-permit review	4124	59,000.00	-	3,832.00	18,154.00	40,846.00	30.77%
	Project Feasibility Studies	4129	395,000.00	-	14,978.42	60,841.79	334,158.21	15.40%
	Attorney-permits	4130	5,000.00	-	-	-	5,000.00	0.00%
	Attorney-general	4131	40,000.00	-	1,605.00	7,570.00	32,430.00	18.93%
	Outside Consulting Services	4160	20,000.00	-	-	-	20,000.00	0.00%
	Sub-Total: Consultants/Outside Services:		**$806,000.00**	**$0.00**	**$36,161.57**	**$137,726.57**	**$668,273.43**	**17.09%**
Programs	Educational programming	4370	70,000.00	-	634.40	6,581.42	63,418.58	9.40%
	Communications & Marketing	4371	50,000.00	-	89.50	930.59	49,069.41	1.86%
	Events	4372	51,000.00	-	7,490.00	21,610.23	29,389.77	42.37%
	Water QM-Engineering	4520-30	240,000.00	-	20,014.41	32,901.40	207,098.60	13.71%
	Project operations	4650	200,000.00	-	4,576.36	6,725.99	193,274.01	3.36%
	SLMP/TMDL Studies	4661	142,000.00	-	389.00	503.00	141,497.00	0.35%
	Natural Resources/Keller Creek	4670-72	120,000.00	-	476.76	2,263.02	117,736.98	1.89%
	Outside Prog.Support/Weed Mgmt.	44683	57,000.00	-	3,369.33	14,869.33	42,130.67	26.09%
	Research Projects	4695	155,000.00	-	8,473.00	11,857.00	143,143.00	7.65%
	Health and Safety Program	4697	4,000.00	-	-	29.15	3,970.85	0.73%
	Sub-Total: Programs:		**$1,089,000.00**	**$0.00**	**$45,512.76**	**$98,271.13**	**$990,728.87**	**9.02%**
GENERAL FUND TOTAL			**$4,361,500.00**	**$0.00**	**$310,855.97**	**$958,541.28**	**$3,402,958.72**	21.98%
CIP's	CIP Project Repair & Maintenance	516	1,500,000.00	-	19,349.35	464,256.72	1,035,743.28	30.95%
	Targeted Retrofit Projects	518	1,500,000.00	-	46,165.50	148,555.22	1,351,444.78	9.90%
	Flood Risk Reduction Fund	520	5,200,000.00	-	8,067.06	204,956.43	4,995,043.57	3.94%
	Debt Services-96-97 Beltline/MM/Battle Creek	526	395,404.00	-	-	278,086.78	117,317.22	70.33%
	Stewardship Grant Program Fund	529	1,128,000.00	-	18,613.25	35,417.85	1,092,582.15	3.14%
	Double Driveway Water Quality Optimization	537	675,000.00	-	6,673.19	16,960.23	658,039.77	2.51%
	Wetland Restoration Projects	540	500,000.00	-	-	-	500,000.00	0.00%
CIP BUDGET TOTAL			**$10,898,404.00**	**-**	**$98,868.35**	**$1,148,233.23**	**$9,750,170.77**	10.54%
TOTAL BUDGET			**$15,259,904.00**	**$0.00**	**$409,724.32**	**$2,106,774.51**	**$13,153,129.49**	**13.81%**

Current Fund Balances:

Fund:	Unaudited Beginning Fund Balance @ 12/31/22	Fund Transfers	Year to date Revenue	Current Month Expenses	Year to Date Expense	Unaudited Fund Balance @ 04/30/23
101 - General Fund	$2,313,604.42	-	129,959.41	310,855.97	958,541.28	1,485,022.55
516 - CIP Project Repair & Maintenance	1,143,456.57	-	12,472.86	19,349.35	464,256.72	691,672.71
518 - Targeted Retrofit Projects	164,101.49	-	70,147.50	46,165.50	148,555.22	85,693.77
520 - Flood Damage Reduction Fund	5,075,970.05	-	32,095.39	8,067.06	204,956.43	4,903,109.01
526 - Debt Services-96-97 Beltline/MM/Beltline-Battle Creek Tunnel Repair	551,908.60	-	-	-	278,086.78	273,821.82
529 - Stewardship Grant Program Fund	428,736.05	-	-	18,613.25	35,417.85	393,318.20
536 - Stormwater Impact Fund	358,950.00	-	-	-	-	358,950.00
537 - Double Driveway Water Quality Optimization Implementation	-	-	-	6,673.19	16,960.23	(16,960.23)
540 - Wetland Restoration Projects	498,036.00	-	-	-	-	498,036.00
580 - Contingency Fund	1,465,487.00	-	-	-	-	1,465,487.00
Total District Fund Balance	**$12,000,250.18**	**$0.00**	**$ 244,675.16**	**$ 409,724.32**	**$2,106,774.51**	**$10,138,150.83**

Ramsey Washington Metro Watershed Dist.

Check Register

For the Period From Apr 1, 2023 to Apr 30, 2023

Check #	Date	Payee ID	Invoice #	Payee	Description		Amount
EFT	04/03/23	hea002	May-23	HealthPartners	Employee Benefits		$15,697.54
EFT	04/03/23	met008	Apr-23	MetLife-Group Benefits	Employee Benefits		1,739.99
73731	04/13/23	aws001	S1335957-040123	AWS Service Center	Janitorial/Trash/Plowing/Sweeping		492.88
73732	04/13/23	bfg001	2261086-00	BFG Supply Co., LLC	Educational Program		18.38
73733	04/13/23	cro001	Mar 31,2023	Nutrien Ag Solutions, Inc.	Natural Resources Program		152.92
73734	04/13/23	del001	1.00664E+11	Dell Marketing, L.P.	Equipment		761.90
73735	04/13/23	gil001	229935	Gilbert Mechanical Contractors, Inc.	Building/Site Maintenance		462.94
73736	04/13/23	han008	2250	Hanna Enterprises, LLC	Janitorial/Trash/Plowing/Sweeping		875.00
73737	04/13/23	hom001	3/28/23	Home Depot Credit Services	Natural Resources Program		164.68
73738	04/13/23	met004	Feb 2023	Metro Sales, Inc.	Copier Lease		444.00
73739	04/13/23	pre003	31948636	Premium Waters, Inc.	Utilities/Building Services Contracts		31.00
73740	04/13/23	ret001	0119638-IN	The Retrofit Companies, Inc.	Building/Site Maintenance		8.40
73741	04/13/23	sai001	3963	Saint Paul Media	Communications and Marketing		50.00
73742	04/13/23	shi001	B16668947	SHI International Corp.	Equipment		343.88
73743	04/13/23	stu001	2019702	Studio Lola	Employee Benefits		691.44
73744	04/13/23	usb005	497992297	US Bank Equipment Finance	Copier Lease		294.00
73745	04/26/23	met013	1198	Metro - INET	IT Services/Web Site/Software/Licenses		6,859.00
73746	04/26/23	nsp001	Apr	Xcel Energy	Building and Site Maintenance		4,767.87
73747	04/26/23	ons001	254177	Onset Computer Corporation	Water Quality Monitoring - Staff		2,876.91
73748	04/26/23	pac001	409056, 410034, 410076	Pace Analytical Services, Inc.	Water Quality Monitoring - Staff		3,643.40
73749	04/26/23	pas002	Mar and Apr 2023	Carol Passi	Employee Benefits, Expenses		490.29
73750	04/26/23	qwe001	45026	CenturyLink	Project Operations		271.29
73751	04/26/23	ram002	PRK-002191	Ramsey County	Stewardship Grant Program		16,818.75
73752	04/26/23	rec002	4105	Rectangle Designs, LLC.	Events		1,250.00
73753	04/26/23	red002	150477145	Redpath & Company	Accounting		5,310.45
73754	04/26/23	rmb001	B008364; B008362; B008310	RMB Environmental Laboratories	Water Quality Monitoring - Staff		277.20
73755	04/26/23	sim001	Apr-23	Emily Simmons	Employee Benefits, Expenses		140.44
73756	04/26/23	sod001	Apr 2023	Nicole Soderholm	Employee Benefits, Expenses		47.21
73757	04/26/23	stu001	2019715; 2019702-part 2	Studio Lola	Events		5,740.00
73758	04/26/23	til002	Apr-23	Joseph S. Tillotson	Employee Benefits, Expenses		83.40
73759	04/26/23	tim002	M28156	Timesaver Off-Site Secretarial, Inc.	Committee/Board Meeting Expenses		310.00
73760	04/26/23	tro002	23-4	Cathy Troendle	Education		439.60
73761	04/26/23	usb002	April 2023 Statement	U.S. Bank	Feb/Mar Credit Card Expense		2,412.83
73762	04/26/23	van001	May 2023	Vanguard Cleaning Systems of Minnesota	Janitorial/Trash/Plowing/Sweeping		594.00
73763	04/26/23	voy001	8.69293E+12	US Bank Voyager Fleet Sys.	Vehicle Fuel		351.43
73764	04/26/23	was002	6001, 6013	Washington Conservation District	Outside Program Support		3,496.08
73771	04/26/23	mel001	Apr-23	Michelle L. Melser	Employee Benefits, Expenses		444.61
73772	04/26/23	lea004	MEL 1001654-8; CMC 1001653-8	League of MN Cities Ins.Trust P & C	Insurance		44,347.00
73773	04/26/23	inn002	IN4145301	Innovative Office Solutions LLC	Office Supplies		329.39
73774	04/26/23	hej001	362026	Hejny Rental	Natural Resources Program		118.38
73775	04/26/23	haw001	6453571	Hawkins, Inc.	Project Operations		4,108.40
73776	04/26/23	gil001	228413	Gilbert Mechanical Contractors, Inc.	Building / Site Maintenance		3,740.00
73777	04/26/23	gal001	April 20, 2023	Galowitz Olson, PLLC	Attorney General		1,605.00
73778	04/26/23	fit002	Apr-23	Mary Fitzgerald	Employee Benefits, Expenses		88.25
73779	04/26/23	ess001	DD1574	Ess Brothers & Sons, Inc.	Building / Site Maintenance		31,880.00
73780	04/26/23	emp003	Quarter 1, 2023	Dept. of Employment & Economic Dev.	MN UC Fund		2,240.27
73781	04/26/23	dor003	505395	Dorner	Project Operations/Project Maintenance & Repair		4,205.12
73782	04/26/23	don001	April, 2023	Matthew Doneux	Employee Benefits, Expenses		259.86
73783	04/26/23	cit021	23-06 CS	City of Shoreview	Stewardship Grant Program		500.00
73784	04/26/23	cit010	13313	City of White Bear Lake	GIS System Maintenance and Equipment		1,257.25
73785	04/26/23	cad001	19425119	Zayo Group, LLC	Water Quality Monitoring - Staff		193.64
73786	04/26/23	bfg001	2271986-00	BFG Supply Co., LLC	Education		18.38
73787	04/26/23	ben002	114926	Benefit Extras, Inc.	Employee Benefits		149.00
73788	04/26/23	bar001	March 18 through April 14, 2023	Barr Engineering	March Engineering Expenses		126,887.84
73789	04/26/23	att002	287256653401X03252023	AT & T Mobility - ROC	Project Operations		166.67
73790	04/26/23	ada002	3631747	Adam's Pest Control, Inc.	Utilities/Building Services Contracts		94.72
Total							**$301,042.88**
EFT	04/14/23	myp001	04/14/23	April 14th Payroll	4110-101-000		76.05
EFT	04/28/23	myp001	04/28/23	April 28th Payroll	4110-101-000		78.15
Dir.Dep.	04/14/23	---	Payroll Expense-Net	April 14th Payroll	4010-101-000		29,739.74
EFT	04/14/23	int002	Internal Rev.Serv.	April 14th Federal Withholding	2001-101-000		10,672.83
EFT	04/14/23	mnd001	MN Revenue	April 14th State Withholding	2003-101-000		1,898.23
EFT	04/14/23	per001	PERA	April 14th PERA	2011-101-000		6,464.69
EFT	04/14/23	emp002	Empower Retirement	Employee Def. Comp. Contributions	2016-101-000		2,653.00
EFT	04/14/23	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000		857.00
Dir.Dep.	04/28/23	---	Payroll Expense-Net	April 28th Payroll	4010-101-000		31,174.51
EFT	04/28/23	int002	Internal Rev.Serv.	April 28th Federal Withholding	2001-101-000		11,073.02
EFT	04/28/23	mnd001	MN Revenue	April 28 th State Withholding	2003-101-000		1,962.23
EFT	04/28/23	per001	PERA	April 28th PERA	2011-101-000		6,464.69
EFT	04/28/23	emp002	Empower Retirement	Employee Def. Comp. Contributions	2016-101-000		2,653.00
EFT	04/28/23	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000		857.00
					Payroll/Benefits:		**$106,624.14**
Total					**Accounts Payable/Payroll/Benefits:**		**$407,667.02**

Ramsey Washington Metro Watershed Dist.
Cash Disbursements Journal
For the Period From Apr 1, 2023 to Apr 30, 2023

Date	Check #	Vendor ID	Name	Account ID	Description	Amount	
04/03/23	EFT	met008	HealthPartners	4040-101-000	Employee Benefits	$15,697.54	
04/03/23	EFT	hea002	MetLife-Group Benefits	4040-101-000	Employee Benefits	1,739.99	
04/13/23	73731	aws001	AWS Service Center	4341-101-000	Janitorial/Trash/Plowing/Sweeping	492.88	
04/13/23	73732	bfg001	BFG Supply Co., LLC	4370-101-000	Educational Program	18.38	
04/13/23	73733	cro001	Nutrien Ag Solutions, Inc.	4670-101-000	Natural Resources Program	152.92	
04/13/23	73734	del001	Dell Marketing, L.P.	4703-101-000	Equipment	761.90	
04/13/23	73735	gil001	Gilbert Mechanical Contractors, Inc.	4343-101-000	Building/Site Maintenance	462.94	
04/13/23	73736	han008	Hanna Enterprises, LLC	4341-101-000	Janitorial/Trash/Plowing/Sweeping	875.00	
04/13/23	73737	hom001	Home Depot Credit Services	4670-101-000	Natural Resources Program	164.68	
04/13/23	73738	met004	Metro Sales, Inc.	4335-101-000	Copier Lease	444.00	
04/13/23	73739	pre003	Premium Waters, Inc.	4342-101-000	Utilities/Building Services Contracts	31.00	
04/13/23	73740	ret001	The Retrofit Companies, Inc.	4343-101-000	Building/Site Maintenance	8.40	
04/13/23	73741	sai001	Saint Paul Media	4371-101-000	Communications and Marketing	50.00	
04/13/23	73742	shi001	SHI International Corp.	4703-101-000	Equipment	343.88	
04/13/23	73743	stu001	Studio Lola	4040-101-000	Employee Benefits	691.44	
04/13/23	73744	usb005	US Bank Equipment Finance	4335-101-000	Copier Lease	294.00	
04/26/23	73745	met013	Metro - INET	4325-101-000	Roseville IT Services/Web Site/Software/Licenses	6,859.00	
04/26/23	73746	nsp001	Xcel Energy			4,767.87	
				4650-520-000	Project Operations/Flood Damage Reduction Fund		206.06
				4530-101-000	Water Quality Monitoring - Staff		516.81
				4343-101-000	Building and Site Maintenance		4,045.00
04/26/23	73747	ons001	Onset Computer Corporation	4530-101-000	Water Quality Monitoring - Staff	2,876.91	
04/26/23	73748	pac001	Pace Analytical Services, Inc.	4530-101-000	Water Quality Monitoring - Staff	3,643.40	
04/26/23	73749	pas002	Carol Passi			490.29	
				4020-101-000	Employee Expenses		227.94
				4040-101-000	Empployee Benefits		80.00
				4830-101-000	Vehicle Fuel		24.31
				4370-101-000	Education		158.04
04/26/23	73750	qwe001	CenturyLink	4650-101-000	Project Operations	271.29	
04/26/23	73751	ram002	Ramsey County	4682-529-000	Stewardship Grant Program	16,818.75	
04/26/23	73752	rec002	Rectangle Designs, LLC.	4372-101-000	Events	1,250.00	
04/26/23	73753	red002	Redpath & Company	4110-101-000	Accounting	5,310.45	
04/26/23	73754	rmb001	RMB Environmental Laboratories	4530-101-000	Water Quality Monitoring - Staff	277.20	
04/26/23	73755	sim001	Emily Simmons			140.44	
				4040-101-000	Employee Benefits		37.78
				4320-101-000	Office Supplies		66.11
				4020-101-000	Employee Expenses		36.55
04/26/23	73756	sod001	Nicole Soderholm			47.21	
				4040-101-000	Employee Benefits		40.00
				4020-101-000	Employee Expenses		7.21
04/26/23	73757	stu001	Studio Lola	4372-101-000	Events	5,740.00	
04/26/23	73758	til002	Joseph S. Tillotson			83.40	
				4040-101-000	Employee Benefits		40.00
				4020-101-000	Employee Expenses		2.62
				4670-101-000	Natural Resources Program		40.78
04/26/23	73759	tim002	Timesaver Off-Site Secretarial, Inc.	4365-101-000	Committee/Board Meeting Expenses	310.00	
04/26/23	73760	tro002	Cathy Troendle	4370-101-000	Education	439.60	

Date	Check #	Vendor ID	Name	Account ID	Description	Amount	
04/26/23	73761	usb002	U.S. Bank			2,412.83	
				4343-101-000	Building and Site Maintenance		103.69
				4335-101-000	Copier Lease		35.28
				4325-101-000	Roseville IT Services/Web Site/Software/Licenses		95.87
				4343-101-000	Building and Site Maintenance		32.01
				4320-101-000	Office Supplies		(0.39)
				4320-101-000	Office Supplies		(0.63)
				4320-101-000	Office Supplies		97.00
				4320-101-000	Office Supplies		25.19
				4342-101-000	Utilities/Building Services Contracts		275.55
				4365-101-000	Committee/Board Meeting Expenses		160.96
				4040-101-000	Employee Benefits		315.75
				4320-101-000	Employee Expenses		14.82
				4530-101-000	Water Quality Monitoring - Staff		614.20
				4703-101-000	Equipment		92.78
				4320-101-000	Office Supplies		9.31
				4372-101-000	Events		500.00
				4371-101-000	Communications and Marketing		39.50
				4320-101-000	Office Supplies		1.94
04/26/23	73762	van001	Vanguard Cleaning Systems of Minnesota	4341-101-000	Janitorial/Trash/Plowing/Sweeping	594.00	
04/26/23	73763	voy001	US Bank Voyager Fleet Sys.	4830-101-000	Vehicle Fuel	351.43	
04/26/23	73764	was002	Washington Conservation District			3,496.08	
				4683-101-000	Outside Program Support		3,369.33
				4530-101-000	Water Quality Monitoring - Staff		126.75
04/26/23	73771	mel001	Michelle L. Melser			444.61	
				4343-101-000	Building / Site Maintenance		350.00
				4020-101-000	Employee Expenses		75.13
				4040-101-000	Employee Benefits		19.48
04/26/23	73772	lea004	League of MN Cities Ins.Trust P & C	4480-101-000	Insurance	44,347.00	
04/26/23	73773	inn002	Innovative Office Solutions LLC	4320-101-000	Office Supplies	329.39	
04/26/23	73774	hej001	Hejny Rental	4670-101-000	Natural Resources Program	118.38	
04/26/23	73775	haw001	Hawkins, Inc.	4650-101-000	Project Operations	4,108.40	
04/26/23	73776	gil001	Gilbert Mechanical Contractors, Inc.	4343-101-000	Building / Site Maintenance	3,740.00	
04/26/23	73777	gal001	Galowitz Olson, PLLC	4131-101-000	Attorney General	1,605.00	
04/26/23	73778	fit002	Mary Fitzgerald			88.25	
				4040-101-000	Employee Benefits		58.25
				4020-101-000	Employee Expenses		30.00
04/26/23	73779	ess001	Ess Brothers & Sons, Inc.	4343-101-000	Building / Site Maintenance	31,880.00	
04/26/23	73780	emp003	Dept. of Employment & Economic Dev.	4032-101-000	MN UC Fund	2,240.27	
04/26/23	73781	dor003	Dorner	4650-516-000	Project Operations/Project Maintenance & Repair	4,205.12	
04/26/23	73782	don001	Matthew Doneux			259.86	
				4040-101-000	Employee Benefits		240.00
				4320-101-000	Office Supplies		12.00
				4020-101-000	Employee Expenses		7.86
04/26/23	73783	cit021	City of Shoreview	4682-529-000	Stewardship Grant Program	500.00	
04/26/23	73784	cit010	City of White Bear Lake	4170-101-000	GIS System Maintenance and Equipment	1,257.25	
04/26/23	73785	cad001	Zayo Group, LLC	4530-101-000	Water Quality Monitoring - Staff	193.64	
04/26/23	73786	bfg001	BFG Supply Co., LLC	4370-101-000	Education	18.38	
04/26/23	73787	ben002	Benefit Extras, Inc.	4040-101-000	Employee Benefits	149.00	

Date	Check #	Vendor ID	Name	Account ID	Description	Amount	
04/26/23	73788	bar001	Barr Engineering			126,887.84	
				4121-101-000	Engineering Admin		6,482.50
				4123-101-000	Engineer Eng. Rev		3,799.00
				4129-101-000	Project Feasability		7,414.42
				4129-101-000	Project Feasability		20.50
				4129-101-000	Project Feasability		655.00
				4128-520-000	Engineering-Flood Damage		7,861.00
				4129-101-000	Project Feasability		26.00
				4129-101-000	Project Feasability		3,003.00
				4129-101-000	Project Feasability		1,366.50
				4129-101-000	Project Feasability		1,023.50
				4129-101-000	Project Feasability		1,469.50
				4520-101-000	WQM-Engineering		2,645.50
				4520-101-000	WQM-Engineering		1,990.00
				4520-101-000	WQM-Engineering		7,130.00
				4124-101-000	Eng. Permit Review		3,832.00
				4661-101-000	SLMP/TMLD Studies		389.00
				4695-101-000	Research Projects		1,279.50
				4695-101-000	Research Projects		5,659.00
				4695-101-000	Research Projects		1,534.50
				4650-101-000	Project Operations		30.00
				4128-518-000	Engineering -Targeted Retrofit		2,209.00
				4128-518-000	Engineering -Targeted Retrofit		440.00
				4128-518-000	Engineering -Targeted Retrofit		3,509.00
				4682-529-000	Stewardship Grant Program		1,294.50
				4128-518-000	Engineering -Targeted Retrofit		31,722.50
				4128-518-000	Engineering -Targeted Retrofit		8,285.00
				4129-537-000	Driveway Fish Creek Tributary		6,673.19
				4128-516-000	Eng. Projects-Maint & Repair		7,185.23
				4128-516-000	Eng. Projects-Maint & Repair		2,530.00
				4128-516-000	Eng. Projects-Maint & Repair		5,429.00
04/26/23	73789	att002	AT & T Mobility - ROC	4650-101-000	Project Operations	166.67	
04/26/23	73790	ada002	Adam's Pest Control, Inc.	4342-101-000	Utilities/Building Services Contracts	94.72	
	Total					**$301,042.88**	
04/14/23	EFT	myp001	April 14th Payroll	4110-101-000	April 14th Payroll	76.05	
04/28/23	EFT	myp001	April 28th Payroll	4110-101-000	April 28th Payroll	78.15	
04/14/23	Dir.Dep.	---	April 14th Payroll	4010-101-000	April 14th Payroll	29,739.74	
04/14/23	EFT	int002	April 14th Federal Withholding	2001-101-000	April 14th Federal Withholding	10,672.83	
04/14/23	EFT	mnd001	April 14th State Withholding	2003-101-000	April 14th State Withholding	1,898.23	
04/14/23	EFT	per001	April 14th PERA	2011-101-000	April 14th PERA	6,464.69	
04/14/23	EFT	emp002	Employee Def. Comp. Contributions	2016-101-000	Employee Def. Comp. Contributions	2,653.00	
04/14/23	EFT	emp002	Employee IRA Contributions	2018-101-000	Employee IRA Contributions	857.00	

Date	Check #	Vendor ID	Name	Account ID	Description	Amount
04/28/23	Dir.Dep.	---	April 28th Payroll	4010-101-000	April 28th Payroll	31,174.51
04/28/23	EFT	int002	April 28th Federal Withholding	2001-101-000	April 28th Federal Withholding	11,073.02
04/28/23	EFT	mnd001	April 28th State Withholding	2003-101-000	April 28th State Withholding	1,962.23
04/28/23	EFT	per001	April 28th PERA	2011-101-000	April 28th PERA	6,464.69
04/28/23	EFT	emp002	Employee Def. Comp. Contributions	2016-101-000	Employee Def. Comp. Contributions	2,653.00
04/28/23	EFT	emp002	Employee IRA Contributions	2018-101-000	Employee IRA Contributions	857.00
					Payroll/Benefits:	**$106,624.14**
	Total				**Accounts Payable/Payroll/Benefits:**	**$407,667.02**

Summary of Professional Engineering Services During the Period
March 18, 2023 through April 14, 2023

	Total Engineering Budget (2023)	Total Fees to Date (2023)	Budget Balance (2023)	Fees During Period	District Accounting Code	Plan Implementation Task Number
Engineering Administration						
General Engineering Administration	$87,000.00	$24,250.43	$62,749.57	$6,482.50	**4121-101**	DW-13
RWMWD Health and Safety/ERTK Program	$2,000.00	$0.00	$2,000.00	$0.00	**4697-101**	DW-13
Educational Program/Educational Forum Assistance	$20,000.00	$702.50	$19,297.50	$0.00	**4129-101**	DW-11
Topical Workshop, Education, and Planning	$25,000.00	$3,159.00	$21,841.00	$0.00	**4129-101**	DW-13
Engineering Review						
Engineering Review	$70,000.00	$14,325.50	$55,674.50	$3,799.00	**4123-101**	DW-13
Project Feasibility Studies						
Emergency Response Plans (communication with cities from 2021 and 2022 efforts)	$15,000.00	$920.00	$14,080.00	$0.00	**4129-101**	DW-19
Kohlman Creek flood damage reduction feasibility study	$75,000.00	$10,445.42	$64,554.58	$7,414.42	**4129-101**	DW-9, KC-2, BELT-3
Kohlman Creek- Wakefield Lake Diversion Planning and Design	$111,600.00	$10,000.50	$101,599.50	$20.50	**4129-101**	DW-9, KC-2, BELT-3
Improvements to County Ditch 17	$5,000.00	$250.00	$4,750.00	$0.00	**4129-101**	DW-9, BELT-3
Improvements to Phalen Village	$5,000.00	$400.00	$4,600.00	$0.00	**4129-101**	DW-9, BELT-3
Ames Lake Technical Assistance and Project Planning with St. Paul	$40,000.00	$1,435.00	$38,565.00	$655.00	**4129-101**	DW-9, BELT-3
Resiliency Study for non-Beltline tributary areas (pre-planning study and evaluation of existing data)	$150,000.00	$17,516.00	$132,484.00	$7,861.00	**4128-520**	DW-9
Evaluate compliance with South Metro Mississippi River TSS TMDL	$2,000.00	$527.00	$1,473.00	$26.00	**4129-101**	MR-2
Owasso Basin area/North Star Estates improvements (with City of Little Canada)	$30,000.00	$15,595.37	$14,404.63	$3,003.00	**4129-101**	GC-3
Street Sweeping	$20,000.00	$9,893.00	$10,107.00	$1,366.50	**4129-101**	DW-6, DW-15
Retrofit Inventory	$20,000.00	$3,138.50	$16,861.50	$1,023.50	**4129-101**	DW-17, DW-20
Wetland Restoration Workshop, Education, and Planning	$5,000.00	$4,375.50	$624.50	$1,469.50	**4129-101**	DW-8, DW-13
Contingency*	$30,000.00				**4129-101**	
GIS Maintenance						
GIS Maintenance	$5,000.00	$0.00	$5,000.00	$0.00	**4170-101**	DW-13
Monitoring Water Quality/Project Monitoring						
Lake Water Quality Monitoring (Misc QA/QC)	$10,000.00	$90.00	$9,910.00	$0.00	**4520-101**	DW-2
Annual WQ Report Assistance	$12,000.00	$3,865.00	$8,135.00	$2,645.50	**4520-101**	DW-2
Special Project BMP Monitoring	$25,000.00	$3,169.50	$21,830.50	$1,990.00	**4520-101**	DW-12
Grass Lake Berm Wetland Monitoring	$12,000.00	$9,480.00	$2,520.00	$7,130.00	**4520-101**	DW-5, DW-8
Battle Creek Monitoring to address TMDL	$15,000.00	$0.00	$15,000.00	$0.00	**4520-101**	DW-1, DW-2
Permit Processing, Inspection and Enforcement						
Permit Application Inspection and Enforcement	$10,000.00	$0.00	$10,000.00	$0.00	**4122-101**	DW-7
Permit Application Review	$59,000.00	$13,781.00	$45,219.00	$3,832.00	**4124-101**	DW-7
Lake Studies/TMDL Reports						
West Vadnais Lake Incorporation	$15,000.00	$75.00	$14,925.00	$0.00	**4661-101**	DW-2
2023 Grant Applications	$40,000.00	$0.00	$40,000.00	$0.00	**4661-101**	DW-13
WMP Updates - Including Implementation Plan Updates if needed	$20,000.00	$0.00	$20,000.00	$0.00	**4661-101**	DW-13
Prioritization of water quality projects from subwatershed feasibility studies	$5,000.00	$39.00	$4,961.00	$0.00	**4661-101**	DW-20
Carver Ponds Internal Load Reduction	$12,000.00	$389.00	$11,611.00	$389.00	**4661-101**	DW-12
Contingency for Lake Studies	$22,500.00	$0.00	$22,500.00	$0.00		
Research Projects						
New Technology Mini Case Studies (average 6 per year)	$15,000.00	$3,925.00	$11,075.00	$1,279.50	**4695-101**	DW-12
Kohlman Permeable Weir Test System - Implement Monitoring Plan	$5,000.00	$150.00	$4,850.00	$0.00	**4695-101**	DW-12
Kohlman Lake Aquatic Plant Management Effects Study	$85,705.00	$5,659.00	$80,046.00	$5,659.00	**4695-101**	DW-12
Shallow Lake Aeration Study	$40,000.00	$2,123.00	$37,877.00	$1,534.50	**4695-101**	DW-12
Project Operations						
2023 Tanners Alum Facility Monitoring	$17,000.00	$570.00	$16,430.00	$30.00	**4650-101**	TaL-3
Phalen/Keller and Twin Operations Support & Communications	$5,000.00	$0.00	$5,000.00	$0.00	**4650-101**	DW-5, DW-13
Lake Level Station Operation and Maintenance (add rain gauges?)	$50,000.00	$0.00	$50,000.00	$0.00	**4650-101**	DW-5
Capital Improvements						
Tanners Outlet	$5,000.00	$0.00	$5,000.00	$0.00	**4128-520**	DW-9
Woodbury Target	$180,000.00	$24,210.50	$155,789.50	$2,209.00	**4128-518**	DW-6
Roosevelt Homes	$77,100.00	$440.00	$76,660.00	$440.00	**4128-518**	DW-6
Targeted Retrofit Projects 2023	$150,000.00	$30,824.81	$119,175.19	$3,509.00	**4128-518**	DW-6
Stewardship Grant Program	$75,000.00	$6,638.50	$68,361.50	$1,294.50	**4682-529**	DW-6
West Industrial Park Berm and associated improvements	$300,000.00	$0.00	$300,000.00	$0.00	**4128-520**	GC-3
Lake Emily Subwatershed BMP	$160,000.00	$137,419.26	$22,580.74	$31,722.50	**4128-518**	LE-3
Pioneer Park Stormwater Reuse	$151,200.00	$45,343.54	$105,856.46	$8,285.00	**4128-518**	DW-6
Double Driveway and Fish Creek Tributary Improvements	$112,200.00	$16,960.23	$95,239.77	$6,673.19	**4129-537**	FC-2
CIP Project Repair & Maintenance						
Routine CIP Inspection and Unplanned Maintenance Identification	$125,000.00	$28,073.34	$96,926.66	$7,185.23	**4128-516**	DW-5
Beltline 5-year Inspection	$15,000.00	$8,318.00	$6,682.00	$2,530.00	**4128-516**	BELT-2
District Inspection Standardization	$0.00	$0.00	$0.00	$0.00	**4128-516**	DW-5
2023 CIP Maintenance and Repairs	$165,000.00	$63,174.90	$101,825.10	$5,429.00	**4128-516**	DW-5

Barr declares under the penalties of Law that this Account, Claim, or Demand is just and that no part has been paid.

$126,887.84

Bradley J. Lindaman, Vice President

Galowitz Olson, PLLC
10390 39th Street North
Lake Elmo, Minnesota 55042
Office: (651) 777-6960
Fax: (651) 777-8937

Ramsey-Washington Metro Watershed District
C/O Tina Carstens
2665 Noel Drive
Little Canada MN 55117

April 20, 2023
File No: 9M

	Balance
General Account	$1,605.00

Stewardship Grant Application Summary

Project Name: Salina **Application Number** 23-12 CS

Board Meeting Date: 5/3/2023

Applicant Name: Erika Salina

Residential ☑ **Commercial/Government** ☐

Project Overview:

This property is located off County Road B East and Kenwood Drive East in the City of Maplewood. The applicant is proposing to install two rain gardens. One will be located in the back yard to help, along with some regrading work, alleviate seasonal flooding issues. The applicant is also proposing to install a curb cut rain garden in the front yard to capture stormwater runoff from the street. Along with water quality and drainage improvements, the applicant is interested in adding native plants to reduce the amount of turf grass on the property and increase pollinator habitat.
The curb cut portion of the project is eligible for 100% coverage and the rain garden work is eligible for 75% coverage for a maximum grant amount of $15,000.

BMP type(s):

Rain Garden(2)

Grant Request:

$15,000.00

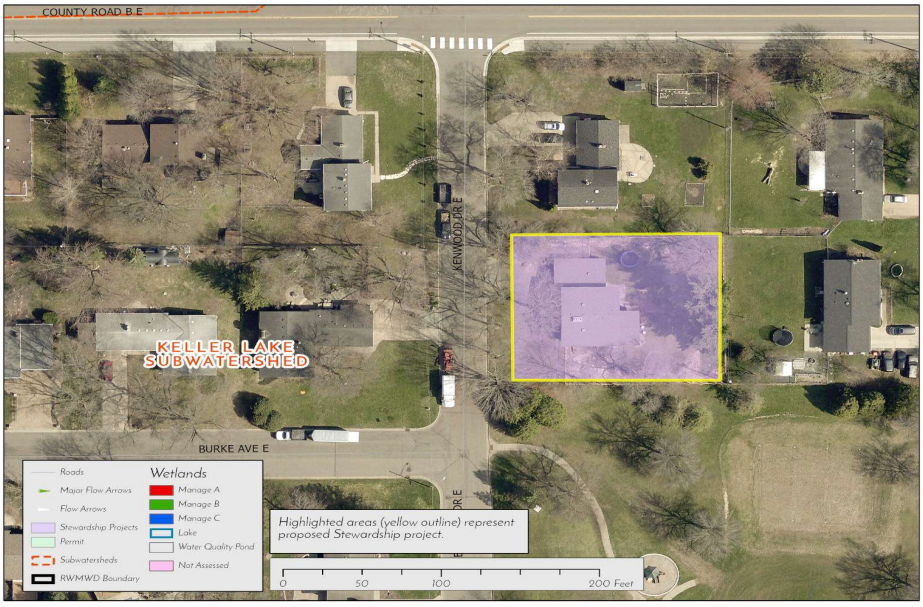
Recommendation:

Staff recommends approval of this application.

Subwatershed:

Keller Lake

Location Maps:



Pollutant Reductions: Curb-Cut Raingarden - Salina				
	Before	After	Reduction	Red. %
Volume (cu-ft/yr)	22,185	4,421	7,928	36%
TSS (lbs/yr)	75.50	15.04	26.98	36%
TP (lbs/yr)	0.416	0.083	0.149	36%

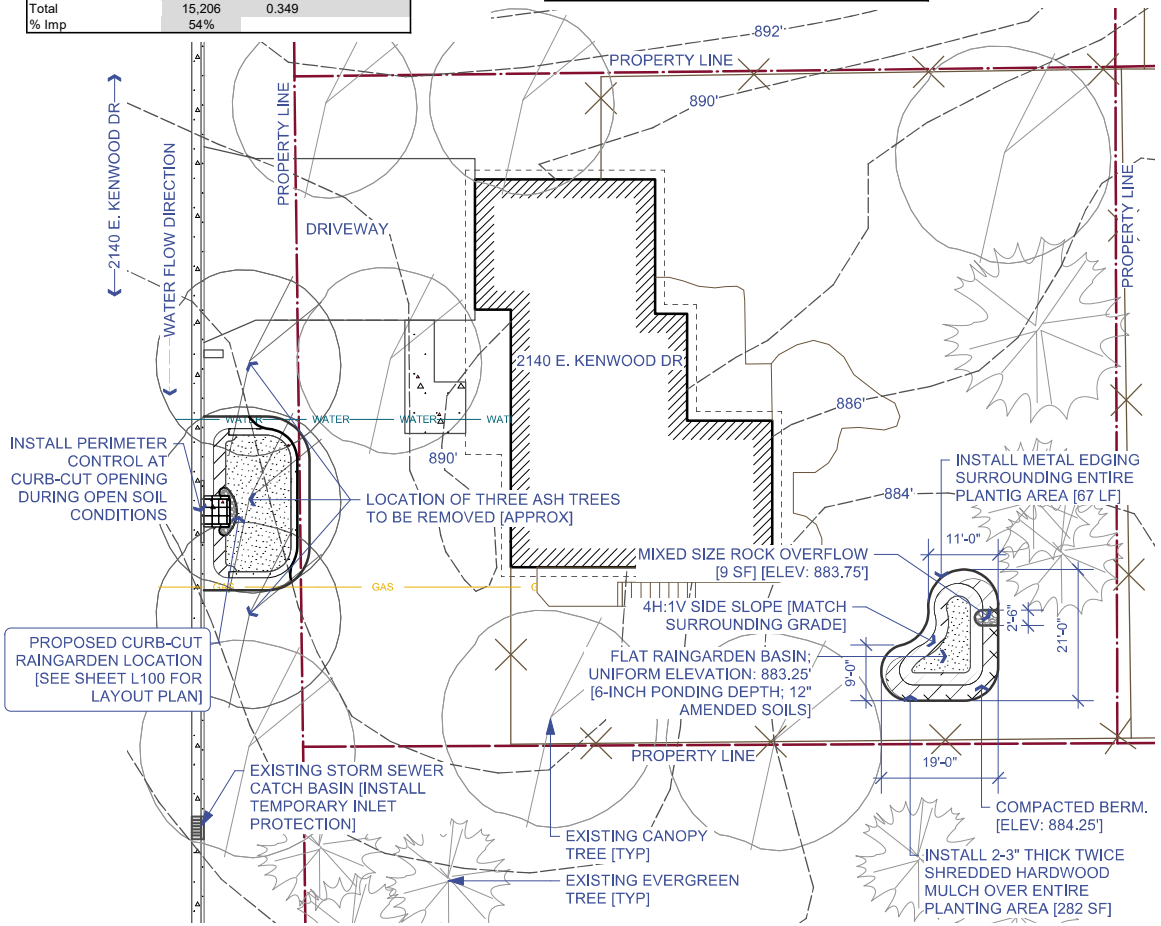
Pollutant Reductions: Backyard Raingarden - Salina				
	Before	After	Reduction	Red. %
Volume (cu-ft/yr)	6,686	4,421	3,390	51%
TSS (lbs/yr)	22.75	15.04	11.50	51%
TP (lbs/yr)	0.125	0.083	0.063	51%

Watershed Data	Curb Cut Raingarden - Salina	
Target Rainfall	0.4	in
Soil Type:	B	HSG:
Soil IR	0.45	in/hr

Surface	Sq-ft	Acre	CN
Road	4,008	0.092	98
Roof	1,572	0.036	98
Sidewalk	226	0.005	98
Driveway	2,425	0.056	98
Turf Grass/Lawn	6,975	0.160	79
Total	15,206	0.349	
% Imp	54%		

Watershed Data	Backyard Raingarden - Salina	
Target Rainfall	0.3	in
Soil Type:	B	HSG:
Soil IR	0.45	in/hr

Surface	Sq-ft	Acre	CN
Roof	1,930	0.044	98
Sidewalk/Patio	212	0.005	98
Turf Grass/Lawn	3,744	0.086	79
Total	5,886	0.135	
% Imp	36%		



GENERAL PROJECT NOTES:

1. CONTRACTOR TO COORDINATE REQUIRED RIGHT OF WAY & GRADING PERMITS WITH CITY OF MAPLEWOOD STAFF, INCLUDING ANY REQUIRED ACCESS ALONG CITY OWNED PARK PROPERTY.
2. CONTRACTOR TO INSTALL ADEQUATE SEDIMENT AND PERIMETER CONTROLS DURING EXCAVATION. (1 INLET PROTECTION, PERIMETER SEDIMENT LOGS, ETC. AS NEDDED)
3. THREE ASH TREES WITHIN THE CITY RIGHT OF WAY TO BE REMOVED TO FACILITATE CURB-CUT RAINGARDEN PROJECT. CONTRACTOR TO VERIFY WITH CITY OF MAPLEWOOD STAFF STATUS OF TREES PRIOR TO PROJECT INSTALLATION.
   TREES TO BE REMOVED (SEE LOCATIONS ON PLAN):
   QTY: 3
   SPECIES: GREEN ASH
   SIZE: ~18" DIAMETER TRUNKS
4. TOTAL CUBIC YARDS OF SOIL EXCAVATION/DISTURBANCE:
   CURB-CUT RAINGARDEN = 36 CY
   BACKYARD RAINGARDEN = 10.75 CY
   TOTAL EXCAVATION = 46.75 CY
5. TOTAL CUBIC YARDS OF IMPORTED SOILS (RAINGARDEN BASIN AMENDED MIX - 80% SAND, 20% LEAF COMPOST)
   CURB-CUT RAINGARDEN = 8 CY
   BACKYARD RAINGARDEN = 2.25 CY
   TOTAL IMPORTED = 10.25 CY
6. CURB-CUT OPENING FOR CURB-CUT RAINGARDEN TO BE MECHANICAL SAW-CUT. TOTAL REMOVAL OF CURB SECTION REQUIRING STREET PATCH IS NOT ALLOWED.

BACKYARD RAINGARDEN NOTES:

1. EXCAVATE RAINGARDEN AREA, LOOSEN UNDERLYING SOILS 6-12", AND INSTALL 1' AMENDED SOILS IN RAINGARDEN BASIN AREA.
2. GRADE OUT FLAT RAINGARDEN BASIN AREA AND 4H:1V SIDE SLOPES.
3. INSTALL COMPACTED BERM SURROUNDING DOWNSLOPE SIDES OF RAINGARDEN TO DIRECT OVERFLOW TO ROCK SWALE. TOP OF BERM TO BE MINIMUM 0.5' ABOVE ROCK OVERFLOW SWALE ELEVATION.
4. INSTALL MIXED SIZE ROCK OVERFLOW SWALE. [2-6" RIVER ROCK OR EQUAL] . INSTALL NON-WOVEN GEOTEXTILE BETWEEN ROCK AND SOIL.
5. INSTALL 3"-THICK TWICE SHREDDED HARDWOOD MULCH OVER ENTIRE RAINGARDEN AREA, PLANT WITH NATIVE SPECIES [SEE PLANTING PLAN]
6. CONTRACTOR TO LOCATE UTILITIES PRIOR TO BEGINNING WORK AND SECURE ANY NECESSARY PERMITS. VERIFY WITH CITY NEED TO ACCESS THROUGH CITY OWNED PARK SPACE IF NECESSARY.
7. CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY PERIMETER & EROSION CONTOL MEASURES DURING ANY SOIL DISTURBANCE PERIODS.
8. CONTRACTOR TO VERIFY ANY REQUIRED CHANGES WITH RCSWCD PRIOR TO INSTALLATION. MAINTAIN SQUARE FEET AND PONDING DEPTH.
9. ELEVATIONS PROVIDED ARE APPROXIMATE, SITE VERIFY FINAL ELEVATIONS TO ENSURE PROPER PONDING DEPTH, OVERLOW, ETC.

RAMSEY COUNTY

RAMSEY COUNTY SWCD
2015 VAN DYKE ST N
MAPLEWOOD, MN 55109
651-266-7280
www.ramseycounty.us

PROJECT: SALINA RESIDENCE
LOCATION:
2140 E. KENWOOD DR
MAPLEWOOD, MN 55119

WATERSHED DISTRICT:
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

DESIGNER: BRIAN T. OLSEN
DATE: 2/27/2023
REVISION:
REVISION:
REVISION:
REVISION:
CHECKED BY:
TAA:

NOTES:
-ELEVATIONS ARE APPROXIMATE
-UTILITY LOCATIONS ARE APPROXIMATE, CONFRIM LOCATIONS PRIOR TO WORK
-CONTRACTOR AQUIRE NECESSARY PERMITS PRIOR TO START
-EXCAVATE WITH TRACKED EQUIPMENT ONLY
-RIP UNDERLYING SOILS 6-12" TO REMOVE COMPACTION
-SIZE AND SHAPE OF RAINGARDEN MAY VARY
-MAINTAIN SQUARE FEET AND PONDING DEPTH
-ORIGINAL SHEET SIZE: 11"x17"

SCALE: 1"=20'-0"

N

SITE PLAN

L000

Stewardship Grant Application Summary

Project Name: Woodlynn Ave Impervious Surface Reduction **Application Number:** 23-13 CS

Board Meeting Date: 5/3/2023

Applicant Name: Jon Jarosch

Residential ☐ **Commercial/Government** ☑

Project Overview:

This project is located on Woodlynn Ave from Ariel St to McKnight Rd. This area was identified by the City of Maplewood as a 2023 pavement rehabilitation project. During the project design phase, it was noted that traffic volumes do not support the need for the existing four lanes of pavement. In an effort to reduce impervious surface, the road will be narrowed from four lanes to two (one in each direction) resulting in the loss of 0.58 acres of impervious surface. Narrowing the roadway will cost about $250,000 more than the original plan due to curb work and additional greenspace restoration. Benefits of street narrowing include less runoff into Kohlman Creek, less maintenance input, less salt use, traffic calming, and increase in green space. This project will not trigger an RWMWD grading permit. This project is located within a priority area and is eligible for 100% funding up to $100,000.

BMP type(s):

Impervious Surface Reduction(1)

Grant Request:

$100,000.00

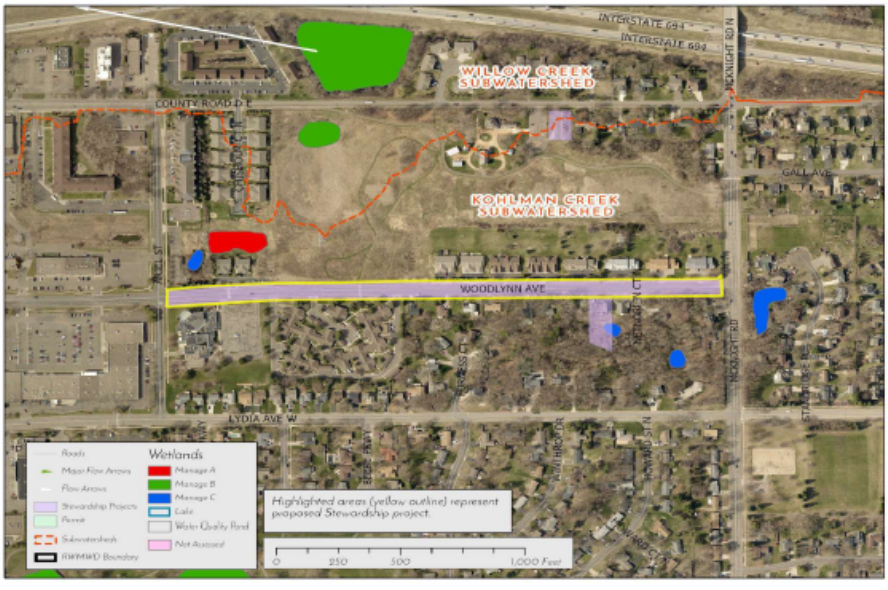
Recommendation:

Staff recommends approval of this application.

Subwatershed:

Kohlman Creek

Location Maps:



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Permit Program

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RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

MEMORANDUM

Date: May 3rd, 2023

To: Board of Managers and Staff

From: Nicole Soderholm, Permit Coordinator
Mary Fitzgerald, District Inspector

Subject: April Enforcement Action Report

During April 2023:

Number of Violations:	**23**
Install/Repair Inlet Protection	4
Install/Maintain Perimeter Control	3
Contain Liquid/Solid Wastes	2
Repair Erosion	1
Install Up-Gradient BMPs	1
Maintain Temporary Sediment Basin	1
Maintain Up-to-Date Inspection Log	4
Sweep Streets	2
Stabilize Exposed Soils	1
Maintain/Protect Permanent BMPs	3
Dewatering Issue	1

Activities and Coordination Meetings:

Active permit site monitoring and inspections, permitting assistance to private developers and public entities, Wetland Conservation Act (WCA) administration/procedures, new permit review with Barr Engineering, TAC rule change process, preconstruction meetings, Hillcrest wetland buffer meeting, Maplewood street project meeting, Water Workforce meeting, stewardship grant inspections check-in, website accessibility webinar, U of M class green infrastructure presentation by RWMWD staff, MECA stormwater webinar, illicit discharge inspection, BMP Inspector Intern onboarding and training

Welcome to BMP Inspector intern Nicole Peterson, who will be joining us for the 2023 field season!

Single Lot Residential Permits Approved by Staff:

None

Permits Closed:

None

Project Updates:

#22-07 North St. Paul 2022 SIP

Street improvements are underway along 7th Avenue East and 4th Avenue East in the city of North St. Paul. Staff scheduled an initial erosion control walkthrough with contractors on Friday, April 21st. During the walkthrough, staff discovered dewatering operations discharging sediment-laden water directly into storm sewer. Staff required all pumping operations to immediately stop. After pumping operations stopped, staff explained dewatering discharge requirements with site contractors. Staff walked to the ultimate outlet location of the storm sewer pipe at a nearby pond and did not locate any sediment plums from the site's dewatering operations, likely because pumping only occurred for a very short time before being discovered.

Staff required contractors to improve dewatering filtering methods prior to pumping resuming. Staff requested submittals of new dewatering operations, as well as proof of frequent monitoring and sampling of discharge. Staff checked back with the site on April 25th for updates. Contractors confirmed with staff that they ended up letting the area settle over the weekend, and most water ended up infiltrating on its own, so no additional pumping was needed. Staff will continue to inspect the site on a regular basis, and require any dewatering activity to be monitored and proof of clean discharge submitted.

#22-18 Battle Creek Park Improvements (St. Paul)

With most lingering snow on its way out, staff conducted a spring inspection on April 13th at Battle Creek Park West (near the Recreation Center) to see how the site faired over winter. As a reminder, substantial work at this site was completed in fall, with stabilization installed in the fall months. During the spring inspection, staff found erosion issues, likely occurring from a large snowpack melt, in conjunction with recent rain events. Staff noted that no offsite or wetland impacts had occurred, but that repairs to the new permanent BMP (wet pond with filtration bench) and sledding hill would be needed quickly. The site confirmed with staff that repair work was identified, and designs underway to

fix erosion issues and ensure they wouldn't occur in these same areas again in the future. Staff will continue to inspect this site through the growing season to monitor repairs and vegetation establishment.

#22-10 Reuter Walton Apartments (Little Canada)

Staff conducted a routine inspection on April 6th at the future apartment site in Little Canada off of Twin Lake Boulevard. Quite a bit of snow still lingered on the edges of the site, but staff were able to determine that most perimeter control silt fence seemed to be damaged from snow and snowplowing operations. In addition to perimeter control repairs, the site needed construction entrance maintenance and better masonry waste management (staff observed waste spilled onto exposed soil). Site contractors confirmed repairs would be underway immediately. Staff reinspected the site on April 21st and found all perimeter control silt fence to be repaired and functional, entrances maintained, and hazardous materials properly managed. Due to wet site conditions, frequent site entrance maintenance will be needed to prevent sediment track-out, as well as sweeping utilized when track-out occurs. Staff will continue biweekly inspections through the duration of the project.

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Stewardship Grant Program

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Stewardship Grant Program Budget Status Update

May 3, 2023

Homeowner	Coverage	Number of Projects: 6	Funds Allocated
Habitat Restoration and rain garden w/o hard surface drainage	50% Cost Share $15,000 Max	3	$2,110**
Rain garden w/hard surface drainage, pervious pavement, green roof	75% Cost Share $15,000 Max	3	$34,570* **
Master Water Steward Project	100% Cost Share $15,000 Max	0	$0
Shoreland Restoration	100% Cost Share $15,000 Max	0	$0

Commercial, School, Government, Church, Associations, etc.	Coverage	Number of Projects: 8	Funds Allocated
Habitat Restoration	50% Cost Share $15,000 Max	1	$4,065
Shoreland Restoration (below 100-year flood elevation w/actively eroding banks)	100% Cost Share $100,000 Max	1 (Lake Owasso Ph 2)	$97,592*
Priority Area Projects	100% Cost Share $100,000 Max	3	$191,000*
Non-Priority Area Projects	75% Cost Share $50,000 Max	0	$0
Public Art ($50,000 Reserved)	50% Cost Share $15,000 Max/Project	3	$4,500**
Aquatic Veg Harvest/LVMP Development	50% Cost Share $15,000 Max	0	$0
Enhanced Street Sweeping ($128,000 Reserved)	Grant Recipients and Amounts to be Set at Future Meeting	0	$0

Maintenance	50% Cost Share $7,500 Max for 5 Years	67	$46,250
Consultant Fees			$23,463
Total Allocated			**$403,550**

**includes funds to be approved at the May 3, 2023 board meeting*
***includes staff approvals since previous board meeting*

2023 Stewardship Grant Program Budget	
Budget	$1,128,000
Total Funds Allocated	$403,550
Total Available Funds	**$724,450**

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Action Items

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Request for Board Action

Board Meeting Date: May 3, 2023 **Agenda Item No:** 7A

Preparer: Tina Carstens, Administrator
Paige Ahlborg, Watershed Project Manager

Item Description: Lake Owasso Shoreline Restoration Phase 2 Project Bid Award

Background:
This project involves the shoreline buffer restoration of 6 residential properties along the Lake Owasso shoreline. Combined, the total restoration area is approximately 0.44 acres, with individual sites ranging from 365 square feet to 10,230 square feet, with an average project size of 3,198 square feet.

Last month the board reviewed the project documents and directed staff to go out for bid. The estimate of probable cost for this project was $125,178. Bids were received on April 25, 2023. Four bids were received as shown in the table below. We have worked with all four contractors in various capacities recently. District staff feels comfortable with a recommendation to award the contract to the low bidder based on a thorough review of the bid documents which included narratives of project understanding, general approaches and process overview.

Contractor Name	Base Bid Amount	Order
Sandstrom Land Management	$97,591.50	1
Davey Resource Group, Inc	$99,191.00	2
RES Great Lakes, LLC	$103,836.55	3
Landbridge Ecological, Inc	$119,499.95	4

Applicable District Goal and Action Item:

Goal: Achieve healthy ecosystems- The District will manage water and related natural resources to create and preserve healthy ecosystems.

Action Items: Lead ecological restoration projects to improve water resources and associated upland habitat.

Staff Recommendation:
Staff recommends the board award the project to Sandstrom Land Management.

Financial Implications:
The Lake Owasso Shoreline Restoration Project budget is included in the 2023 Stewardship Grant Program budget.

Board Action Requested:
Accept the bids and award the Lake Owasso Shoreline Restoration Phase 2 Project to Sandstrom Land Management. Direct staff to prepare and mail the notice of award, prepare the agreements, and review the required submittals.

Request for Board Action

Board Meeting Date: May 3, 2023 **Agenda Item No:** 7B

Preparer: Tina Carstens, Administrator
Paige Ahlborg, Project Manager

Item Description: 2023 Targeted Retrofit Project Bid Award – Arbogast Underground Stormwater Filter

Background:
At the April 2023 meeting, the board was presented with the plans and cost estimate for the 2023 Targeted Retrofit Project for Arbogast Underground Stormwater Filter. The board directed staff to finalize the design and bidding documents and solicit bid proposals. The engineer's opinion of probable cost for this projects was $723,000.

This project is planned through our Targeted Retrofit program and will be funded partially through this project fund as well as the Watershed Based Implementation Funding (WBIF) we are receiving from BWSR through the Clean Water Fund allocations to metro watersheds. That funding allocation is $140,295. We also have Stormwater Impact Funds available in this subwatershed and will allocate $27,121.50 to this project from that fund.

This bid opening is planned for Monday, May 1, 2023. The results will be shared with the board at the meeting on May 3, 2023. The managers should consider awarding the project to the lowest responsive and responsible bidder.

Applicable District Goal and Action Item:

Goal: Achieve quality surface water – The District will maintain or improve surface water quality to support healthy ecosystems and provide the public with a wide range of water-based benefits.

Action Item: Implement retrofit water quality improvement projects.

Staff Recommendation:
Staff recommends the board award the project to the recommended responsive and responsible bidder.

Financial Implications:
This project will be funded in the amount of $140,295 through Clean Water WBIF and $27,121.50 from the Stormwater Impact Fund. The remaining amount will come from the district's Targeted Retrofit Fund where there are sufficient funds available.

Board Action Requested:
Accept the bids and award the 2023 Targeted Retrofit project to _____. Direct staff to prepare and mail the notice of award and prepare the agreements, and review the required submittals.

Request for Board Action

Board Meeting Date: May 3, 2023 **Agenda Item No:** 7C

Preparer: Tina Carstens, Administrator

Item Description: Adding Additional Holidays to the District Holiday Schedule

Background:
The district has a paid holiday schedule that includes ten observed holidays throughout the year as shown in the 2023 list below.

Monday, January 2 – New Year's Day
Monday, January 16 – Martin Luther King Day
Monday, February 20 – Presidents' Day
Monday, May 29 – Memorial Day
Tuesday, July 4 – Independence Day
Monday, September 4 – Labor Day
Friday, November 10 – Veterans Day
Thursday, November 23 – Thanksgiving Day
Friday, November 24 – Day after Thanksgiving Day
Monday, December 25 – Christmas Day

In 2021, the federal government added the Juneteenth holiday to be observed on June 19 of each year. The State of Minnesota also designated Juneteenth as a state holiday in February of 2023. Many government agencies, local governments, and private companies have added Juneteenth to their holiday schedule and I would recommend that we do the same starting this year on June 19, 2023.

In reviewing the federal and state holidays along with the Minnesota local government holiday list, I noted that many have also included Indigenous Peoples' Day on the second Monday of October as an observed holiday. I would like to propose that we also include this day on our holiday schedule.

Adding these two days would keep us consistent with the federal holiday designations which is a good rule of thumb to keep in line with.

Applicable District Goal and Action Item:

Goal: Manage organization effectively – Operate in a manner that achieves the District's mission while adhering to its core principles.

Action Item: Creative a positive work environment for staff by offering competitive salaries and benefits as well as opportunities for professional growth.

Staff Recommendation:
Staff recommends the board add Juneteenth and Indigenous Peoples' Day to the District holiday schedule to stay consistent with federal holiday designations.

Financial Implications:
None.

Board Action Requested:
Add Monday, June 19, 2023 (Juneteenth) and Monday, October 9, 2023 (Indigenous Peoples' Day) to the District holiday schedule and include them in subsequent years.

Request for Board Action

Board Meeting Date: May 3, 2023 **Agenda Item No:** 7D

Preparer: Tina Carstens, Administrator

Item Description: Review and Accept the 2022 District Annual Financial Audit

Background:
The District is required by law to complete and file an annual audit of the District's financial records. A final audit report is enclosed for your review. The auditor has also prepared an audit management letter that serves as an easier way to understand a summary of the audit. The audit will be sent to the State Auditor as well as the Board of Water and Soil Resources as required. The audit will also be available on the district website.

The audit gives the District a clean opinion, the highest opinion you can receive. There were no changes to our financial management recommended.

Applicable District Goal and Action Item:

Goal: Manage organization effectively – Operate in a manner that achieves the District's mission while adhering to its core principles.

Action Item: Maintain financial solvency and accountability.

Staff Recommendation:
Accept the 2022 Annual Audit Report.

Financial Implications:
None.

Board Action Requested:
Accept the 2022 Annual Audit Report.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

AUDIT MANAGEMENT LETTER

DECEMBER 31, 2022

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To the Board of Managers
Ramsey-Washington Metro Watershed District
Little Canada, Minnesota

We have completed our audit of the Ramsey-Washington Metro Watershed District (the District) for the year ended December 31, 2022. In conjunction with that audit, we present this management letter on matters relating to the financial operations of the District. We offer this report as an additional analytical perspective for the Board of Managers in monitoring the financial position and operations of the accounts and funds of the District. This report also contains required communications to those charged with governance.

Several reports are issued in conjunction with the audit. A summary is as follows:

- Opinion on Financial Statements – unmodified (clean) opinion
- Report on Internal Control – no internal control findings
- Minnesota Legal Compliance Report – no compliance findings

Thank you for the opportunity to serve the District. We are available to discuss this report with you.

Redpath and Company, Ltd.

REDPATH AND COMPANY, LTD.
St. Paul, Minnesota

April 26, 2023

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Cash and Investments

Cash and investment balances at December 31, 2022 and 2021 were as follows:

Fund	December 31, 2022	December 31, 2021	Increase (Decrease)
General	$3,889,781	$3,747,934	$141,847
Debt Service Funds:			
General Obligation Bonds	562,589	943,722	(381,133)
Capital Project Funds:			
Stormwater Impact Fund	363,688	314,817	48,871
Capital Projects CIB	8,888,957	7,454,398	1,434,559
Total	$13,705,015	$12,460,871	$1,244,144

Investment income totaled $184,154 for the year ended December 31, 2022 as compared to $1,527 for the year ended December 31, 2021. The increase is due to higher interest rates on the District's investments realized in the second half of the year. As of December 31, 2022, the District's funds were earning 3.93%.

Taxes Receivable

Taxes receivable at December 31, 2022 and 2021 consisted of the following:

	December 31, 2022	December 31, 2021	Increase (Decrease)
Delinquent	$96,075	$80,985	$15,090
Due from County	42,466	90,005	(47,539)
Total	$138,541	$170,990	($32,449)

Delinquent taxes receivable represent the balance of property taxes levied for collection in 2016 through 2022, but which remained unpaid by the property owner as of December 31, 2022. This uncollected portion of property taxes is also classified as unavailable revenue and is not part of fund balance at year-end. Accounting standards related to revenue recognition for governments require revenue to be both measurable and available. Delinquent property taxes are not considered to be available.

Due from County taxes receivable consist of amounts collected by Ramsey County and Washington County during November and December of 2022, but not remitted to the District until January 2023. Such amounts are included in fund balance at year-end.

The District's overall property tax collection rate was 99.5% for the year ended December 31, 2022. The following table details the District's 2022 levy and collections:

	Ramsey & Washington Counties
Total levy (pay 2022)	$6,735,000
2022 collections:	
July 2022 collections	3,486,804
December 2022 collections	3,170,333
January 2023 collections	42,467
Total collections - 2022	$6,699,604
Collection percentage - current and delinquent	99.5%

Fund Balance – All Funds

Fund balance represents the net current assets of each fund (i.e., cash plus receivables minus liabilities).

The District's funds are all governmental type funds. Governmental type funds are accounted for using the current financial resources measurement focus. With this measurement focus, only current assets and current liabilities generally are included on the balance sheet.

At December 31, 2022 and 2021, fund balance of the District was as follows:

Fund	December 31, 2022	December 31, 2021	Increase (Decrease)
General	$2,240,112	$2,382,780	($142,668)
Debt Service Funds:			
General Obligation Bonds	562,589	944,949	(382,360)
Capital Project Funds:			
Stormwater Impact Fund	363,688	309,837	53,851
Capital Projects CIB	8,804,649	7,345,231	1,459,418
Total	$11,971,038	$10,982,797	$988,241

General Fund

The fund balance of the General Fund decreased by $142,668 during the year. Statement 6 of the Annual Financial Report details the General Fund budget versus actual operating results. A summary is presented below:

Budgeted change in fund balance		($1,000,000)
Actual revenue over (under) budgeted revenue:		
Property taxes	($16,792)	
Intergovernmental	11,030	
Investment income	34,322	
Permit escrow fees	(4,370)	
Refunds, reimbursements and other	44,553	
		68,743
Actual expenditures (over) under budget:		
Engineering	47,327	
Salaries/payroll taxes/benefits	23,678	
Watershed programs	271,424	
All other (net)	446,160	788,589
Net change in fund balance		($142,668)

For watershed programs, positive expenditure budget variances included project feasibility studies ($82,587), lake studies/WRAPS/TMDL ($81,180), and research projects ($68,796). Other positive expenditure budget variances included office equipment and maintenance ($173,249) and project operations ($61,075).

Intergovernmental Revenue

Intergovernmental grants and aids, and cost sharing agreement revenue (in all funds) in 2022 include the following:

Met Council WOMP grant	$9,000
Other	2,030
Total intergovernmental revenue	$11,030

Stormwater Impact Payments

Stormwater impact payment revenue totaled $49,113 for the year ended December 31, 2022 as compared to $44,539 for the year ended December 31, 2021.

Pension Liability

GASB Statement No. 68 requires the District to report its proportionate share of PERA's net pension liability. During 2022, the District's share of PERA's net pension liability increased by $544,333 to $1,227,605. The District paid its required contribution of $88,727 to the Plan, which was equal to 7.5% of eligible wages. The District is not obligated to "pay off" the net pension liability.

103.B Levy Authority

The District levies taxes under the authority of Minnesota Statute 103B.241. As such, the District's General Fund is not limited by the $250,000 tax levy authorized in Minnesota Statute 103D. The District no longer employs Special Revenue Funds to account for maintenance and projects and instead levies for all non-CIB Fund projects out of the General Fund. Minnesota Statute 103B.241 Subd.1 reads in part as follows:

> ***103B.241 LEVIES***
>
> *Subdivision 1.* ***Watershed plans and projects****. Notwithstanding chapter 103D, a local government unit or watershed management organization may levy a tax to pay the increased costs of preparing a plan under sections 103B.231 and 103B.235 or for projects identified in an approved and adopted plan necessary to implement the purposes of section 103B.201. The proceeds of any tax levied under this section shall be deposited in a separate fund and expended only for the purposes authorized by this section. Watershed management organizations and local government units may accumulate the proceeds of levies as an alternative to issuing bonds to finance improvements.*

General Fund Balance

The fund balance of the General Fund for the past ten years is as follows:

Year Ended December 31	Amount	Increase (Decrease)
2013	$1,725,348	$362,014
2014	2,211,684	486,336
2015	2,901,187	689,503
2016	3,420,562	519,375
2017	4,329,905	909,343
2018	4,464,553	134,648
2019	4,633,167	168,614
2020	4,364,964	(268,203)
2021	2,382,780	(1,982,184)
2022	2,240,112	(142,668)

The District sets the General Fund tax levy and budgets expenditures at a level consistent with the District's reserve balance policy. In 2022, the District's final budget reflected a decrease of $1,000,000 in General Fund reserves. Actual reserves decreased by $142,668 as detailed previously. In comparison, during 2021 the District budgeted to use $1,753,125 of General Fund reserves while actual usage of reserves was $1,982,184.

The District budget includes a higher level of program activity in the General Fund, and as such requires a levy. Schedules and completion of projects is variable and often results in carryover fund balances and unspent levy amounts. These program funds are generally spent in the following budget year if not spent in the current budget year. Excess budget balances are considered in the following year levy/budget process to reduce ensuing year tax levies by spending down available fund balances. Past management reports have discussed the purposes and benefits of maintaining adequate cash flow reserve balances. A summary of these purposes and benefits is as follows:

1. Cash flow reserve. The District receives revenue from property taxes primarily in December and July. The District, however, incurs expenditures throughout the year. Timing differences in the receipt of property taxes should be compensated for with adequate operating reserves. The District targets 50% of the ensuing year's expenditure budget as the end of year minimum unassigned fund balance. The unassigned balance at December 31, 2022 was $2,219,534 or 51% of the ensuing year's expenditure budget.
2. Emergency and/or unanticipated expenditures. Operating budgets are estimates only. The District requires a surplus to finance unforeseen events. One method of measuring the amount of this type of surplus is to use a percent of the District's annual operating budget (i.e., 10% to 15% or more, depending upon the budget philosophy of the District).
3. Preliminary project funding. Feasibility studies of potential projects require financing. The District does receive such preliminary funding for certain projects. Other minor projects may be more efficiently funded through available reserves.

CIB Authority

This fund was established to account for the Capital Improvement Budget (CIB) process of the District. A summary of financial activity of this fund from inception is presented in Exhibit 2 of the Annual Financial Report.

Under the authorities provided by State Statute 103B.241, the District is authorized to levy ad valorem taxes for the purposes of financing the CIB projects. The District has levied the following amounts for CIB projects over the past ten years:

Collectible Year	CIB Levy Certified
2013	$2,268,479
2014	2,945,481
2015	3,513,200
2016	3,839,885
2017	3,205,383
2018	3,859,885
2019	3,754,885
2020	4,211,885
2021	3,962,337
2022	3,540,000

These levies have financed the CIB projects of the District as well as debt service payments on the Certificates of Participation (paid off February 1, 2020). A summary of the District's ad valorem tax levies is presented in Exhibit 1 of the Annual Financial Report. Additionally, a breakdown of the District's CIB Fund levy by project is presented in Exhibit 2 of the Annual Financial Report.

Long-Term Debt

As of December 31, 2022, the District has the following outstanding long-term debt:

- General Obligation Minnesota Public Facilities Authority (MPFA) Loan of 2012
  - December 31, 2022 balance is $439,000, matures in 2027
- General Obligation Drainage Bonds of 2016A
  - December 31, 2022 balance is $2,710,000, matures in 2032

The schedules of indebtedness and deferred tax levies associated with the District's long-term debt are presented in Exhibits 3 and 4 of the Annual Financial Report.

The District has a General Obligation Bonds debt service fund to account for activity associated with the G.O. MPFA Loan and the G.O. Drainage Bonds. Fund balance decreased from $944,949 at December 31, 2021 to $562,589 at December 31, 2022.

During 2019, the District tranferred $863,674 of excess project funds into the General Obligation Bonds fund. During 2020, $304,813 of these funds were used to pay the 2016A debt service requirements in lieu of levying property taxes. During 2022, $393,041 of the funds were used to pay debt service requirements in lieu of levying property taxes.

The District is also planning to fund its 2023 debt service requirements with available fund balance, but should levy for debt service in 2024 unless an other financing source is identified.

COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE

We have audited the financial statements of the governmental activities and each major fund of Ramsey-Washington Metro Watershed District (the District) for the year ended December 31, 2022. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated March 13, 2023. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Matters

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the District are described in Note 1 to the financial statements. Effective January 1, 2022, the District adopted new accounting guidance, Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*. However, the District currently has no material leases that fall within the scope of GASB Statement No. 87 and therefore, implementation of the standard had no effect on the financial statements. We noted no transactions entered into by the District during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected.

The most sensitive estimates affecting the financial statements are estimates used to calculate the net pension liability, the pension related deferred outflows and inflows of resources and pension expense. These estimates are based on actuarial studies. We evaluated the key factors and assumptions used to develop these estimates in determining that they are reasonable in relation to the financial statements taken as a whole.

Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. Determining sensitivity is subjective, however, we believe the disclosures most likely to be considered sensitive are Note 7 – Long-Term Debt.

The financial statement disclosures are neutral, consistent and clear.

Difficulties Encountered in Performing the Audit

We encountered no difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. There were no uncorrected misstatements that have an effect on our opinion on the financial statements. The uncorrected misstatements or the matters underlying them could potentially cause future period financial statements to be materially misstated, even though, in our judgment, such uncorrected misstatements are immaterial to the financial statements under audit. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated April 26, 2023.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the District's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the District's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to the budgetary comparison schedule and the schedules of pension information which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the individual fund financial statements, which accompany the financial statements but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

We were not engaged to report on the introductory and other information sections, which accompany the financial statements but are not RSI. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Other Reports

Various reports on compliance and internal controls are contained in the Other Required Reports section of the audited financial statements document.

Restriction on Use

This information is intended solely for the information and use of the Board of Managers and management of Ramsey-Washington Metro Watershed District and is not intended to be, and should not be, used by anyone other than these specified parties.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

ANNUAL FINANCIAL REPORT

DECEMBER 31, 2022

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RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
TABLE OF CONTENTS

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INTRODUCTORY SECTION

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RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
ORGANIZATION
December 31, 2022

	Term Expires
Managers:	
Lawrence Swope - President	February 23, 2023
Dianne Ward - Vice President	February 23, 2023
Val Eisele - Treasurer	February 23, 2024
Pamela Skinner - Secretary	February 23, 2024
Matt Kramer - Manager	February 23, 2025
Administrator:	
Tina Carstens	Appointed

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FINANCIAL SECTION

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INDEPENDENT AUDITOR'S REPORT

To the Board of Managers
Ramsey-Washington Metro Watershed District
Little Canada, Minnesota

Report on the Audit of the Financial Statements

Opinions

We have audited the accompanying financial statements of the governmental activities and each major fund of Ramsey-Washington Metro Watershed District, as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise Ramsey-Washington Metro Watershed District's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of Ramsey-Washington Metro Watershed District, as of December 31, 2022, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of Ramsey-Washington Metro Watershed District and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Report on Summarized Comparative Information

We have previously audited Ramsey-Washington Metro Watershed District's 2021 financial statements, and we expressed unmodified audit opinions on the respective financial statements of the governmental activities and each major fund in our report dated May 24, 2022. In our opinion, the summarized comparative information presented herein as of and for the year ended December 31, 2021 is consistent, in all material respects, with the audited financial statements from which it has been derived.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about Ramsey-Washington Metro Watershed District's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of Ramsey-Washington Metro Watershed District's internal control. Accordingly, no such opinion is expressed.

- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about Ramsey-Washington Metro Watershed District's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the budgetary comparison schedule and the schedules of pension information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Management has omitted the management’s discussion and analysis that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Our opinions on the basic financial statements are not affected by this missing information.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise Ramsey-Washington Metro Watershed District's basic financial statements. The accompanying individual fund financial statements are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the individual fund financial statements are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the introductory and other information sections but does not include the basic financial statements and our auditor's report thereon. Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Redpath and Company, Ltd.

REDPATH AND COMPANY, LTD.
St. Paul, Minnesota

April 26, 2023

BASIC FINANCIAL STATEMENTS

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
STATEMENT OF NET POSITION **Statement 1**
December 31, 2022
With Comparative Totals For December 31, 2021

	Primary Government	
	Governmental Activities	
	2022	2021
Assets:		
Cash and investments	$13,705,015	$12,460,871
Accounts receivable	15,708	-
Due from other governmental units	108,535	336,987
Property taxes receivable:		
Delinquent	96,075	80,985
Due from county	42,466	90,005
Prepaid items	20,578	16,836
Capital assets - net of accumulated depreciation:		
Depreciable	13,799,590	13,227,703
Nondepreciable	421,581	1,276,412
Total assets	28,209,548	27,489,799
Deferred outflows of resources related to pensions	428,130	592,381
Liabilities:		
Accounts payable	169,371	96,349
Salaries payable	37,168	34,559
Due to other governmental units	94,614	216,173
Escrow deposits payable	1,590,899	1,323,914
Retainage payable	29,212	31,907
Accrued interest payable	27,740	29,815
Compensated absences payable:		
Due within one year	102,622	92,870
Due in more than one year	32,976	40,056
Unamortized bond premium	47,783	53,044
Bonds payable:		
Due within one year	330,000	323,000
Due in more than one year	2,819,000	3,149,000
Net pension liability:		
Due in more than one year	1,227,605	683,272
Total liabilities	6,508,990	6,073,959
Deferred inflows of resources related to pensions	39,808	630,813
Net position:		
Net investment in capital assets	13,782,171	13,982,115
Unrestricted	8,306,709	7,395,293
Total net position	$22,088,880	$21,377,408

The accompanying notes are an integral part of these financial statements.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
STATEMENT OF ACTIVITIES
For The Year Ended December 31, 2022
With Comparative Totals For The Year Ended December 31, 2021

Statement 2

Functions/Programs	Expenses	Program Revenues: Charges For Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position Primary Government Totals: 2022	Net (Expense) Revenue and Changes in Net Position Primary Government Totals: 2021
Primary government:						
Governmental activities:						
General government	$2,827,235	$59,743	$ -	$ -	($2,767,492)	($2,391,115)
Programs	797,088	-	16,389	-	(780,699)	(407,387)
Projects	3,052,929	-	470,782	-	(2,582,147)	(3,177,694)
Interest on long-term debt	62,705	-	-	-	(62,705)	(68,526)
Total governmental activities	$6,739,957	$59,743	$487,171	$0	(6,193,043)	(6,044,722)
General revenues:						
Property taxes					6,714,694	6,741,624
Unrestricted investment earnings					184,154	1,527
Miscellaneous other					5,667	3,600
Total general revenues					6,904,515	6,746,751
Change in net position					711,472	702,029
Net position - January 1					21,377,408	20,675,379
Net position - December 31					$22,088,880	$21,377,408

The accompanying notes are an integral part of these financial statements.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2022
With Comparative Totals For December 31, 2021

Statement 3

	General Fund	General Obligation Bonds	Stormwater Impact Fund	Capital Projects CIB	Total Governmental Funds 2022	Total Governmental Funds 2021
Assets:						
Cash and investments	$3,889,781	$562,589	$363,688	$8,888,957	$13,705,015	$12,460,871
Accounts receivable	-	-	-	15,708	15,708	-
Due from other governmental units	4,659	-	-	103,876	108,535	336,987
Due from other funds	-	-	-	-	-	2,593
Property taxes receivable:						
Delinquent	34,183	5,611	-	56,281	96,075	80,985
Due from county	20,145	-	-	22,321	42,466	90,005
Prepaid items	20,578	-	-	-	20,578	16,836
Total assets	$3,969,346	$568,200	$363,688	$9,087,143	$13,988,377	$12,988,277
Liabilities:						
Accounts payable	$52,987	$ -	$ -	$116,384	$169,371	$96,349
Salaries payable	37,168	-	-	-	37,168	34,559
Due to other governmental units	13,997	-	-	80,617	94,614	216,173
Due to other funds	-	-	-	-	-	2,593
Escrow deposits payable	1,590,899	-	-	-	1,590,899	1,323,914
Retainage payable	-	-	-	29,212	29,212	31,907
Total liabilities	1,695,051	0	0	226,213	1,921,264	1,705,495
Deferred inflows of resources:						
Unavailable revenue	34,183	5,611	-	56,281	96,075	299,985
Fund balance:						
Nonspendable	20,578	-	-	-	20,578	16,836
Restricted	-	562,589	-	-	562,589	944,949
Assigned	-	-	363,688	8,804,649	9,168,337	7,655,068
Unassigned	2,219,534	-	-	-	2,219,534	2,365,944
Total fund balance	2,240,112	562,589	363,688	8,804,649	11,971,038	10,982,797
Total liabilities, deferred inflows of resources, and fund balance	$3,969,346	$568,200	$363,688	$9,087,143	$13,988,377	$12,988,277
Fund balance reported above					$11,971,038	$10,982,797
Amounts reported in the statement of net position are different because:						
Capital assets are not financial resources and, therefore, are not reported in the funds.					14,221,171	14,504,115
Other long-term assets are not available to pay for current period expenditures and, therefore, are reported as unavailable revenue in the funds.					96,075	299,985
Deferred outflows of resources related to pensions are not current financial resources and, therefore, are not reported in the funds.					428,130	592,381
Long-term liabilities are not due and payable in the current period and, therefore, are not reported in the funds. Long-term liabilities at year end consist of:						
Bonds payable					(3,149,000)	(3,472,000)
Unamortized bond premium					(47,783)	(53,044)
Accrued interest payable					(27,740)	(29,815)
Compensated absences payable					(135,598)	(132,926)
Net pension liability					(1,227,605)	(683,272)
Deferred inflows of resources related to pensions are associated with long-term liabilities that are not due and payable in the current period and, therefore, are not reported in the funds.					(39,808)	(630,813)
Net position (Statement 1)					$22,088,880	$21,377,408

The accompanying notes are an integral part of these financial statements.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
STATEMENT OF REVENUES, EXPENDITURES AND
CHANGES IN FUND BALANCE
GOVERNMENTAL FUNDS
For The Year Ended December 31, 2022
With Comparative Totals For The Year Ended December 31, 2021

Statement 4

	General Fund	General Obligation Bonds	Stormwater Impact Fund	Capital Projects CIB	Total Governmental Funds	
Revenues:					2022	2021
General property taxes	$3,178,208	$ -	$ -	$3,521,396	$6,699,604	$6,736,927
Intergovernmental - grants	11,030	-	-	-	11,030	175,710
Stormwater impact payment	-	-	49,113	-	49,113	44,539
Investment income	54,322	10,681	4,738	114,413	184,154	1,527
Permit escrow fees	10,630	-	-	-	10,630	25,595
Refunds and reimbursements	38,886	-	-	650,896	689,782	107,774
Other	5,667	-	-	-	5,667	3,600
Total revenues	3,298,743	10,681	53,851	4,286,705	7,649,980	7,095,672
Expenditures:						
Current:						
General government	2,621,552	-	-	-	2,621,552	2,327,340
Programs	793,076	-	-	-	793,076	582,131
Capital outlay	26,783	-	-	-	26,783	140,784
Construction/projects	-	-	-	2,827,287	2,827,287	4,801,562
Debt service:						
Principal	-	323,000	-	-	323,000	322,000
Interest and fiscal agent fees	-	70,041	-	-	70,041	75,796
Total expenditures	3,441,411	393,041	0	2,827,287	6,661,739	8,249,613
Revenues over (under) expenditures	(142,668)	(382,360)	53,851	1,459,418	988,241	(1,153,941)
Other financing sources (uses):						
Transfers in	-	-	-	-	-	1,675,699
Transfers out	-	-	-	-	-	(1,675,699)
Total other financing sources (uses)	0	0	0	0	0	0
Net change in fund balance	(142,668)	(382,360)	53,851	1,459,418	988,241	(1,153,941)
Fund balance - January 1	2,382,780	944,949	309,837	7,345,231	10,982,797	12,136,738
Fund balance - December 31	$2,240,112	$562,589	$363,688	$8,804,649	$11,971,038	$10,982,797

The accompanying notes are an integral part of these financial statements.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE OF GOVERNMENTAL FUNDS
For The Year Ended December 31, 2022
With Comparative Totals For The Year Ended December 31, 2021

Statement 5

		2022	2021
Amounts reported in the statement of activities (Statement 2) are different because:			
Net changes in fund balances - total governmental funds (Statement 4)		$988,241	($1,153,941)
Governmental funds report capital outlays as expenditures. However, in the statement of activities the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense:			
Depreciation expense		(532,245)	(519,094)
Capital outlay and construction costs capitalized		249,301	2,068,553
Revenues in the statement of activities that do not provide current financial resources are not reported as revenues in the funds:			
Change in unavailable revenue - delinquent property taxes		15,090	4,697
Change in unavailable revenue - refunds and reimbursements		(219,000)	-
Change in unavailable revenue - stormwater impact payment		-	(33,680)
The issuance of long-term debt (e.g., bonds, leases) provides current financial resources to governmental funds, while the repayment of the principal of long-term debt consumes the current financial resources of governmental funds. Neither transaction, however, has any effect on net position.			
Repayment of principal of long-term debt		323,000	322,000
Governmental funds report the effects of bond premiums and discounts when the debt is first issued, whereas these amounts are deferred and amortized over the life of the debt in the statement of activities.			
Amortization of bond premium		5,261	5,261
Some expenses reported in the statement of activities do not require the use of current financial resources and, therefore, are not reported as expenditures in governmental funds. Changes in these expense accruals are as follows:			
Change in accrued interest payable		2,075	2,009
Change in compensated absences payable		(2,672)	(13,590)
Governmental funds report pension contributions as expenditures, however, pension expense is reported in the statement of activities. This is the amount by which pension expense differed from pension contributions in the current period:			
Pension contributions	$88,727		
Pension expense	(206,306)	(117,579)	19,814
Change in net position (Statement 2)		$711,472	$702,029

The accompanying notes are an integral part of these financial statements.

Note 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accounting policies of the Ramsey-Washington Metro Watershed District (the District) conform to accounting principles generally accepted in the United States of America applicable to governmental units. The following is a summary of significant accounting policies.

A. FINANCIAL REPORTING ENTITY

The Ramsey-Washington Metro Watershed District was created in 1975 by the Minnesota Water Resources Board as provided in Minnesota Statutes Chapter 112. The District is operated by a five member Board of Managers appointed by the Ramsey and Washington County Boards of Commissioners for three year terms. In accordance with Governmental Accounting Standards Board (GASB) pronouncements and generally accepted accounting principles, the financial statements of the reporting entity should include the primary government and its component units. The District (primary government) does not have any component units.

B. GOVERNMENT-WIDE AND FUND FINANCIAL STATEMENTS

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the non-fiduciary activities of the primary government. *Governmental activities*, which normally are supported by taxes and intergovernmental revenues, are reported separately from *business-type activities*. There are no *business-type activities*, which rely to a significant extent on fees and charges for support.

The statement of activities demonstrates the degree to which the direct expenses of a given function are offset by program revenues. *Direct expenses* are those that are clearly identifiable with a specific function. *Program revenues* include 1) charges to customers or applicants who purchase, use or directly benefit from goods, services or privileges provided by a given function and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function. Taxes and other items not included among program revenues are reported instead as *general revenues*.

Separate financial statements are provided for governmental funds. Major individual governmental funds are reported as separate columns in the fund financial statements. The District reports the following major funds:

General Fund is the general operating fund of the District. It is used to account for financial resources to be used for general administrative expenses and for the construction and maintenance of projects of common benefit to the District.

General Obligation Bonds Debt Service is established to account for accumulation of resources for, and the payment of, long-term debt principal, interest and related costs.

Stormwater Impact Fund is established to account for the accumulation of resources to be used for equivalent volume reduction projects as required by the permitting program as shown in Ramsey-Washington Metro Watershed District's Rule C.3.c.3.iii.

Capital Project CIB Fund is established to account for the capital improvement program as a part of the Watershed Management Plan. The fund is financed by an ad valorem tax levy. This fund was established pursuant to Minnesota Statutes, Chapter 473.

C. MEASUREMENT FOCUS, BASIS OF ACCOUNTING AND FINANCIAL STATEMENT PRESENTATION

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be *available* when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the District considers all revenues, except reimbursement grants, to be available if they are collected within 60 days of the end of the current fiscal period. Reimbursement grants are considered available if they are collected within one year of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures are recorded only when payment is due.

Property taxes, intergovernmental revenues and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenue items are considered to be measurable and available only when cash is received.

As a general rule the effect of inter-fund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are transactions that would be treated as revenues, expenditures or expenses if they involved external organizations, such as buying goods and services or payments in lieu of taxes, are similarly treated when they involve other funds of the District. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

D. BUDGETS

The Board of Managers prepares annual revenue and expenditure budgets for the District's General Fund. The District monitors budget performance on the fund basis. All amounts over budget have been approved by the Board through the disbursement approval process. The modified accrual basis of accounting is used by the District for budgeting data. All appropriations end with the fiscal year for which they were made. Encumbrance accounting, under which purchase orders, contracts and other commitments of monies are recorded in order to reserve that portion of the applicable appropriation, is not employed by the District.

E. CASH AND INVESTMENTS

Cash and investment balances from all funds are pooled and invested to the extent available in authorized investments. Investment income is allocated to individual funds on the basis of the fund's equity in the cash and investment pool.

Investments are stated at fair value, except investments in external investment pools that meet GASB 79 requirements which are stated at amortized cost. Investment income is accrued at the balance sheet date.

F. PROPERTY TAX REVENUE RECOGNITION

The Board of Managers annually adopts a tax levy and certifies it to the county in October (levy/assessment date) of each year for collection in the following year. The county is responsible for billing and collecting all property taxes for itself, the city, the local school district and other taxing authorities. Such taxes become a lien on January 1 and are recorded as receivables by the District at that date. Real property taxes are payable (by property owners) on May 15 and October 15 of each calendar year. Personal property taxes are payable by taxpayers on February 28 and June 30 of each year. These taxes are collected by the county and remitted to the District on or before July 7 and December 2 of the same year. Delinquent collections for November and December are received the following January. The District has no ability to enforce payment of property taxes by property owners. The county possesses this authority.

GOVERNMENT-WIDE FINANCIAL STATEMENTS
The District recognizes property tax revenue in the period for which the taxes were levied. Uncollectible property taxes are not material and have not been reported.

GOVERNMENTAL FUND FINANCIAL STATEMENTS
The District recognizes property tax revenue when it becomes both measurable and available to finance expenditures of the current period. In practice, current and delinquent taxes and state credits received by the District in July, December and January are recognized as revenue for the current year. Taxes collected by the county by December 31 (remitted to the District the following January) are classified as due from county. Taxes not collected by the county by December 31 are classified as delinquent taxes receivable. The portion of delinquent taxes not collected by the District in January is fully offset by deferred inflow of resources because they are not available to finance current expenditures.

PROPERTY TAX LEVY

103B Levy Authority
The District levies taxes under the authority of Minnesota Statute 103B.241. As such, the District's General Fund and the Capital Projects CIB Funds are not limited by the tax levy authorized in Minnesota Statute 103D. The District levies for maintenance and project costs out of the General and Capital Projects CIB Funds. Minnesota Statute Section 103B.241 Subd.1 reads in part as follows:

103B.241 LEVIES

Subdivision 1. ***Watershed plans and projects.*** *Notwithstanding chapter 103D, a local government unit or watershed management organization may levy a tax to pay the increased costs of preparing a plan under sections 103B.231 and 103B.235 or for projects identified in an approved and adopted plan necessary to implement the purposes of section 103B.201. The proceeds of any tax levied under this section shall be deposited in a separate fund and expended only for the purposes authorized by this section. Watershed management organizations and local government units may accumulate the proceeds of levies as an alternative to issuing bonds to finance improvements.*

G. INVENTORIES

The original cost of materials and supplies has been recorded as expenditures at the time of purchase. The District does not maintain material amounts of inventories.

H. PREPAID ITEMS

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both government-wide and fund financial statements. Prepaid items are reported using the consumption method and recorded as expenditures/expenses at the time of consumption.

I. CAPITAL ASSETS

Capital assets, which include property, plant, equipment and infrastructure assets and intangible assets such as easements and computer software, are reported in the government-wide financial statements. Capital assets (including intangible assets) are defined by the District as assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of one year. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at acquisition value at the date of donation. The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend asset lives are not capitalized.

Capital assets are depreciated using the straight-line method over the following estimated useful lives:

Buildings	40 years
Furniture and fixtures	5 years
Equipment	5 years
Vehicles	5 years
Infrastructure	50 – 100 years

J. LONG-TERM OBLIGATIONS

In the government-wide financial statements, long-term debt is reported as a liability in the statement of net position. Material bond premiums and discounts are amortized over the life of the bonds.

In the fund financial statements, governmental fund types recognize bond premiums and discounts during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt issuances are reported as other financing uses.

K. COMPENSATED ABSENCES

It is the District's policy to permit employees to accumulate earned but unused vacation and sick pay benefits. A liability for these amounts is reported in governmental funds only if they have matured, for example, as a result of employee resignations and retirements. All vacation pay and accumulated sick leave benefits that are vested as severance pay are accrued when incurred in the government-wide financial statements.

L. DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES

In addition to assets, the statement of net position reports a separate section for deferred outflows of resources. This separate financial statement element represents a consumption of net assets that applies to future period and so will *not* be recognized as an outflow of resources (expense) until then. The District has one item that qualifies for reporting in this category. It is the pension related deferred outflows reported in the government-wide Statement of Net Position.

In addition to liabilities, the statement of net position reports a separate section for deferred inflows of resources. This separate financial statement element represents an acquisition of net assets that applies to future periods and so will *not* be recognized as an inflow of resources (revenue) until that time. The District has pension related deferred inflows of resources reported in the government-wide Statement of Net Position. The District also has an item, which arises only under a modified accrual basis of accounting, that qualifies for reporting in this category. Accordingly, the item, unavailable revenue, is reported only in the governmental fund balance sheet. The governmental funds report unavailable revenues from property taxes and unavailable stormwater impact fees.

M. DEFINED BENEFIT PENSION PLANS

For purposes of measuring the net pension liability, deferred outflows and inflows of resources, and pension expense, information about the fiduciary net position of the Public Employees Retirement Association (PERA) and additions to and deductions from PERA's fiduciary net position have been determined on the same basis as they are reported by PERA, except that PERA's fiscal year end is June 30. For this purpose, plan contributions are recognized as of employer payroll paid dates and benefit payments and refunds are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

N. FUND BALANCE CLASSIFICATIONS

In the fund financial statements, governmental funds report fund balance in classifications that disclose constraints for which amounts in those funds can be spent. These classifications are as follows:

Nonspendable - consists of amounts that are not in spendable form, such as prepaid items.

Restricted - consists of amounts related to externally imposed constraints established by creditors, grantors or contributors; or constraints imposed by state statutory provisions.

Committed - consists of internally imposed constraints. These constraints are established by Resolution of the Board.

Assigned - consists of internally imposed constraints. These constraints reflect the specific purpose for which it is the Board's intended use. These constraints are established by the Board and/or management. Pursuant to Board Resolution, the Board's District Administrator and/or Treasurer is authorized to establish assignments of fund balance.

Unassigned - is the residual classification for the general fund and also reflects negative residual amounts in other funds.

When both restricted and unrestricted resources are available for use, it is the District's policy to first use restricted resources, and then use unrestricted resources as they are needed.

When committed, assigned or unassigned resources are available for use, it is the District's policy to use resources in the following order: 1) committed 2) assigned and 3) unassigned.

O. INTERFUND TRANSACTIONS

Interfund services provided and used are accounted for as revenues or expenditures. Transactions that constitute reimbursements to a fund for expenditures initially made from it that are properly applicable to another fund, are recorded as expenditures in the reimbursing fund and as reductions of expenditures in the fund that is reimbursed. All other interfund transactions are reported as transfers.

The District provides temporary advances to funds that have insufficient cash balances by means of an advance from another fund shown as due from other funds in the advancing fund, and due to other funds in the fund with the deficit, until adequate resources are received.

P. USE OF ESTIMATES

The preparation of financial statements in accordance with generally accepted accounting principles in the United States of America (GAAP) requires management to make estimates that affect amounts reported in the financial statements during the reporting period. Actual results could differ from such estimates.

Q. COMPARATIVE TOTALS

The basic financial statements, individual fund financial statements, required supplementary information, and supplementary financial information include certain prior-year summarized comparative information in total but not at the level of detail required for presentation in conformity with generally accepted accounting principles. Accordingly, such information should be read in conjunction with the District's financial statements for the year ended December 31, 2021 from which the summarized information was derived.

Note 2 DEPOSITS AND INVESTMENTS

A. DEPOSITS

In accordance with Minnesota Statutes, the District maintains its deposits at depository banks authorized by the Board of Managers. All such banks are members of the Federal Reserve System.

Minnesota Statutes require that all District deposits be protected by insurance, surety bond, or collateral. The market value of collateral pledged must equal 110% of the deposits not covered by insurance or bonds. Securities pledged as collateral are required to be held in safekeeping by the District or in a financial institution other than that furnishing the collateral. Minnesota Statute 118A.03 identifies allowable forms of collateral.

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that in the event of a bank failure, the District's deposits may not be returned to it. The District did not have deposits at December 31, 2022.

B. INVESTMENTS

Subject to rating, yield, maturity and issuer requirements as prescribed by statute, Minnesota Statutes 118A.04 and 118A.05 authorize the District to invest in United States securities, state and local securities, commercial paper, time deposits, temporary general obligation bonds, repurchase agreements, Minnesota joint powers investment trust and guaranteed investment contracts.

The District has investments in the Minnesota Municipal Money Market Fund (4M fund). The 4M fund is an external investment pool regulated by Minnesota Statutes and the Board of Directors of the League of Minnesota Cities. The 4M fund is an unrated pool and the fair value of the position in the pool is the same as the value of pool shares. The pool is managed to maintain a portfolio weighted average maturity of no greater than 60 days and seeks to maintain a constant net asset value (NAV) of $1 per share. The pool measures its investments at amortized cost in accordance with GASB Statement No. 79. The 4M Liquid Asset Fund has no redemption requirements. The 4M Plus Fund requires funds to be deposited for a minimum of 14 calendar days. Withdrawals prior to the 14-day restriction period are subject to a penalty equal to 7 days interest on the amount withdrawn.

At December 31, 2022, the amount of investments held in the 4M fund was $13,705,015, all of which were in the 4M Liquid Asset Fund.

The District categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. The hierarchy has three levels. Level 1 investments are valued using inputs that are based on quoted prices in active markets for identical assets. Level 2 investments are valued using inputs that are based on quoted prices for similar assets or inputs that are observable, either directly or indirectly. Level 3 investments are valued using inputs that are unobservable.

Because investments of the 4M fund are measured at amortized cost, its investments are not categorized within the fair value hierarchy described above.

C. INVESTMENT RISKS

Credit Risk. Credit risk is the risk that an issuer or other counterparty to an investment will be unable to fulfill its obligation to the holder of the investment. The District follows state statutes in regards to credit risk of investments. The District does not have an investment policy which further limits its investment choices.

Interest Rate Risk. Interest rate risk is the risk that changes in the interest rates of debt investments could adversely affect the fair value of an investment. The District does not have an investment policy which limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Concentration of Credit Risk. Concentration of credit risk is the risk of loss that may be attributed to the magnitude of the District's investment in a single issuer. The District does not have an investment policy which addresses the concentration of credit risk.

Custodial Credit Risk. For investments in securities, custodial credit risk is the risk that in the event of a failure of the counterparty, the District will not be able to recover the value of its investment securities that is in the possession of an outside party. Investments in investment pools and money markets are not evidenced by securities that exist in physical or book entry form, and therefore are not subject to custodial credit risk disclosures. The District does not have an investment policy which addresses custodial credit risk.

Note 3 RECEIVABLES

Significant receivable balances not expected to be collected within one year of December 31, 2022 are as follows:

	Major Funds			
	General	General Obligation Bonds	Capital Projects CIB	Total
Delinquent property taxes	$30,500	$5,000	$50,200	$85,700

Note 4 UNAVAILABLE REVENUES

Governmental funds report deferred inflows of resources in connection with receivables for revenues that are not considered to be available to liquidate liabilities of the current period. At the end of the current fiscal year, the various components of unavailable revenue reported in the governmental funds were as follows:

	Property Taxes
General Fund	$34,183
General Obligation Bonds	5,611
Capital Projects CIB	56,281
Total unavailable revenue	$96,075

Note 5 DEFINED BENEFIT PENSION PLANS

A. PLAN DESCRIPTION

The District participates in the following cost-sharing multiple-employer defined benefit pension plan administered by the Public Employees Retirement Association of Minnesota (PERA). PERA's defined benefit pension plans are established and administered in accordance with Minnesota Statutes, Chapters 353 and 356. PERA's defined benefit pension plans are tax qualified plans under Section 401(a) of the Internal Revenue Code.

All full-time and certain part-time employees of the District are covered by the General Employees Retirement Fund (GERF). GERF members belong to the Coordinated Plan. Coordinated Plan members are covered by Social Security.

B. BENEFITS PROVIDED

PERA provides retirement, disability, and death benefits. Benefit provisions are established by state statute and can only be modified by the state legislature. Vested, terminated employees who are entitled to benefits but are not receiving them yet are bound by the provisions in effect at the time they last terminated their public service.

Benefits are based on a member's highest average salary for any five successive years of allowable service, age, and years of credit at termination of service. Two methods are used to compute benefits for PERA's Coordinated members. Members hired prior to July 1, 1989 receive the higher of Method 1 or Method 2 formulas. Only Method 2 is used for members hired after June 30, 1989. Under Method 1, the accrual rate for Coordinated members is 1.2% for each of the first ten years of service and 1.7% for each additional year. Under Method 2, the accrual rate for Coordinated Plan members is 1.7% for all years of service. For members hired prior to July 1, 1989 a full annuity is available when age plus years of service equal 90 and normal retirement age is 65. For members hired on or after July 1, 1989, normal retirement age is the age for unreduced Social Security benefits capped at 66.

Benefit increases are provided to benefit recipients each January. The postretirement increase is equal to 50% of the cost-of-living adjustment (COLA) announced by the SSA, with a minimum increase of at least 1% and a maximum of 1.5%. Recipients that have been receiving the annuity or benefit for at least a full year as of the June 30 before the effective date of the increase will receive the full increase. For recipients receiving the annuity or benefit for at least one month but less than a full year as of the June 30 before the effective date of the increase will receive a reduced prorated increase. For members retiring on January 1, 2024 or later, the increase will be delayed until normal retirement age (age 65 if hired prior to July 1, 1989, or age 66 for individuals hired on or after July 1, 1989). Members retiring under Rule of 90 are exempt from the delay to normal retirement.

C. CONTRIBUTIONS

Minnesota Statutes Chapter 353 sets the rates for employer and employee contributions. Contribution rates can only be modified by the state legislature.

Coordinated Plan members were required to contribute 6.50% of their annual covered salary in fiscal year 2022 and the District was required to contribute 7.50% for Coordinated Plan members. The District's contributions to the GERF for the year ended December 31, 2022 were $88,727. The District's contributions were equal to the required contributions as set by state statute.

D. PENSION COSTS

At December 31, 2022, the District reported a liability of $1,227,605 for its proportionate share of GERF's net pension liability. The District's net pension liability reflected a reduction due to the State of Minnesota's contribution of $16 million. The State of Minnesota is considered a non-employer contributing entity and the state's contribution meets the definition of a special funding situation. The State of Minnesota's proportionate share of the net pension liability associated with the District totaled $35,867.

The net pension liability was measured as of June 30, 2022, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The District's proportion of the net pension liability was based on the District's contributions received by PERA during the measurement period for employer payroll paid dates from July 1, 2021 through June 30, 2022, relative to the total employer contributions received from all of PERA's participating employers. The District's proportionate share was 0.0155% at the end of the measurement period and 0.0160% for the beginning of the period.

District's proportionate share of the net pension liability	$1,227,605
State of Minnesota's proportionate share of the net pension liability associated with the District	35,867
Total	$1,263,472

For the year ended December 31, 2022, the District recognized pension expense of $206,306 for its proportionate share of the GERF's pension expense. In addition, the District recognized an additional $5,359 as pension expense (and grant revenue) for its proportionate share of the State of Minnesota's contribution of $16 million to the GERF.

At December 31, 2022, the District reported its proportionate share of the GERF's deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual economic experience	$10,254	$13,095
Changes in actuarial assumptions	277,829	4,912
Net collective difference between projected and actual investment earnings	20,828	-
Changes in proportion	74,684	21,801
Contributions paid to PERA subsequent to the measurement date	44,535	-
Total	$428,130	$39,808

The $44,535 reported as deferred outflows of resources related to pensions resulting from District contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended December 31, 2023. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended December 31,	Pension Expense
2023	$144,759
2024	134,397
2025	(46,388)
2026	111,019
2027	-
Thereafter	-

E. ACTUARIAL ASSUMPTIONS

The total pension liability in the June 30, 2022 actuarial valuation was determined using an individual entry-age normal actuarial cost method and the following actuarial assumptions:

Inflation	2.25% per year
Investment Rate of Return	6.50%

The long-term investment rate of return is based on a review of inflation and investment return assumptions from a number of national investment consulting firms. The review provided a range of investment return rates deemed to be reasonable by the actuary. An investment return of 6.50% was deemed to be within that range of reasonableness for financial reporting purposes.

Salary growth assumptions range in annual increments from 10.25% after one year of service to 3.0% after 27 years of service.

Mortality rates were based on the Pub-2010 General Employee Mortality Table, with slight adjustments to fit PERA's experience.

Actuarial assumptions for GERF are reviewed every four years. The most recent four-year experience study was completed in 2019. The assumption changes were adopted by the Board and become effective with the July 1, 2020 actuarial valuation.

The following changes in actuarial assumptions and plan provisions occurred in 2022:

Changes in Actuarial Assumptions:

- The mortality improvement scale was changed from Scale MP-2020 to Scale MP-2021.

The State Board of Investment, which manages the investments of PERA, prepares an analysis of the reasonableness on a regular basis of the long-term expected rate of return using a building-block method in which best-estimate ranges of expected future rates of return are developed for each major asset class. These ranges are combined to produce an expected long-term rate of return by weighting the expected future rates of return by the target asset allocation percentages. The target allocation and best estimates of geometric real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	33.5%	5.10%
International equity	16.5%	5.30%
Fixed income	25.0%	0.75%
Private markets	25.0%	5.90%
Total	100.0%	

F. DISCOUNT RATE

The discount rate used to measure the total pension liability in 2022 was 6.5%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and employers will be made at the rate set in Minnesota statutes. Based on these assumptions, the fiduciary net position of the GERF was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

G. PENSION LIABILITY SENSITIVITY

The following presents the District's proportionate share of the net pension liability, calculated using the discount rate disclosed in the preceding paragraph, as well as what the District's proportionate share of the net pension liability would be if it were calculated using a discount rate one percentage point lower or one percentage point higher than the current discount rate:

	1% Decrease in Discount Rate (5.5%)	Discount Rate (6.5%)	1% Increase in Discount Rate (7.5%)
Proportionate share of the GERF net pension liability	$1,939,067	$1,227,605	$644,097

H. PENSION PLAN FIDUCIARY NET POSITION

Detailed information about the pension plan's fiduciary net position is available in a separately-issued PERA financial report that includes financial statements and required supplementary information. That report may be obtained at www.mnpera.org.

Note 6 CAPITAL ASSETS

Capital asset activity for the year ended December 31, 2022 was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets, not being depreciated:				
Land	$421,581	$ -	$ -	$421,581
Construction in progress	854,831	83,109	(937,940)	-
Total capital assets, not being depreciated	1,276,412	83,109	(937,940)	421,581
Capital assets, being depreciated:				
Building	2,234,955	68,200	-	2,303,155
Furniture and fixtures	140,413	-	-	140,413
Equipment	143,080	36,277	-	179,357
Vehicles	147,651	-	-	147,651
Infrastructure	22,400,572	999,655	-	23,400,227
Total capital assets, being depreciated	25,066,671	1,104,132	0	26,170,803
Less accumulated depreciation for:				
Building	850,589	56,513	-	907,102
Furniture and fixtures	33,118	2,147	-	35,265
Equipment	129,731	3,867	-	133,598
Vehicles	103,518	21,213	-	124,731
Infrastructure	10,722,012	448,505	-	11,170,517
Total accumulated depreciation	11,838,968	532,245	0	12,371,213
Total capital assets being depreciated - net	13,227,703	571,887	0	13,799,590
Capital assets - net	$14,504,115	$654,996	($937,940)	$14,221,171

Depreciation expense was charged to function/programs as follows:

General government	$79,873
Programs	3,155
Projects	449,217
Total depreciation expense	$532,245

Note 7 LONG-TERM DEBT

Annual debt service requirements to maturity for general obligation bonds are as follows:

Year Ending	G.O. MPFA Loan of 2012		G.O. Drainage Bonds of 2016A		Totals	
December 31,	Principal	Interest	Principal	Interest	Principal	Interest
2023	$85,000	$7,441	$245,000	$55,413	$330,000	$62,854
2024	86,000	6,000	250,000	50,463	336,000	56,463
2025	88,000	4,543	255,000	45,413	343,000	49,956
2026	89,000	3,051	260,000	40,263	349,000	43,314
2027	91,000	1,542	270,000	34,963	361,000	36,505
2028	-	-	275,000	29,513	275,000	29,513
2029	-	-	280,000	23,963	280,000	23,963
2030	-	-	285,000	17,956	285,000	17,956
2031	-	-	290,000	11,125	290,000	11,125
2032	-	-	300,000	3,750	300,000	3,750
Total	$439,000	$22,577	$2,710,000	$312,822	$3,149,000	$335,399

The following is a schedule of changes in the District's indebtedness for the year ended December 31, 2022:

	Beginning Balance	Additions	Deletions	Ending Balance	Due Within One Year
Governmental activities:					
Bonded debt:					
G.O. MPFA Loan of 2012	$522,000	$ -	($83,000)	$439,000	$85,000
G.O. Drainage Bonds of 2016A	2,950,000	-	(240,000)	2,710,000	245,000
Unamortized bond premium	53,044	-	(5,261)	47,783	-
Compensated absences	132,926	127,522	(124,850)	135,598	102,623
Total governmental activities	$3,657,970	$127,522	($453,111)	$3,332,381	$432,623

GENERAL OBLIGATION MINNESOTA PUBLIC FACILITIES AUTHORITY (MPFA) LOAN OF 2012

The District entered into a loan agreement with the Minnesota Public Facilities Authority (MPFA) on May 5, 2012. The agreement called for the MPFA to lend $1,569,623 from the Clean Water Revolving Fund Principal Forgiveness – Green Project, to the District for the purpose of funding the eligible costs related to the Maplewood Mall project. Of this amount, $1,177,217 (the "Loan") has a final maturity date of August 20, 2027 and carries an interest rate of 1.695% per annum. The remaining $392,406 (the "Green Principal Forgiveness"), is not required to be repaid except as otherwise provided per the terms of the agreement. The District's management has indicated that the terms of the "Green Principal Forgiveness" will be met. The loan is considered a direct borrowing and is a general obligation of the District for which it pledges its full faith, credit and taxing powers to the payment of principal and interest on the bonds.

$3,860,000 GENERAL OBLIGATION DRAINAGE BONDS, SERIES 2016A

The District sold $3,860,000 of General Obligation bonds, Series 2016A on November 15, 2016 for the purpose of funding eligible ongoing maintenance and repairs for the Beltline and Battle Creek Tunnel repair project. The term of the bond is 15 years, at an interest rate of 2.0% - 2.5% per annum. The final maturity date is February 1, 2032.

PLEDGED REVENUE

Future revenue pledged for the payment of long-term debt is as follows:

		Revenue Pledged				Current Year	
Bond Issue	Use of Proceeds	Type	Percent of Total Debt Service	Term of Pledge	Remaining Principal and Interest	Principal and Interest Paid	Pledged Revenue Received
2016A Bond	Beltline and Battle Creek Tunnel Repair	Property Taxes	100%	2016 - 2031	$3,022,822	$300,263	$0

Note 8 CONTINGENCIES

The District's management has indicated that there are no pending lawsuits or other actions in which the District is a defendant.

Note 9 COMMITTED CONTRACTS

At December 31, 2022, the District had committed contracts of $76,627 for construction/repair projects.

Note 10 FUND BALANCE

A. CLASSIFICATIONS

At December 31, 2022, a summary of the governmental fund balance classifications are as follows:

	General Fund	General Obligation Bonds	Stormwater Impact Fund	Capital Projects CIB	Total
Nonspendable:					
Prepaid items	$20,578	$ -	$ -	$ -	$20,578
Restricted for:					
Debt service	-	562,589	-	-	562,589
Assigned for:					
Construction/projects	-	-	363,688	8,804,649	9,168,337
Unassigned	2,219,534	-	-	-	2,219,534
Total	$2,240,112	$562,589	$363,688	$8,804,649	$11,971,038

B. MINIMUM UNASSIGNED FUND BALANCE POLICY

The Board has formally adopted a policy regarding the minimum unassigned fund balance for the General Fund. The most significant revenue source of the General Fund is property taxes. This revenue source is received in two installments during the year – June and December. As such, it is the District's goal to begin each fiscal year with sufficient working capital to fund operations between each semi-annual receipt of property taxes.

The policy establishes a year end targeted unassigned fund balance amount for cash-flow timing needs, emergencies/contingencies and compensated absences of 50% of the subsequent year's budgeted expenditures. At December 31, 2022, the unassigned fund balance of the General Fund was 51% of the subsequent year's budgeted expenditures.

Note 11 RISK MANAGEMENT

The District is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters.

Workers compensation coverage is provided through a pooled self-insurance program through the League of Minnesota Cities Insurance Trust (LMCIT). The District pays an annual premium to LMCIT. The District is subject to supplemental assessments if deemed necessary by the LMCIT. The LMCIT reinsures through Workers Compensation Reinsurance Association (WCRA) as required by law. For workers compensation, the District is not subject to a deductible. The District workers compensation coverage is retrospectively rated. With this type of coverage, final premiums are determined after loss experience is known. The amount of premium adjustment, if any, is considered immaterial and not recorded until received or paid.

Other insurance coverage is provided through a pooled self-insurance program through the LMCIT. The District pays an annual premium to the LMCIT. The District is subject to supplemental assessments if deemed necessary by the LMCIT. The LMCIT reinsures through commercial companies for claims in excess of various amounts. The District retains risk for the deductible portions of the insurance policies. The amount of these deductibles is considered immaterial to the financial statements.

There were no significant reductions in insurance from the previous year or settlements in excess of insurance coverage for any of the past three fiscal years.

Note 12 RECENTLY ISSUED ACCOUNTING STANDARDS

The Governmental Accounting Standards Boards (GASB) recently approved the following statements which were not implemented for these financial statements:

Statement No. 94 *Public-Private and Public-Public Partnerships and Availability Payment Arrangements.* The provisions of this Statement are effective for reporting periods beginning after June 15, 2022.

Statement No. 96 *Subscription-Based Information Technology Arrangements.* The provisions of this Statement are effective for reporting periods beginning after June 15, 2022.

Statement No. 99 *Omnibus 2022*. The provisions of this Statement contain multiple effective dates, the first being for reporting periods beginning after June 15, 2022.

Statement No. 100 *Accounting Changes and Error Corrections – an amendment of GASB Statement No. 62.* The provisions of this Statement are effective for reporting periods beginning after June 15, 2023.

Statement No. 101 *Compensated Absences.* The provisions of this Statement are effective for reporting periods beginning after June 15, 2023.

The effect these standards may have on future financial statements is not determinable at this time.

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REQUIRED SUPPLEMENTARY INFORMATION

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - GENERAL FUND
For The Year Ended December 31, 2022
With Comparative Actual Amounts For The Year Ended December 31, 2021

	2022				
	Budgeted Amounts		Actual	Variance with Final Budget - Positive	2021 Actual
	Original	Final	Amounts	(Negative)	Amounts
Revenues:					
General property taxes	$3,195,000	$3,195,000	$3,178,208	($16,792)	$2,202,687
Intergovernmental - grants	-	-	11,030	11,030	11,303
Stormwater impact payment	-	-	-	-	44,539
Investment income	20,000	20,000	54,322	34,322	1,018
Permit escrow fees	15,000	15,000	10,630	(4,370)	25,595
Refunds and reimbursements	-	-	38,886	38,886	51,531
Other	-	-	5,667	5,667	3,600
Total revenues	3,230,000	3,230,000	3,298,743	68,743	2,340,273
Expenditures:					
General government:					
Engineering:					
Administration	125,000	125,000	82,720	42,280	72,948
Engineer review	65,000	65,000	57,388	7,612	47,793
Permit review	60,000	60,000	62,565	(2,565)	47,391
Subtotal engineering	250,000	250,000	202,673	47,327	168,132
Committee expenditures	50,000	50,000	4,385	45,615	3,729
Consulting	20,000	20,000	-	20,000	-
District training	75,000	75,000	33,267	41,733	15,960
Dues	11,000	11,000	11,189	(189)	11,568
Employee expenses	15,000	15,000	7,295	7,705	7,133
GIS system maintenance and equipment	50,000	50,000	5,613	44,387	6,277
Insurance	55,000	55,000	50,989	4,011	44,215
Internet/website	75,000	75,000	77,280	(2,280)	63,556
Legal and audit	120,000	120,000	78,496	41,504	80,955
Manager's per diem and expenses	12,500	12,500	3,534	8,966	7,825
Miscellaneous	5,000	5,000	-	5,000	-
Office equipment and maintenance	318,000	318,000	144,751	173,249	71,697
Office supplies and postage	10,000	10,000	8,075	1,925	6,586
Printing	5,000	5,000	4,548	452	4,982
Project operations	200,000	200,000	138,925	61,075	71,716
Salaries/payroll taxes/benefits	1,660,000	1,660,000	1,636,322	23,678	1,579,050
Telephone	4,000	4,000	712	3,288	1,308
Utilities	30,000	30,000	9,464	20,536	14,831
Vehicle lease and maintenance	20,000	20,000	35,605	(15,605)	147,463
Water quality monitoring	180,000	180,000	195,212	(15,212)	161,141
Total general government	3,165,500	3,165,500	2,648,335	517,165	2,468,124

See accompanying notes to the required supplementary information.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - GENERAL FUND
For The Year Ended December 31, 2022
With Comparative Actual Amounts For The Year Ended December 31, 2021

	2022				
	Budgeted Amounts		Actual	Variance with Final Budget - Positive	2021 Actual
	Original	Final	Amounts	(Negative)	Amounts
Watershed programs:					
Project feasibility studies	$410,000	$410,000	$327,413	$82,587	$244,449
Communications and marketing	3,500	3,500	31,822	(28,322)	26,356
Keller Creek	-	-	1,098	(1,098)	-
Education programming	75,000	75,000	44,765	30,235	23,711
Health and safety program	3,000	3,000	3,663	(663)	988
Lake Studies/WRAPS/TMDL	125,000	125,000	43,820	81,180	18,599
Natural resources program	120,000	120,000	112,063	7,937	103,866
Outside programs	57,000	57,000	20,933	36,067	26,950
Research projects	225,000	225,000	156,204	68,796	95,676
Waterfest	46,000	46,000	51,295	(5,295)	36,556
Total watershed programs	1,064,500	1,064,500	793,076	271,424	577,151
Total expenditures	4,230,000	4,230,000	3,441,411	788,589	3,045,275
Revenues over (under) expenditures	(1,000,000)	(1,000,000)	(142,668)	857,332	(705,002)
Other financing sources (uses):					
Transfers out	-	-	-	-	(1,277,182)
Net change in fund balance	($1,000,000)	($1,000,000)	(142,668)	$857,332	(1,982,184)
Fund balance - January 1			2,382,780		4,364,964
Fund balance - December 31			$2,240,112		$2,382,780

See accompanying notes to the required supplementary information.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF PROPORTIONATE SHARE OF NET PENSION LIABILITY -
GENERAL EMPLOYEES RETIREMENT FUND
For The Last Ten Years

Statement 7

Measurement Date June 30	Fiscal Year Ending December 31	District's Proportionate (Percentage) of the Net Pension Liability	District's Proportionate Share (Amount) of the Net Pension Liability (a)	State's Proportionate Share (Amount) of the Net Pension Liability Associated with District (b)	District's Proportionate Share of the Net Pension Liability and the State's Proportionate Share of the Net Pension Liability Associated with District (a+b)	Covered Payroll (c)	Proportionate Share of the Net Pension Liability as a Percentage of its Covered Payroll (a+b)/c	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability
2015	2015	0.0132%	$684,093	$ -	$684,093	$773,820	88.4%	78.2%
2016	2016	0.0120%	974,340	12,771	987,111	747,482	132.1%	68.9%
2017	2017	0.0125%	797,992	10,038	808,030	805,604	100.3%	75.9%
2018	2018	0.0127%	704,544	23,081	727,625	852,560	85.3%	79.5%
2019	2019	0.0128%	707,683	21,999	729,682	903,338	80.8%	80.2%
2020	2020	0.0139%	833,369	25,647	859,016	983,775	87.3%	79.1%
2021	2021	0.0160%	683,272	20,880	704,152	1,151,307	61.2%	87.0%
2022	2022	0.0155%	1,227,605	35,867	1,263,472	1,159,809	108.9%	76.7%

The schedule is provided prospectively beginning with the District's fiscal year ended December 31, 2015 and is intended to show a ten year trend. Additional years will be reported as they become available.

See accompanying notes to the required supplementary information.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION **Statement 8**
SCHEDULE OF PENSION CONTRIBUTIONS - GENERAL EMPLOYEES RETIREMENT FUND
For The Last Ten Years

Fiscal Year Ending December 31	Statutorily Required Contribution (a)	Contributions in Relation to the Statutorily Required Contribution (b)	Contribution Deficiency (Excess) (a-b)	Covered Payroll (c)	Contributions as a Percentage of Covered Payroll (b/c)
2015	$57,121	$57,121	$ -	$761,606	7.5%
2016	57,310	57,310	-	764,138	7.5%
2017	60,595	60,595	-	807,938	7.5%
2018	65,933	65,933	-	879,103	7.5%
2019	68,723	68,723	-	916,307	7.5%
2020	81,725	81,725	-	1,089,683	7.5%
2021	87,049	87,049	-	1,160,648	7.5%
2022	88,727	88,727	-	1,183,018	7.5%

The schedule is provided prospectively beginning with the District's fiscal year ended December 31, 2015 and is intended to show a ten year trend. Additional years will be reported as they become available.

See accompanying notes to the required supplementary information.

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Note A LEGAL COMPLIANCE – BUDGETS

The General Fund budget is legally adopted on a basis consistent with accounting principles generally accepted in the United States of America. The legal level of budgetary control is at the fund level for the General Fund.

Note B PENSION INFORMATION

PERA – General Employees Retirement Fund

2022 Changes in Actuarial Assumptions:

- The mortality improvement scale was changed from Scale MP-2020 to Scale MP-2021.

2021 Changes in Actuarial Assumptions:

- The investment return and single discount rates were changed from 7.50% to 6.50% for financial reporting purposes.
- The mortality improvement scale was changed from Scale MP-2019 to Scale MP-2020.

2020 Changes in Actuarial Assumptions:

- The price inflation assumption was decreased from 2.50% to 2.25%.
- The payroll growth assumption was decreased from 3.25% to 3.00%.
- Assumed salary increase rates were decreased 0.25% and assumed rates of retirement were changed resulting in more unreduced (normal) retirements and slightly fewer Rule of 90 and early retirements. Assumed rates of termination and disability were also changed.
- Base mortality tables were changed from RP-2014 tables to Pub-2010 tables, with adjustments.
- The mortality improvement scale was changed from Scale MP-2018 to Scale MP-2019.
- The spouse age difference was changed from two years older for females to one year older.
- The assumed number of married male new retirees electing the 100% Joint & Survivor option changed from 35% to 45%. The assumed number of married female new retirees electing the 100% Joint & Survivor option changed from 15% to 30%. The corresponding number of married new retirees electing the Life annuity option was adjusted accordingly.

2020 Changes in Plan Provisions:

- Augmentation for current privatized members was reduced to 2.0% for the period July 1, 2020 through December 31, 2023 and 0.0% after. Augmentation was eliminated for privatizations occurring after June 30, 2020.

2019 Changes in Actuarial Assumptions:

- The mortality projection scale was changed from MP-2017 to MP-2018.

2019 Changes in the Plan Provisions:

- The employer supplemental contribution was changed prospectively, decreasing from $31.0 million to $21.0 million per year. The State's special funding contribution was changed prospectively, requiring $16.0 million due per year through 2031.

2018 Changes in Actuarial Assumptions:

- The mortality projection scale was changed from MP-2015 to MP-2017.
- The assumed benefit increase was changed from 1.00% per year through 2044 and 2.50% per year thereafter to 1.25% per year.

2017 Changes in Actuarial Assumptions:

- The Combined Service Annuity (CSA) loads were changed from 0.8% for active members and 60% for vested and non-vested deferred members. The revised CSA loads are now 0.0% for active member liability, 15.0% for vested deferred member liability and 3.0% for non-vested deferred member liability.
- The assumed post-retirement benefit increase rate was changed from 1.0% per year for all years to 1.0% per year through 2044 and 2.5% per year thereafter.

2016 Changes in Actuarial Assumptions:

- The assumed post-retirement benefit increase rate was changed from 1.0% per year through 2035 and 2.5% per year thereafter to 1.0% per year for all future years.
- The assumed investment return was changed from 7.9% to 7.5%. The single discount rate was changed from 7.9% to 7.5%.
- Other assumptions were changed pursuant to the experience study dated June 30, 2015. The assumed future salary increases, payroll growth, and inflation were decreased by 0.25% to 3.25% for payroll growth and 2.50% for inflation.

INDIVIDUAL FUND FINANCIAL STATEMENTS

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
COMPARATIVE BALANCE SHEET **Statement 9**
GENERAL FUND
December 31, 2022
With Comparative Totals For The Year Ended December 31, 2021

	2022	2021
Assets:		
Cash and investments	$3,889,781	$3,747,934
Due from other governmental units	4,659	101
Due from other funds	-	2,593
Property taxes receivable:		
Delinquent	34,183	26,482
Due from county	20,145	29,428
Prepaid items	20,578	16,836
Total assets	$3,969,346	$3,823,374
Liabilities:		
Accounts payable	$52,987	$42,122
Salaries payable	37,168	34,559
Due to other governmental units	13,997	13,517
Escrow deposits payable	1,590,899	1,323,914
Total liabilities	1,695,051	1,414,112
Deferred inflows of resources:		
Unavailable revenue	34,183	26,482
Fund balance:		
Nonspendable	20,578	16,836
Unassigned	2,219,534	2,365,944
Total fund balance	2,240,112	2,382,780
Total liabilities, deferred inflows of resources, and fund balance	$3,969,346	$3,823,374

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
COMPARATIVE STATEMENT OF REVENUE, EXPENDITURES AND CHANGES IN FUND BALANCE
GENERAL FUND
For The Year Ended December 31, 2022
With Comparative Totals For The Year Ended December 31, 2021

Statement 10

	2022	2021
Revenues:		
General property taxes	$3,178,208	$2,202,687
Intergovernmental - grants	11,030	11,303
Stormwater impact payment	-	44,539
Investment income	54,322	1,018
Permit escrow fees	10,630	25,595
Refunds and reimbursements	38,886	51,531
Other	5,667	3,600
Total revenues	3,298,743	2,340,273
Expenditures:		
Current:		
General government	2,621,552	2,327,340
Programs	793,076	577,151
Capital outlay	26,783	140,784
Total expenditures	3,441,411	3,045,275
Revenues over (under) expenditures	(142,668)	(705,002)
Other financing sources (uses):		
Transfers out	-	(1,277,182)
Net change in fund balance	(142,668)	(1,982,184)
Fund balance - January 1	2,382,780	4,364,964
Fund balance - December 31	$2,240,112	$2,382,780

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OTHER INFORMATION - UNAUDITED

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RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
TAXABLE VALUATIONS, TAX LEVIES AND TAX RATES - UNAUDITED **Exhibit 1**

	2022/23 Tax Capacity Values		2021/22 Tax Capacity Values	2020/21 Tax Capacity Values	2019/20 Tax Capacity Values	2018/19 Tax Capacity Values
Taxable valuations:						
Washington County	$52,310,370		$46,235,738	$43,980,559	$41,789,361	$38,856,341
Ramsey County	205,686,963	**	180,083,161	175,983,773	162,115,952	153,459,180
Total	$257,997,333		$226,318,899	$219,964,332	$203,905,313	$192,315,521

Tax levies extended:										
Extended in year	2022		2021		2020		2019		2018	
Collectible in year	2023		2022		2021		2020		2019	
	Levy	Tax Capacity Rate	Levy	Tax Capacity Rate	Levy	Tax Capacity Rate	Levy	Tax Capacity Rate	Levy	Tax Capacity Rate
General Fund	$3,726,500	1.444	$3,195,000	1.412	$2,211,375	1.005	$2,499,500	1.226	$2,609,500	1.357
Debt levy	-	.000	-	.000	394,901	.180	92,611	.045	399,113	.208
CIB Fund	3,390,000	1.314	3,540,000	1.564	4,157,222	1.890	4,211,885	2.066	3,754,885	1.952
Total	$7,116,500	2.758	$6,735,000	2.976	$6,763,498	3.075	$6,803,996	3.337	$6,763,498	3.517

** Based on the 2023 proposed value, final value was not available.

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
CIB FUND - UNAUDITED
SCHEDULE OF FINANCIAL ACTIVITY FROM INCEPTION

Project	CIB Year	Expenditures		
		Prior Years	12/31/2022	Total
Completed projects:				
Subtotal - completed projects	1987-2018	$36,909,956	$ -	$36,909,956
Current CIB projects:				
516 - Project Maintenance and Repair	1992-2018	13,814,013	1,103,846	14,917,859
529 - BMP Incentive Grant Program	2007-2018	6,246,470	774,174	7,020,644
518 - School/Commercial Site Retrofit	2015	5,162,123	860,559	6,022,682
520 - Flood Damage	2015	3,615,072	88,708	3,703,780
540 - Wetland Restoration Projects	2021	-	-	-
Subtotal - current projects		28,837,678	2,827,287	31,664,965
580 - CIB contingency account		267,879	-	267,879

Exhibit 2

Revenue	Revenue					Revenue
Prior Years Revenue	2022 CIB Levy	Investment Income	Transfers/ Reallocation	Grant/Project Reimbursement	Total Revenue	Over/(Under) Expenditures
$38,299,550	$ -	$ -	$ -	$ -	$38,299,550	$1,389,594
13,976,672	1,492,117	-	-	592,527	16,061,316	1,143,457
5,887,471	348,161	-	-	-	6,235,632	(785,012)
6,110,678	-	-	-	46,893	6,157,571	134,889
7,030,816	1,681,118	-	-	11,476	8,723,410	5,019,630
498,036	-	-	-	-	498,036	498,036
33,503,673	3,521,396	0	0	650,896	37,675,965	6,011,000
1,557,521	-	114,413	-	-	1,671,934	1,404,055
				Fund balance - December 31, 2022		$8,804,649

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
COMBINED SCHEDULE OF INDEBTEDNESS - UNAUDITED
December 31, 2022

	Dated	Final Due Date	Net Interest Rate
Bonded indebtedness:			
General Obligation Debt:			
G.O. Bonds of 2012 - PFA Bond	5/5/2012	8/20/2027	1.70%
G.O. Drainage Bonds of 2016A	11/15/2016	2/1/2032	2.09%
Total bonded indebtedness			
Unamortized bond premiums			
Compensated absences			
Total indebtedness			

Exhibit 3

Authorized and Issued	Retired	Outstanding 12/31/2022	Due in 2023 Principal	Due in 2023 Interest
$1,177,217	$738,217	$439,000	$85,000	$7,441
3,860,000	1,150,000	2,710,000	245,000	55,413
5,037,217	1,888,217	3,149,000	330,000	62,854
		47,783	-	-
		135,598	102,623	-
$5,037,217	$1,888,217	$3,332,381	$432,623	$62,854

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
DEFERRED TAX LEVIES - PER BOARD RESOLUTIONS - UNAUDITED **Exhibit 4**
December 31, 2022

Year of Levy/ Collection	G.O. Drainage Bonds of 2016A
2022/2023	$ -
2023/2024	302,963
2024/2025	302,863
2025/2026	307,663
2026/2027	307,263
2027/2028	306,763
2028/2029	306,163
2029/2030	304,750
2030/2031	307,500
Totals	$2,445,928

OTHER REQUIRED REPORTS

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REDPATH AND COMPANY

REPORT ON INTERNAL CONTROL

To the Board of Managers
Ramsey-Washington Metro Watershed District
Little Canada, Minnesota

In planning and performing our audit of the financial statements of the governmental activities and each major fund of Ramsey-Washington Metro Watershed District as of and for the year ended December 31, 2022, in accordance with auditing standards generally accepted in the United States of America, we considered Ramsey-Washington Metro Watershed District's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Ramsey-Washington Metro Watershed District's internal control. Accordingly, we do not express an opinion on the effectiveness of Ramsey-Washington Metro Watershed District's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis.

Our consideration of internal control was for the limited purpose described in the first paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses. Given those limitations, during our audit, we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

This communication is intended solely for the information and use of management, Ramsey-Washington Metro Watershed District's Board of Managers, and others within the organization, and is not intended to be, and should not be, used by anyone other than these specified parties.

Redpath and Company, Ltd.

REDPATH AND COMPANY, LTD.
St. Paul, Minnesota

April 26, 2023

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REDPATH AND COMPANY

MINNESOTA LEGAL COMPLIANCE REPORT

To the Board of Managers
Ramsey-Washington Metro Watershed District
Little Canada, Minnesota

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the governmental activities and each major fund of Ramsey-Washington Metro Watershed District as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise Ramsey-Washington Metro Watershed District's basic financial statements, and have issued our report thereon dated April 26, 2023.

In connection with our audit, nothing came to our attention that caused us to believe that Ramsey-Washington Metro Watershed District failed to comply with the provisions of the contracting-bid laws, depositories of public funds and public investments, conflicts of interest, public indebtedness, claims and disbursements, and miscellaneous provisions sections of the *Minnesota Legal Compliance Audit Guide for Other Political Subdivisions*, promulgated by the State Auditor pursuant to Minnesota Statute § 6.65, insofar as they relate to accounting matters. However, our audit was not directed primarily toward obtaining knowledge of such noncompliance. Accordingly, had we performed additional procedures, other matters may have come to our attention regarding Ramsey-Washington Metro Watershed District's noncompliance with the above referenced provisions, insofar as they relate to accounting matters.

This report is intended solely for the information and use of those charged with governance and management of Ramsey-Washington Metro Watershed District and the State Auditor and is not intended to be, and should not be, used by anyone other than these specified parties.

Redpath and Company, Ltd.

REDPATH AND COMPANY, LTD.
St. Paul, Minnesota

April 26, 2023

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New Reports/ Presentations

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RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

2022 WATER MONITORING ANNUAL REPORT

Prepared
April 2023

TABLE OF CONTENTS

TERMS

Best management practices (BMPs): Practices that protect water quality.

Chloride: Small amounts of chlorides are required for normal cell functions in plant and animal life, but chloride from de-icing and water-softener salt that gets into lakes and streams can be toxic to some aquatic life. The standard for chloride in Minnesota lakes and streams is 230 mg/l for chronic levels. That is the standard level used in this report.

Chlorophyll *a*: Chlorophyll *a* measures the amount of algae in a lake. Large amounts of algae, which cause green scum and odors, are a symptom of degraded water quality.

Eutrophication: Eutrophication describes a situation where a lake or other body of water has excessive nutrients and minerals, frequently due to polluted runoff. Nutrient excess can lead to dense plant growth and cause stress to animal life due to lack of oxygen.

Orthophosphorus: The form of phosphorus that is readily available for use by algae and other aquatic plants for growth.

PFAS (perfluoroalkyl substances): Polluting substances used in a variety of industrial, agricultural, military, and commercial product applications.

Phosphorus: Phosphorus is a nutrient that is essential for plant life, but excessive phosphorus degrades water quality. Common sources of phosphorus in lakes are fertilizers and organic wastes from runoff and soil erosion.

Secchi disc: The clarity or transparency of water is measured by lowering a "Secchi disc" (usually black and white) into the water until it is no longer visible from the surface. The greater the "Secchi depth," the more transparent the water.

Tiered Aquatic Life Uses (TALU): The Minnesota Pollution Control Agency's TALU framework is a significant revision to the aquatic life use classification in the state's water quality standards and is built on existing water quality standards to improve how water quality in streams and rivers are monitored and managed.

Measuring water clarity with a Secchi disc

Total suspended solids: Particulate matter, including soils, metals, organic materials, and debris suspended in a moving body of water.

STATE STANDARDS

The following information on how Minnesota standards for water quality are determined is taken from the Minnesota Pollution Control Agency's *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List.*

- **Total phosphorus and chlorophyll *a* in lakes:** Data used for phosphorus and chlorophyll *a* calculations are limited to those collected from the upper most 3 meters of the water column (surface). If more than one sample is collected in a lake per day, these values are averaged to yield a daily average value. Following this step, all June to September data for the 10-year assessment window are averaged to determine mean summer values for TP, corrected chlorophyll *a*, and Secchi depth. These values are then compared to the standards and the assessment is made.

- **Conventional pollutants (total suspended solids [TSS]):** A stream is considered to exceed the standard for TSS if (1) the standard is exceeded more than 10% of the days of the assessment season (April through September) as determined from a data set that gives an unbiased representation of conditions over the assessment season, and (2) there are at least three such measurements exceeding the standard.

- **Aquatic life toxicity-based standards (chlorides):** Aquatic life toxicity-based chronic water quality standards are written as 4-day average concentrations. In some cases, pollutant concentrations can be quite variable over such periods, depending on factors such as the type and size of the water body, weather and flow conditions, and the source and nature of the pollutant. For example, chloride concentrations in lakes, streams, and wetlands are relatively stable during low-flow conditions over a 4-day period, while pesticide concentrations during storm events in small streams can vary greatly in that same amount of time. The chloride values presented in this report represent average water column concentrations.

1. INTRODUCTION

This report presents annual and historical monitoring data, providing an overall water quality assessment of lakes and streams located within the Ramsey-Washington Metro Watershed District (RWMWD or the District). It includes an assessment of 15 lakes and ponds and five streams or conveyances, with a primary focus on total phosphorus, ortho-phosphorus, chlorophyll a, Secchi disk depth (lakes only), total suspended solids, and chloride. Nitrogen is also included for streams as there are many shallow lakes in the District, and nitrogen loads contributed by streams may have an influence on the ecological status of aquatic plant-dominated shallow lakes. Chloride is also a pollutant of increasing concern as road/sidewalk salt use has the potential to lead to high chloride concentrations in ponds, lakes, and streams, particularly during winter and spring months.

Also included as a separate section, as well as intermixed with the lake and stream assessment sections, is an assessment or accounting of BMPs that have been constructed at various locations in the watershed. Unlike ponds, which settle phosphorus attached to particles, these BMPs are designed to remove both particulate and dissolved phosphorus. While ponds are still a dominant feature in the District and remove most of the particulate pollutants, their phosphorus-removal performance is limited. For this reason, one of the primary types of BMPs installed to meet TMDL requirements is filtration-type BMPs. Many of the filtration-type BMPs with media designed to bind dissolved and unsettleable phosphorus are still considered somewhat experimental; hence, an assessment of the lifespan, performance, and effectiveness of these systems is warranted. This section will also cover other unique BMPs within the District, such as an alum treatment plant and a pond that received an iron filing application.

The report is organized by resource type or subject.

- Chapter 3 includes the most recent and historical lake data, water quality trends, a discussion of in-lake management actions and actions in the tributary watershed, and an overall assessment.
- Chapter 4 includes recent and historical monitoring data for streams and conveyances, an overall assessment, a discussion of water quality trends, and a description of relevant management actions.
- Chapter 5 provides a brief assessment of a potentially emerging issue for the District: PFAS (perfluoroalkyl substances).
- Chapter 6 provides the results of a 2021 and 2022 winter chloride study to better understand the sources of chloride in District waters.
- Chapter 7 provides the results of various monitored BMPs throughout the District.

2. CONCLUSIONS AND RECOMMENDATIONS

Overall, there is a long-term trend of improving water quality for eutrophication parameters for District lakes. A qualitative review of the figures in Section 3 suggests that in 2022 water quality improved in Battle Creek Lake and Gervais Lake, while water quality was worse for Casey Lake and Kohlman Lake. For monitored streams (Battle Creek, Fish Creek, Kohlman Creek, Beltline Interceptor, and Gervais Creek) and eutrophication parameters, there is also a long-term trend of improving water quality; however, those improvements appear to have plateaued and are potentially starting to decrease again over the last 10 years. In contrast, and although the period of record for many of these water bodies is short, it appears that chloride concentrations are either increasing or stable in District lakes and streams rather than decreasing.

Long-term water quality improvements in District lakes and streams suggest that the implementation of numerous best-management practices (BMPs) has been successful, though changes in precipitation may have also contributed to changes in the water quality of District water bodies. A next generation of BMPs has been implemented over the past decade to begin to remove dissolved phosphorus in addition to particulate phosphorus. A summarized assessment of these BMPs is provided below:

- **The Beam Avenue filter**, an iron-enhanced sand filter, was first monitored in 2009, with total phosphorus removal ranging from around 75 to 90% and ortho-phosphorus removal ranging from 10 to 80% from 2009 to 2018. Performance slightly improved in 2021 and 2022, but that may have been due to two drought years and a media closest to the inlet being replaced in 2022. Continued monitoring is planned for 2023, and this will provide valuable information regarding the expected longevity of iron-enhanced sand filters in Minnesota.

- **The Woodlyn Avenue iron-enhanced sand-type vegetative filter** was monitored from 2012 to 2018, and during that period, total phosphorus removal ranged from 22 to 75 percent, with the most recent removal in 2018 being 75 percent. Ortho-phosphorus removal during the monitoring period was as high as 90%, but in 2018 the percent removal was 0. In 2022, the BMP was monitored again and had over 90% removal for total phosphorus, orthophosphate, and total suspended solids. One potential explanation is that 2022 was a drought year with small rain events, so the potential for phosphorus release was low. Monitoring is planned to be on a rotational basis. After the next monitoring period, it will be important to evaluate if the media should be replaced.

- **Three spent-lime media filtration type BMPs** have been constructed in the District. It is instructive to compare the performance of these systems to the iron-enhanced sand filters and critically evaluate them both as it is still not clear which type of media performs best, as each has positive and negative attributes. The Wakefield Experimental Filter (Wakefield cell) was monitored from 2012 to 2016 and had annual average total phosphorus removal ranging from 41 to 80%, ortho phosphate removal ranging from 67 to 86%, and total suspended solids removal from 0 to 77%. The Frost Kennard Filter had a decrease in total phosphorus, orthophosphate, and total suspended solids removal from 2018 to 2019. In 2022, the filter had its best removal performance, with 78% total phosphorus removal, 65% orthophosphate removal, and 93% total suspended solids removal. The other spent-lime BMP, Willow Pond, is new and is just beginning to be monitored. Monitoring of Frost Kennard Filter will continue in 2023, and additional "start-up" monitoring will be conducted for Willow Pond in 2023.

- **The Wakefield experimental filter (Wakefield cell)** had the spent-lime media replaced with iron and granite sand media in 2022. The performance of the filter for phosphorus and orthophosphate was mixed with an average removal of 9% and 19%, respectively. Total suspended solids performance improved over the year, but the filter still had minimal removals, with two events releasing suspended solids. One potential reason for this is if the new media was not washed properly and contained additional solids at the time of installation. Monitoring is planned for 2023 to see if the performance improves.

- The Tanners Lake alum treatment facility deserves some mention as it has performed very reliably and is likely the primary reason that Tanners Lake has been taken off the impaired waters list and also why Battle Creek Lake water quality has improved notably. Since the beginning of operation in 1998, the average annual total phosphorus removal has ranged from 48 to 91%, with the removals from 2015 to 2019 ranging from 78-89%. Total phosphorus removal declined in the past 2 years at 72% in 2021 and 48% in 2022; therefore, it will be important to monitor to determine if the trend persists.

- The Shoreview Commons Pond is a pond that has a history of internal loading. In February 2021, an iron filing application was applied to the frozen lake. The application of iron on frozen ice allows the iron filings to be equally distributed as the ice melts. The pond was monitored from 2019 to 2021 to evaluate the impacts of the iron-filing application. Similarly, orthophosphate and total suspended solids removal were similar pre- and post-filing. Given similar removals pre- and post-filing application, a small data set in 2021, and the installation of an aerator in 2021, it is hard to make a statement regarding the impact of iron filings. It is recommended to sample more frequently for an entire year to determine the impacts of iron-filings.

The following include monitoring recommendations as well as some recommendations for future annual reports.

1. **Chloride**
   a. Continue to incorporate chloride monitoring into all routine water quality monitoring.
   b. On a rotating basis, continue annual monitoring of water bodies, including ponds, ditches, and creeks, to better understand where the chloride hotspots are located within the RWMWD. In 2022, chloride monitoring was continued (see Chapter 6) in water bodies downstream of approximately 40% of the District watershed area. Monitoring in water bodies is planned to continue in 2023.
   c. Measure specific conductance when measuring chloride to develop a relationship between chloride and specific conductance. In the future, specific conductance may be used as a surrogate for chloride by developing a regression between the two parameters.

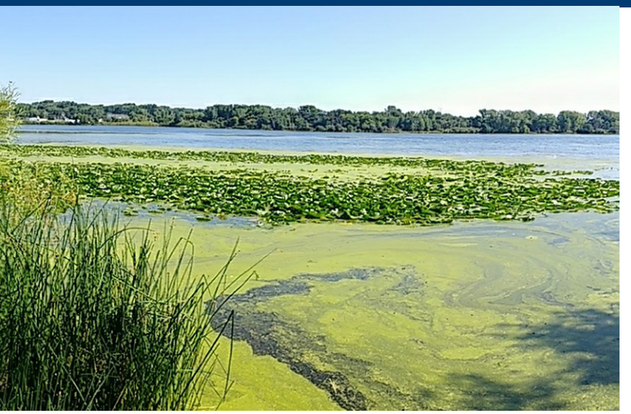
2. **Streams**
   a. Continue monitoring water quality of streams (at a minimum total phosphorus, total dissolved phosphorus, ortho-phosphorus, total Kjeldahl nitrogen, nitrate plus nitrite, total suspended solids, chloride, and chlorophyll *a*). Monitoring will have value even if flow cannot be monitored.

3. **BMPs**
   a. A rotating monitoring schedule for the filtration-type BMPs has been developed to document the performance of BMPs constructed in the District. A rotating schedule will allow for a more widespread monitoring effort when new BMPs come online. It is important to reevaluate the BMP monitoring schedule annually.
   b. The media of the following BMPs needs further evaluation in 2023 or a latter year (another year of monitoring may be appropriate to confirm whether these filters are performing as designed):
      i. Beam Avenue iron-enhanced sand filter
      ii. Woodlyn Avenue iron-enhanced sand filter
      iii. Wakefield Lake experiemental iron and granite sand filter
   c. A recommendation of the 2020 report was to monitor high-priority ponds (flow and water quality) to determine whether ponds are releasing phosphorus and if performance can be improved by various treatments. A study is currently ongoing to evaluate internal loading in Markham Pond, Bennett Lake, Gervais Mill Pond, and Marham Pond to identify the potential benefit of aerating ponds and shallow lakes to reduce internal loading. The outcome of this study will be highlighted in the 2023 report.

4. **For future reports, it is recommended that other non-water-quality activities be documented to keep track of how watershed and waterbody health is being improved in the watershed. These activities may include the following:**
   a. Carp management
   b. Aquatic plant management
   c. Shoreline restoration
   d. Wetland reclamation
   e. Macroinvertebrate and fisheries monitoring (relative to TALU)

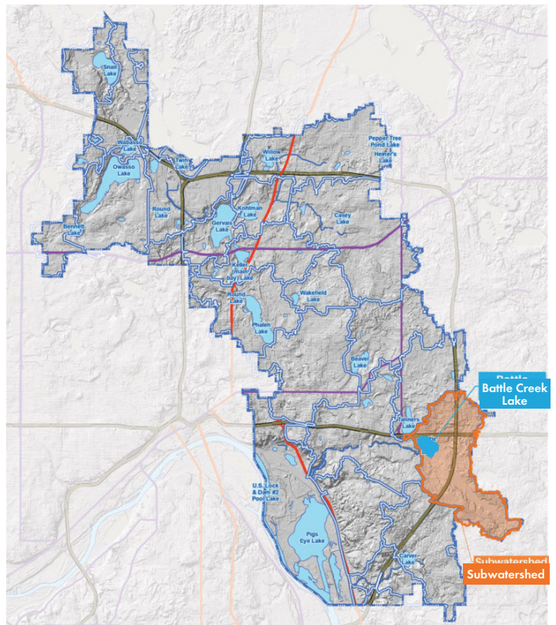
2022 WATER MONITORING ANNUAL REPORT

BATTLE CREEK LAKE



Minnesota Pollution Control Agency (MPCA) designations	Shallow lake; "non-support" of aqutic life (chloride)
Tributary area	2,638 acres
Surface area	103 acres
Average/maximum depth	4 feet/15 feet
RWMWD nutrient classification[1]	At risk
Accountable municipalities	Landfall, Oakdale, Woodbury, Washington County
Downstream water body	Battle Creek

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Battle Creek Lake is a shallow lake in Washington County that receives flows from Tanners Lake and outlets to Battle Creek. The lake is used for a variety of recreational purposes, including motor boating, canoeing, fishing, picnicking, and aesthetic viewing. A public boat access is located at the lake's southeast corner in Shawnee Park.

Battle Creek Lake is on the MPCA's impairment list for mercury (aquatic consumption) and chloride (aquatic life). A statewide mercury TMDL was completed in 2007, and the Twin Cities Metro Area Chloride TMDL was completed in 2016. The lake was removed from the MPCA's Impaired Waters List for excess nutrients in 2014.

Battle Creek Lake has been monitored annually for phosphorus, chlorophyll *a*, and Secchi disc depth from 1997 to 2022; it has been monitored annually for chloride since 2015. In 2022, the lake met Minnesota state standards for summer averages of all parameters but chloride (see table and graphs at right). The 10-year data shows a statistically significant trend of increasing Secchi disc transparency.

According to the 2017 *Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 68% of the phosphorus in Battle Creek Lake comes from stormwater. Strategies to address stormwater management include implementing water-quality projects that reduce external loading to the lake and BMP cost-share programs. Plans to address chloride include improving road salt management by promoting and adopting strategies outlined in the *Twin Cities Metro Area Chloride Management Plan*.

Since first establishing water quality goals for Battle Creek Lake, RWMWD has completed several projects that have contributed to improvements in water quality. Recent projects include:

- Woodbury Elementary and Middle School rain gardens (2017): This was one of six school rain garden projects funded, in part, by a $150,000 Clean Water Fund grant. Two gardens were planted at the site, providing needed pollinator habitat and reducing the volume of polluted runoff that drains to Battle Creek Lake.

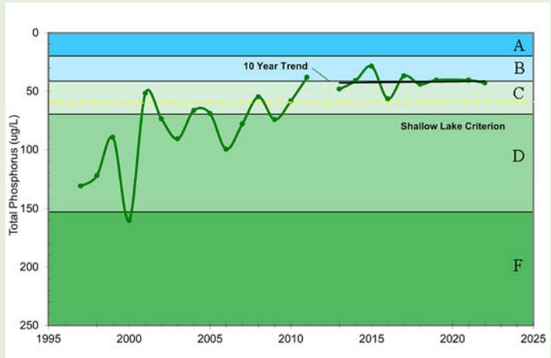
- Trinity Presbyterian Church (2017): Two rain gardens were installed at this site to manage runoff from the church's parking lot. This reduces the volume of polluted rainwater draining to Battle Creek Lake.

Parameter	State Standard	2022 Battle Creek Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 60 µg/l	43.0 µg/l	42 µg/l	None
Chlorophyll *a*	≤ 20 µg/l	9.6 µg/l	7.6 µg/l	None
Secchi disc transparency	> 1 meter	2.9 meters	2.4 meters	Increasing
Chloride	≤ 230 mg/l[2]	233 mg/l	N/A	N/A

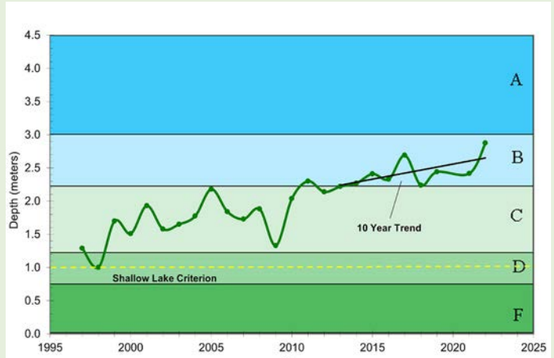
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

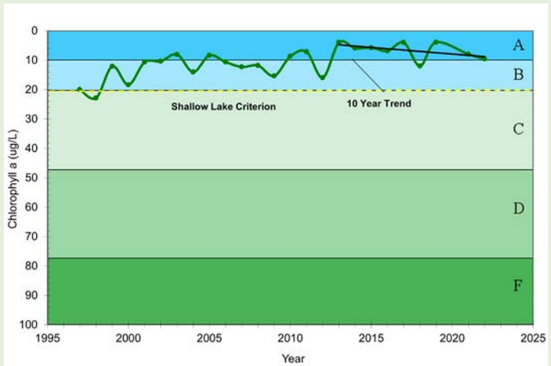
Total phosphorus (µg/l)



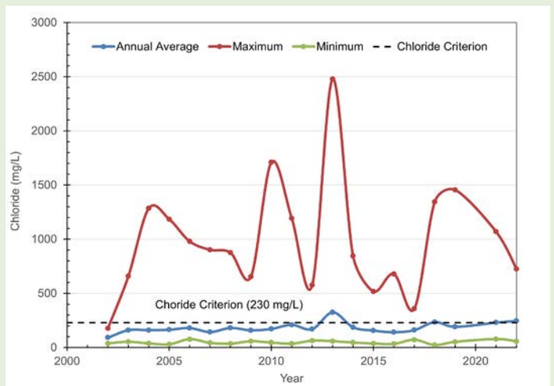
Secchi transparency (m)



Chlorophyll *a* (µg/l)



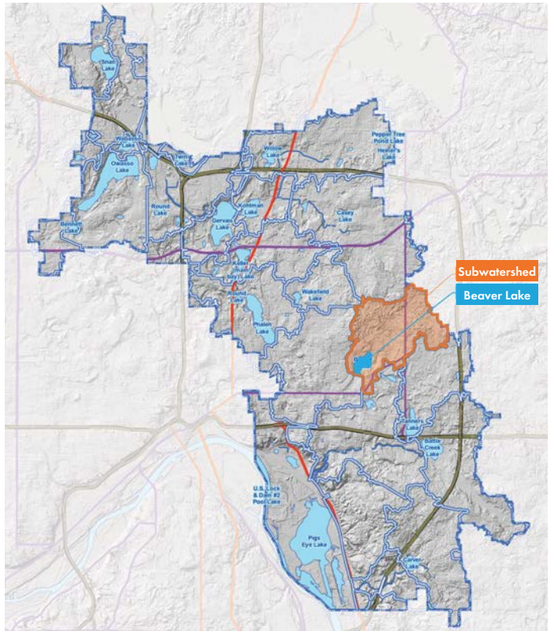
Chloride (mg/l)



BEAVER LAKE

MPCA designation	Shallow
Tributary area	1,935 acres
Surface area	87 acres
Average/maximum depth	4/11 feet
RWMWD nutrient classification[1]	At risk
Accountable municipalities	Maplewood, St. Paul, Ramsey County, Washington County
Downstream water body	Beltline Storm Sewer and Mississippi River

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Beaver Lake is a small, shallow lake in Maplewood that drains to the Beltline storm sewer and on to the Mississippi River. A Ramsey County park occupies most of the north and west shoreline. The lake has some wildlife habitat and is primarily used for canoeing, fishing, picnicking, and aesthetic viewing. It is impaired for mercury (aquatic consumption), at risk for chlorides, and listed by the Minnesota DNR as infested with Eurasian watermilfoil. In 2012 the lake was removed from the MPCA's Impaired Waters List for excess nutrients.

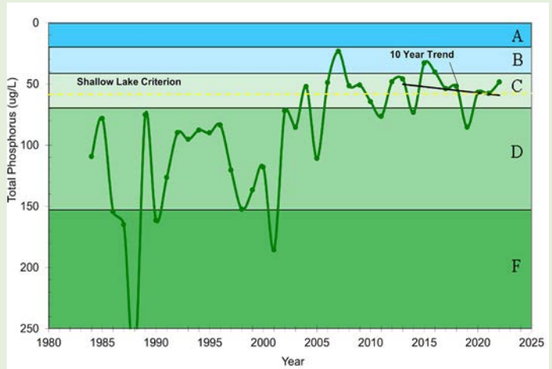
Beaver Lake has been monitored annually for phosphorus, chlorophyll *a*, and Secchi disc depth since 1984; chloride monitoring started in 2015. In 2022, the lake met summer-average state standards for all four parameters (see table and graphs at right). The 10-year data shows no statistically significant change for any parameter.

According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 51% of the phosphorus in Beaver Lake comes from stormwater, and 47% comes from internal loading. Strategies to address stormwater management include implementing water-quality projects to reduce the total phosphorus load to the lake and BMP cost-share programs. Plans to reduce in-lake loading include assessing options for the inactivation of sediment release of phosphorus.

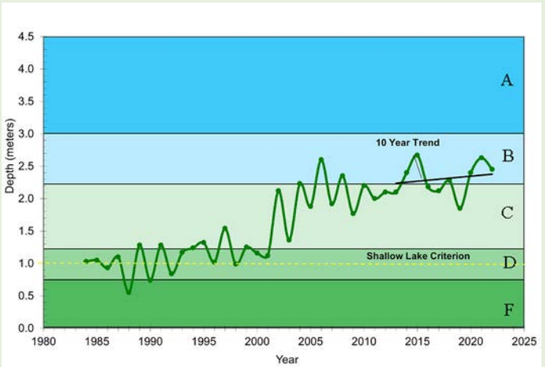
Parameter	State Standard	2022 Beaver Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 60 µg/l	48.5 µg/l	54 µg/l	None
Chlorophyll *a*	≤ 20 µg/l	18.1 µg/l	14 µg/l	None
Secchi disc transparency	> 1 meter	2.45 meters	2.3 meters	None
Chloride	≤ 230 mg/l[2]	116 mg/l	N/A	N/A

[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.
[2] State standard for chronic chloride exposure.

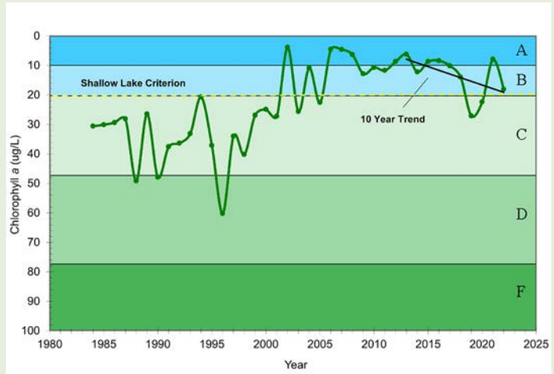
Total phosphorus (µg/l)



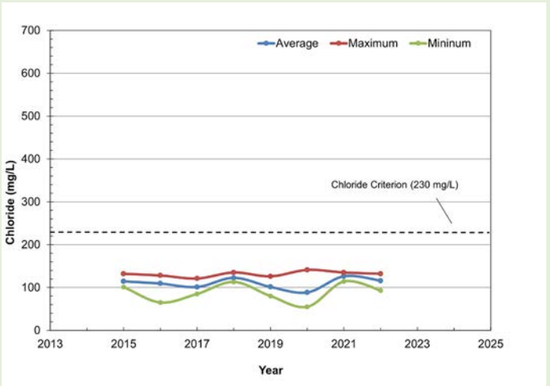
Secchi transparency (m)



Chlorophyll *a* (µg/l)



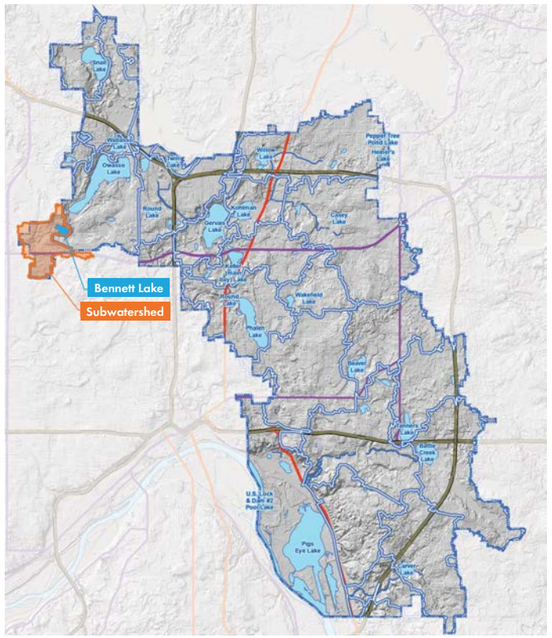
Chloride (mg/l)



BENNETT LAKE

MPCA designation	Shallow
Tributary area	721 acres
Surface area	25 acres
Average/maximum depth	9 feet
RWMWD nutrient classification[1]	Impaired
Accountable municipalities	Roseville, Ramsey County
Downstream water body	Lake Owasso

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Bennett Lake is the start of a chain of lakes that ultimately drains to Grass Lake. The City of Roseville's Central Park surrounds the lake, which has a fishing pier and provides canoeing opportunities. The Minnesota Department of Natural Resources uses Bennett Lake as a fish nursery.

Bennett Lake is considered by the MPCA to be impaired for mercury (aquatic consumption) and excess nutrients. A statewide mercury TMDL was completed in 2007, and a nutrient TMDL was completed in 2017.

Bennett Lake has been monitored annually for chlorophyll *a* from 1984 to 2022 and for phosphorus and Secchi disc depth from 2003 to 2022. Annual chloride monitoring began in 2015. In 2022, the lake met summer-average state standards for chlorophyll *a*, Secchi disc transparency, and chloride but failed to meet the phosphorus standard (see table and graphs at right). The 10-year data shows a statistically significant trend of decreasing chlorophyll *a* levels.

According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 56% of the phosphorus in Bennett Lake comes from internal loading, and 43% comes from stormwater. In 2022, a shallow lake aeration study began. The study consists of monthly monitoring for water quality and sediment coring, as well as continuous dissolved oxygen monitoring. The objective of the study is to determine if shallow aeration could reduce phosphorus loading and improve dissolved oxygen throughout the lake.

RWMWD has completed three recent projects that have contributed to the improving water quality of this lake:

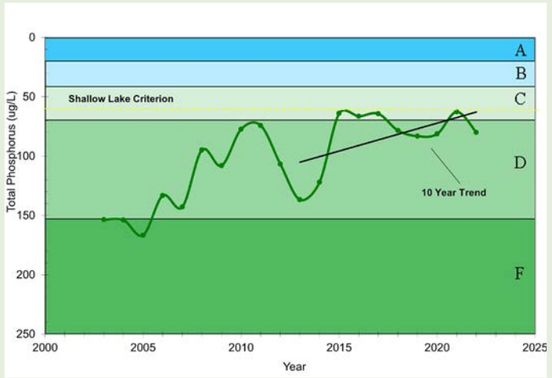
- Grace Church retrofit (2015): This project involved the installation of two rain gardens and three native planting areas to intercept and filter runoff from the Grace Church parking lot, reducing the volume of polluted rainwater draining to Bennett Lake.
- Willow Pond Spent Lime Filter (2018): This project involved the installation of a spent lime filter that draws water above the pond's outlet elevation off of Willow Pond. The pipe that draws water from Willow Pond can be opened and closed automatically to control the volume of water in the filter and the length of time between filling events.
- Carp management (ongoing since 2017): Carp management in the Lake Owasso system of lakes (Owasso, Wabasso, Bennet, and Grass) is helping control phosphorus loading in these waters. Foraging carp stir up nutrient-rich sediment on the lake bottom, which, in turn, contributes to turbid water and algae blooms. Management efforts include counting carp to understand the extent of the population, tracking them with radio tags to allow efficient harvesting and identification of carp nurseries, and installing barriers.

Parameter	State Standard	2022 Bennett Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 60 µg/l	80.1 µg/l	84 µg/l	None
Chlorophyll *a*	≤ 20 µg/l	6.7 µg/l	17.5 µg/l	Decreasing
Secchi disc transparency	> 1 meter	2.05 meters	1. 6 meters	None
Chloride	≤ 230 mg/l[2]	142 mg/l	N/A	N/A

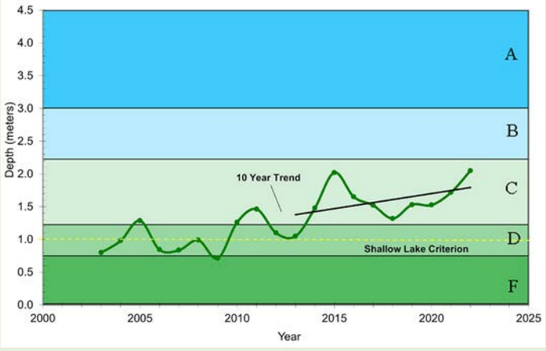
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

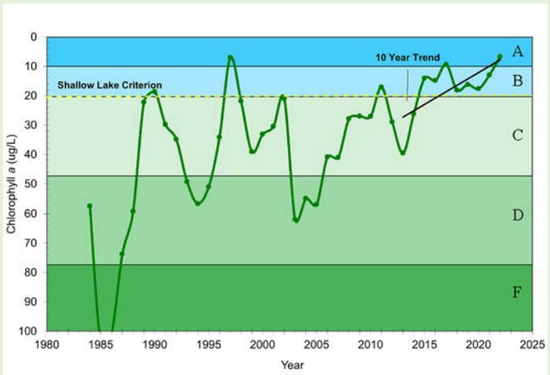
Total phosphorus (µg/l)



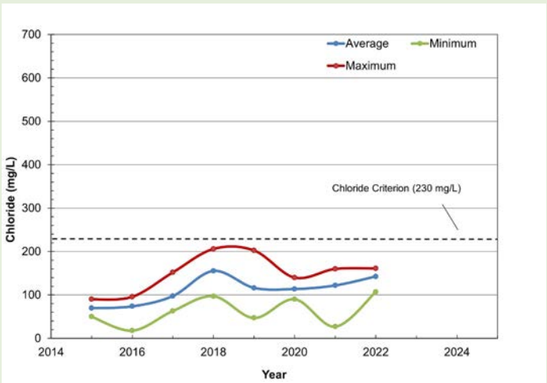
Secchi transparency (m)



Chlorophyll *a* (µg/l)



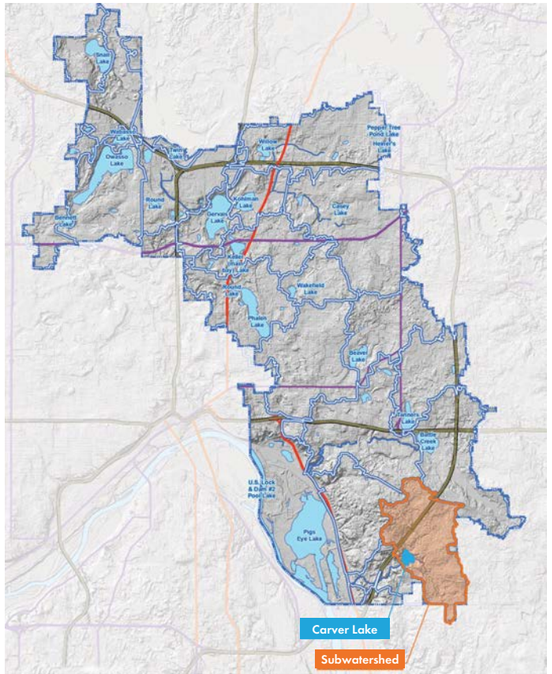
Chloride (mg/l)



CARVER LAKE

MPCA designations	Deep lake; "non-support" of aquatic life (chloride)
Tributary area	2,274 acres
Surface area	49 acres
Average/maximum depth	16/36 feet
RWMWD nutrient classification[1]	At risk
Accountable municipalities	Maplewood, Woodbury, Ramsey County, Washington County
Downstream water body	Fish Creek

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Carver Lake, which borders the popular Carver Lake Park, is used primarily for swimming and canoeing. There is a public beach located on the southeast side, along with a canoe access.

Carver Lake was removed from the MPCA's impaired list for nutrients in 2012. However, it is still considered by to be impaired for mercury (aquatic consumption) and chloride (aquatic life). A statewide mercury TMDL was completed in 2007, and the Twin Cities Metro Area Chloride TMDL was completed in 2016.

Carver Lake has been monitored annually for phosphorus, chlorophyll *a*, and Secchi disc depth from 1997 to 2021. Annual chloride monitoring began in 2016. In 2022, the lake met MPCA summer-average state standards for phosphorus, chlorophyll *a*, and Secchi disc transparency. However, chloride levels were notably over the state standard. The 10-year trend shows a statistically significant improvement in Secchi disc transparency (see table and graphs at right).

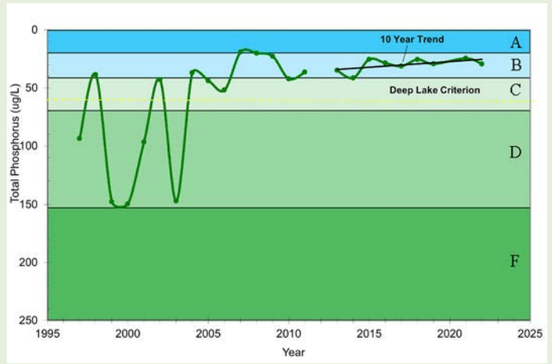
According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 79% of the phosphorus in Carver Lake comes from stormwater, and 19% comes from internal loading. Goals for the lake include improving stormwater management by implementing a BMP cost-share program and water quality projects that decrease the phosphorus load to Carver Lake.

Parameter	State Standard	2021 Carver Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	29.5 µg/l	30 µg/l	None
Chlorophyll *a*	≤ 14 µg/l	9.8 µg/l	13 µg/l	None
Secchi disc transparency	> 1.4 meters	3.07 meters	2.4 meters	Increasing
Chloride	≤ 230 mg/l[2]	317 mg/l	N/A	N/A

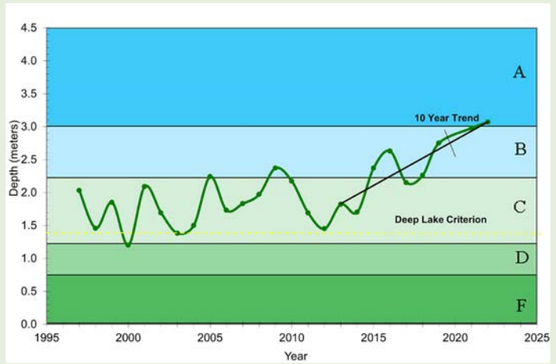
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

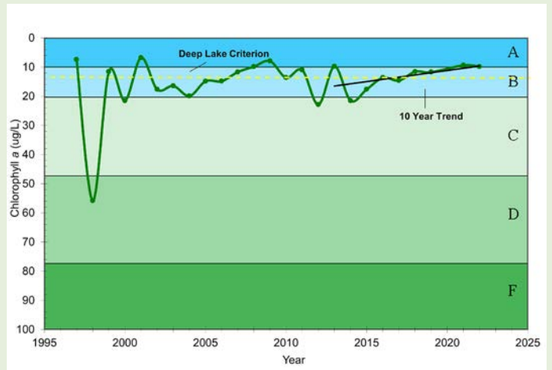
Total phosphorus (µg/l)



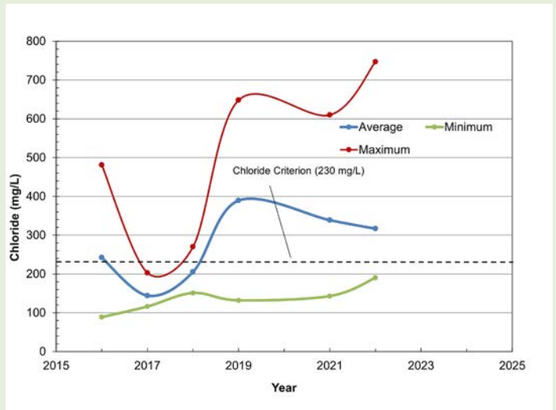
Secchi transparency (m)



Chlorophyll *a* (µg/l)



Chloride (mg/l)



CASEY LAKE

Casey Lake is actually a large wetland. Located in North St. Paul, it is the headwaters of Kohlman Creek.

Casey Lake has been monitored annually for phosphorus, chlorophyll a, and Secchi disc depth since 2008; however, as a wetland, state eutrophication standards do not apply. The 10-year data shows a statistically significant increase in Secchi disc depths and chlorophyll *a* concentrations.

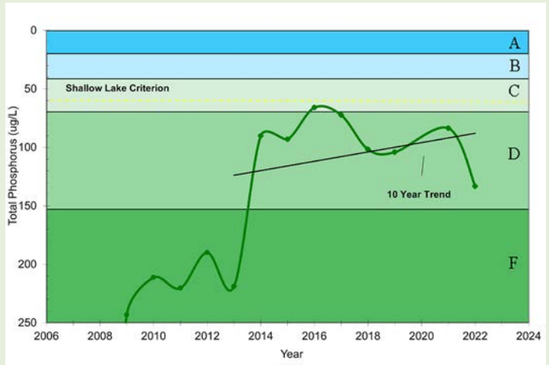
In the winter of 2012–2013, a draw-down of Casey Lake was done to kill invasive carp, which used the lake as a nursery. Foraging carp stir up nutrient-rich sediment on the lake bottom, which, in turn, contributes to turbid water and algae blooms. The draw-down dramatically improved the lake's water clarity (from 0.26 meters to 0.88 meters). In the spring of 2013, the DNR stocked bluegills and bass in Casey Lake to keep carp levels low.

Parameter	State Standard	2022 Casey Lake	10-Year Average[1]	10-Year Trend
Phosphorus	N/A	133.2 µg/l	106 µg/l	None
Chlorophyll *a*	N/A	15.6 µg/l	17 µg/l	Increasing
Secchi disc transparency	N/A	0.96 meter	0.9 meters	Increasing
Chloride	N/A	74.6 mg/l	N/A	N/A

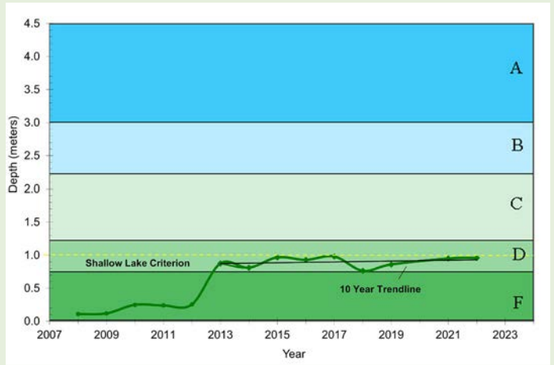
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] Chloride value is average water-column concentration.

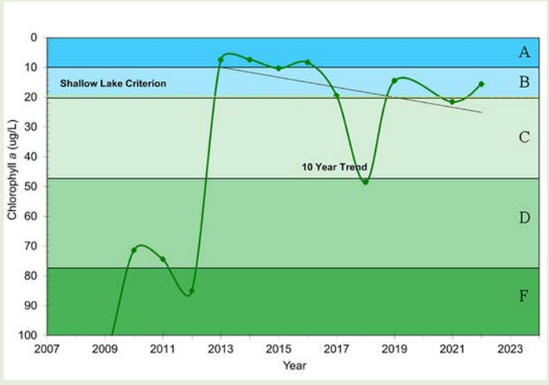
Total phosphorus (µg/l)



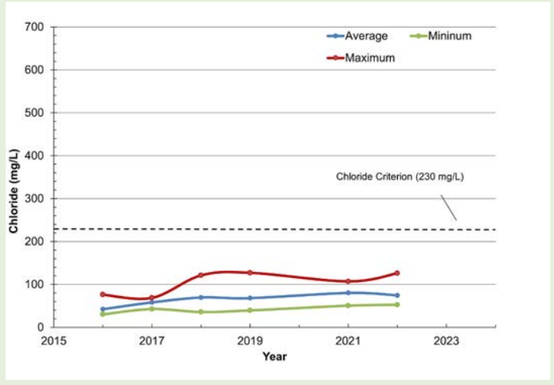
Secchi transparency (m)



Chlorophyll *a* (µg/l)



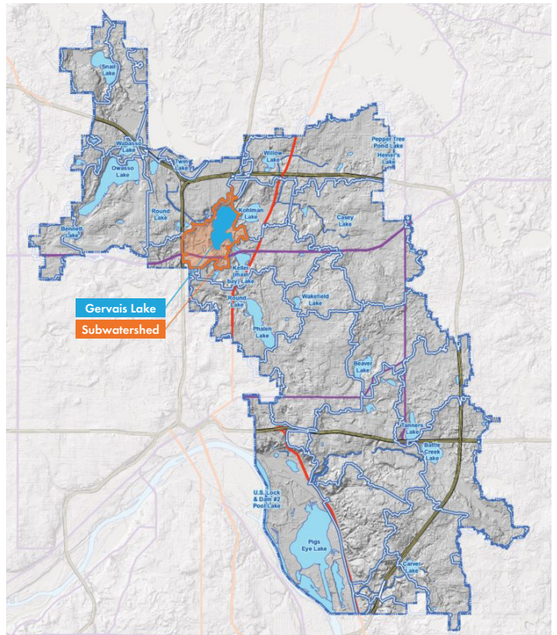
Chloride (mg/l)



GERVAIS LAKE

MPCA designations	Deep; "non-support of aquatic life (fish and chloride)
Tributary area	893 acres
Surface area	234 acres
Average/maximum depth	22/41 feet
RWMWD nutrient classification[1]	Stable
Accountable municipalities	Little Canada, Maplewood, Ramsey County
Downstream water body	Keller Lake

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Gervais Lake is the second and largest lake in the Phalen Chain of Lakes. It is used primarily for swimming, skiing, and boating. There is a public boat access from Spoon Lake and a Ramsey County swimming beach and park adjacent to the lake. The lake receives flows from Gervais Creek, Kohlman Lake, and runoff from its direct tributary area.

Gervais Lake is on the MPCA's impaired waters list as impaired for mercury (aquatic consumption) and is considered to be at risk for chloride. The lake is also listed by the Minnesota DNR as infested with Eurasian watermilfoil. A statewide mercury TMDL was completed in 2007.

Annual monitoring for phosphorus, chlorophyll *a*, and Secchi disc depth started in 1981. Annual monitoring for chloride began in 1998. In 2022, the lake met summer-average state standards for all parameters but chlorophyll *a*. The 10-year data shows no statistically significant change for any parameter.

According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 24% of the phosphorus in Gervais Lake comes from stormwater, and 76% comes from upstream water bodies. Plans to address these conditions include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake.

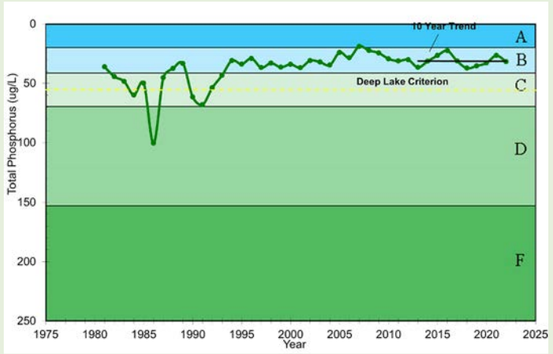
One project that helps control phosphorus loading in the Phalen Chain of Lakes (Gervais, Lake Phalen, Lake Keller, Kohlman Lake) is carp management (ongoing since 2009). Foraging carp stir up nutrient-rich sediment on the lake bottom, which, in turn, contributes to turbid water and algae blooms. Management efforts include counting carp to understand the extent of the population, tracking them with radio tags to allow efficient harvesting and identification of nurseries, and installing barriers. Efforts have reduced carp in the Phalen Chain by over 60%.

Parameter	State Standard	2022 Gervais Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	31.9 µg/l	31 µg/l	None
Chlorophyll *a*	≤ 14 µg/l	21.6 µg/l	13 µg/l	None
Secchi disc transparency	> 1.4 meter	2.52 meters	2.3 meters	None
Chloride	≤ 230 mg/l[2]	196 mg/l	N/A	N/A

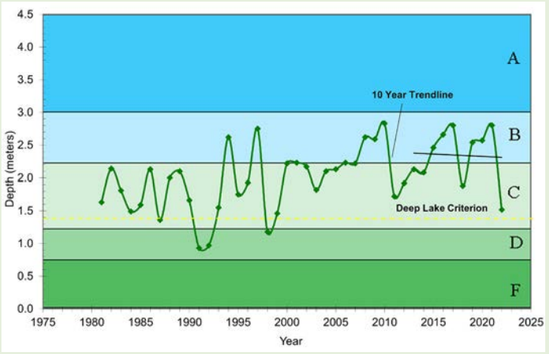
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

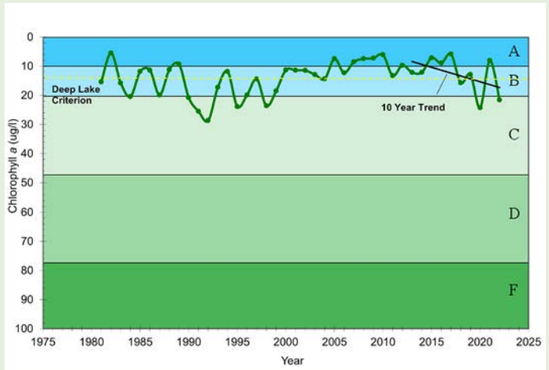
Total phosphorus (µg/l)



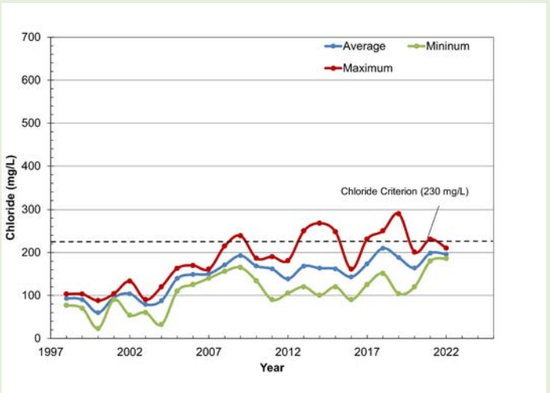
Secchi transparency (m)



Chlorophyll *a* (µg/l)



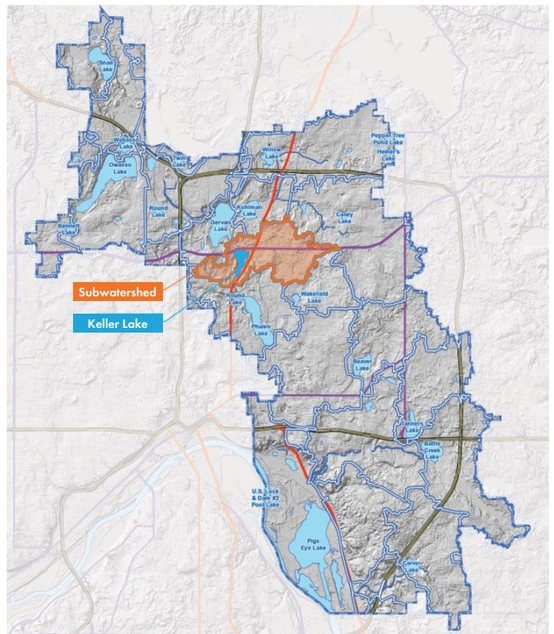
Chloride (mg/l)



KELLER LAKE

MPCA designation	Shallow
Tributary area	1,577 acres
Surface area	72 acres
Average/maximum depth	4/8 feet
RWMWD nutrient classification[1]	Stable
Accountable municipalities	Little Canada, Maplewood, Ramsey County
Downstream water body	Lake Phalen

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Keller Lake is the third lake in the Phalen Chain of Lakes and is used for motor-boating, canoeing, fishing, picnicking, and aesthetic viewing. There is a Ramsey County Park on the lake's east shoreline. Flows to the lake are received from Gervais Lake (through Spoon Lake) and runoff from its direct tributary area.

Keller Lake was listed as impaired for excess nutrients in 2002 but was removed from the list in 2012 after meeting state standards (for shallow lakes). The lake is still at risk of impairment for chlorides. In addition, Keller Lake is listed by the Minnesota DNR as infested with Eurasian watermilfoil.

Annual monitoring for phosphorus, chlorophyll *a*, and Secchi disc depth began in 1981; monitoring for chlorides started in 2015. In 2022, Keller Lake did not meet summer-average state standards for any parameter except chloride concentration (see table and graphs at right). The 10-year data shows no statistically significant change for any parameter.

According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 42% of the phosphorus in Keller Lake comes from stormwater, 8% comes from internal loading, and 49% comes from upstream water bodies. Strategies to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake. Internal loading is being addressed by managing carp.

Several recent projects have helped Keller Lake water quality. These include:

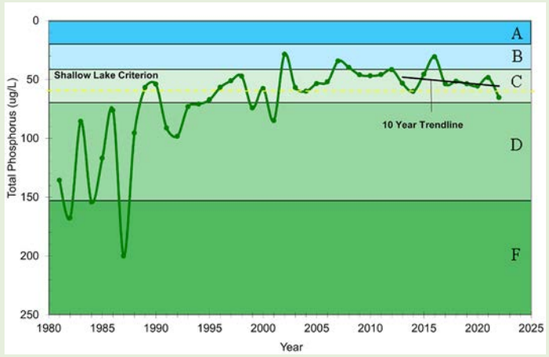
- Weaver Elementary School (2016) is one of six school rain garden projects to manage polluted runoff at schools in priority areas of the watershed. This project also provides needed pollinator habitat.
- The Highway 36/61 project (2014): This project was constructed as part of the overall Trunk Highway 36 and English Street interchange effort. It included the installation of a stormwater treatment system to prevent polluted stormwater runoff from entering Keller Lake and downstream Lake Phalen. The project treats stormwater from approximately 70 acres of commercial, residential, and highway areas by channeling it through an enhanced sand filter cell and two wetland treatment basins designed to remove phosphorus-rich sediment and other contaminants.
- Lakeview Lutheran (2013) is one of 12 projects to manage rainwater runoff at churches with large amounts of impervious surface. Three rain gardens were installed, as well as a native planting area that provides pollinator habitat. The gardens and planting area filter runoff from the church parking lot.

Parameter	State Standard	2022 Keller Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 60 µg/l	65.3 µg/l	52 µg/l	None
Chlorophyll *a*	≤ 20 µg/l	38.8 µg/l	14 µg/l	None
Secchi disc transparency	> 1 meter	0.78 meters	1.6 meters	None
Chloride	≤ 230 mg/l[2]	192 mg/l	N/A	N/A

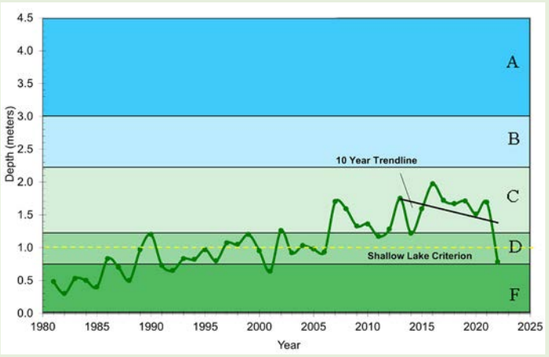
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

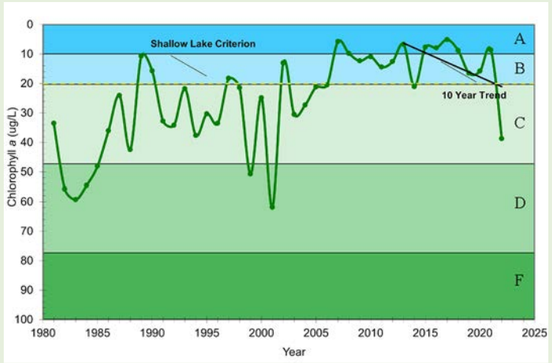
Total phosphorus (µg/l)



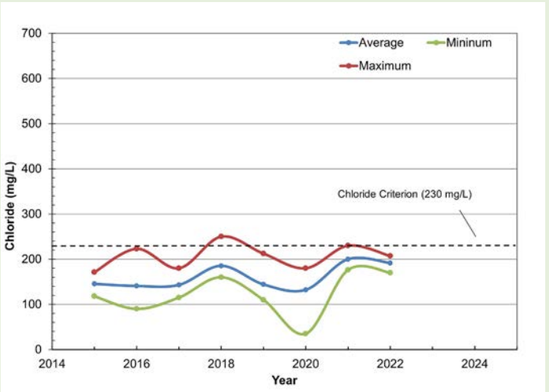
Secchi transparency (m)



Chlorophyll *a* (µg/l)



Chloride (mg/l)

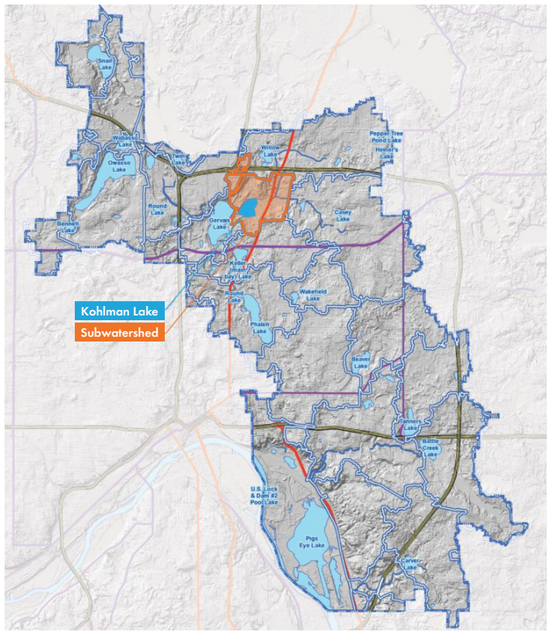


- Keller Lake Shoreline (2012): This ecological restoration project treated over 2,000 feet of shoreline, helping to reduce the volume of polluted stormwater that reaches the lake. The restoration areas now support more than 75 species of native plants.
- Carp management (ongoing since 2009): Carp management helps control phosphorus loading in the Phalen Chain of Lakes (Keller Lake, Gervais Lake, Lake Phalen, and Kohlman Lake). Foraging carp stir up nutrient-rich sediment on the lake bottom, which, in turn, contributes to turbid water and algae blooms. Management efforts include counting carp to understand the extent of the population, tracking them with radio tags to allow efficient harvesting and identification of nurseries, and installing barriers. Efforts have reduced carp in the Phalen Chain by over 60%.

Kohlman Lake

MPCA designations	Shallow; "non-support" of aquatic life (chloride)
Tributary area	1,009 acres
Surface area	84 acres
Average/maximum depth	4/12 feet
RWMWD nutrient classification[1]	At-risk (changed from "impaired" in 2022 MPCA assessment)
Accountable municipalities	Little Canada, Maplewood, Vadnais Heights, Ramsey County
Downstream water body	Gervais Lake

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Kohlman Lake is the first lake in the Phalen Chain of Lakes. It is used for a variety of recreational purposes, including motor-boating, canoeing, fishing, picnicking, and aesthetic viewing. While the drainage area that directly reaches the lake is just over 1,000 acres, the total area connected to the lake through Kohlman and Willow Creeks is about 7,500 acres. There is no direct public boat access to Kohlman Lake, but it can be accessed from Gervais Lake.

Kohlman Lake was listed as impaired for excess nutrients in 2002 and is impaired for chloride (aquatic life). In addition, Kohlman is listed by the Minnesota DNR as infested with Eurasian watermilfoil. A nutrient TMDL was completed in 2010, and the Twin Cities Metro Area Chloride TMDL was completed in 2016.

Annual monitoring for phosphorus, chlorophyll *a*, and Secchi disc depth has occurred since 1981. Annual monitoring for chlorides began in 2021. In 2022, only chloride met summer-average state standards. The 10-year trend shows a statistically significant increase in total phosphorus and chlorophyll *a* concentration, while Secchi disc depth is decreasing.

According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 76% of the phosphorus in Kohlman Lake comes from stormwater, and 23% comes from internal loading. Strategies to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake. Internal loading will be addressed by managing carp and curlyleaf pondweed, as needed. An initial alum treatment has been completed on the lake; treatment will be continued if needed, and other options will be assessed.

A few projects have helped improve water quality in Kohlman Lake:

- Maplewood Mall (2012): With 35 acres of asphalt pavement and concrete surfaces surrounding it, Maplewood Mall was a major source of phosphorus runoff to Kohlman Lake. But, over 4 years, the RWMWD installed a variety of stormwater management features that capture and filter 67 percent of rainwater at the mall—up from just 3 percent before the project. These features include innovative tree trenches, rain gardens, permeable pavers, and a 5,700-gallon cistern that receives runoff from the mall roof. Interpretive signage educates the public about these improvements, and a large watershed map in the entry vestibule shows how water travels from the mall all the way to the Mississippi River.

- Beam Avenue Iron-Enhanced Sand Filter (2009): During construction of the new Country View Lane in Maplewood, RWMWD constructed a sand filter to remove dissolved phosphorus from stormwater. Sand filters have been used for years to remove solids and some pollutants from stormwater, but elemental iron (often called zero-valent iron) was added to the sand to remove dissolved phosphorus by forming iron-phosphate complexes. RWMWD monitoring indicates this practice is effectively removing about 90 percent of dissolved phosphorus in the tributary stormwater. This filter is evaluated in Section 7.

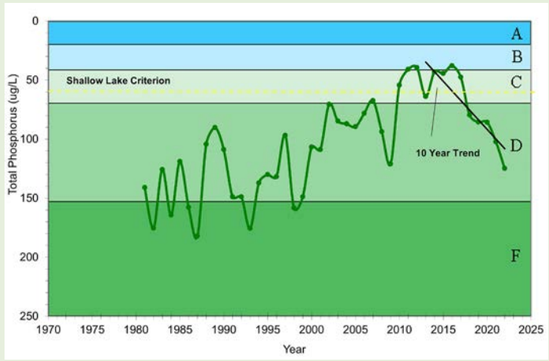
- Carp management (ongoing since 2009): Carp management helps control phosphorus loading in the Phalen Chain of Lakes (Kohlman Lake, Lake Phalen, Gervais Lake, Lake Keller). Foraging carp stir up nutrient-rich sediment on the lake bottom, which, in turn, contributes to turbid water and algae blooms. Management efforts include counting carp to understand the extent of the population, tracking them with radio tags to allow efficient harvesting and identification of nurseries, and installing barriers. These efforts have reduced carp in the Phalen Chain by over 60%.

Parameter	State Standard	2022 Kohlman Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 60 µg/l	124.8 µg/l	71 µg/l	Increasing
Chlorophyll *a*	≤ 20 µg/l	54.4 µg/l	15 µg/	Increasing
Secchi disc transparency	> 1 meter	0.98 meters	1.6 meters	Decreasing
Chloride	≤ 230 mg/l[2]	168 mg/l	N/A	N/A

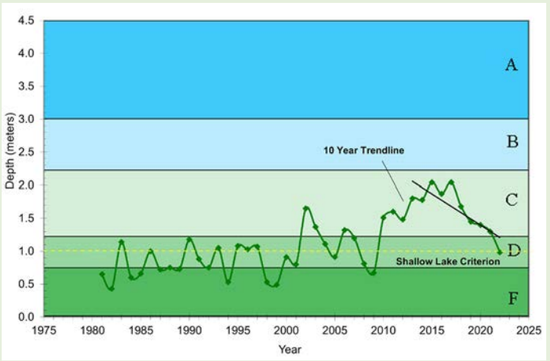
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure; chloride value is average water-column concentration.

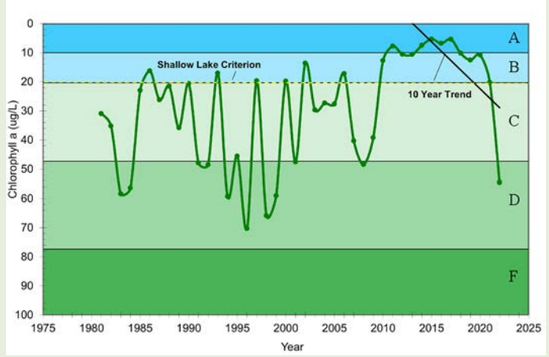
Total phosphorus (µg/l)



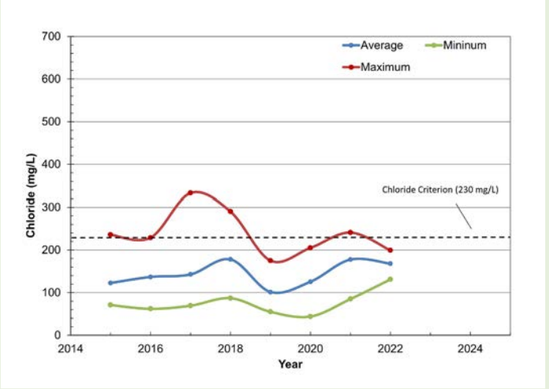
Secchi transparency (m)



Chlorophyll *a* (µg/l)



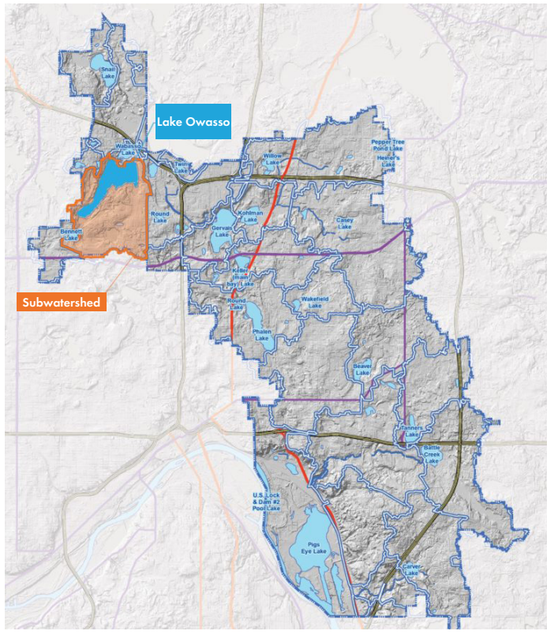
Chloride (mg/l)



LAKE OWASSO

MPCA designation	Deep
Tributary area	2,175 acres
Surface area	375 acres
Average/maximum depth	11/37 feet
RWMWD nutrient classification[1]	At risk
Accountable municipalities	Roseville, Shoreview, Ramsey County
Downstream waterbody	Lake Wabasso

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Lake Owasso is the largest lake in the RWMWD and a major regional recreational resource for fishing, boating, waterskiing, and swimming. Roseville's Central Park North (along the south shore of the lake) and Owasso County Park in the city of Shoreview (on the north side) provide two public access points, including a boat launch and a public swimming beach. Lake Owasso receives water from Bennett Lake and Lake Emily.

Lake Owasso is impaired for mercury (aquatic consumption) and is also listed by the Minnesota DNR as infested with Eurasian watermilfoil. A statewide mercury TMDL was completed in 2007.

Phosphorus and Secchi disc depth have been monitored annually at Lake Owasso from 2003 to 2022. Chlorophyll *a* has been monitored annually since 1984, and chlorides have been monitored since 2015. 2022 monitoring shows that the lake meets summer-average state standards for all four parameters. The 10-year data shows a statistically significant decrease in phosphorus and chlorophyll *a* levels.

According to the 2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report, 31% of the phosphorus in Lake Owasso comes from stormwater, and 63% comes from internal loading. Plans to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake. Internal loading will be addressed by managing carp as needed. Options for the inactivation of sediment release of phosphorus will also be assessed.

Several projects have been completed to improve water quality in Lake Owasso:

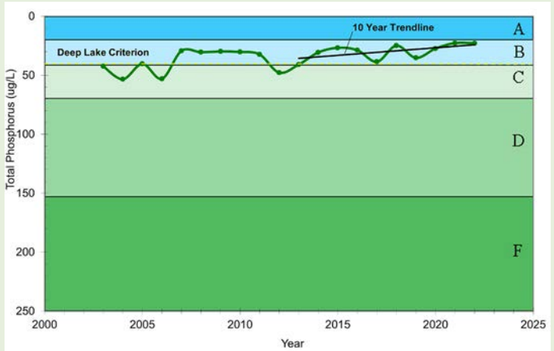
- Central Park Elementary (2017) is one of six school rain garden projects providing needed pollinator habitat and reducing the volume of polluted runoff. RWMWD's goal was to manage rainwater runoff at schools in priority areas of the watershed while engaging local communities in a shared learning experience.
- Prince of Peace Lutheran Church (2015) and North Heights Christian Academy (2017) are two of 12 projects to manage rainwater runoff at churches with large impervious surfaces. The goal of these projects was to install rain gardens to intercept and filter polluted runoff from the church parking lots.
- Carp management (ongoing since 2017): With four interconnected lakes (Owasso, Wabasso, Bennett, and Grass) and 12 shallow ponds, the Lake Owasso system offers prime habitat for carp to potentially out-compete native game fish. As carp root for food along the lake bottom, they stir up nutrient-rich sediment, which, in turn, contributes to turbid water and algae blooms. Management efforts include counting carp to understand the extent of the population, tracking them with radio tags to allow efficient harvesting and identification of nurseries, and installing barriers.

Parameter	State Standard	2022 Lake Owasso	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	22.9 µg/l	30 µg/l	Decreasing
Chlorophyll *a*	≤ 14 µg/l	9.2 µg/l	14 µg/l	Decreasing
Secchi disc transparency	> 1.4 meter	2.25 meters	2.0 meters	None
Chloride	≤ 230 mg/l[2]	70.3 mg/l	N/A	N/A

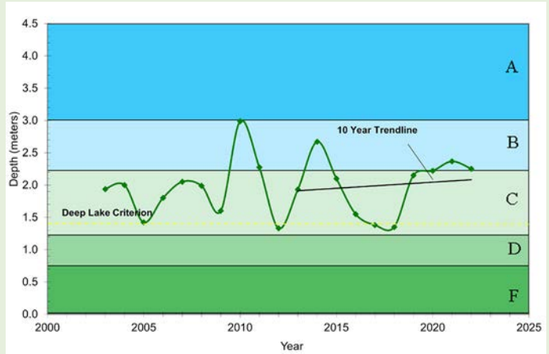
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

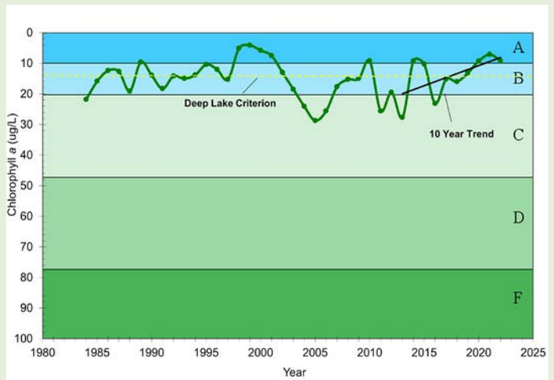
Total phosphorus (µg/l)



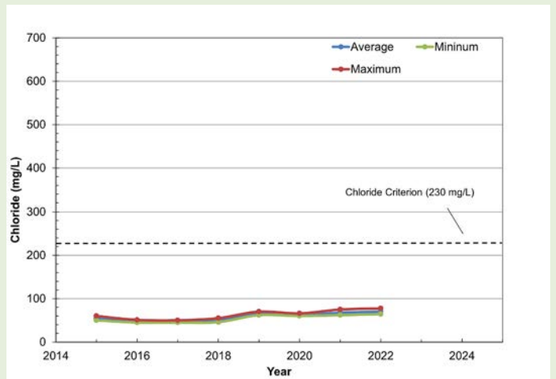
Secchi transparency (m)



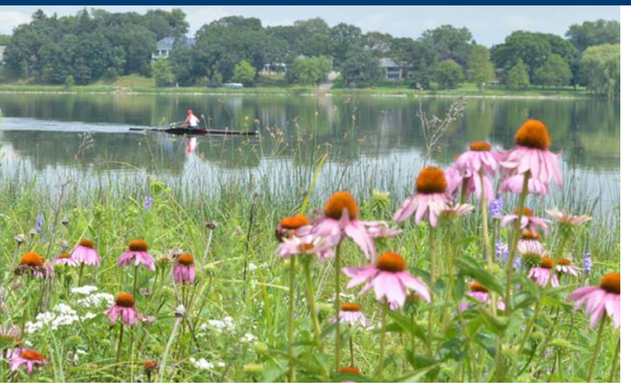
Chlorophyll *a* (µg/l)



Chloride (mg/l)

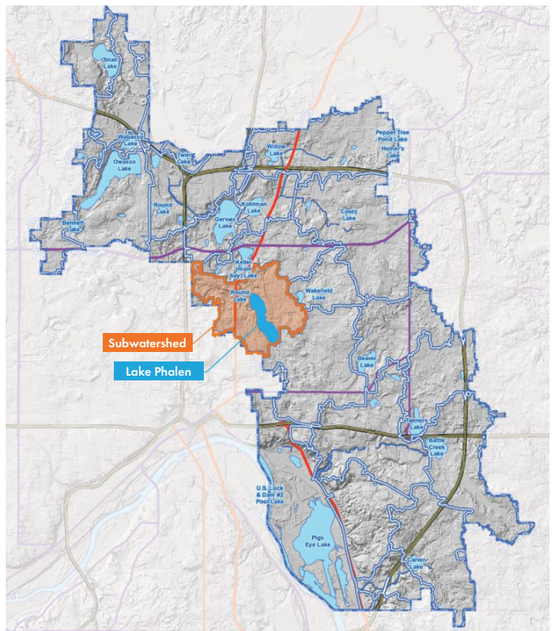


LAKE PHALEN



MPCA designation	Deep
Tributary area	1,995 acres
Surface area	200 acres
Average/maximum depth	22/95 feet
RWMWD nutrient classification[1]	Stable
Accountable municipalities	Maplewood, St. Paul, Ramsey County
Downstream water body	Mississippi River via the Beltline Interceptor storm sewer

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Lake Phalen, the downstream-most lake in the Phalen Chain of Lakes, is surrounded by park land that has 2 miles of restored shoreline. The lake is used primarily for swimming, fishing, paddling, picnicking, and aesthetic viewing. It has public boating access and a swimming beach. While the direct tributary area to the lake is close to 2,000 acres, the total land area that ultimately drains through Lake Phalen is closer to 15,000 acres, including the Keller Lake and Wakefield Lake subwatersheds.

Lake Phalen is impaired for mercury (aquatic consumption) and is listed by the Minnesota DNR as infested with Eurasian watermilfoil. A statewide mercury TMDL was completed in 2007.

Phosphorus, chlorophyll *a*, and Secchi disc depth have been monitored annually since 1981. Annual chloride monitoring began in 2015. In 2022, all four parameters met summer-average state standards. The 10-year data shows no statistically significant trends for any tested parameters.

According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 68% of the phosphorus in Lake Phalen comes from stormwater, and 32% comes from internal loading. Plans to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake.

Projects that have improved water quality in Lake Phalen include:

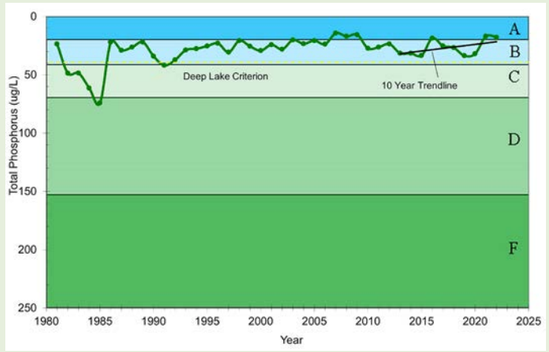
- Keller Creek Buffer (2018): The Keller Creek restoration effort restored native plant communities, removed invasive vegetation, reduced erosion, and brought significant improvements to wildlife habitat and recreation along nearly a mile of the creek.
- Keller Golf Course (2014): Keller is a beautiful public course located just east of Lake Keller. The no-play areas on this course comprise part of the Phalen Chain of Lakes natural areas corridor, providing critical wildlife habitat and improving infiltration. This improvement project restored more than seven acres of no-play area.
- Phalen Shoreline Restoration (2010): This project has become one of the largest lakeshore restoration efforts in Minnesota. The long-term effort involved restoring deep-rooted native plants to filter stormwater, prevent erosion, and create needed urban wildlife habitat. More than 100 native plant species have become established along the shore.

Parameter	State Standard	2022 Lake Phalen	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	17.8 µg/l	27 µg/l	None
Chlorophyll *a*	≤ 14 µg/l	7.9 µg/l	7.5 µg/l	None
Secchi disc transparency	> 1.4 meters	3.25 meters	3.0 meters	None
Chloride	≤ 230 mg/l[2]	171 mg/l	N/A	N/A

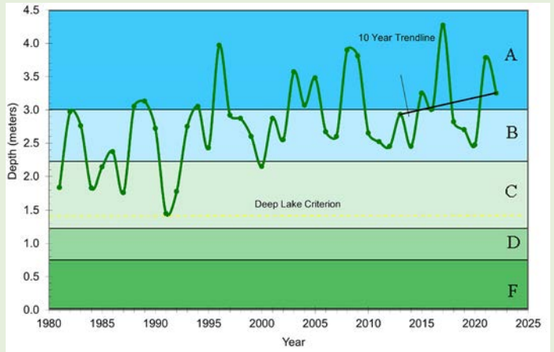
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

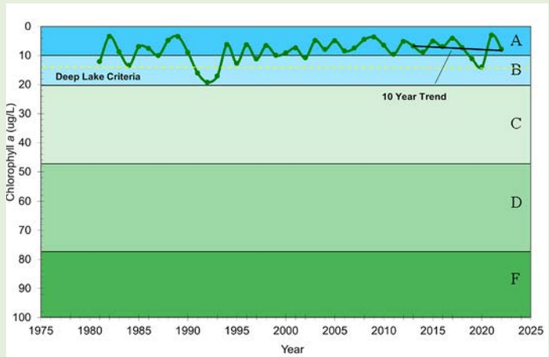
Total phosphorus (µg/l)



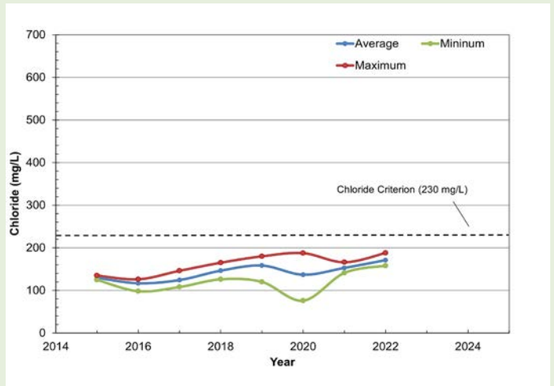
Secchi transparency (m)



Chlorophyll *a* (µg/l)

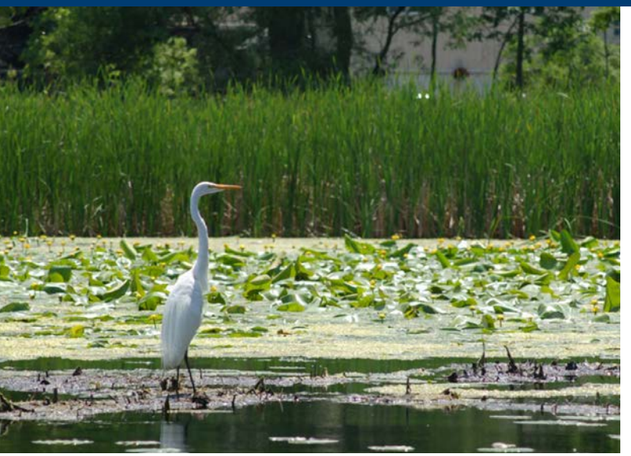


Chloride (mg/l)



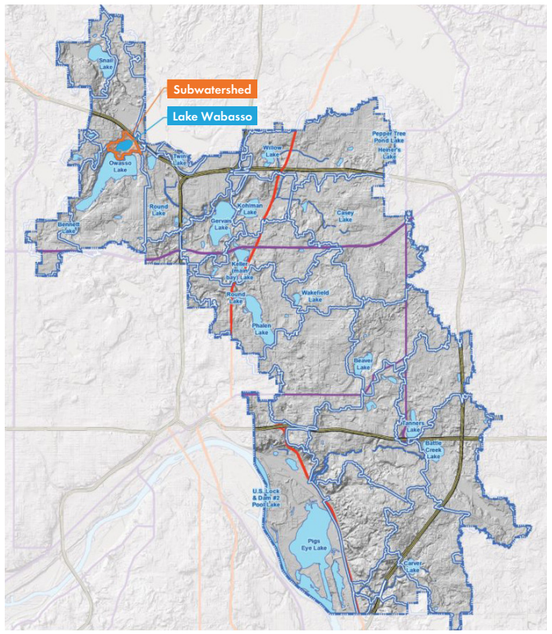
- Carp management (ongoing since 2009): Carp management helps control phosphorus loading in the Phalen Chain of Lakes (Lake Phalen, Gervais Lake, Lake Keller, Kohlman Lake). Foraging carp stir up nutrient-rich sediment on the lake bottom, which, in turn, contributes to turbid water and algae blooms. Management efforts include counting carp to understand the extent of the population, tracking them with radio tags to allow efficient harvesting and identification of nurseries, and installing barriers. These efforts have reduced carp in the Phalen Chain by over 60%.

LAKE WABASSO



MPCA designation	Deep
Tributary area	147 acres
Surface area	52 acres
Average/maximum depth	16/66 feet
RWMWD nutrient classification[1]	Stable
Accountable municipalities	Shoreview, Ramsey County
Downstream waterbody	Grass Lake

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Lake Wabasso is a deep lake in Shoreview that supports a healthy fish population. In addition to fishing, it is used for boating and swimming. Boat access is provided in Lake Owasso County Park on the south side. The lake is at risk of impairment for chloride; however, 2019 data suggest it may not be at risk. It is also listed by the Minnesota DNR as infested with Eurasian watermilfoil.

Chlorophyll *a* has been monitored annually at Lake Wabasso since 1984. Phosphorus and Secchi disc depths have been monitored annually since 2003. Annual chloride monitoring began in 2015. In 2022, Lake Wabasso met summer-average state standards for all four parameters. The 10-year data shows no statistically significant trend for the tested parameters.

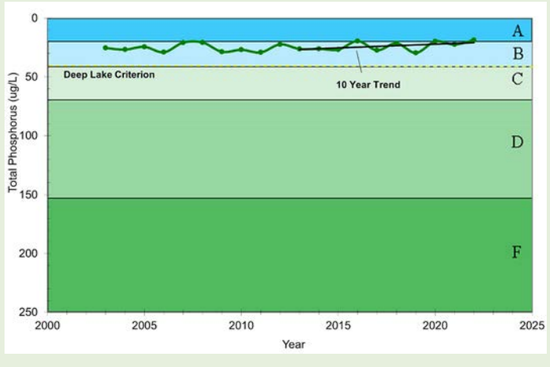
According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 13% of the phosphorus in Lake Wabasso comes from stormwater, 62% comes from internal loading, and 22% comes from atmospheric deposition. Plans to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake.

Parameter	State Standard	2022 Lake Wabasso	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	18.6 µg/l	24 µg/	None
Chlorophyll *a*	≤ 14 µg/l	6.5 µg/L	6.5 µg/	None
Secchi disc transparency	> 1.4 meters	3.57 meters	3.2 meters	None
Chloride	≤ 230 mg/l[2]	65.6 mg/l	N/A	N/A

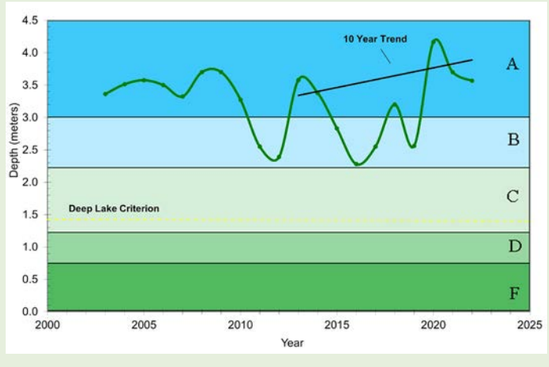
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

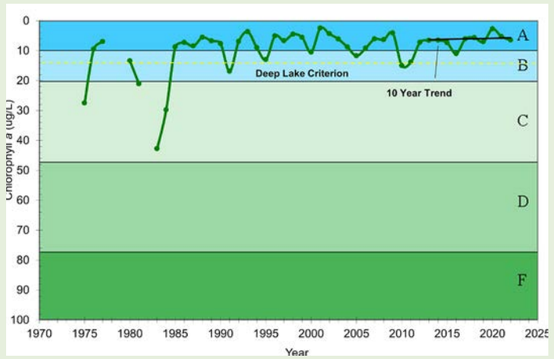
Total phosphorus (µg/l)



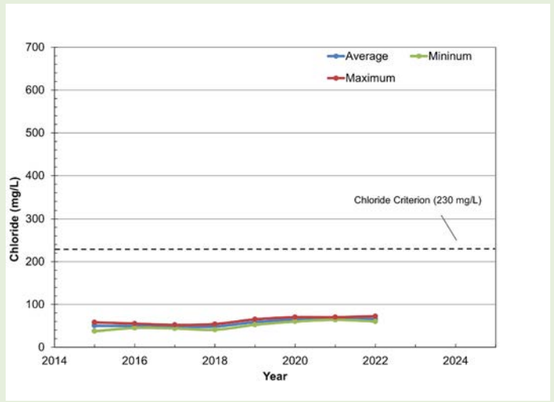
Secchi transparency (m)



Chlorophyll *a* (µg/l)



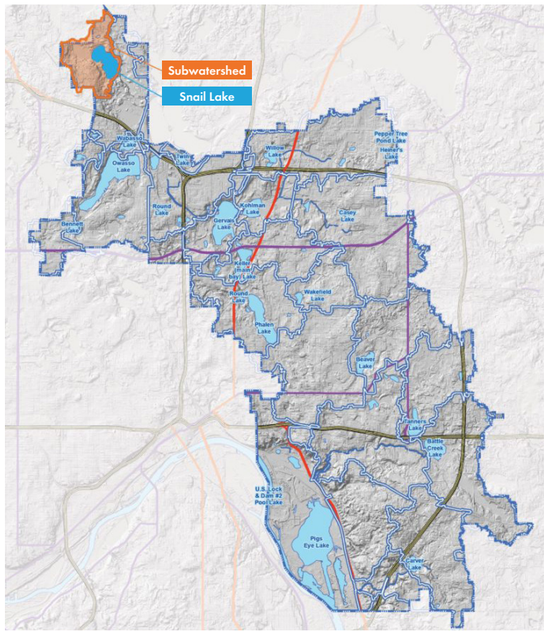
Chloride (mg/l)



SNAIL LAKE

MPCA designation	Deep
Tributary area	961 acres
Surface area	190 acres
Average/maximum depth	28 feet
RWMWD nutrient classification[1]	Stable
Accountable municipalities	Shoreview, Ramsey County
Downstream waterbody	Landlocked

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Snail Lake is a 190-acre landlocked lake in the city of Shoreview; a 35 acre wetland can be found on the northwest side of the lake. The lake, used for fishing, boating, and swimming, is bordered by Snail Lake Regional Park to the south. The park includes public access and a swimming beach.

Snail Lake is impaired for mercury (aquatic consumption); a statewide mercury TMDL was completed in 2007. The lake is also listed by the Minnesota DNR as infested with Eurasian watermilfoil.

Phosphorus, chlorophyll *a*, and Secchi disc depth have been monitored annually since 2005. Annual monitoring of chloride began in 2015. In 2022, the lake met all four water-quality parameters. The 10-year data shows no statistically significant trends.

According to the *2017 Ramsey Washington Metro Watershed District Watershed Restoration and Protection Strategies Report*, 30% of the phosphorus in Snail Lake comes from stormwater, 11% comes from internal loading, and 51% from upstream water bodies. Strategies to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake.

One project that has improved water quality in Snail Lake is:

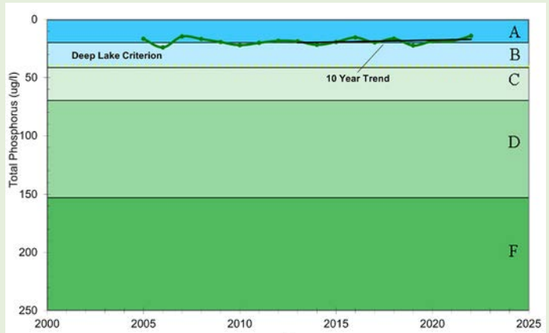
- Wetland A Ecological Restoration (2020 and 2021): RWMWD partnered with Ramsey County and other organizations to conduct a 3-year ecological restoration project in the area. Between 2020 and 2021, RWMWD staff and volunteers restored 4.8 acres of shoreline that stretched approximately 4,500 feet long. Over 80 species of native plants were installed as natural buffers in place of invasive species like common buckthorn.

Parameter	State Standard	2022 Snail Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	14.1 µg/l	19 µg/l	None
Chlorophyll *a*	≤ 14 µg/l	3.3 µg/l	4.5 µg/l	None
Secchi disc transparency	> 1.4 meters	3.93 meters	3.5 meters	None
Chloride	≤ 230 mg/l[2]	109.4 mg/l	N/A	N/A

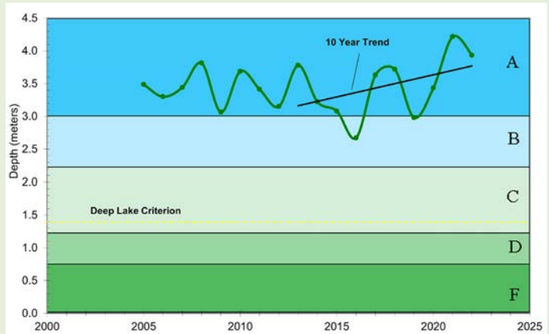
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

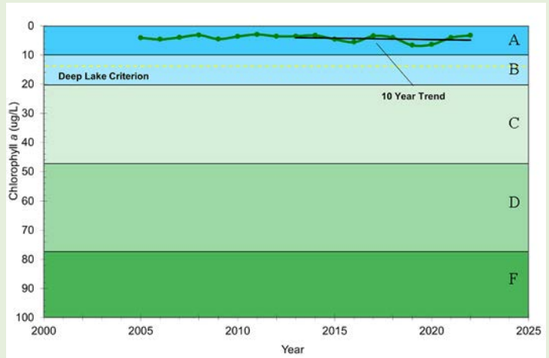
Total phosphorus (µg/l)



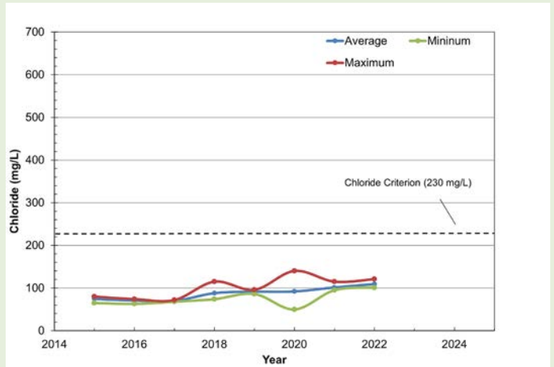
Secchi transparency (m)



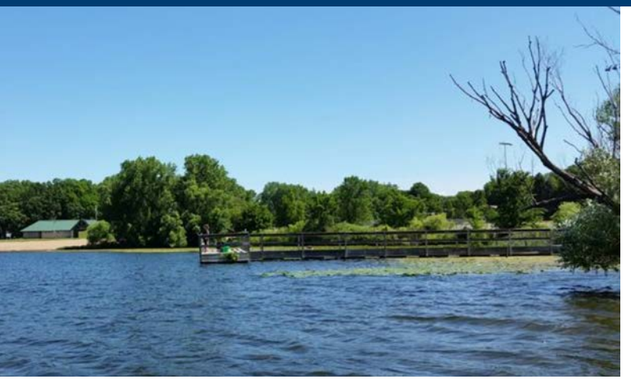
Chlorophyll *a* (µg/l)



Chloride (mg/l)

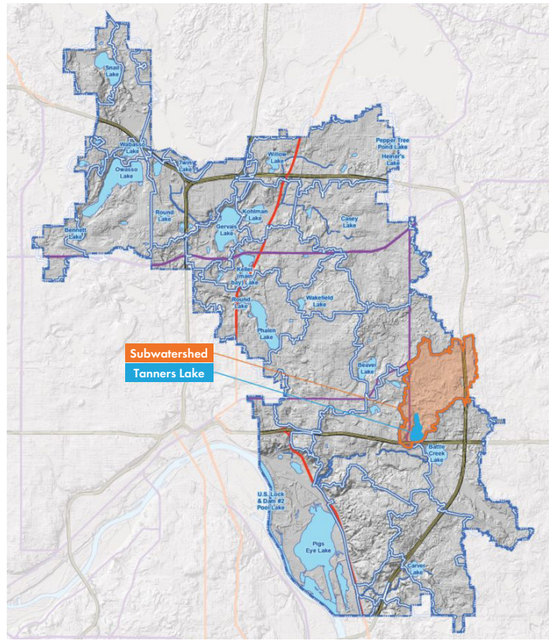


TANNERS LAKE



MPCA designations	Deep; "non-support" of aquatic life (chloride)
Tributary area	1,707 acres
Surface area	74 acres
Average/maximum depth	20/46 feet
RWMWD nutrient classification[1]	Stable
Accountable municipalities	Landfall, Maplewood, Oakdale, Woodbury, Ramsey County, Washington County
Downstream water body	Battle Creek Lake

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Located almost entirely within the cities of Oakdale and Landfall, Tanners Lake discharges into the headwaters of Battle Creek—a tributary of the Mississippi River. The lake is used primarily for swimming, skiing, motor boating, fishing, canoeing, picnicking, and aesthetic viewing. Tanners Lake Park, which includes a beach for swimming and boat access for fishing, is located on the east shore of the lake. Facilities are also present for softball and volleyball.

Tanners Lake was listed as impaired for excess nutrients in 2002, but after meeting state standards was removed from the impaired waters list in 2004. It is currently impaired for mercury (aquatic consumption) and chloride (aquatic life). A statewide mercury TMDL was completed in 2007, and the Twin Cities Metro Area Chloride TMDL was completed in 2016.

RWMWD currently operates an aluminum sulfate (alum) treatment facility on the north end of Tanners Lake that treats a significant portion of watershed runoff before it enters the lake. Alum is injected into the stormwater runoff, which causes phosphorus to precipitate out and settle into a sedimentation pond.

Phosphorus, chlorophyll *a*, and Secchi disc depth have been monitored annually since 1993. Annual chloride monitoring began in 2017. In 2022, the lake met summer-average state standards for all parameters. The 10-year data shows no statistically significant trends.

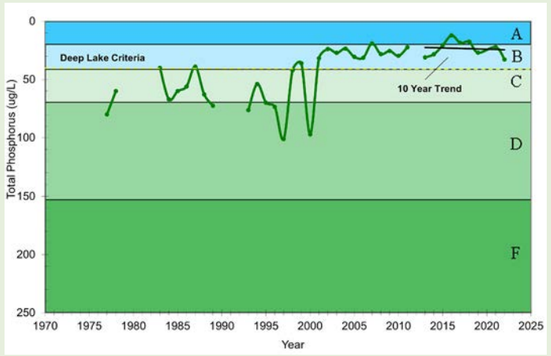
Strategies to address stormwater pollution include implementing the BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake. Plans to address chloride include improving road salt management by promoting and adopting strategies in the Twin Cities Metro Area Chloride Management Plan.

Parameter	State Standard	2022 Tanners Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	32.9 µg/l	23 µg/l	None
Chlorophyll *a*	≤ 14 µg/l	13.02 µg/l	8.6 µg/l	None
Secchi disc transparency	> 1.4 meters	2.28 meters	2.9 meters	None
Chloride	≤ 230 mg/l[2]	177.3 mg/l	N/A	N/A

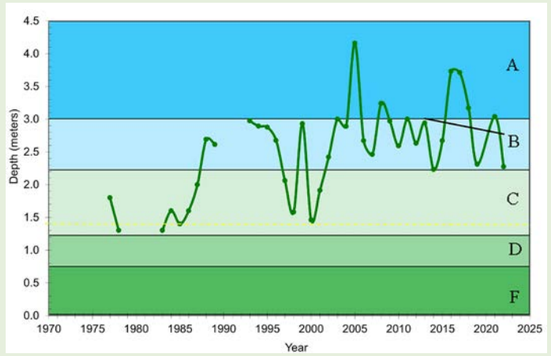
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

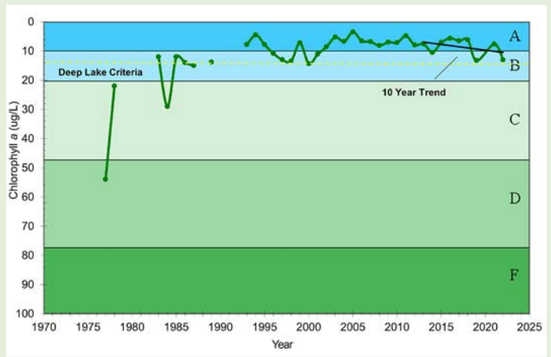
Total phosphorus (µg/l)



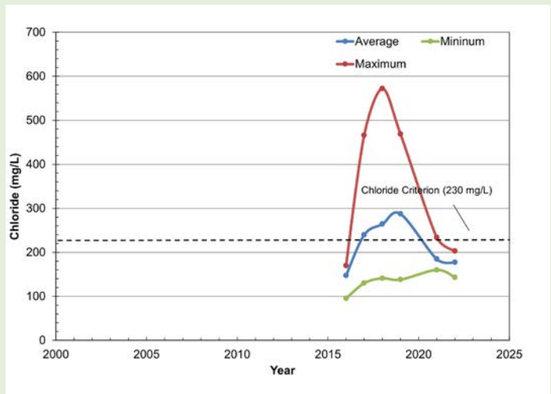
Secchi transparency (m)



Chlorophyll *a* (µg/l)



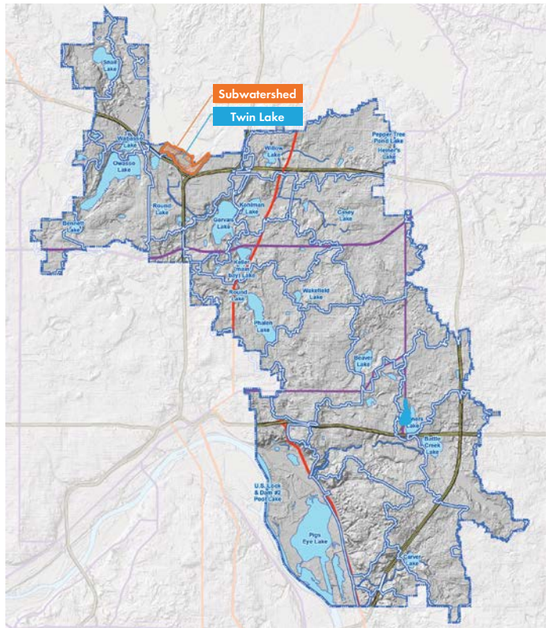
Chloride (mg/l)



TWIN LAKE

MPCA designation	Deep
Tributary area	192 acres
Surface area	35.5 acres
Average/maximum depth	33 feet
RWMWD nutrient classification[1]	Stable
Accountable municipalities	Little Canada, Vadnais Heights, Ramsey County
Downstream waterbody	Gervais Creek

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Twin Lake lies in Little Canada and Vadnais Heights. It is a small and relatively deep lake, mainly surrounded by homes. Formerly landlocked, an outlet was installed in the lake in 2020 to allow water to discharge to Gervais Creek during high water periods. Twin Lake has some wildlife habitat and is primarily used for canoeing, aesthetic viewing, fishing, and occasional jet skiing; there is no public access. The lake is not impaired.

With the exception of 2007, phosphorus, chlorophyll *a*, and Secchi disc depth have been monitored annually on Twin Lake since 1996. Annual monitoring of chloride began in 2015. In 2022, the lake met all four summer-average state standards. The 10-year data shows no statistically significant change for any parameter.

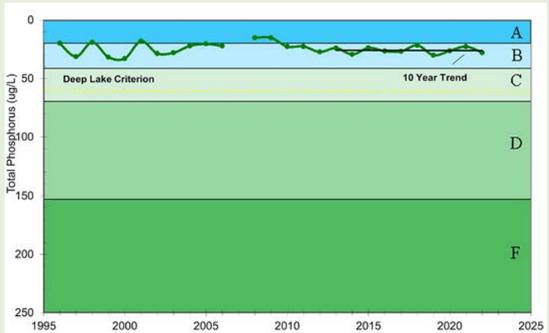
Strategies to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake.

Parameter	State Standard	2022 Twin Lake	10-Year Average[1]	10-Year Trend
Phosphorus	≤ 40 µg/l	28.0 µg/l	26 µg/l	None
Chlorophyll *a*	≤ 14 µg/l	11.7 µg/l	9.4 µg/l	None
Secchi disc transparency	> 1.4 meters	2.16 meters	2.5 meters	None
Chloride	≤ 230 mg/l[2]	56.5 mg/l	N/A	N/A

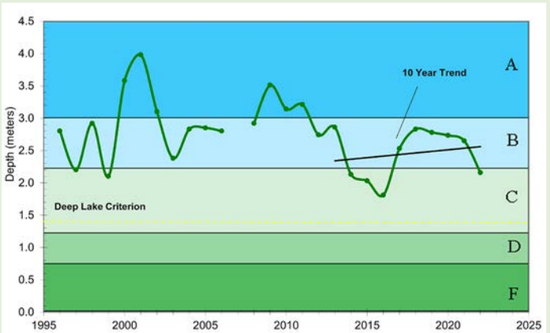
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

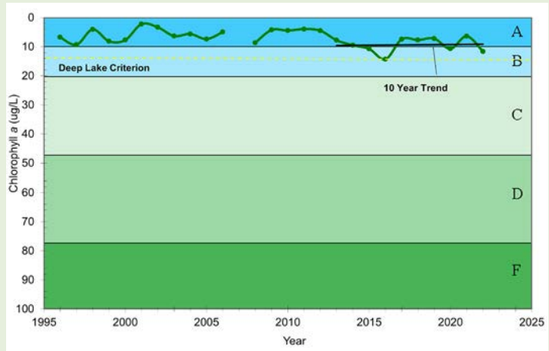
Total phosphorus (µg/l)



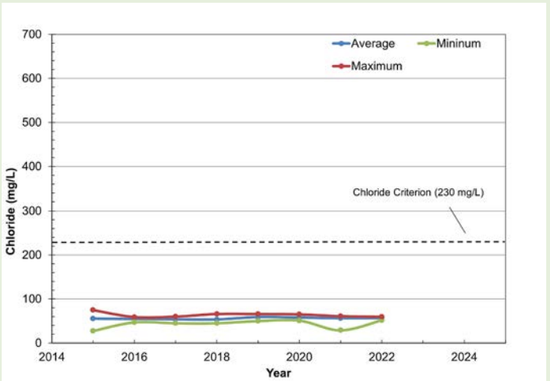
Secchi transparency (m)



Chlorophyll *a* (µg/l)



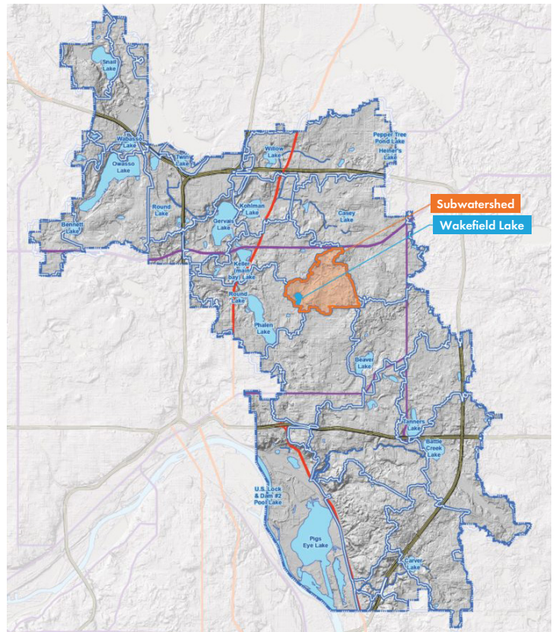
Chloride (mg/l)



WAKEFIELD LAKE

MPCA designation	Shallow
Tributary area	948 acres
Surface area	23 acres
Average/maximum depth	4.6/9 feet
RWMWD nutrient classification[1]	Impaired
Accountable municipalities	Maplewood, North St. Paul, St. Paul, Ramsey County
Downstream water body	Lake Phalen

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Wakefield Lake is located in Maplewood and is primarily used for shoreline fishing, picnicking, and aesthetic viewing. It is bordered by park land on the north and east sides of the lake. Public access is available in Wakefield Park, although there is no boat launch.

Wakefield Lake was added to the MPCA's impaired waters list for excess nutrients in 2002; a nutrient TMDL was completed in 2017. Wakefield is also at risk for chloride impairment.

Phosphorus, chlorophyll *a*, and Secchi disc depth have been monitored annually since 1984. Chloride has been measured annually since 1992. In 2022, Wakefield Lake only met summer-average state standards for Secchi disc and chloride concentration. The 10-year data shows no statistically significant trends for the tested parameters.

Strategies to address stormwater pollution include implementing a BMP cost-share program and water-quality projects that decrease the total phosphorus load to the lake. Plans to reduce in-lake loading by 80% include developing a plan for macrophyte management (including curlyleaf pondweed) and assessing options for the inactivation of sediment release of phosphorus.

Recent projects to improve the water quality of Wakefield Lake are:

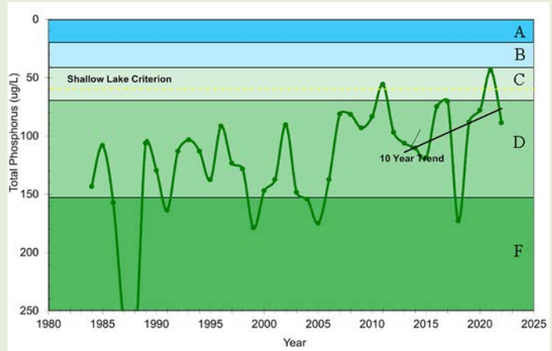
- Mounds Park Academy (2022): The goal of this project was to remove a section of unused parking lot to build a rain garden to treat runoff before it enters the school's pond. The school is interested in funding the creation of an outdoor learning space alongside the rain garden.
- Wakefield Park Stormwater Improvements (2020): The goal of this project was to install two large rain gardens that intercept and filter rainwater runoff from the streets. This reduces the volume of rainwater runoff and increases the quality of runoff that drains into Wakefield Lake. This project was completed in conjunction with a City of Maplewood project to narrow Frost Avenue, which also improves the quality of runoff going into Wakefield Lake.
- Aldrich Ice Arena (2020): The goal of this project was to remove the asphalt parking lot and install 15 rain gardens. The rain gardens reduce the volume of stormwater runoff and remove pollutants from the runoff before reaching Wakefield Lake.
- The Wakefield Spent Lime Filter (2018): This project involves piping stormwater from a large portion of the 944-acre Wakefield Lake subwatershed into a large underground chamber where it interacts with spent lime. The lime material is a repurposed byproduct of municipal drinking water treatment, and it binds to phosphorus in the stormwater. Water leaving the spent lime chamber was projected to contain about 70 percent less dissolved phosphorus than when it entered. (This treatment system, during the first year of operation, is evaluated in Section 7).
- Presentation Catholic Church (2015) is one of 12 projects managing rainwater runoff at churches with large amounts of impervious surfaces. The goal was to install six rain gardens and one infiltration trench that intercept and filter runoff from the church parking lot. This reduces the volume of polluted rainwater draining to Wakefield Lake.

Parameter	State Standard	2022 Wakefield Lake	10-Year Average[1]	10-YearTrend
Phosphorus	≤ 60 µg/l	88.6 µg/l	95 µg/l	None
Chlorophyll *a*	≤ 20 µg/l	37.2 µg/l	31 µg/l	None
Secchi disc transparency	> 1 meter	1.4 meters	1.4 meters	None
Chloride	≤ 230 mg/l[2]	132.3 mg/l	N/A	N/A

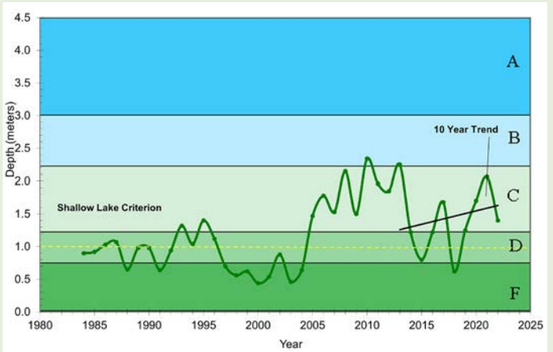
[1] A minimum of 10 years of data were analyzed. If a year was missing within the most recent 10-year period, the period of record was extended.

[2] State standard for chronic chloride exposure.

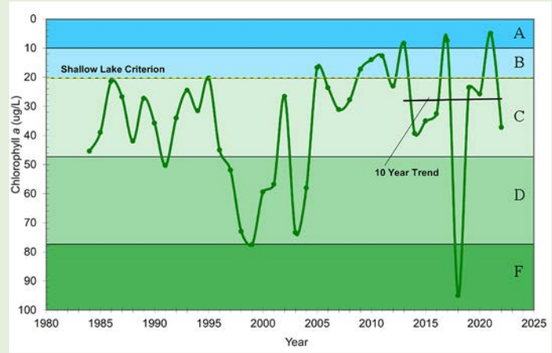
Total phosphorus (µg/l)



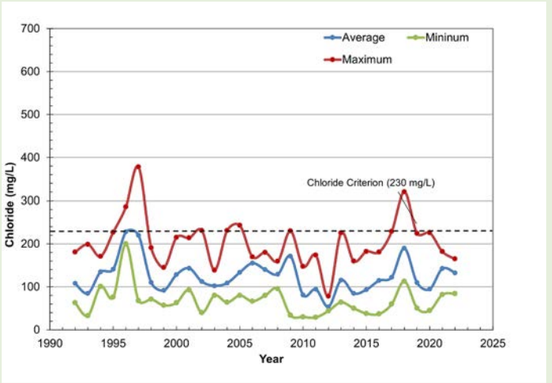
Secchi transparency (m)



Chlorophyll *a* (µg/l)



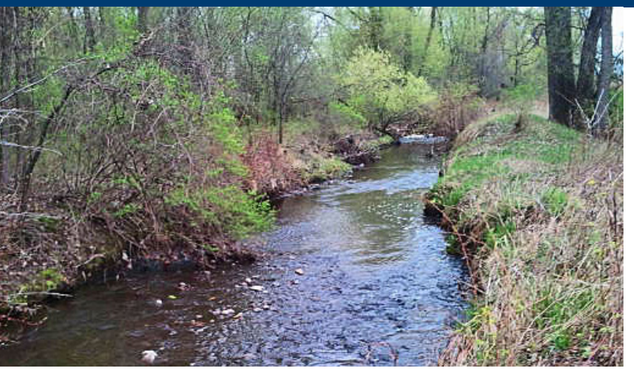
Chloride (mg/l)



4. STREAMS

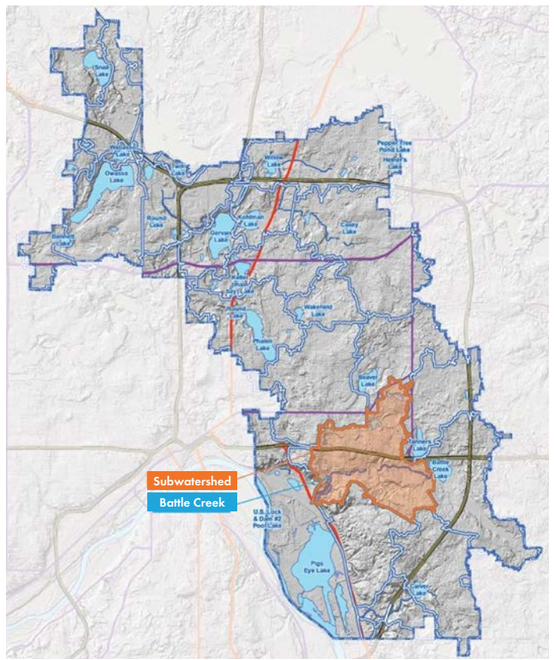
2022 WATER MONITORING ANNUAL REPORT

BATTLE CREEK



Tributary area	2,972 acres
Creek length	3.8 miles
Downstream waterbody	Mississippi River
MPCA designations	Impaired for "non-support" of aquatic life (chloride, fish, macroinvertebrates)
Accountable municipalities	Maplewood, St. Paul, Woodbury, Ramsey County, Washington County
RWMWD nutrient classification	Impaired (TSS)

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Battle Creek is a perennial, urban stream that originates at the outlet from Battle Creek Lake in Woodbury. The creek then flows west and ultimately discharges to Pigs Eye Lake and the Mississippi River. A well-maintained regional park with trails for hiking, cross-country skiing, and cycling is situated along the creek in St. Paul.

Historically, Battle Creek has been plagued by frequent and devastating floods that caused loss of life, substantial property damage, and heavy stream erosion. The District completed a significant restoration project in 1982 and continues to conduct maintenance on the creek to sustain that project.

Battle Creek has been monitored annually for phosphorus and total suspended solids since 1996. Annual monitoring for nitrate began in 2000 and for chloride in 2002. The creek is currently impaired for chloride and was also listed in 2014 as impaired for degraded fish and macroinvertebrate biological community health. A stressor identification report was completed in 2015 and found that chloride and total suspended solids (TSS) are the primary stressors to the fish and macroinvertebrates in the creek. The study identified total phosphorus as a probable secondary stressor. For that reason, the District has assigned Battle Creek a RWMWD nutrient water quality classification of "Impaired. "

As seen in the chart at right, the creek failed to meet state standards for phosphorus, total suspended solids, and chloride in 2022. The 10-year data shows no statistically significant trend for any parameter.

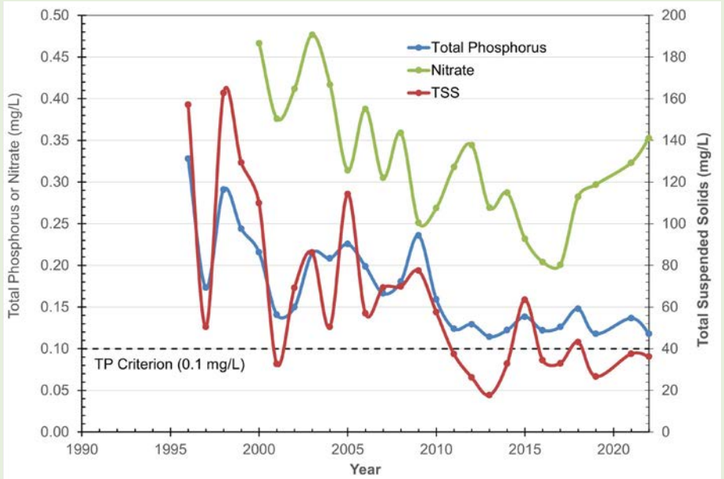
Recent projects to improve the water quality of Battle Creek include:

- St. Pascal Baylon Church (2022): The project included retrofitting the existing parking lot to maintain the existing grading and adding a tree trench and small rain garden. The tree trench and rain garden will remove phosphorus and sediment from stormwater that travels to Battle Creek.
- Target—Suburban Avenue (2020): The project included the removal of impervious parking lot to install seven rain gardens and a linear tree trench. The installed best management practices can reduce the volume of polluted runoff that drains to Battle Creek, as well as remove pollutants such as total suspended solids and total phosphorus.
- Christ United Methodist Church (2016): Two rain gardens were installed to intercept and filter runoff from the church's parking lot—reducing the volume of polluted runoff that drains to Battle Creek.
- Slumberland Clearance Outlet Store (2016): A native planting area replacing 20,000 square feet of parking lot surface provides pollinator habitat and filters rainwater runoff before it drains to Battle Creek.

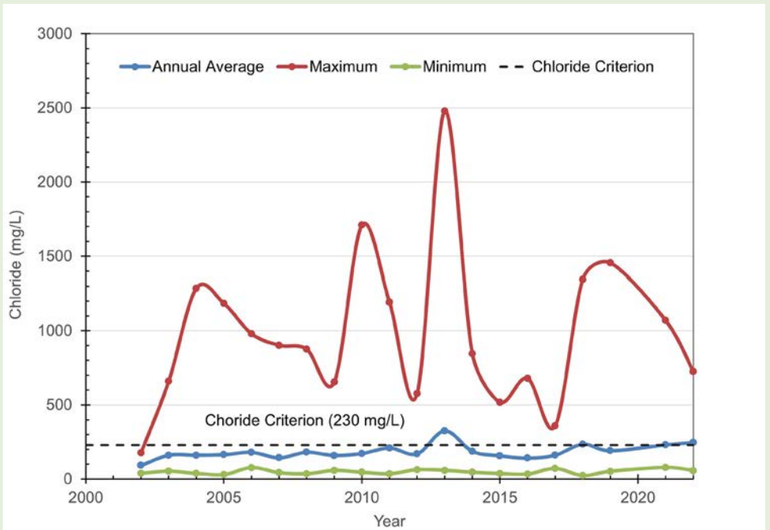
Parameter	State Standard	2022 Battle Creek	10-Year Average	10-Year Trend
Phosphorus	≤ 100 µg/l	118 µg/l	127 µg/l	None
Total suspended solids	<15 mg/l	36 mg/l	36 mg/l	None
Nitrate	N/A	0.35 mg/l	0.27 mg/l	None
Chloride	≤ 230 mg/l[1]	246 mg/l	208 mg/l	None

[1] State standard for chronic chloride exposure.

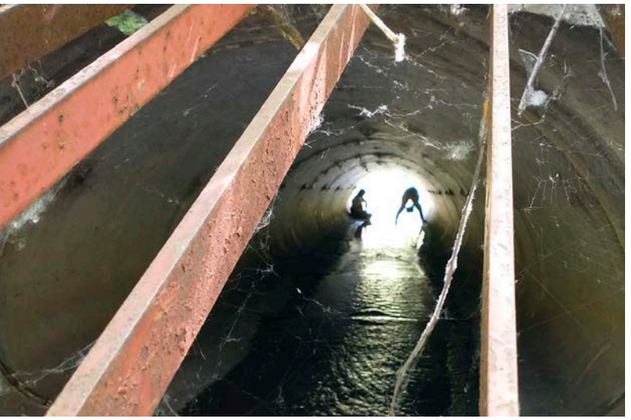
Nutrients and solids (mg/l)



Chlorides (mg/l)



BELTLINE INTERCEPTOR



The Beltline Interceptor is a large storm sewer pipe system constructed in 1920 and maintained by the RWMWD. The system is approximately 5 miles long, extending from the outlets of Lake Phalen and Beaver Lake to the Mississippi River. It collects a large percentage of stormwater runoff from St. Paul's east side and also conveys runoff from the entire Phalen Chain of Lakes subwatershed and the Beaver Lake subwatershed to the Mississippi River. The total drainage area to the Beltline Interceptor is 27. 8 square miles—over half of the District's water.

The Beltline Interceptor has been monitored annually for phosphorus and total suspended solids since 1995. Annual monitoring for nitrates began in 2000 and for chloride in 2002. As seen in the chart at right, the Beltline Interceptor met state standards for only chlorides in 2022. At 59 mg/L, the decrease in total suspended solids has been dramatic since reaching its peak in 1997 (349 mg/L). The 10-year data shows no statistically significant trend for any parameterr.

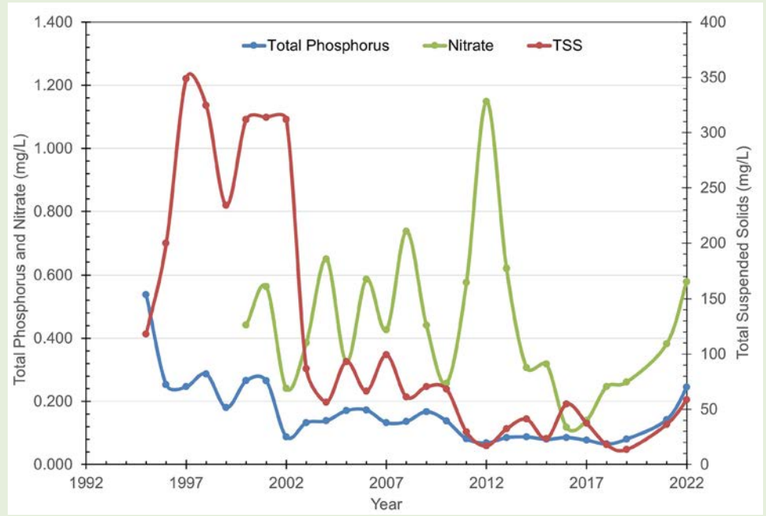
Recent projects to improve the water quality of Beltline Interceptor include:

- Saint Paul Urban Tennis Center (2020): A new infiltration basin was installed to reduce the volume of runoff to the Beltline interceptor and remove pollutants from stormwater runoff.

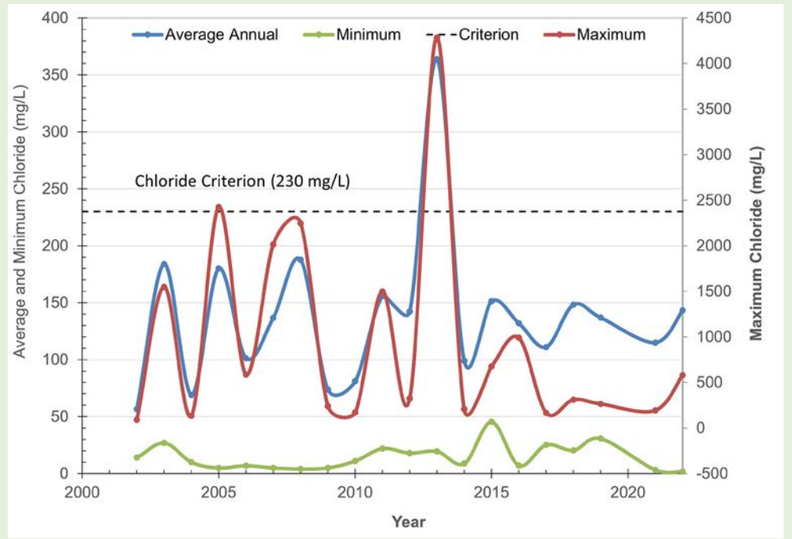
Parameter	State Standard	2022 Beltline Interceptor	10-Year Average	10-Year Trend
Phosphorus	≤ 100 µg/l	245 µg/l	105 µg/l	None
Total suspended solids	<15 mg/l	59 mg/l	35 mg/l	None
Nitrate	N/A	0.58 mg/l	0.33 mg/l	None
Chloride	≤ 230 mg/l[1]	143 mg/l	156 mg/l	None

[1] State standard for chronic chloride exposure; chloride value is average water-column concentration

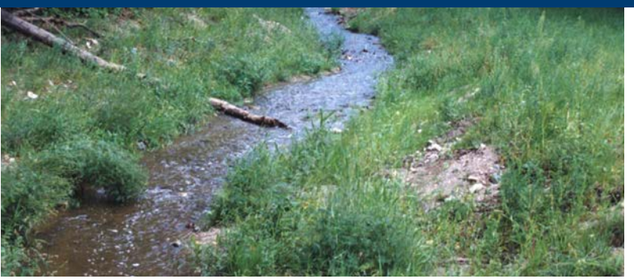
Nutrients and solids (mg/l)



Chlorides (mg/l)

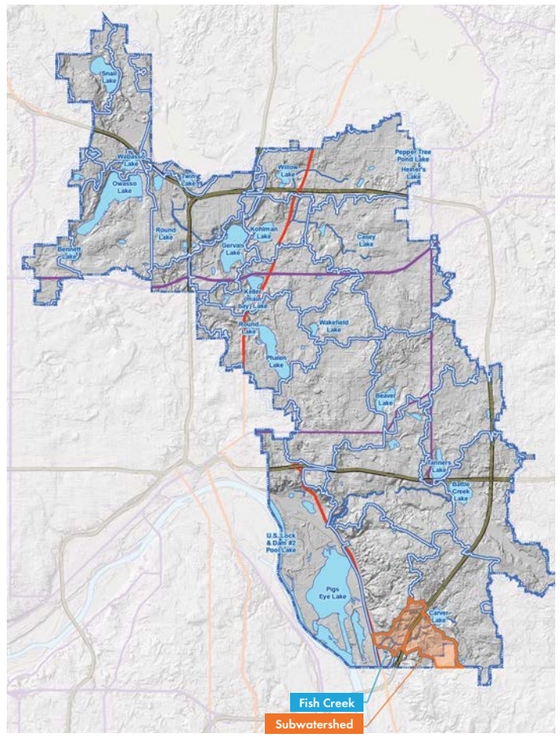


FISH CREEK



Tributary area	783 acres
Creek length	1.8 miles
Downstream waterbody	Eagle Lake
MPCA designations	"Non-support of aquatic life (benthic macroinvertebrates); at risk for chloride; "non-support of aquatic recreation (*E. coli;* and total suspended solids)
Accountable municipalities	Maplewood, St. Paul, Woodbury, Ramsey County, Washington County
RWMWD nutrient classification	Impaired (TSS)

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Fish Creek is a perennial, urban stream that originates at Carver Lake and ultimately discharges to Eagle Lake and the Mississippi River. The majority of the Fish Creek subwatershed is located in Ramsey County and the southeastern portion of Washington County.

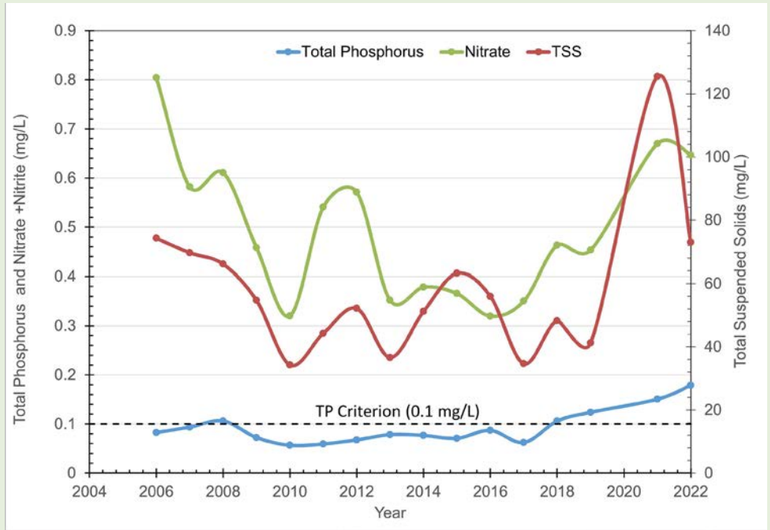
Fish Creek was placed on the 2014 303(d) impaired waters list due to elevated levels of E. coli bacteria. E. coli is used in water quality monitoring as an indicator of water that is contaminated with human or animal waste and accompanying disease-causing organisms. Bacterial abundance in excess of the water quality standards can pose a risk to human health.

Fish Creek has been monitored annually for phosphorus and total suspended solids since 1995. Annual monitoring for nitrates began in 2000 and for chlorides in 2002. In 2022, Fish Creek failed to meet state standards for phosphorus and total suspended solids, but the average annual chloride concentration met the chloride standard (see chart below). The 10-year data shows a statistically significant increase in total phosphorus, nitrate, and chloride concentrations.

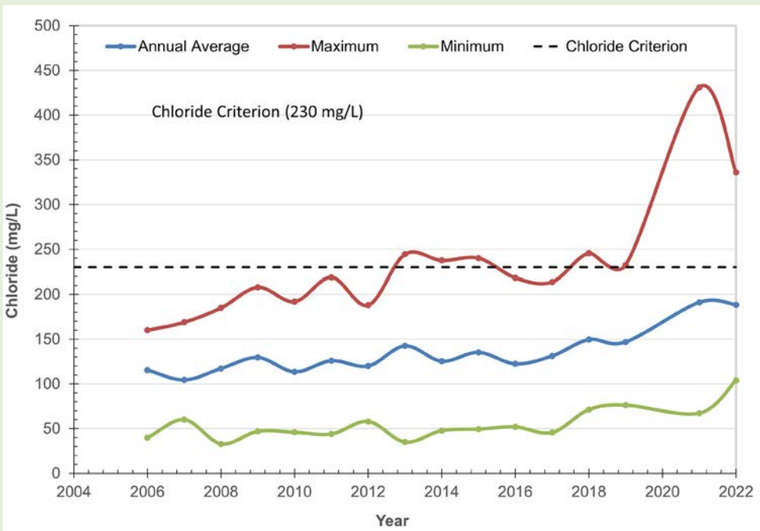
Parameter	State Standard	2022 Fish Creek	10-Year Average	10-Year Trend
Phosphorus	≤ 100 µg/l	179 µg/l	104 µg/L	Increasing
Total suspended solids	<15 mg/l	73 mg/l	59 mg/l	None
Nitrate	N/A	0.65 mg/l	0.44 mg/l	Increasing
Chloride	≤ 230 mg/l[1]	188 mg/l	148 mg/l	Increasing

[1] State standard for chronic chloride exposure; chloride value is average water-column concentration.

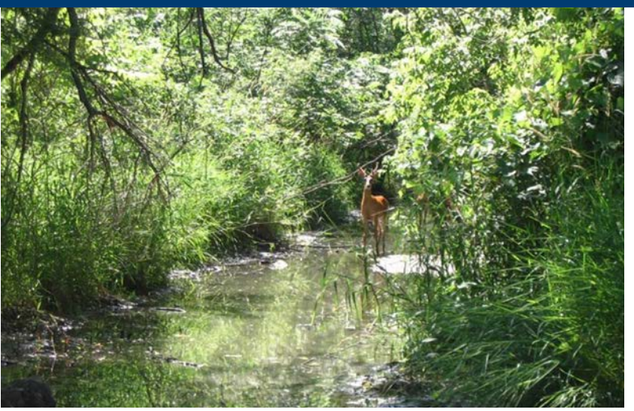
Nutrients and solids (mgl/l)



Chlorides (mg/l)



GERVAIS CREEK

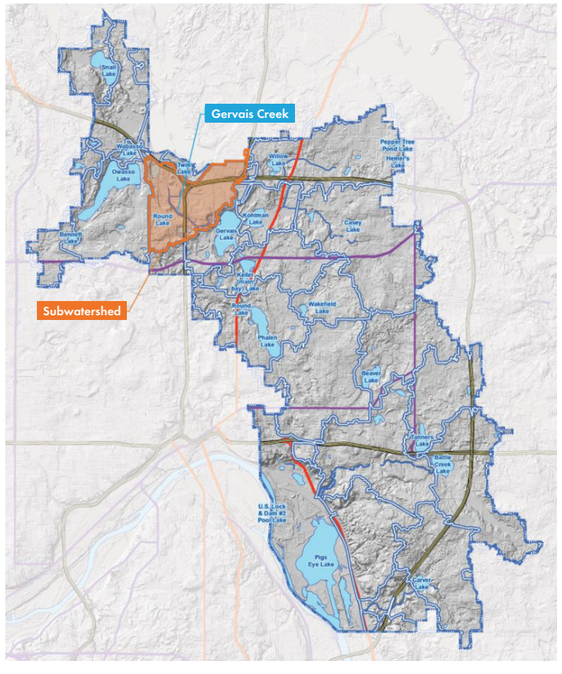


Gervais Creek is an intermittent stream that was previously managed as a county ditch (County Ditch 16). It is managed by the RWMWD as a stormwater system.

Gervais Creek has been monitored annually for phosphorus and total suspended solids since 2010. Annual monitoring for chlorides began in 2010 and for nitrates in 2016. In 2022 the creek exceeded the state standard for phosphorus but met the standard for total suspended solids. The average annual chloride concentration met the chloride standard, but the maximum concentration did not. The 10-year data shows no statistically significant trend for any parameter.

Tributary area	1,847 acres
Creek length	2.2 miles
Downstream waterbody	Gervais Lake
MPCA designations	"Non-support" of aquatic life (benthic macroinvertebrates)
Accountable municipalities	Little Canada, Vadnais Heights, Ramsey County
RWMWD nutrient classification	At risk

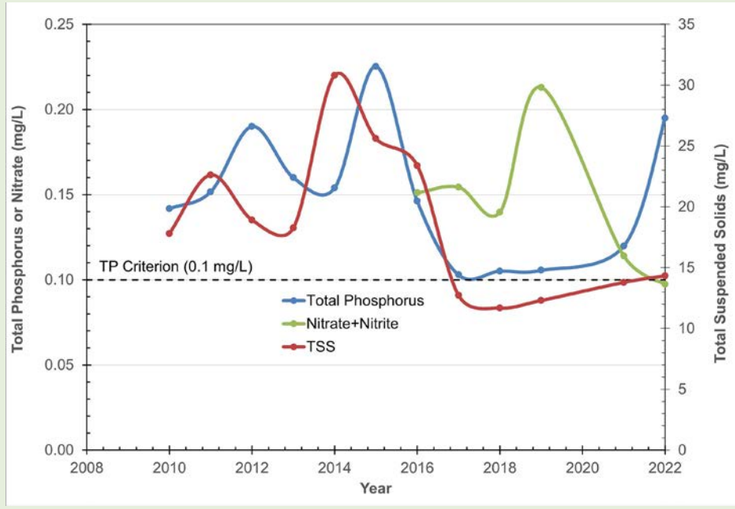
[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



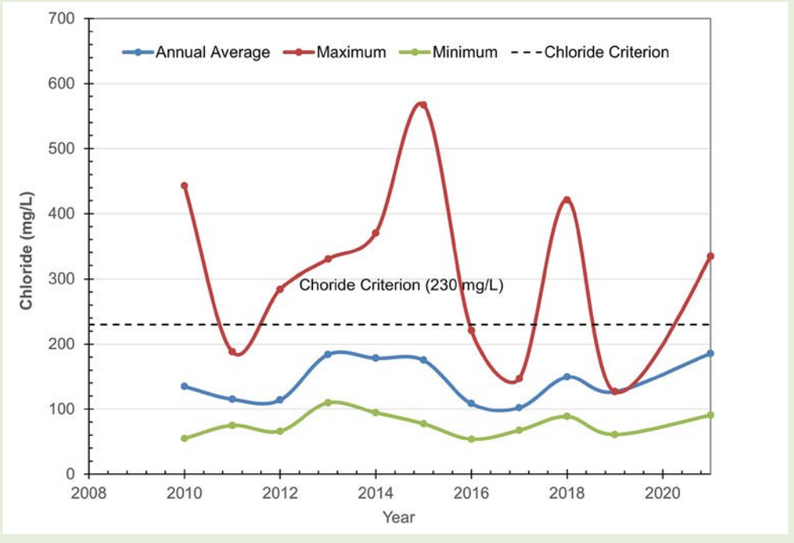
Parameter	State Standard	2022 Gervais Creek	Average	10-Year Trend
Phosphorus	≤ 100 µg/l	195 µg/l	146 µg/l (10-year average)	None
Total suspended solids	<15 mg/l	14 mg/l	18.1 mg/l (10-year average)	None
Nitrate	N/A	0.10 mg/l	0.15 mg/l (6-year average)	N/A
Chloride	≤ 230 mg/l[1]	208 mg/l	157 mg/l (10-year average)	None

[1] State standard for chronic chloride exposure.

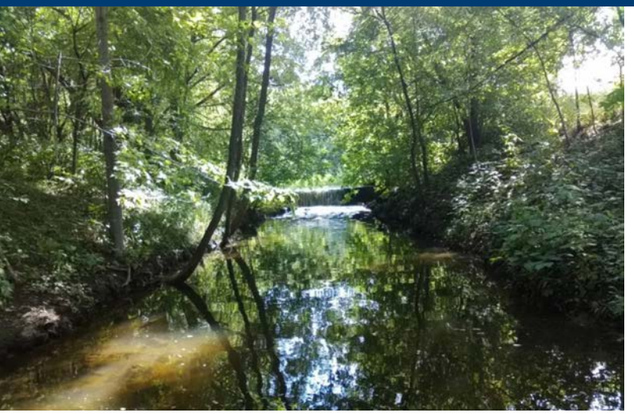
Nutrients and solids (mg/l)



Chlorides (mg/l)

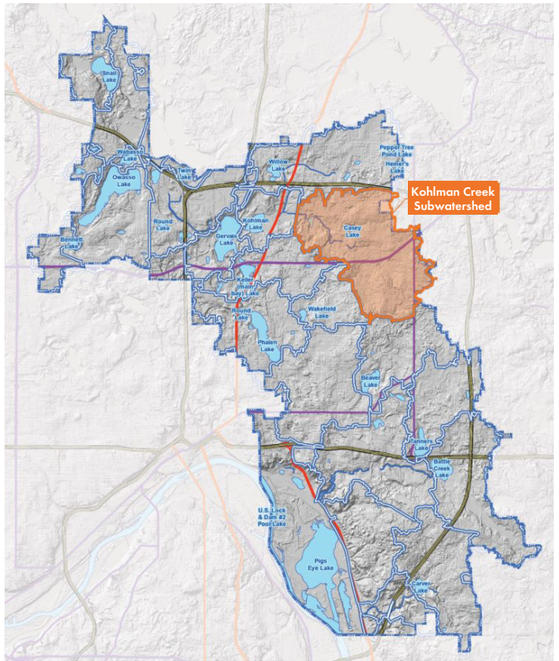


KOHLMAN CREEK



Tributary area	3,653 acres
Creek length	2.8 miles
Downstream waterbody	Kohlman Lake
Accountable municipalities	Maplewood, North St. Paul, Oakdale, Ramsey County, Washington County
RWMWD nutrient classification	At risk

[1]RWMWD nutrient classifications are based on the relationship between the historical average water quality (based on phosphorus concentration alone) and the MPCA water quality (phosphorus) standards.



Kohlman Creek is an intermittent stream that was previously considered a county ditch (County Ditch 18 South). The stream generally flows from southeast to northwest and eventually discharges to the Kohlman Basin in the Kohlman Lake subwatershed. The creek has been managed by the District as a stormwater conveyance system. Most of the creek remains in its natural state.

Kohlman Creek has been monitored annually for phosphorus, total suspended solids, and chlorides since 2008. Annual monitoring for chlorides began in 2015. In 2022, Kohlman Creek failed to meet the state standard for chloride. The 10-year data show statistically significant decreases in levels of phosphorus but an increase in chloride.

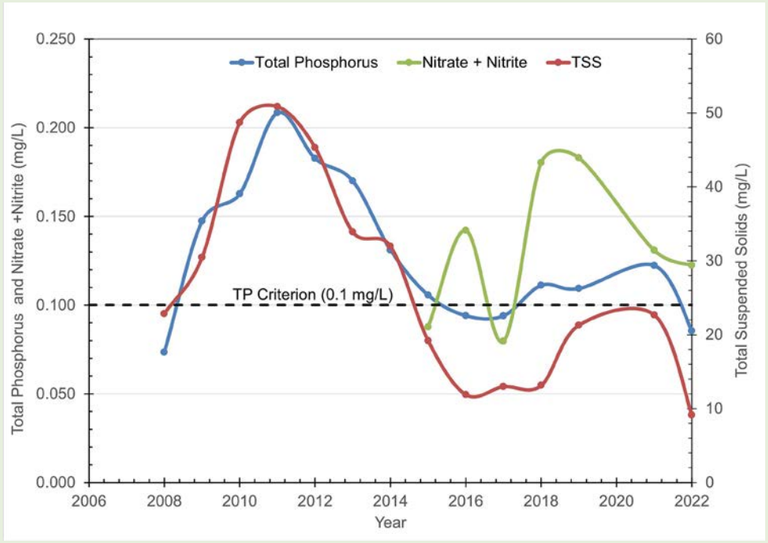
Recent projects to improve the water quality in Kohlman Creek include:

- Target—North Saint Paul (2021): The project included the removal of an impervious parking lot to install 4 rain gardens and 2 linear tree trenches. The installed best management practices can reduce the volume of polluted runoff that drains to Kohlman Creek, as well as remove pollutants such as total suspended solids and total phosphorus.
- North Presbyterian Church (2017): This rain garden intercepts and filters runoff from the church parking lot, reducing the volume of polluted rainwater draining to Kohlman Creek.
- Harmony Learning Center and Maplewood Middle School (2016): These school rain garden projects provide pollinator habitat and reduce the volume of polluted runoff that drains to Kohlman Creek.
- Maplewood Mall (2012): With 35 acres of asphalt pavement and concrete surfaces surrounding it, Maplewood Mall was a major source of phosphorus runoff to Kohlman Lake and Kohlman Creek. But, over 4 years, the RWMWD installed a variety of stormwater management features that capture and filter 67 percent of rainwater at the mall—up from just 3 percent before the project. These features include innovative tree trenches, rain gardens, permeable pavers, and a 5,700-gallon cistern that receives runoff from the mall roof. Interpretive signage educates the public about these improvements, and a large watershed map in the entry vestibule shows how water travels from the mall all the way to the Mississippi River.

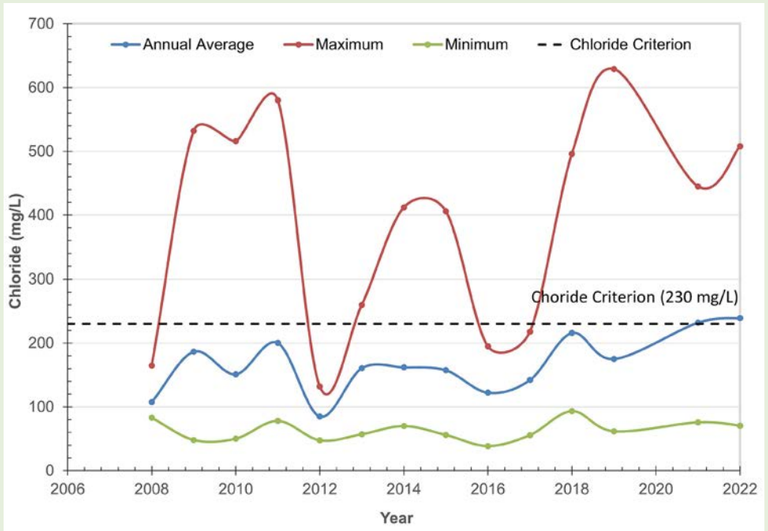
Parameter	State Standard	2022 Kohlman Creek	Average	10-Year Trend
Phosphorus	≤ 100 µg/l	85 µg/l	114 µg/l (10-year average)	Decreasing
Total suspended solids	<15 mg/l	9.1 mg/l	20 mg/l (10-year average)	None
Nitrate	N/A	0.12 mg/l	0.13 mg/l (6-year average)	N/A
Chloride	≤ 230 mg/l[1]	239 mg/l	178 mg/l (10-year average)	Increasing

[1] State standard for chronic chloride exposure.

Nutrients and solids (mg/l)



Chlorides (mg/l)



5. PFAS

Perfluoroalkyl substances (PFAS) are also referred to as Perfluorochemicals (PFCs). PFAS are a family of manmade chemicals that have been widely used for decades. PFAS are extremely stable and do not breakdown in the environment. Common uses of PFAS include the following:

- Nonstick cookware, stain-resistant carpets and fabrics
- Coatings on some food packaging (especially microwave popcorn bags and fast food wrappers)
- Components of fire-fighting foam
- Many industrial applications

PFAS have been found in the groundwater in certain parts of Minnesota and are considered to be "emerging contaminants." Emerging contaminants are contaminants about which the MPCA has a new awareness or understanding of how they move in the environment or affect public health. PFAS, like other emerging contaminants, are the focus of active research and study, which means that new information is released occasionally.

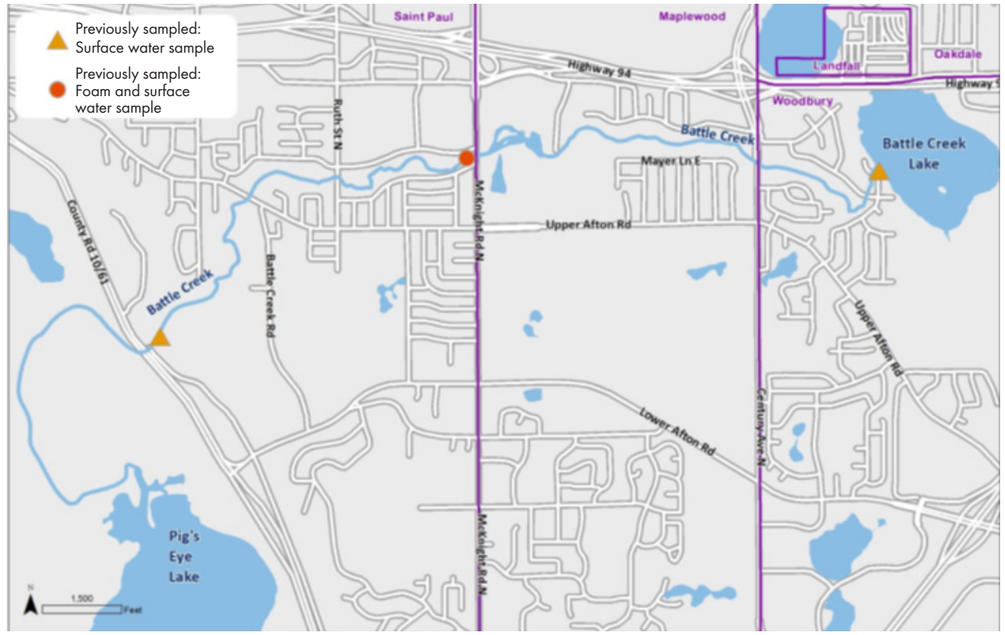
Generally, surface water foam on natural water bodies is naturally occurring and does not contain PFAS. However, if PFAS-containing foam is found on surface water, MDH states that it does not pose a risk to human health if skin contact with the foam is minor and infrequent. Overall, with respect to contact with water bodies containing PFAS, MPCA recommends "when in doubt, stay out."

In 2019 and 2020, the Minnesota Department of Health (MDH) collected samples for PFAS analysis from Battle Creek (surface water and foam) and Battle Creek Lake (surface water) after discussions with the Minnesota Department of Transportation related to transit route planning in the area. All samples were analyzed for seven different PFAS compounds by the MDH Public Health Laboratory.

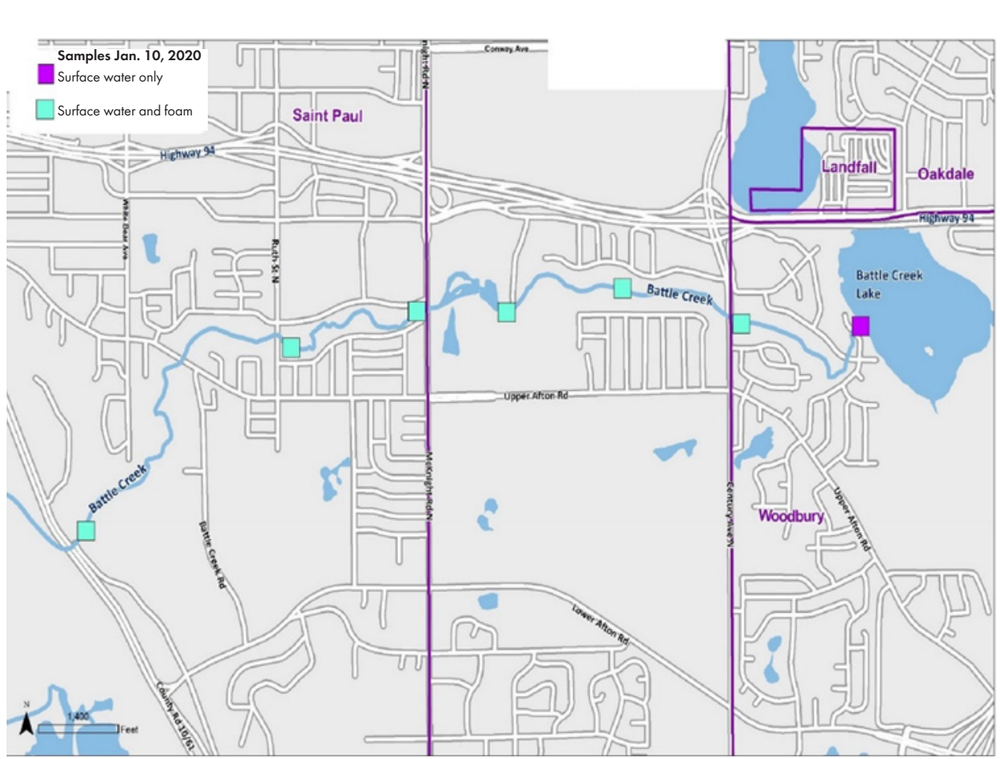
Various forms of PFAS (PFOS, PFOA, PFBA, PFPeA, PFPxA, PFBS, and PFHxS) were detected in surface water from both Battle Creek and Battle Creek Lake. Concentrations were low, especially in Battle Creek Lake. High concentrations of PFAS (PFOS, PFOA, PFBA, PFPeA, PFPxA, PFBS, and PFHxS) were detected in samples from the surface foam on Battle Creek.

This work is being conducted under MPCA's Superfund Site Assessment program. The objective of the program is to confirm earlier monitoring results and to develop lines of evidence for determining the potentially responsive party that can be brought into the Superfund program.

2022 WATER MONITORING ANNUAL REPORT



MPCA's 2019 PFAS sampling locations



MPCA's 2020 PFAS sampling locations

6. Chloride

The Minnesota Pollution Control Agency's chronic chloride criteria is 230 mg/L. Chloride is a component of total dissolved solids (or total dissolved salts), and chloride alone or in combination with other dissolved salts can be toxic to aquatic life. Most aquatic life criteria are based on testing with sensitive species; hence, the cumulative ecological impact of short-term or persistently high chloride is challenging to identify. Clearly, maintaining chloride below the 230 mg/L criteria will have ecological benefits by reducing overall stress on aquatic life. However, the potential ecological effect can be expected to be a function of the degree to which a given water sample exceeds criteria (e.g., how much greater than 230 mg/L), the frequency of the exceedance, and the persistence. The first step is to examine which water bodies have high chloride and consider if there are areas within the District that might be hot spots.

Chloride monitoring work prior to 2021 was focused on the routine annual sampling that occurs in lakes and streams, as presented in earlier sections of this report. In 2021, annual chloride sampling continued, but additional sampling took place from late March to early April. Late winter and early spring chloride sampling gives insight into worst-case chloride concentrations that are a result of road salt application.

The District sampled 36 water bodies in 15 subwatersheds for chloride concentrations. The goal of sampling 36 water bodies was to characterize runoff for as many of the District's drainage areas as possible to determine areas of high concentration ("hot spots"). In 2021, the majority of chloride samples were collected from the bottom of the water body (note that most of the water bodies sampled were shallow); however, some water bodies were sampled from the surface and/or the bottom. If a water body was sampled at more than one depth, then the surface sample was used in the mapping exercise. Chloride concentrations were mapped using drainage areas identified during the creation of the 2016 Management Plan. Figure 6-1 shows that runoff from approximately 40% of the District was included as part of the 2021 winter chloride monitoring program.

Figure 6-1 identifies chloride concentrations in monitored water bodies, and it also identifies the drainage areas that contribute runoff and chloride to the monitored water body. The lighter the shade of blue, the lower the chloride concentrations. Dark blue and black represent high concentrations that are above the MPCA chloride criteria. For the winter 2021 sampling program, 13 of the 15 major lake and stream subwatersheds had concentrations above the MPCA chloride criteria, while five of the 15 lake and stream subwatersheds had concentrations that were double the MPCA chloride criteria, including a sample in a Snail Lake subwatershed with a concentration of 1,520 mg/L.

Results in Figure 6-1 indicate that most subwatersheds have water bodies with elevated chloride concentrations, but the following subwatersheds are tentatively identified as hotspots, based on their high 2021 chloride concentrations in tributary drainage areas: Snail Lake, Gervais Creek, Battle Creek, Battle Creek Lake, and Carver Lake.

The winter monitoring program was continued in 2022. In April 2022, samples were collected from 22 sites. The sampling locations primarily comprise waterbodies with high (above the MPCA chloride criteria) chloride concentrations in 2021 (to confirm whether high concentrations were persistent) and/or waterbodies that were not included in the 2021 monitoring. Samples were either collected at the bottom of the waterbody or were composite samples that represented the entire water column. Results for the 2022 ice-out monitoring are shown in Figure 6-2. For the winter 2022 sampling program, seven of the 14 lake and stream subwatersheds had concentrations above the MPCA chloride criteria.

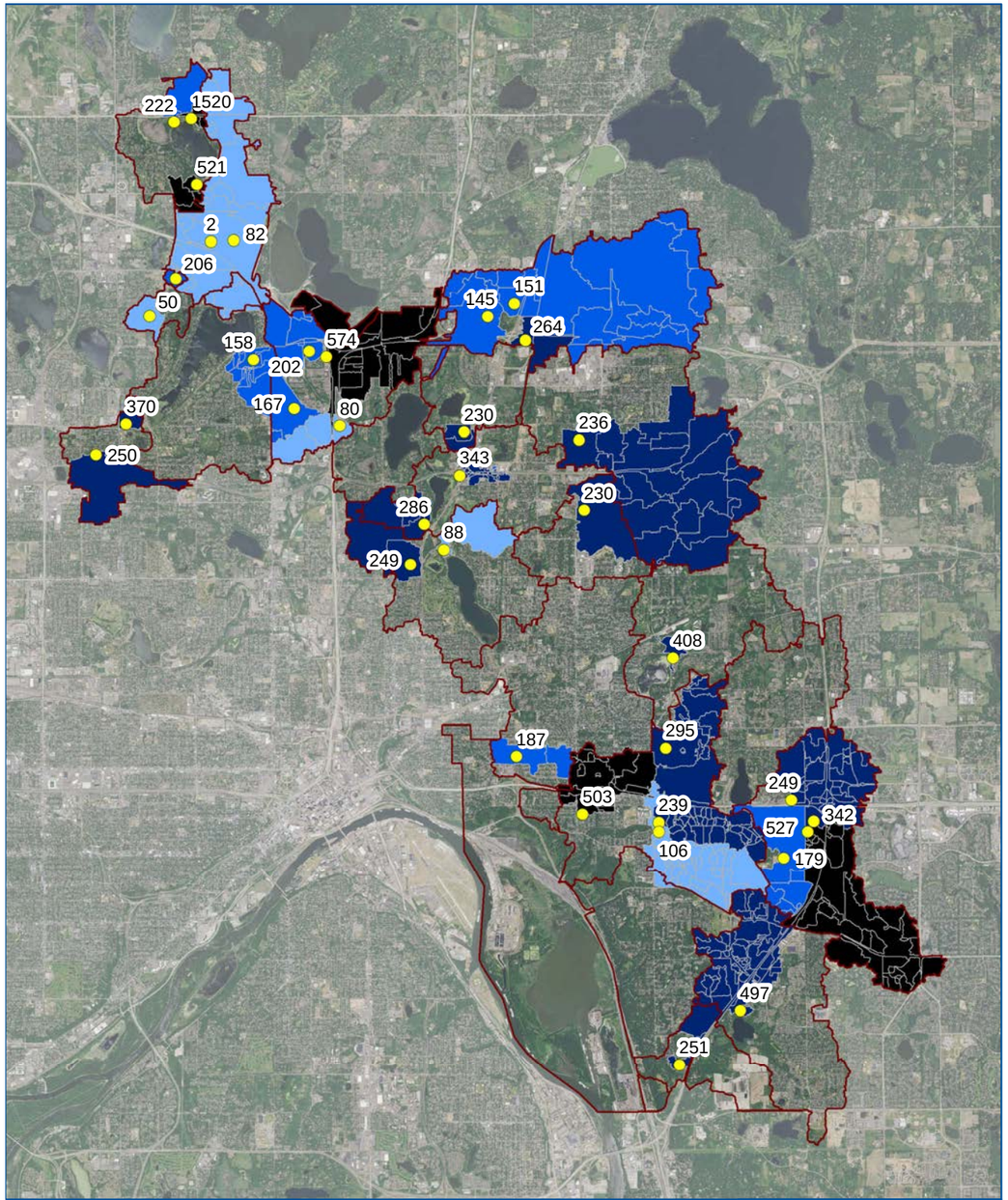


Figure 6-1 2021 chloride ice-out (March/April) sampling results

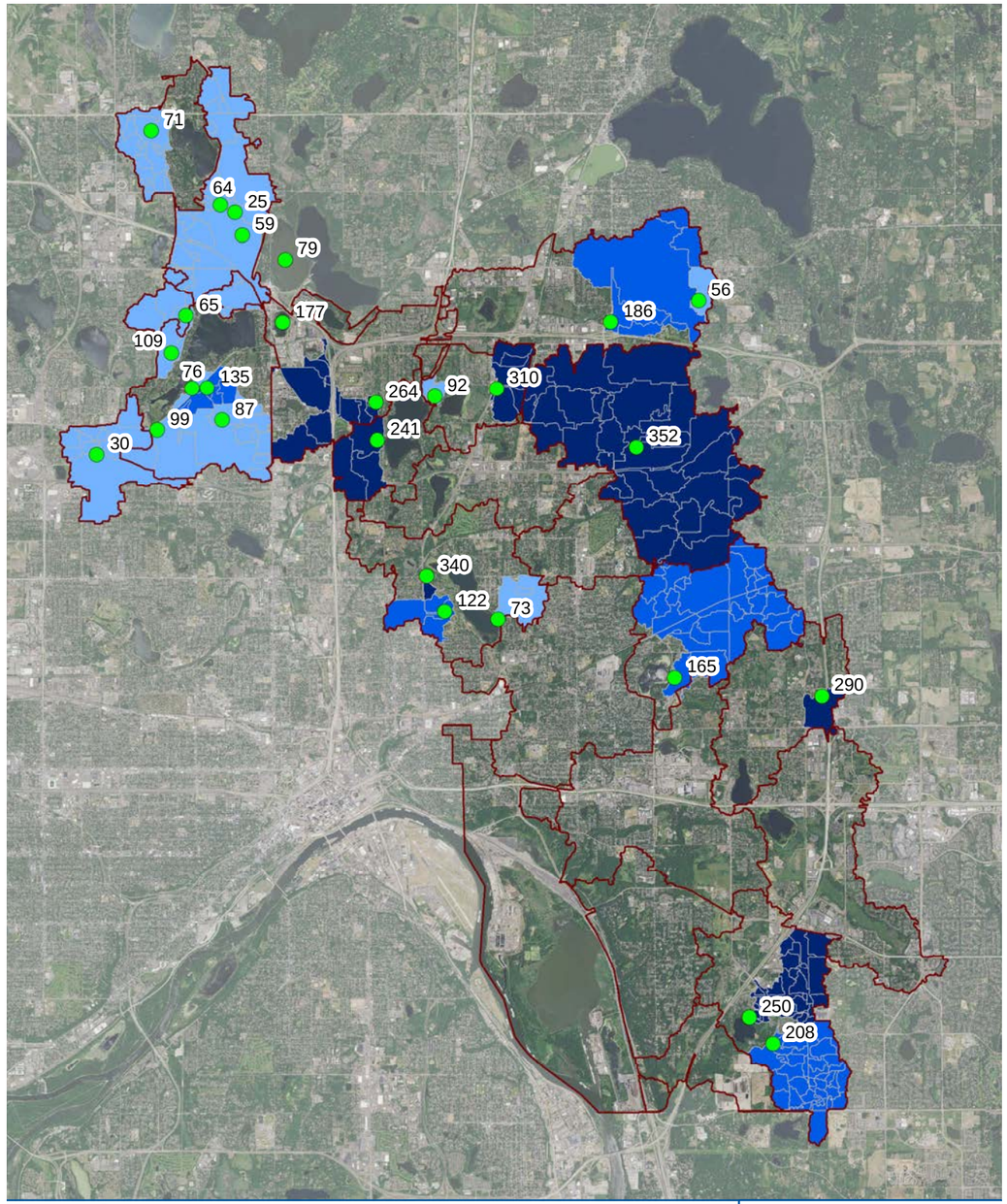


Figure 6-2 2022 chloride ice-out (March/April) sampling results

The results of the 2021 and 2022 monitoring period are superimposed in Figure 6-3. If a location was sampled in 2021 and 2022, the higher concentration is represented in the map. Overall, waterbodies receiving approximately 80% of the RWMWD's stormwater runoff (excluding those that drain to Pig's Eye Lake) have been sampled for chloride ice-out between 2021 and 2022. Results indicate that the majority of subwatersheds have either high or very high concentrations of chlorides after ice-out in late March and April, including but not limited to, Snail Lake, Carver Lake, Battle Creek Lake, Battle Creek, Keller Lake, and Gervais Creek. It is interesting to note was that there is no clear chloride correlation between years. Some waterbodies maintained similar concentrations; for example, one particular waterbody had a chloride concentration of 82 mg/L in 2021 and 59 mg/L in 2022. However, in a different location, another waterbody had a chloride concentration of 250 mg/L in 2021, and a concentration of 30 mg/L in 2022. These results reflect the need to annually repeat sampling to get a better understanding of year-to-year variation.

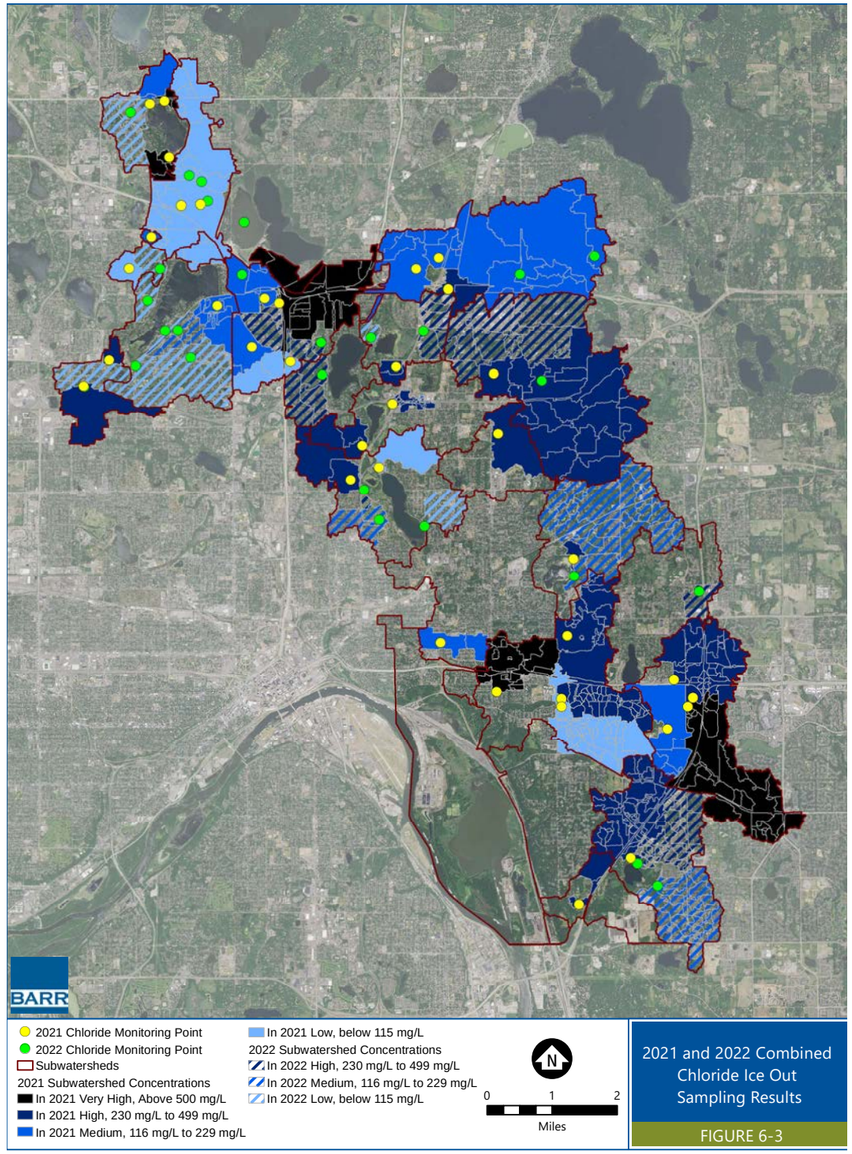


Figure 6-3 2021and 2022 combined chloride ice-out sampling results

Ice-out chloride monitoring is scheduled to continue in 2023. Using the results of 2021 and 2022 sampling, 30 locations have been selected (Figure 6-4). Half of the locations represent areas that were above the top 50th percentile for chloride concentrations in 2021 and/or 2022. The other half are locations in subwatersheds with lakes known to be impaired by high chloride concentrations: Tanners Lake, Carver Lake, Battle Creek Lake, and Kohlman Lake.

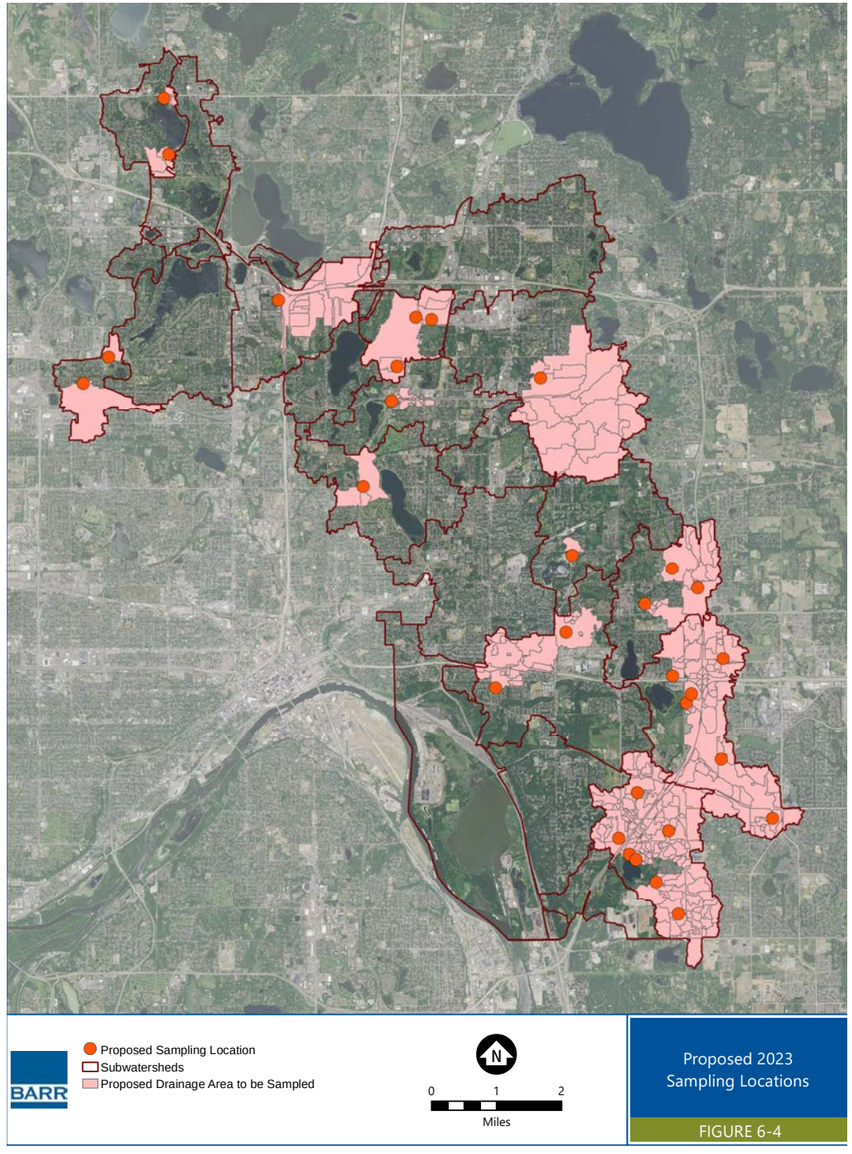


Figure 6-4 Proposed 2023 chloride sampling locations

7. Best Management Practices (BMPs)

2022 WATER MONITORING ANNUAL REPORT

SAND FILTERS

City	Maplewood
Subwatershed	Kohlman Creek
Completed	2009
Cost	$235,000
Funding Sources	District Levy Fund, Stormwater Impact Fund
Partners	City of Maplewood, University of Minnesota–St. Anthony Falls Laboratory

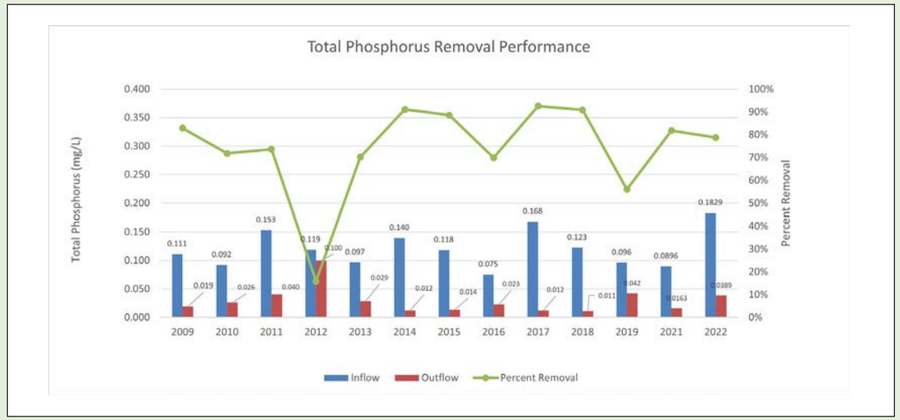
Beam Avenue Iron-Enhanced Sand Filter

RWMWD's iron-enhanced sand filter on Beam Avenue was installed in 2009 to improve the water quality of Kohlman Lake. It was the first filter of its kind in Minnesota.

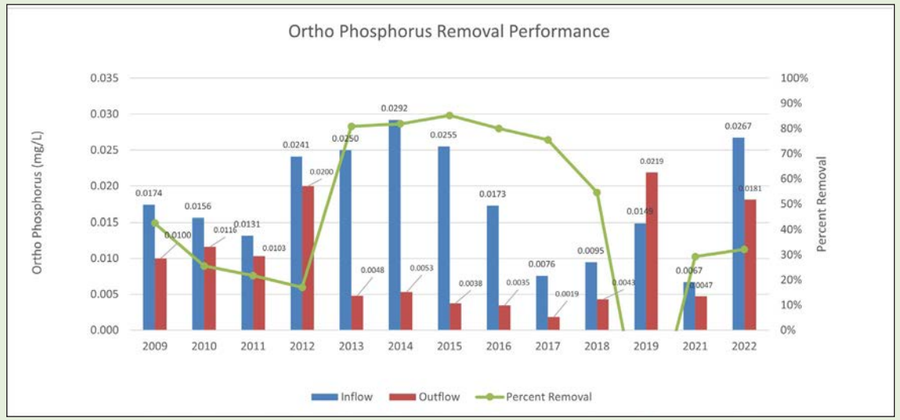
Sand filters have been used for years to remove solids and pollutants from stormwater. Newer, iron-enhanced sand filters (sand mixed with iron filings) are now being used as an efficient and cost-effective means of removing phosphorus. The filter works through a chemical process in which phosphorus molecules bind to the iron particles in the sand filter as water passes through.

The RWMWD has monitored its iron-enhanced sand filter since 2009. Between 2009–2018, total phosphorus removal ranged from 70–93%. But, in 2019, it declined significantly (56%). Since 2019, the TP removal has improved to 82% and 79% for 2021 and 2022, respectively. Removal of orthophosphate has declined, dropping from 70% removal in 2016 to -47% in 2019 (perhaps an indication that the filter is releasing dissolved phosphorus). In 2021 and 2022, orthophosphate removal rates increased slightly, but that could be due to 2021 and 2022 being drought years. Increased performance for total phosphorus and orthophosphate could also be attributed to the 2022 replacement of the media closest to the system's inlet. Removal of total suspended solids remains relatively steady, with average yearly removal consistently exceeding 85% for almost all monitored years. The average percent removal for the period of monitoring (2009–2022) is 74% for total phosphorus, 45% for orthophosphate, and 89% for total suspended solids.

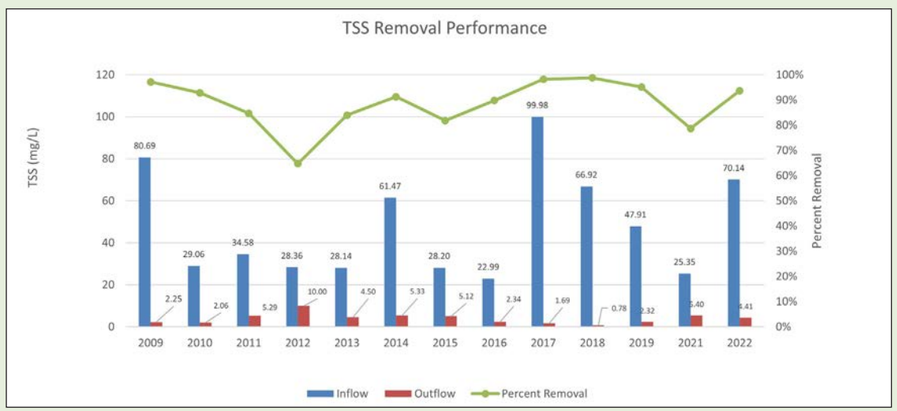
Total phosphorus removal performance



Orthophosphate removal performance



TSS removal performance



City	Maplewood
Subwatershed	Kohlman Lake
Completed	2009
Cost	$72,900
Funding Sources	District funds
Partner	Simon Property Group, Minnesota Pollution Control Agency (monitoring)

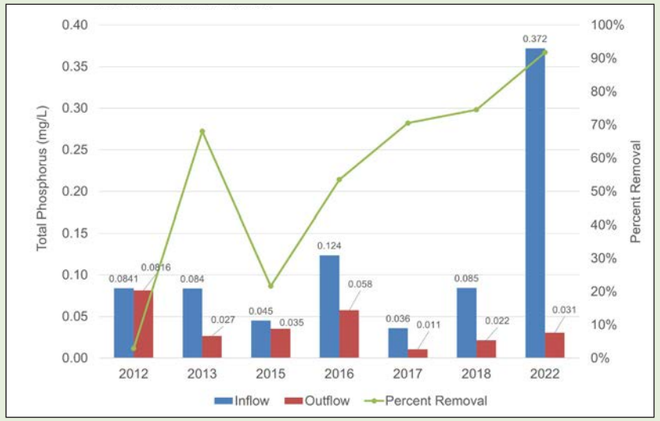
Woodlyn Rain Garden Iron-Enhanced Sand Filter

The Woodlyn iron-enhanced sand filter is part of the larger Maplewood Mall stormwater retrofit effort. The goal of that project—designed to capture and filter 67% of rainwater at the mall site—was to decrease the phosphorus runoff to nearby Kohlman Lake. Prior to the project, only 3% of the stormwater runoff from the mall was captured and filtered.

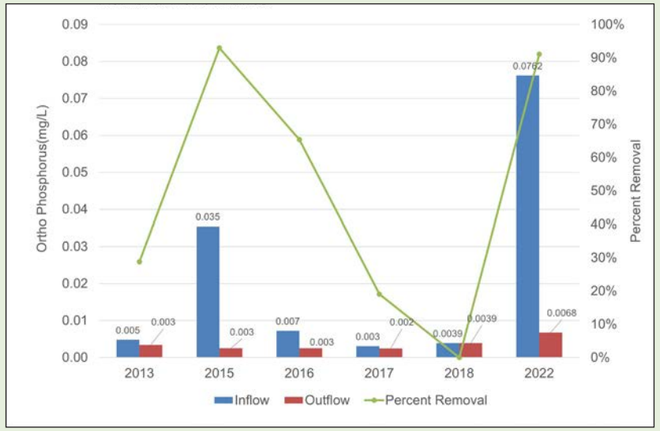
The Woodlyn iron-enhanced sand filter is a narrow strip of iron-enhanced sand beneath a rain garden. Runoff is intercepted from a parking lot and directed to the rain garden. There, the stormwater filters through the iron-enhanced sand for a period of time until it is treated. The average annual phosphorus removal with the filter has ranged from 3% during the first year of operation to 75% in 2018. The average annual removal of orthophosphate ranged from 0% in 2018 to 93% in 2015. The average removal for the period of monitoring (2012–2018) was 58% for total phosphorus, 73% for orthophosphate, and 94% for total suspended solids.

In 2022 total phosphorus, orthophosphate, and total suspended solids removal were all over 90%—the highest yearly removal rates since monitoring began. The infrequent and small rainfall events in 2022 may account for this increased performance, as the rain washed down impervious surfaces laden with atypically high levels of accumulated sediment. Due to the improved performance in 2022, it is recommended to monitor Woodlyn before deciding if filter media replacement is required.

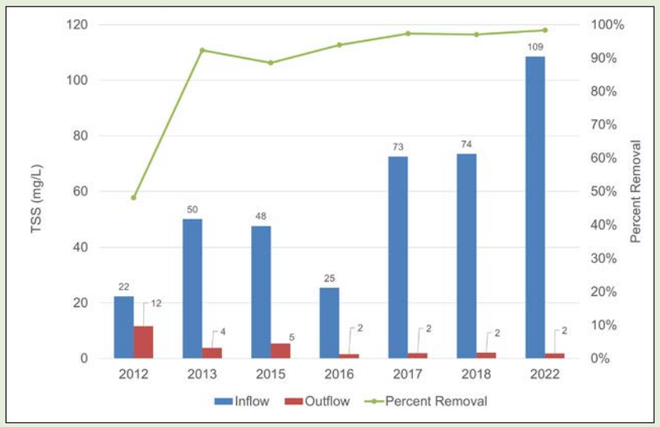
Total phosphorus removal performance



Orthophosphate removal performance



TSS removal performance



City	Maplewood
Subwatershed	Wakefield Lake
Completed	Fall 2011; filter media changed in 2022
Cost	$40,000
Funding Source	MPCA 319 Grant
Partner	City of Maplewood

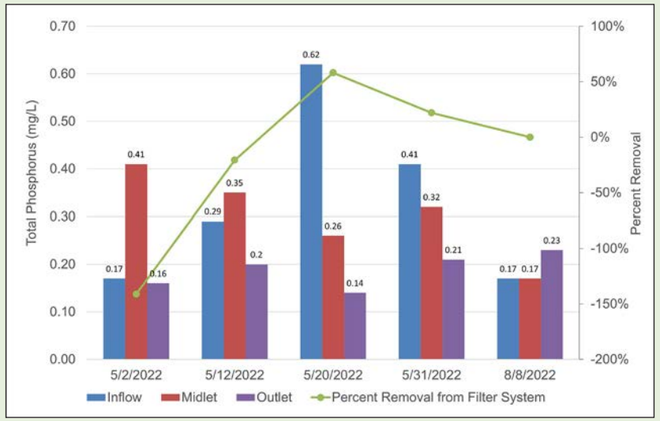
Wakefield Lake Experimental Iron and Granite Sand Filter

In 2022, the media in the Wakefield Lake Experimental Filter (see page 70) was replaced with iron and granite sand. Iron and granite sand was selected as replacement media due to granite sand's high infiltration rate and iron's capacity to remove dissolved phosphorus. The system was monitored in 2022 in three locations: inlet, "midlet," and outlet. The inlet is the inflow location, the "midlet" is where water leaves the filter media system, and the outlet is the outflow of the pond downstream of the filter (before Wakefield Lake).

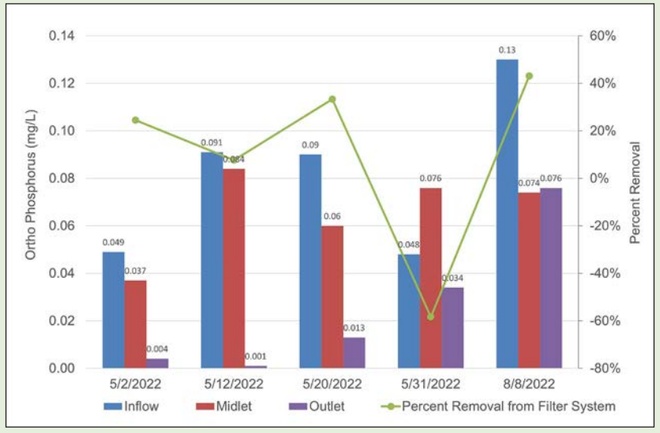
In 2022, the filter system had mixed total phosphorus removal performance—the filter removed phosphorus for some events, but released some phosphorus during others. From inlet to outlet, almost all events had a reduction in total phosphorus, but the majority of removals came from the downstream pond. The filter had an average total phosphorus removal (between the inlet and the "midlet") of 9%, while the pond's average removal (between the "midlet" and the outlet) was 38%. A similar trend was apparent for orthophosphate and total suspended solids. The average orthophosphate removal from the filter was 19%, while the average removal from the pond was 61%. The average total suspended solids removal from the filter was negative, while the pond was 91%.

The total suspended solids results stand out, especially when examining the outflow concentrations from the filter. The "midlet" concentrations decreased from 1,510 mg/L at the beginning of the year to 97.3 mg/L. One potential explanation for the high "midlet" concentration of total suspended solids on the first sampling date is that the granite sand was, perhaps, not washed well enough before being installed in the filter, resulting in a pulse of suspended solids getting washed off the new media. It will be important to continue monitoring the filter to see if the performance of all three parameters improves and performance stabilizes.

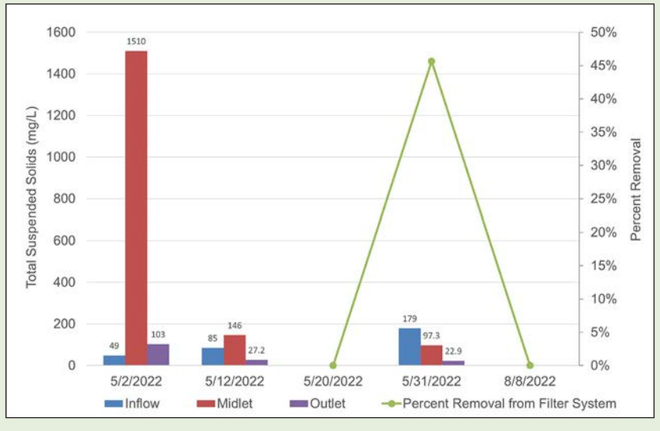
Total phosphorus removal performance



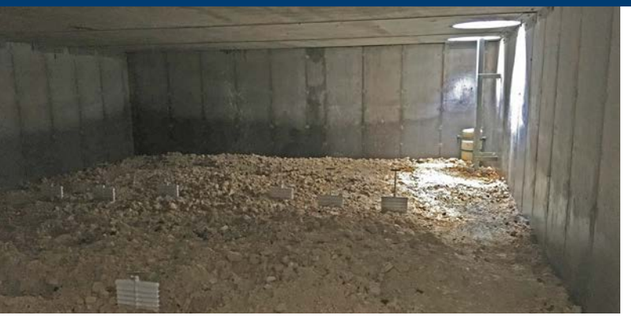
Orthophosphate removal performance



TSS removal performance



SPENT-LIME FILTERS



City	Maplewood
Subwatershed	Wakefield Lake
Completed	2018
Cost	$390,000
Funding Sources	Clean Water Fund ($300,000) and District funds
Partner	City of Maplewood

Frost and Kennard Spent-Lime Filter

This innovative stormwater filter is located at the corner of Frost Avenue and Kennard Street in Maplewood, a few blocks upstream from Wakefield Lake. It is designed to capture and filter stormwater runoff from a large portion of the lake's 944-acre subwatershed.

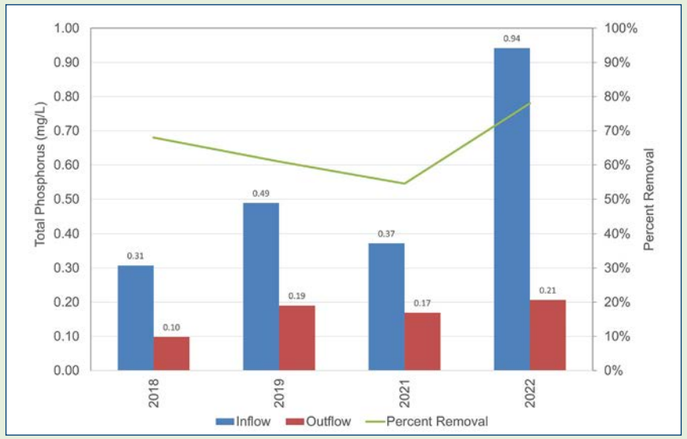
The filter intercepts water from the storm sewer and routes it into a 20- by 36-foot underground chamber. There, the water interacts with spent lime—a chalky clay-like material consisting of calcium carbonate, which is a waste product of municipal drinking water treatment. Phosphorus in the water binds to calcium in the spent lime material, decreasing the amount of phosphorus in the water leaving the chamber.

Spent lime is particularly effective in removing a form of phosphorus called orthophosphate, which is often found in stormwater runoff. While orthophosphate is a vital nutrient for bacteria and plants in surface waters, too much orthophosphate can promote algae growth and decrease water clarity.

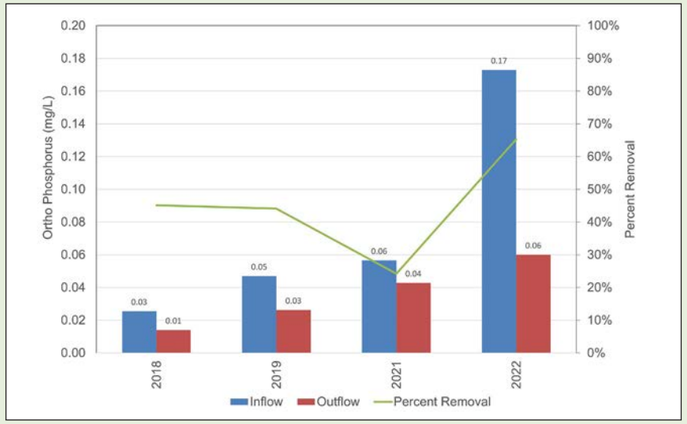
Sampling equipment monitors phosphorus levels and total suspended solids as water enters and leaves the filter on its way to Wakefield Lake, which is impaired for phosphorus. The goal is to help the lake meet the state standard for phosphorus (60 micrograms per liter).

The removal performance for total phosphorus, orthophosphorus, and total suspended solids all show a similar pattern. From 2018 to 2021, there was a slight decrease in removal for all parameters. For example, total phosphorus performance was 68% in 2018, 61% in 2019, and 55% in 2021. This decreasing trend would indicate that the media may need to be replaced. However, in 2022, the filter had its best removal performance, with removals of 78% for total phosphorus, 65% for orthophosphate, and 93% for total suspended solids. One potential reason for the increased performance in 2022 could be that 2022 was a drought year with typically small rainfall events. It is important to continue monitoring the Frost Kennard filter to see if performance is improving or if the media is reaching the end of its lifespan, as the 2018–2021 data suggests.

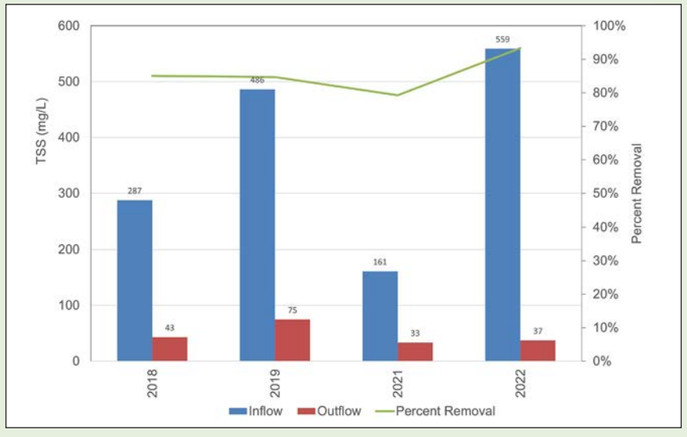
Total phosphorus removal performance



Orthophosphate removal performance



TSS removal performance



Wakefield Lake Experimental Spent-Lime Filter

This stormwater filter is adjacent to Larpenteur Avenue and Prosperity Road. It is designed to capture and filter stormwater runoff from a large portion of the lake's 944-acre subwatershed.

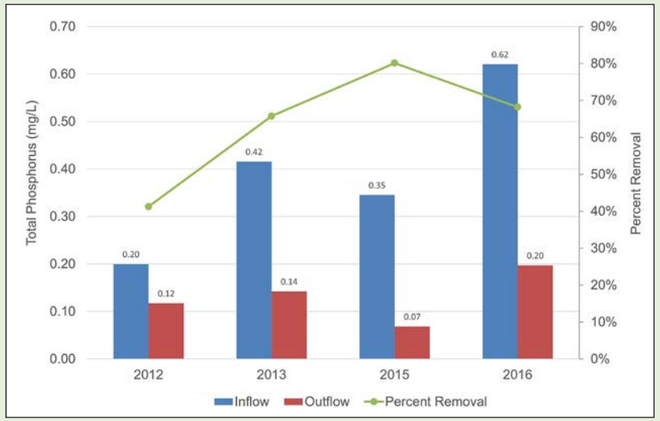
The filter intercepts water from the storm sewer and routes it into an underground chamber. From 2011 to 2021 the filter media was spent lime. Spent lime is a chalky clay-like material consisting of calcium carbonate, which is a waste product of municipal drinking water treatment. Phosphorus in the water binds to calcium in the spent lime material, decreasing the amount of phosphorus in the water leaving the chamber.

Spent lime is particularly effective in removing a form of phosphorus called orthophosphate, which is often found in stormwater runoff. While orthophosphate is a vital nutrient for bacteria and plants in surface waters, too much orthophosphate can promote algae growth and decrease water clarity. The goal of this filter is to decrease the amount of phosphorus and total suspended solids entering Wakefield Lake, which is impaired for phosphorus.

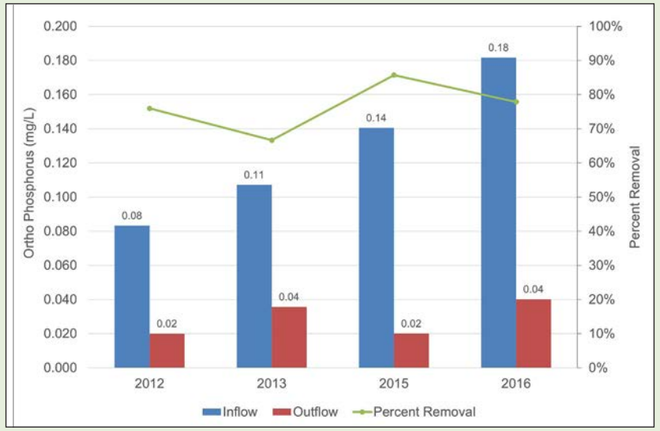
The graphs at right show the effectiveness of the spent-lime filter in reducing total phosphorus, orthophosphate, and total suspended solids in 2012, 2013, 2015, and 2016. Peak performance for total phosphorus and orthophosphate removal occurred in 2015 (73% and 77%). In 2016 performance dipped to 42% and 38%. Removal of total suspended solids improved substantially from 2012 (-19%) to 2016 (61%). Over the four years of monitoring, the average removal for the three parameters was 51% for total phosphorus, 55% for orthophosphate, and 37% for total suspended solids. It should be recognized that these averages include periods where performance changed due to structural changes in the media after placement. For example, total suspended solids removal of around 50% is probably more typical as the media broke down and filled in pore space, thereby improving the filtration effectiveness of the media.

City	Maplewood
Subwatershed	Wakefield Lake
Completed	Fall 2011
Cost	$40,000
Funding Source	MPCA 319 Grant
Partner	City of Maplewood

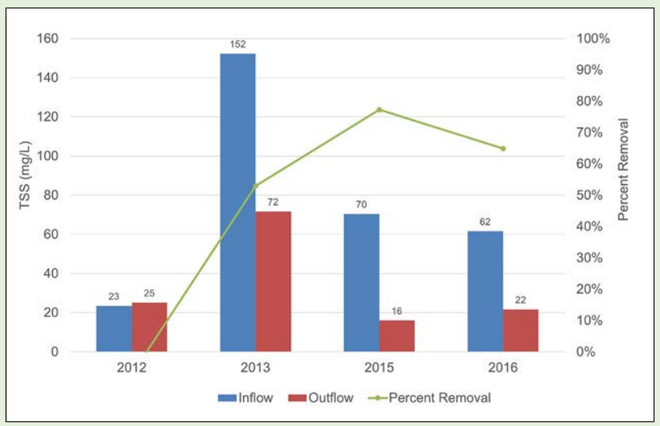
Total phosphorus removal performance



Orthophosphate removal performance



TSS removal performance



City	Shoreview
Subwatershed	Snail Lake
Completed	2021
Cost	$20,000
Funding Source	District funds
Partner	University of Minnesota

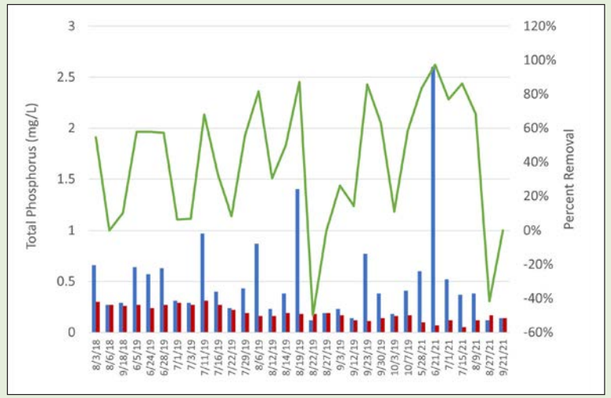
Shoreview Commons Pond

The Shoreview Commons Pond is located north of Highway 96 in the Shoreview Commons Park. The pond has a drainage area that is approximately 144 acres (35% impervious), primarily comprising residential, residential, and institutional land. The outflow of the pond travels to Snail Lake. Shoreview Commons Park Pond has a historical trend of odor problems, low water clarity, and significant duckweed growth.

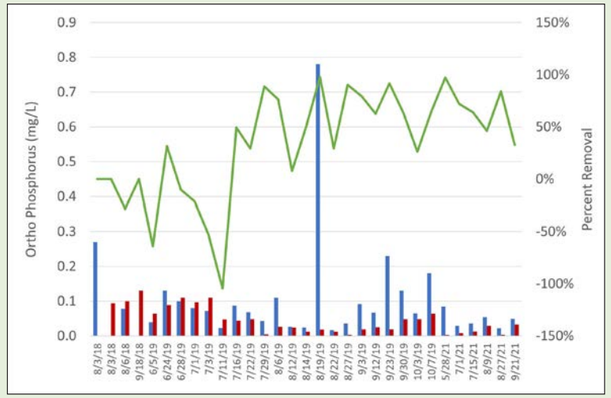
The pond was initially studied in 2018 with the use of sediment cores, laboratory mesocosms, and in-situ water quality sampling. The 2018 study was used to determine the baseline water quality for the pond and to develop an iron filings treatment plan and dose. St. Anthony Falls Laboratory researchers chose to add iron filings to the pond to reduce internal loading with the pond and to improve its water quality. In February 2021, Shoreview Commons Pond 12,000 pounds of iron filings were applied to the surface of the frozen pond. The application of iron on frozen ice allows the iron filings to be equally distributed as the ice melts, releasing the filings into the pond.

From 2018 to 2019 (pre-iron-filing application), the average total phosphorus removal in the pond was typically between 0 and 70%. In 2021, post-iron-filing application, the majority of events were over 65% total phosphorus removal and as high as 97% removal. However, toward the end of the season, there were two events with no total phosphorus removed. Therefore, , the impact of the iron filings on total phosphorus removal remains unclear. Similarly, it is difficult to understand the impacts of iron fillings on orthophosphate removal. Orthophosphate removals were the lowest in the 2018 pre-iron-filing application. However, 2019 (pre-iron filing) and 2021 (post-iron filing) had similarly low orthophosphate removal performance, although Lastly, it appears the iron-filing application did not impact total suspended solids performance, with all years typically having events with over 85% of total suspended solids removed. It is hard to predict the performance of the iron filing application due to limited data post-application. In addition, the pond had a fountain or aerator installed between October 2020 and August 2021 which may have interfered with the pond's water quality.. To understand the impacts of the filing, monitoring would need to continue and would need to be done more consistently, in a manner similar to the 2019 sampling period. However, given the 2021 results it may still be hard to draw conclusions.

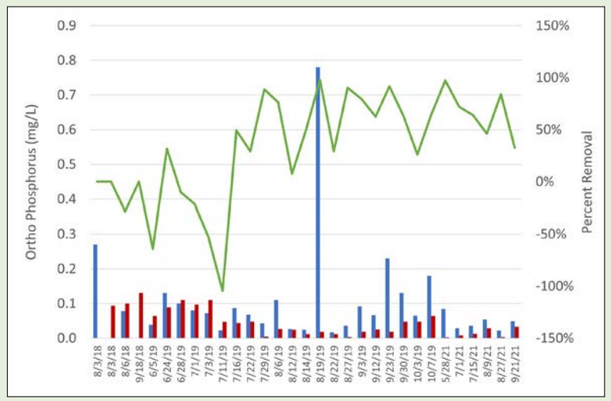
Phosphorus removal performance (mg/l)



Orthophosphate removal performance (mg/l)



Total suspended solids removal performance (mg/l)



ALUM TREATMENT SYSTEM

Tanners Lake Alum Treatment Facility

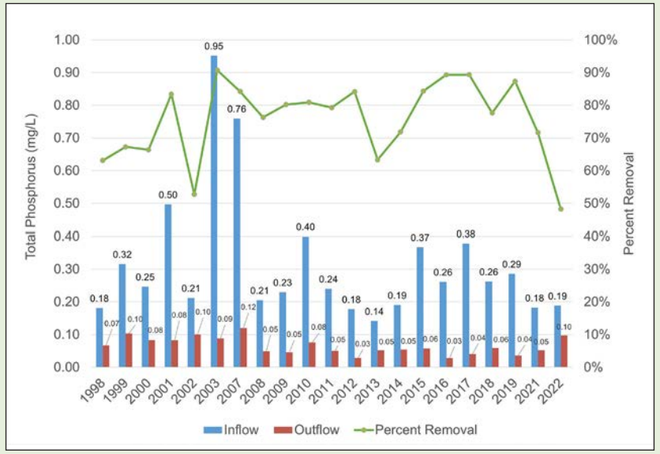
The Tanners Lake alum treatment facility was constructed in 1998 to reduce the amount of phosphorus reaching Tanners Lake. The facility receives stormwater runoff from a 1,246-acre watershed and injects it with aluminum sulfate (known as alum). The alum then binds with the phosphorus in the water and forms a floc that settles to the bottom of a pond upstream of Tanners Lake. The water that ultimately drains out of the pond to Tanners Lake has significantly lower phosphorus content.

The graphs at right show the effectiveness of the alum treatment system in reducing total phosphorus over the last 20-plus years of monitoring. Peak performance for phosphorus removal occurred in 2003 (91%) after improvements were made to the system in 2002. From 2004 to 2019, total phosphorus removal would consistently range from 72% to 89%. In 2021 and 2022, there was a slight downward trend in total phosphorus removal compared to years prior. It will be important to continue monitoring total phosphorus removal to determine if this trend persists.

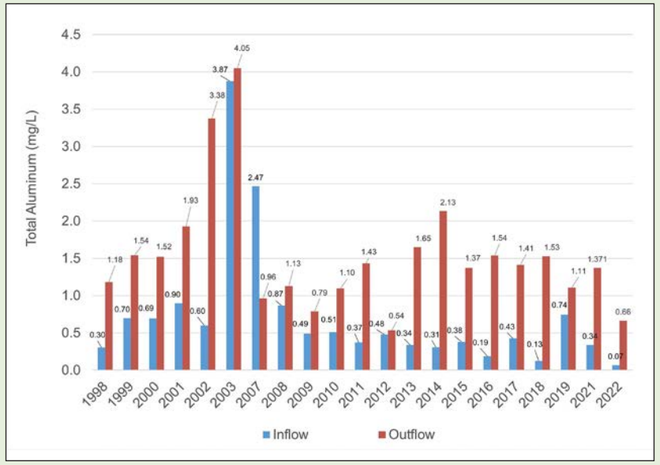
City	Oakdale
Subwatershed	Tanners Lake
Completed	1998
Cost	$1.9 million[1]
Funding Sources	District funds, Minnesota Pollution Control Agency State Revolving Fund Loan

[1] This cost reflects the alum facility as well as other related water quality improvements: Tanners Lake 5th Street Basin, Tanners Lake Berm, Tanners Lake Tartan High School Pond

Total phosphorus removal performance



Total aluminum



RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

2665 Noel Drive
Little Canada, MN 55117
P: 651-792-7950
E: office@rwmwd.org

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engineering and environmental consultants

BARR

Technical Memorandum

To: Paige Ahlborg – Ramsey-Washington Metro Watershed District (RWMWD)
From: Katie Turpin-Nagel, Tyler Olsen, and Katherine Tomaska – Barr Engineering Co. (Barr)
Subject: DRAFT Concept Design Summary for Woodbury Target Stormwater Retrofit Project
Date: April 25, 2023
Project: 23/82-1306
c: Erin Anderson Wenz (Barr)

1 Introduction

This memorandum summarizes the stormwater retrofit concept designs for the Target store located in Woodbury, MN at Valley Creek Plaza (managed by Muir Property Management). The goal of the stormwater retrofits is to treat runoff from tributary areas with high impervious percentages to improve water quality for downstream waterbodies (e.g., Tamarack Nature Preserve, Battle Creek Lake). Of the Valley Creek Plaza complex, Target Corporation (Target) owns approximately 12.4 acres as shown by the red outline in Figure 1. The parcel consists of approximately 3.4 acres of impervious roof and 7.3 acres of impervious pavement.

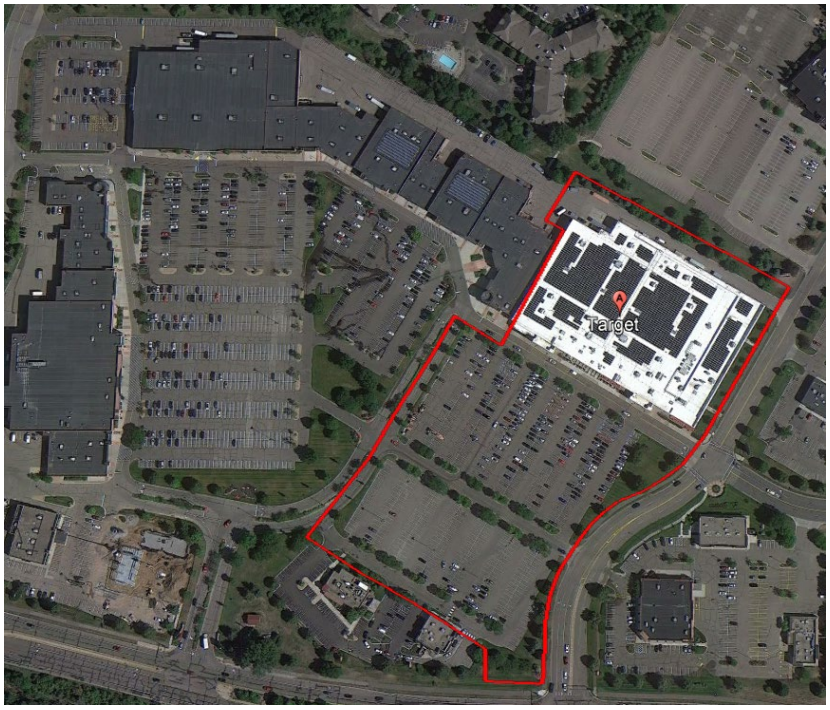


Figure 1 Target store at the Valley Creek Plaza in Woodbury, MN

The installation of stormwater retrofits at the Target store in Woodbury would be the third partnership between RWMWD and Target. Rain garden and tree trench retrofits were installed at the Target stores located in East Saint Paul and North Saint Paul in 2020 and 2021, respectively, resulting in over 7 acres of impervious surfaces treated between the two stores. Target is eager to partner with RWMWD again to treat additional impervious pavement at another store location and continue to learn more about which stormwater retrofits could be installed at other stores, not only in the Twin Cities, but throughout the nation.

The sections below summarize the two concept design layouts investigated and discuss why a specific layout was recommended for final design. For the recommended concept design, the modeling results and engineer's opinion of probable cost are summarized.

2 Concept Designs

A topographic and utility survey was completed in fall 2022 to facilitate the development of concept designs for the Woodbury Target store. The survey was completed by Alliant Engineering, Inc. and included the following details: (1) topography (ground contours), (2) utility locations, (3) detailed information on storm infrastructure (e.g., invert elevations, rim elevations, diameters, materials, condition), (4) locations of paved areas, (5) locations of buildings, and (6) tree survey. Based on the information presented in the survey, Barr investigated various layouts for stormwater retrofits within and adjacent to the parking lots south of the Target store.

Concept Design #1 includes the installation of two rain gardens with iron-enhanced sand trenches as shown in Figure 2. Both rain gardens are sized to treat approximately 1.1 inches of runoff from tributary impervious surfaces. Stormwater will be diverted into the rain gardens by installing trench drains (polydrains) around existing catch basins, which will collect runoff before entering the existing grates. Runoff captured by the polydrains will discharge into installed storm manholes and storm sewer, which will drain to the rain gardens for treatment. As runoff filters through the rain gardens, total suspended solids (TSS), particulate nutrients, and dissolved nutrients will be captured by the treatment media or utilized by plants. Filtered runoff will then discharge to underlying draintile in the rain gardens connected to the existing storm infrastructure. It is unlikely that the rain gardens can be infiltration basins based on the soil conditions observed from nearby developments. However, soil borings will be collected as a part of the next phase to inform infiltration capacity of the underlying soils. The north rain garden is located completely within existing open green space. The south rain garden is also located in existing open green space, but also includes the removal of 8 parking spaces. The removal of 8 parking spaces will not only allow for a larger treatment volume but will also reduce the parcel's impervious area. Target and the City of Woodbury have indicated that the removal of 8 parking spaces should be approved.

Concept Design #2 includes the installation of the two rain gardens shown in Concept Design #1 as well as the installation of two tree trenches. Figure 3 shows the proposed location of the north tree trench system. To divert water into the north tree trench system, a diversion manhole would be installed onto the existing storm sewer. Because the existing storm sewer extends northwest into the adjacent parking lot, the tributary area to the north tree trench not only includes 1.5 acres of the Target parking lot but

includes approximately 2.9 acres of impervious pavement from the adjacent parking lot. Due to site restrictions, the north tree trench was sized to treat 0.5 inches of runoff from the tributary Target parking lot. However, due to the additional tributary drainage area from the adjacent parking lot, the north tree trench would treat 0.12 inches of runoff from the total tributary impervious area. Figure 4 shows the proposed location of the south tree trench system. Like the rain gardens, stormwater will be diverted into the tree trench by installing trench drains (polydrains) around an existing catch basin, which would collect runoff before entering the existing grate. Runoff captured by the polydrains would discharge into installed storm sewer, which would drain to the tree trench for treatment. The south tree trench is sized to treat 0.5 inches of runoff from tributary Target parking lot impervious surfaces.

While the installation of two tree trench systems would result in additional impervious pavement treated without the loss of parking spaces, Barr recommends Concept Design #1 for the following reasons:

- Soil borings collected in 2020 during the design process for Chase Bank (located in Valley Creek Plaza) found clayey sands and lean clays up to 20 feet below the ground surface. Clay soils will limit the volume of runoff that can infiltrate in the tree trenches resulting in reduced removals of dissolved contaminants. As such, the tree trench systems would target the removal of particulates.
- During the concept design process, Barr learned that Muir Property Management sweeps all of the parking lots in Valley Creek Plaza once per week during non-snow conditions. Since Muir Property Management already has a best management practice (BMP) that targets the removal of particulates, installing another BMP that primarily targets the removal of particulates will result in a higher cost for lower benefit.
- The large tributary area to the north tree trench would likely result in intensive maintenance requirements to preserve BMP performance and may shorten the life of the BMP.

Since Concept Design #1 targets the treatment of both particulate and dissolved contaminants, Barr recommends moving forward with the final design for the two rain gardens adjacent to the parking lots. The installation of surface stormwater retrofits can also provide opportunities for storm water education (e.g., signage) and allows for easier maintenance. The two proposed rain gardens will treat approximately 4.3 acres of onsite impervious pavement (i.e., treating ~59% of the total impervious pavement of the Target storage parcel) and convert 8 existing parking spaces to part of the south rain garden.

The concept designs were presented to Target staff in early March 2023. The meeting attendees approved Concept Design #1 and are looking forward to next steps.

3 Cost-Benefit: Concept Design #1

Barr modeled Concept Design #1 using the Minnesota Pollution Control Agency (MPCA) Minimal Impact Design Standards (MIDs) Calculator and estimates that approximately 1,300 pounds of TSS and 6.5 pounds of total phosphorus (TP) will be removed annually.

A concept design-level opinion of probable cost was developed for the recommended concept. It's estimated the construction costs for Concept Design #1 ranges between $660,000 - $1.07 million. The

opinion of cost is intended to provide assistance in evaluating and comparing alternatives and should not be assumed as an absolute value. The Association for the Advancement of Cost Engineering (AACE) Class 4 opinion of cost was used based on the limited project definition, wide-scale use of parametric models to calculate estimated costs (i.e., making extensive use of order-of-magnitude costs from similar projects), and uncertainty, with an acceptable range of between -20% and +30% of the estimated project cost.

Assuming a construction cost estimate between $660,000 - $1.07 million, a 20-year lifespan, and an annual TP removal of 6.5 pounds, the annualized cost-benefit for the project is $8,800 - $13,400 per pound of TP. This estimated annualized cost-benefit is within the typical cost-benefit range ($400 to $14,000 per pound of TP) observed for larger-scale, regional projects within the RWMWD.

4 RWMWD Prioritization Tool

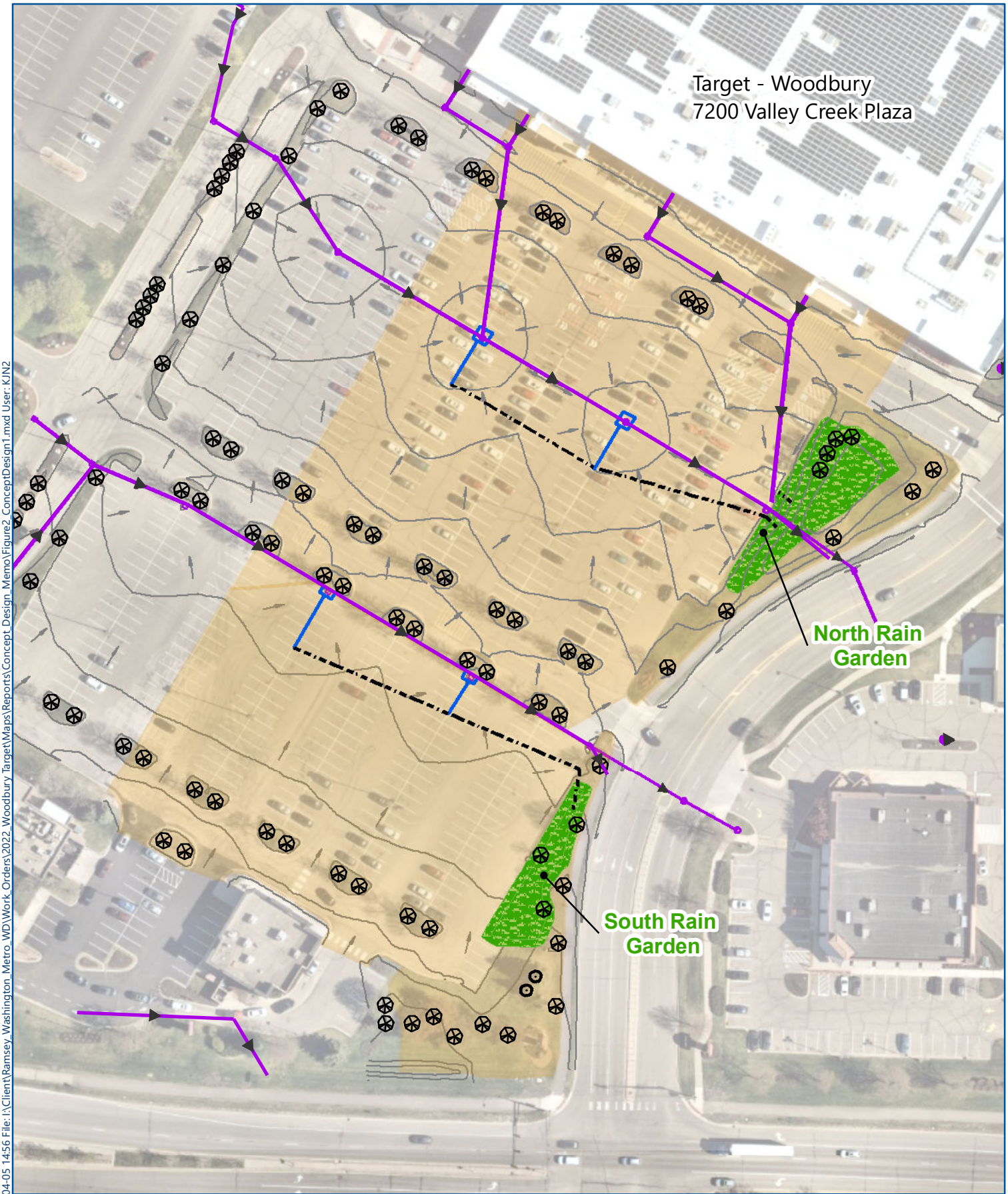
This project is ranked fourth in RWMWD's water quality project prioritization list of viable projects (i.e. not on-hold or under current study/design) where the primary project benefit is "Inform and Empower Communities". The viable projects ahead of the Woodbury Target Stormwater Retrofit include large-scale reuse projects in other areas of the watershed. Table 1 summarizes the project's scores per each goal in RWMWD's Watershed Management Plan. The prioritization score for this project will be updated as the design progresses.

Table 1 Summary of RWMWD Prioritization Tool Scores

Plan Goal Category	Scores per Plan Goal Category	Tool Scoring Credits Descriptions
1. Achieve quality surface water	3.0	• < $10,300 per pound TP removal • Reduction in impervious area
2. Achieve health ecosystems	1.0	• Addition of native plantings
3. Manage risk of flooding	0.0	• N/A
4. Support sustainable groundwater	2.0	• Promotes infiltration
5. Inform and empower communities	5.0	• Planned educational component (signage) • Improve community attractiveness • Improve businesses • Foster collaboration with stakeholders
6. Manage organization effectively	0.5	• Willing project partner

5 Schedule

Pending Board approval, final design will start in June 2023 with project bidding anticipated in early 2024 (January/February 2024). Target has requested that construction be largely completed during the summer months, with substantial completion before mid-October 2024.



Existing Site Storm
Existing 1-ft Contours
Tributary Watershed
Proposed Rain Garden
Proposed Polydrain
Proposed Storm Sewer

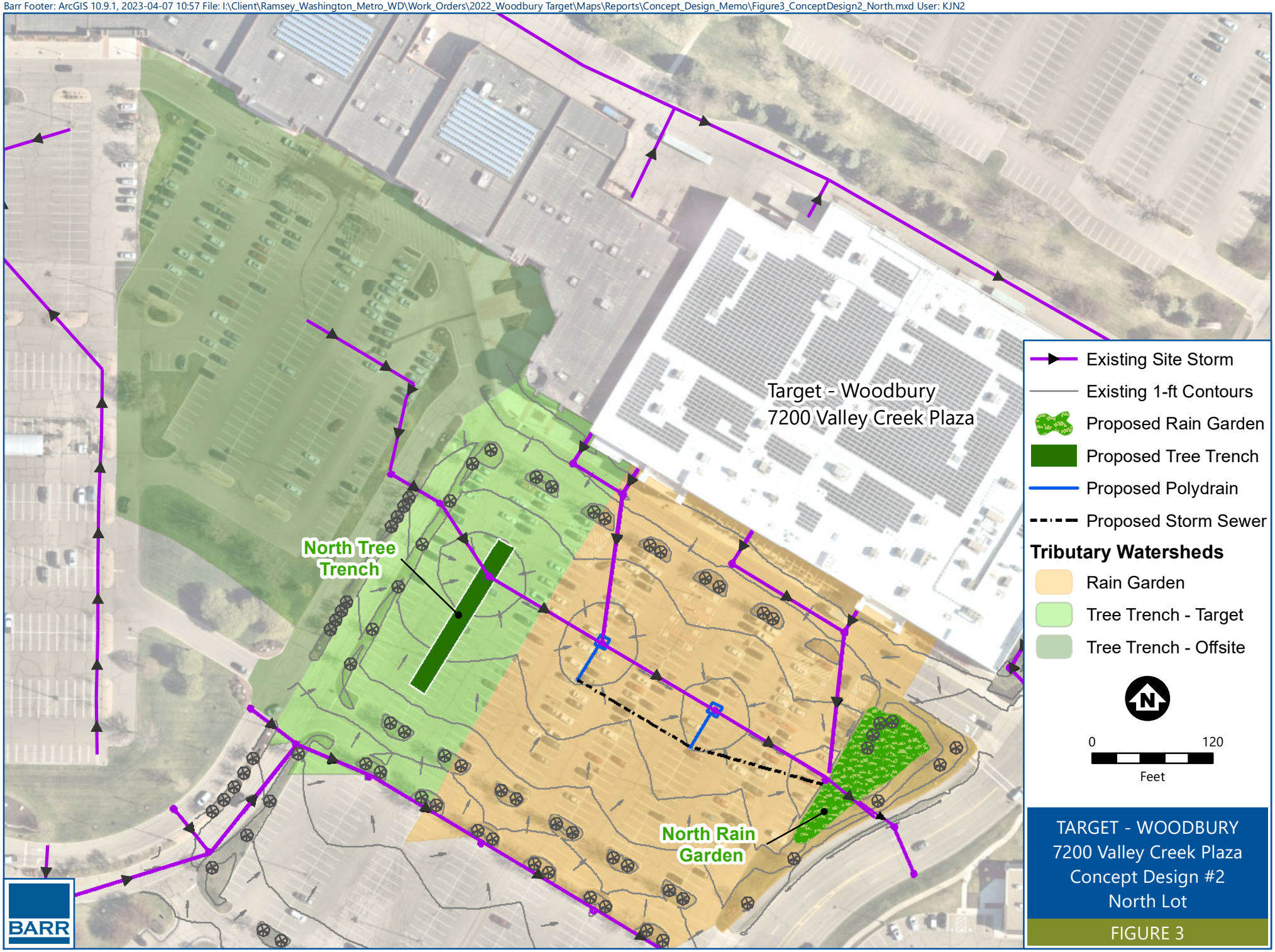
N

0 50 100
Feet

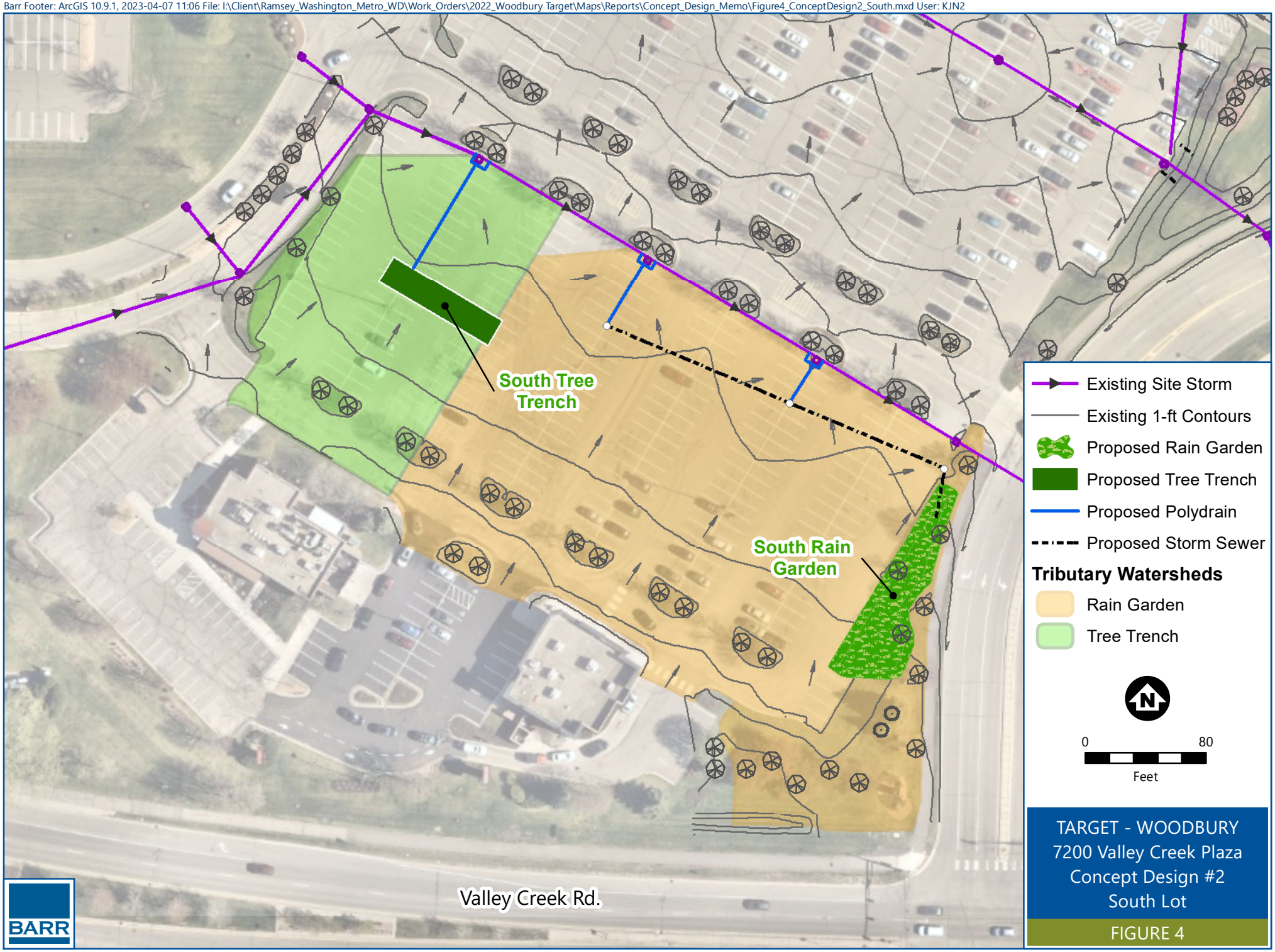
TARGET - WOODBURY
7200 Valley Creek Plaza

Concept Design #1

FIGURE 2



Barr Footer: ArcGIS 10.9.1, 2023-04-07 11:06 File: I:\Client\Ramsey_Washington_Metro_WD\Work_Orders\2022_Woodbury Target\Maps\Reports\Concept_Design_Memo\Figure4_ConceptDesign2_South.mxd User: KJN2



BARR

TARGET - WOODBURY
7200 Valley Creek Plaza
Concept Design #2
South Lot

FIGURE 4

****

Administrator's Report

****

MEMO

TO: Board of Managers and Staff
FROM: Tina Carstens, Administrator
SUBJECT: April Administrator's Report
DATE: April 27, 2023

A. Meetings Attended

Tuesday, April 4	9:00 AM	MAWA Executive Committee
	12:00 PM	Webinar: ADA Best Practices for Websites
Wednesday, April 5	6:30 PM	Board Meeting
Thursday, April 6	9:00 AM	Water Resources Conference Planning
	1:00 PM	Payne-Phalen Council Support
Monday, April 10	8:30 AM	MW and MAWA Meeting
Tuesday, April 18	10:00 AM	MPCA Draft Monitoring Report
	7:00 PM	Metro Watersheds Meeting
Thursday, April 20	2:00 PM	MW Handbook Committee
Tuesday, April 25	11:00 PM	Building Maintenance Meeting
	2:00 PM	Metro-INET Board Meeting
	5:00 PM	Retirement Gathering for Accountant, Nancy
Wednesday, April 26	9:00 AM	Audit Exit Meeting
	11:00 AM	Administrator's Meeting

B. Upcoming Meetings and Dates

WaterFest	June 3, 2023
June Board Meeting	June 7, 2023
CAC Meeting	June 13, 2023
MW Summer Tour (Albert Lea, MN)	June 20-22, 2023
July Board Meeting	***June 28, 2023***
Metro Watersheds Meeting	July 18, 2023
August Board Meeting	August 2, 2023
September Board Meeting	September 6, 2023
CAC Meeting	September 26, 2023
October Board Meeting	October 4, 2023
Metro Watersheds Meeting	October 17, 2023
CAC Meeting	October 24, 2023
November Board Meeting	November 1, 2023
Watershed Excellence Awards	Mid-November TBD
Minnesota Watersheds Annual Conference	November 28-30, 2023
CAC Meeting	December 5, 2023
December Board Meeting	December 6, 2023

C. **Board Action Log and Updates**

This month's board action log is attached. Each month, I review this list and add anything that was suggested in the previous meeting. If you have anything you'd like to add, this would be the time for board discussion.

D. **Minnesota Watersheds (formally MAWD) Updates**

Registration for the Minnesota Watersheds Summer Tour in Albert Lea, MN is now open. The first day of the event is Tuesday, June 20. The agenda starts at 12:30 pm with agenda partner updates followed by educational workshops. The evening will have a welcome, dinner, and tour overview. The tour will be the full day on Wednesday, June 21. Here is a link to the agenda and tour stops.

For information on legislative updates you can go to their website: https://www.mnwatersheds.com/leg-updates

For the monthly newsletters go here: https://www.mnwatersheds.com/news-letters

E. **Staffing Updates**

Our new administrative assistant, Emily Fitzgerald, started at the watershed this month. You will likely start to see communication from her shortly. Please help me in welcoming Emily F to the RWMWD!

Matt's last day was in April and Bill's is May 1. We currently have the job announcement and position descriptions posted to our website until May 5, which is when we will complete the hiring process for the Natural Resources Specialist and Natural Resources Program Manager positions.

RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

Board of Managers Action Log

Wednesday, May 3, 2023

Item	Anticipated Action Date	Means of Action	Completed
West Vadnais Lake Boundary Change	June 2023	Board review and approval.	
Governance Manual	June 2023	Board review and approval.	
Land Acquisition and Use Policy	July 2023	Board discussion and approval.	
Adopt-A-Drain Program Evaluation and Promotion	June 2023	Presentation and discussion.	
Review of Equity Areas Definition	June 2023	Presentation, discussion, and approval.	
Alum Use Policy	Summer 2023	Proposed policy discussion.	
Planting of Edible Plants in Restoration Areas	Winter 2022/2023	Barr new technology report	Feb 2023
PFAS (Per- and polyfluoroalyl substances) in MN and RWMWD's role.	Winter 2022/2023	Presentation	Feb 2023
Miyawaki Mini-Forest Assessment	Fall 2022	Barr new technology report	Oct 2022
Alum use for internal load control along with information on alternative solutions.	Fall/Winter 2022	Memo/Presentation	Nov 2022

(651) 792-7950
fax (651) 792-7951
office@rwmwd.org
rwmwd.org
2665 Noel Drive
Little Canada, MN 55117

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Project and Program Status Reports

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RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

resourceful. naturally. engineering and environmental consultants BARR

Memorandum

To: Board of Managers and Staff

From: Tina Carstens and Brad Lindaman

Subject: Project and Program Status Report – April 2023

Date: April 27, 2023

Note: The location, brief description, and current status of each project described below can be found on the 2023 RWMWD engineering services story map.

Project feasibility studies

A. Interim emergency response planning for district areas at risk of flooding (Barr project manager: Gareth Becker; RWMWD project manager: Tina Carstens)

The purpose of this project is to provide information and guidance to cities throughout the district about how to protect low-lying habitable structures from flooding during the 100-year storm event. These emergency response plans address areas for which there is 1) not currently a feasible project that has been identified to protect structures or 2) a project that cannot be implemented in the near future due to logistical and/or budgeting reasons. This effort is an outcome of the Beltline resiliency study. This project will extend into 2022.

Barr has created plan sheets for emergency flood-risk-mitigation measures and has met with the district to present the figures. This May, we will split figures by municipality and develop a memo for each city's staff. Barr will make any needed edits to the designs/figures after their review. Barr will begin working directly with city representatives to communicate the plans to potentially impacted individuals and answer questions about implementation.

B. Kohlman Creek flood risk reduction feasibility study (Barr project manager: Tyler Olsen; RWMWD project manager: Tina Carstens)

The purpose of this study is to complete a feasibility evaluation of modifications to reduce flood risk along Kohlman Creek to remove structures from the 100-year floodplain. Work includes coordination with the cities of Maplewood and North Saint Paul, evaluation of alternatives to reduce flood risk, preparation of cost estimates for each alternative, and identification of permitting requirements. This project focused primarily on areas surrounding PCU Pond and the wetland complex west of White Bear Avenue. This feasibility study is a follow-up study of flood-prone areas identified in the Beltline resiliency study.

This month, Barr coordinated and began the field survey based on data gaps in the District's XPSWMM modeling. The survey will capture key stormwater infrastructure that may be improved to reduce flood risk. Additionally, the Barr team continued coordination with the City of North Saint Paul on its upcoming flood-risk open house (being conducted by its consultant team). Next period, Barr will review

the survey data, make modeling updates, and begin alternatives analysis for different infrastructure improvements.

C. Ames Lake area flood risk reduction planning study (Barr project manager: Brandon Barnes; RWMWD project manager: Tina Carstens)

The purpose is to complete a planning-level evaluation of modifications to reduce flood risk near Ames Lake, supported by the City of Saint Paul. Work includes coordination discussions with Saint Paul; review of potential pipe alignments, land acquisition costs, utility conflicts, and permitting issues; and related design. If the planning study identifies projects that impact regional drainage, a feasibility study will be completed in 2023. This planning study is a follow-up study that was identified in the Beltline resiliency study.

Barr and RWMWD staff completed a kickoff meeting with the City of Saint Paul and Saint Paul Housing and Redevelopment Authority (HRA) staff. During the meeting, we reviewed the project schedule, confirmed goals for the site, and discussed a general approach for reducing flood risk for the area. Next month staff will begin developing concepts for site modifications. We plan to share initial concepts for city and HRA review later this summer.

D. Owasso Basin area/North Star Estates improvements (Barr project manager: Sam Redinger; RWMWD project manager: Tina Carstens)

The purpose of this study is to evaluate the benefit-cost of flood risk reduction strategies in the Owasso Basin/North Star Estates area by reviewing potential pipe and berm alignments, land acquisition costs, utility conflicts, permitting issues, and related design as well as construction and long-term maintenance costs associated with each alternative that achieves the project objective of removing habitable structures from the floodplain in this area. Stakeholder outreach with the City of Little Canada is an important part of this effort. This study is a continuation of the Owasso Basin bypass study, which laid out several phases of implementation and areas of further study.

Barr is planning for geotechnical field investigations to support the final design of system modifications. Initial tasks included a review of historical soil borings from the early 1990s when Owasso Basin was constructed. The geotechnical investigation will include the collection of soil borings to fill in gaps and missing information that isn't available from historical borings. Next month staff will contact the North Star Estates property owner and Saint Paul Water to discuss system improvements on their respective properties and schedule geotechnical investigation activities.

E. Carver Ponds improvements study (Barr project manager: Tyler Olsen; RWMWD project manager: Tina Carstens)

The purpose of this study is to characterize the water quality in the Carver Ponds in the Fish Creek subwatershed and to evaluate the benefit-cost of water quality improvements to the ponds. These improvements will be targeted at internal loading of nutrients in the pond, as well as potential external sediment and nutrient loading. The goal will be to inform design solutions to be implemented in the ponds.

During this period, Barr reviewed monitoring recommendations from 2022 and coordinated with RWMWD staff to complete growing season monitoring for 2023. Monitoring includes monthly grab samples, dissolved oxygen, pH, temperature, and conductivity. Additionally, staff will observe outflow patterns to determine if the pond frequently discharges to Fish Creek.

F. Resiliency study for non-Beltline tributary areas (pre-planning study and evaluation of existing data) (Barr project managers: Jay Hawley, Lulu Fang; RWMWD project manager: Tina Carstens)

The purpose of this project is to evaluate system-scale modifications to reduce flood risk within the portion of the RWMWD that was not evaluated as part of the Beltline resiliency evaluation. This portion of the watershed includes the Tanners Lake, Battle Creek Lake, Battle Creek, Carver Lake, Fish Creek, and Snake Creek subwatersheds. The evaluation will identify modifications to the drainage system to reduce flood risk to habitable structures located within the 100-year floodplain of District-managed water bodies, including evaluating actively managing outlet control structures on Tanners Lake, Battle Creek Lake, and Carver Lake. This evaluation will allow RWMWD to identify potential system-wide strategies for mitigating flood risk that are consistent with the portion of the district that is tributary to the Beltline, which was studied as part of the Beltline resiliency evaluation.

This month, Barr staff worked on reviewing and updating the existing-conditions XPSWMM models for the Tanners Lake, Battle Creek Lake, Battle Creek, Carver Lake, Fish Creek, and Snake Creek subwatersheds based on LiDAR, aerial imagery, and recent development plans. The review and updates include revising subwatershed boundaries and adding model detail to more accurately account for storage and flow routing in areas near potentially flood-prone structures. Next month, staff will evaluate potential system modifications to reduce flood risk and remove habitable structures from the floodplain. The study is expected to continue through 2023.

G. Street sweeping study (Barr project managers: Michael B. McKinney; RWMWD project manager: Paige Ahlborg)

T*he purpose of this study is to provide general support related to implementing a pilot program to incorporate grant-funding support into the District's Stewardship Grant program for enhanced street-sweeping efforts.*

Last period, Barr and RWMWD staff held one-on-one meetings with engineer and operator staff from seven member cities to gauge interest in participating in the 2023 street-sweeping pilot program (via the Stewardship Grant program). During this period, Barr prepared a detailed summary of meeting notes and findings from the street-sweeping prioritization study and developed recommendations for targeted partnering opportunities. Barr and RWMWD staff met to review recommendations, and the District began follow-up efforts to reach out to targeted cities for additional details/specific requests for 2023 enhanced street-sweeping funding support

H. Wetland workshop, education, and planning (Barr project manager: Greg Williams; RWMWD project manager, Tina Carstens)

The purpose of this project is to review the sections of RWMWD's Plan pertaining to wetlands to revisit how the Plan describes RWMWD's wetland policies, goals, and action items and to determine whether a Plan amendment is warranted before RWMWD's next Plan update cycle.

In 2022, Barr staff reviewed, documented, and presented the wetland management policies, rules, and activities of the RWMWD and several Twin Cities metro area watershed management organizations to the Board of Managers. During the last period, Barr staff presented potential revisions to the RWMWD wetland management activities for consideration by the Managers at the April 5, 2023, RWMWD meeting. At the meeting, the Managers requested additional information about proposed activities,

including performance standards related to wetland bounce and inundation period and wetland monitoring. Barr staff will present additional information at a future meeting.

Research projects

I. Kohlman Lake aquatic plants and nutrients: phase I and II (Barr project manager: Keith Pilgrim; RWMWD project manager: Bill Bartodziej)

The objective of this preliminary investigation is to determine the effect of intensive aquatic-plant management on Kohlman Lake water quality.

As mentioned last month, the water quality of Kohlman Lake has declined significantly in recent years. During this time, the lake has had intensive aquatic plant management (not conducted by RWMWD). It is suspected that declining water quality is linked to the loss of aquatic plants. In 2023, an extensive field data collection effort on Kohlman Lake and Beaver Lake (a control lake without significant aquatic plant management) will be conducted and will include water quality monitoring, aquatic plant monitoring (relative abundance) and biomass sampling, drone-based surveys of aquatic plant coverage, dissolved oxygen monitoring in-lake, and sediment chemistry sampling. These data will be used as inputs to a lake model to conclusively determine the effect of intensive aquatic plant management on nutrient concentrations in Kohlman Lake. Management guidelines will be developed after determining the level of aquatic plant management that can occur without adverse effects on water quality.

J. Shallow lake aeration study (Barr project manager: Keith Pilgrim; RWMWD project manager: Bill Bartodziej)

The purpose of this project is to determine the potential for aeration to reduce internal phosphorus loading from bottom sediments in shallow lakes and ponds.

Aerators have been placed in Bennett Lake (mid-2022), Markham Pond, and Gervais Mill Pond (end of 2022). Monitoring was conducted in 2022, and the results demonstrated that aeration could reduce internal loading. Monitoring will be conducted again in 2023 to get a full-year evaluation of the benefits for Bennett Lake andGervais Mill Pond. Monitoring will be conducted by Barr staff and RWMWD staff. A final report with a comprehensive analysis and recommendation regarding the potential for shallow lake aeration to control internal loading and improve shallow lake water quality will be provided at the end of 2023.

Project operations

K. 2023 automated lake-level stations (Barr project manager: Chris Bonick; RWMWD project manager: Kyle Kubitza)

The purpose of this project is to continuously measure and record lake levels and display real-time and historical data in graphs on the RWMWD website for the following lakes: Phalen, Snail, Owasso, Wabasso, West Vadnais, Battle Creek, Tanners, Spoon, and Twin.

The initial project is complete, including the installation of automated lake-level stations and the development of Power BI reports that display real-time and historical lake-level data in graphs on the RWMWD website.

Currently, individual lake graphs are viewable on each lake's webpage. Barr is currently working on a Power BI report allowing website users to view lake-level graphs for all lakes on a single webpage by simply clicking on a lake name rather than navigating to each lake webpage. Barr's data management and IS staff members have been developing data-connection and visualization processes for the single webpage. Barr staff recently met with district staff to review progress and get feedback on the draft version of the Power BI single webpage.

The Phalen Lake station's cell modem stopped working and has been removed and sent to the manufacturer for repair. A temporary replacement was installed, and the station is back up and running. Repairs have been completed (cell modem module replaced inside datalogger), and the datalogger has been shipped from Campbell Scientific, with delivery expected this week.

Ice-out occurred from April 11–14 for the District's lakes. Spring surveys were conducted for the lake-level stations on April 21. Distric and Barr staff are adjusting and calibrating the stations at Snail, Twin, Spoon, and West Vadnais Lakes. These efforts will be completed by the end of April. All other lake-level stations surveyed were found to be accurate.

Capital improvements

L. Woodbury Target store stormwater retrofit projects (Barr project manager: Katie Turpin-Nagel; RWMWD project manager: Paige Ahlborg)

The purpose of this project is to design, provide bid assistance for, and oversee construction of BMP retrofits at two Target retail stores.

Barr summarized the selected concept-design layout and estimated costs and benefits (e.g., total suspended solids and total phosphorus removals) for RWMWD board review (please see attached memorandum). With board approval, Barr can start the final design process and complete the geotechnical investigation in June 2023.

M. Roosevelt Homes targeted retrofit project (Barr project manager: Marcy Bean; RWMWD project manager: Paige Ahlborg)

The purpose of this project is to create construction documents for a multi-phase flood management and water quality improvement project at the Roosevelt Homes public housing area in St. Paul.

Roosevelt Homes is a multi-family housing area owned by the Saint Paul Public Housing Authority (SPHA). Barr recently updated existing conditions models to show more detailed resolution, and preliminary concepts were developed to provide the owner with options to consider. SPHA is interested in moving forward with 1–2 year phased retrofits. Barr and the RWMWD anticipate coordinating with the City of Saint Paul to help inform improvements. During this period, Barr prepared updated designs to support construction documentation which will be developed in May.

N. Stewardship grant program support (Barr project manager: Marcy Bean and Michael McKinney; RWMWD project manager: Paige Ahlborg)

The purpose of this project is to a) provide BMP design and review services to cost-share applicants throughout the RWMWD on as-needed basis and b) support development of the stewardship grant program.

Woodland Hills Church in Maplewood is interested in removing a portion of its under-utilized parking lot to use the space as a model for tiny home communities. A site survey has been initiated, and once received, Barr will refine concept plans and create construction documents for the church to work with a contractor to build the project as early as fall 2023.

O. Arbogast Stormwater Filtration BMP (Barr project manager: Leslie DellAngelo; RWMWD project manager: Paige Ahlborg)

The purpose of this project is to complete final design, plans, and specifications for a regional stormwater BMP in the Lake Emily subwatershed with the purpose of decreasing phosphorus loads to Lake Emily, which is deemed to be at risk of impairment from excess nutrients.

During the last period, Barr finalized the contract documents for the construction of the underground filter and advertised the project to potential bidders. The bids are due May 1. Barr will review bids and present the bids to the managers at the May meeting.

P. Pioneer Park stormwater reuse (Barr project manager: Jennifer Koehler; RWMWD project manager: Paige Ahlborg)

The purpose of this project is to design and implement a stormwater reuse irrigation system in Pioneer Park to conserve groundwater and reduce phosphorus loading to downstream water bodies, in partnership with the City of Little Canada.

Barr coordinated and attended a 60% plan set review meeting on March 20 with district and city staff. This included redlines and revisions to the 60% plan set. Additionally, in follow-up to the 60% design review, we coordinated a site visit with city and district staff to review and verify design components related to electrical and controls as well as existing piping to inform design progression from 60% to 90% design. Work on progressing the design toward 90% continues, including developing the front-end documents and the technical specifications. We anticipate collecting some additional survey data related to the irrigation system and any other final items that could not be completed late last fall. This will be completed when the city brings the irrigation system online this year (anticipated mid- to late May).

Q. Double Driveway Pond and Fish Creek tributary improvements (Barr project manager: Tyler Olsen; RWMWD project manager: Tina Carstens)

The purpose of this project is to design and implement vegetation improvements around Double Driveway Pond, as well as stream-stabilization improvements in the Fish Creek tributary upstream of Double Driveway Pond.

During this period, Barr and RWMWD staff sent letters to property owners notifying them of the upcoming survey work and requesting a signature acknowledging the project. Upon receiving property owner consent, Barr staff began the field survey of the Fish Creek tributary from the Bailey Nursery to Double Driveway Pond and from Double Driveway Pond to the tributary's outfall to Fish Creek. The survey is ongoing and will be completed by the end of April. Barr also began initial hydrologic and hydraulic modeling of the system to be used in the final design and began setting up Civil3D base files for the final design.

CIP project repair and maintenance

R. 2023 CIP maintenance and repair project (Barr project manager: Gareth Becker; RWMWD project manager: Dave Vlasin)

The purpose of this project is to maintain existing systems and infrastructure owned and operated by the RWMWD and to assist and facilitate stormwater pond cleanouts to allow other public entities to meet their MS4 requirements.

During this period, Miller Excavating was not actively working on the project due to weather-related conditions and road restrictions. They have recently informed the owner that work will resume on May 1 and continue at each site until complete. The remaining sites are Site 4—Gervais Mill Pond, Site 6—Kohlman Basin Upflow Treatment System, Site 2—Tanners Wetland, Site 3—5th Street Wetland, and Site 10—Aspen Pond for trail paving. Site 2 and 3 are substantially complete other than cleaning the permeable weir slots. Miller Excavating is anticipating the completion of the project on time. No partial payment application was requested during this period, but Barr expects one shortly as work is completed.

S. 2023-2025 BMP maintenance program (Barr project manager: Marcy Bean; RWMWD project manager: Paige Ahlborg)

The purpose of this project is to maintain the RWMWD's existing vegetated BMPs.

Barr and district staff developed a Request for Qualifications to form a pool of qualified landscape maintenance contractors to provide maintenance services for the existing vegetated BMPs in the district. This effort was initiated in 2015 as a pilot program to support grantees and project partners with vegetation maintenance for up to 2 years post-construction. School-based BMPs are maintained on a longer-term basis. In 2023, 23 sites will be maintained as part of this program.

In March, the Board reviewed recommendations for contract awards from the pool of applicants. During this period, contracts were drafted specifying the sites each of the three contractors would maintain. These will be finalized next month with site visits to kick off the 3-year maintenance period.

T. Natural Resources Update – Bill Bartodziej and Joe Tillotson

Farewell

I would like to thank the Board again for the opportunity to spend most of my career at the watershed. The support that I received from the Board and staff made it possible to meld natural resources, watershed management, and applied research in quite innovate, productive, and meaningful ways. The natural systems, restoration areas, and how the watershed functions are incredibly unique, and I will very much miss having a hand in the day-to-day management. Most of all, I will miss the people – staff – Board – citizens that create such an amazing culture at RW; it really seems to be incredibly rare. I'll still be involved in restoration work with my firm called Natural Shore Technologies. I am looking forward to continuing to conduct restoration in the east metro, just at a different capacity. I hope to see you around!

Paper Submission to Ecological Restoration

We are quite pleased to report that the paper summarizing the assessment of the Lake Phalen shoreland restoration was submitted last week. If the reviews are favorable, we estimate that the manuscript will be published next winter. This will be the first paper published that takes a critical look at shore restoration over a long-term time horizon. Below is the final paper abstract:

Urban lake shoreland restoration: landform, vegetation, and management assessment 20 years later

William Bartodziej and Susan Galatowitsch

Abstract: Residential development and recreation cause lake shoreland degradation, triggering vegetation loss and soil erosion. Shoreland restorations have been attempted for over 30 yrs but practices have received minimal evaluation and outcomes are unpredictable. Using comprehensive project records (13-20 yr) and ecosystem response metrics (shoreline stability and vegetation), we assessed 9 urban shoreland restoration sites, each making up part of a single large initiative on Lake Phalen, Minnesota, to ascertain guiding principles. Restoration scope included littoral wetlands, wet meadows, and upland prairie/savanna. All sites received attention to altered landforms, soil erosion, and active revegetation. In general, these restored shorelands are well-vegetated with native plant species, have low abundance of introduced species, and are, with some exceptions, very stable. Bank erosion was observed on 4 sites, high slope areas without full rip-rap berms. Informal footpath formation generated bare soil and required regular monitoring and response. Post-restoration management to control introduced species and encourage native vegetation establishment never exceeded 5% of individual project costs (per year). Although the number of introduced species/site ranged from 12-39 (in 2021), most sites (8) have 0-2 species with > 1% cover and none > 5%, suggesting that management was effective. Recovery lags of native vegetation were most evident at locations prone to stressors that favored introduced over native species, particularly those with high recreational (pedestrian) traffic, high muskrat activity, and near large, unmanaged stands of invasive

plants. Shoreland vegetation management overwhelmingly required fine-scale, inherently labor-intensive control approaches, which necessitated regular surveillance and rapid response.

Key Words: Littoral wetlands, lakeshore soil erosion control, invasive species management, Minnesota, wet meadow, wetland restoration, cost estimation

Ecological Restoration in Keller Regional Park

Site preparation work is in full swing. In late winter, staff and CCM crews removed large amounts of buckthorn from the restoration areas just north of Round Lake (see photos and map below). Turf areas were killed last fall and spot treatments of green patches (spots that were missed) were treated last week. Although conditions have been pretty horrible this spring, we did manage to burn a 1,500' stretch of the Keller Lake shoreline, as part of the site preparation. This segment will be restored in 2024. Seeding of the restoration areas north of Round Lake will take place in the next couple of weeks. Sage Passi, Education Coordinator, has over 400 students from 7 local schools lined up to assist with plant installation. In addition to this field activity, she has been in the classrooms teaching about the restoration and basic watershed principles. The project is off to an excellent start.

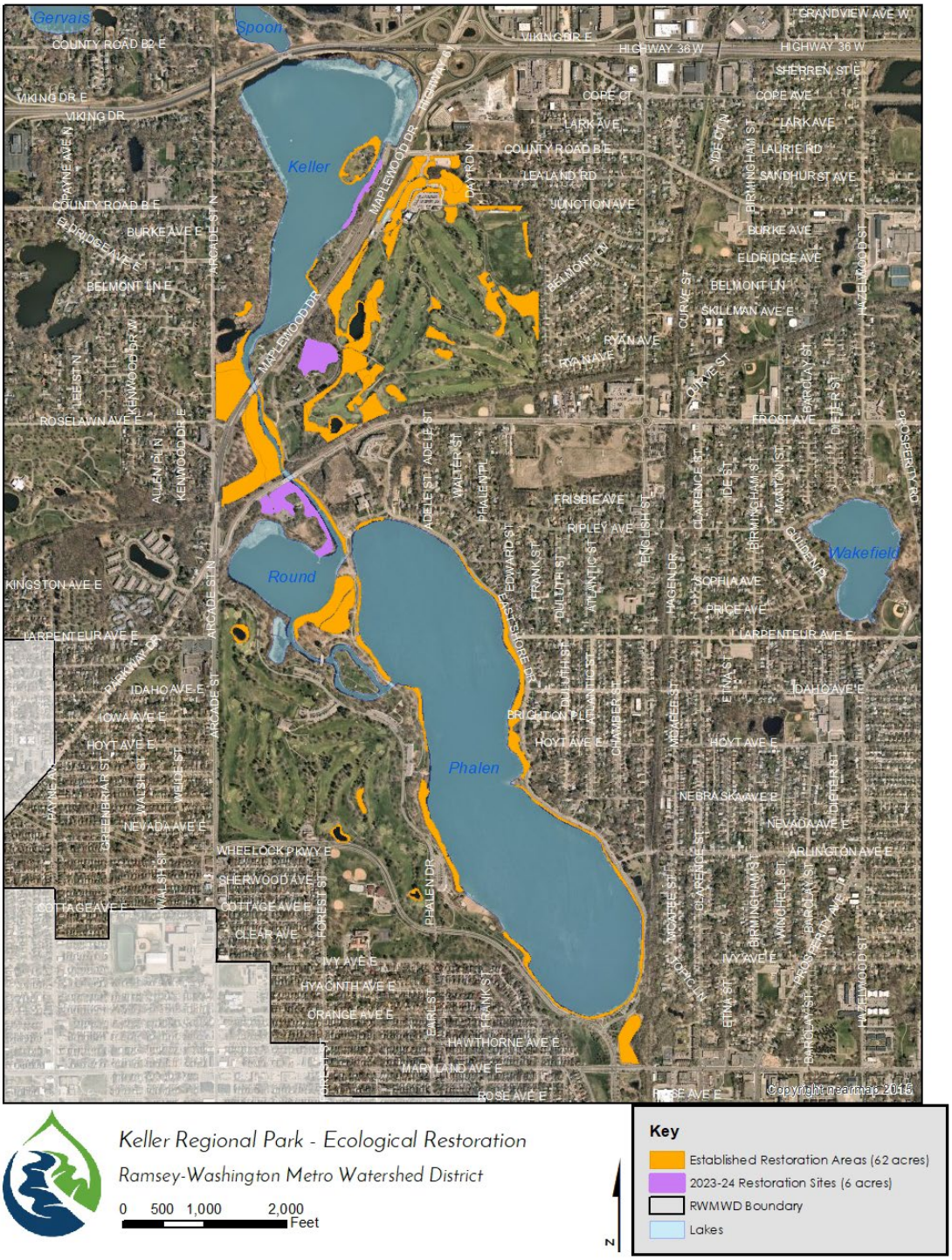
Here is some background information, a map, and recent photos of the site preparation work:

Overview
Keller Regional Park (248 acres), in the heart of the Phalen Chain of Lake Corridor, has a mix of recreational and natural land cover that serves as a refuge for a multitude of wildlife species. Between 2015-2018, the Watershed restored over 2,000 linear feet of Keller Creek shoreline to quality buffer habitat. During that same period, Ramsey County restored over 40 acres of woodlands and savanna and converted 15 acres of brome field to native prairie. The natural areas in Keller Golf Course are also a significant component to the Corridor (see map #1 below).

Objectives
This project will: (1) convert over six acres of mowed turf to native prairie, (2) improve 1,000 linear feet of Keller Creek buffer, and restore 1,400 linear feet of Keller Lake shoreland. These areas are not being used for recreational purposes, and the creek and shore buffer areas are currently dominated by invasive species, the two dominants being buckthorn and reed canary grass.

Scope and Broad Timeline
All of the restoration elements, such as the design, site preparation, installation, and maintenance will be conducted by NR and Ramsey County staff, and volunteer groups. This will assure a high-quality restoration product and enable broad and effective community outreach. Watershed education staff have already begun working with local schools to develop programs centered around this restoration effort. Students and adult volunteers will be on site to learn and assist with plant installation. Site preparation work began this fall. Turf and reed canary grass areas were treated, and buckthorn removal

was initiated with CCM crews (see photos below). Native seeding and plant installation will take place in 2023 and 2024. Long-term maintenance will be conducted by NR and Ramsey County staff.



Buckthorn was removed from the Round Lake shoreline in late winter.

Piles are stacked up for removal.

Reed canary grass, treated last fall, is being burned as part of site preparation.

U. Public Involvement and Education Program – Sage Pass

Engaging Communities in Outreach in St. Paul/Roseville on Earth Day 2023

(Left) Stephanie Wang shares tips on growing native plants at the Payne-Phalen Recreation Center. (Right) Linda Neilson assists families in transplanting native seedlings to take home for their yards.

The Payne-Phalen District 5 Planning Council hosted a public event in East St. Paul; *Earth Day in Six Languages*. Roseville created a community engagement event at Harriet Alexander Nature Center on Saturday, April 21 to encourage involvement in environmental stewardship. Sage and Minnesota Water Stewards/Citizen Advisory Committee members Linda Neilson, Stephanie Wang, Hallie Finucane and Stuart Knappmiller teamed up to engage residents from these communities at their two education outreach events to help residents learn about the benefits and roles of native plants in water quality stewardship, pollinator and ecological protection. Participants had the opportunity to transplant and take home native seedlings for their own yards and get info about WaterFest, stewardship grants and other water protection efforts.

The Roseville Water Steward duo estimated that about 350+ people attended the Roseville event. Linda Neilson, a Master Gardener and previous long-time member of the CAC, commented on the success of the event, “There were LOTS of people there and there was a lot of interest in the materials on the table. The line of kids wanting to plant was intimidating, but at the same time, great to see! Many little environmentalists roaming out there! It was affirming to hear many families say they had native plants in their yards and wanted more!”

April Preparations for WaterFest and 2023 Field Season Checklist

- Engaged schools in creating the cover art for the WaterFest seed packet give-away.
- Transplanted and watered dozens of trays of native plants grown at schools and our office for give-away at WaterFest and future summer projects around the District.
- Scheduled all the May/June field trips with schools to Keller Regional Park for our NR restoration project. Made sure the schools are ordering the buses. Reserved the Round Lake picnic pavilion.
- Scheduled rain garden clean-ups at Weaver Elementary and Central Park Elementary for early May.
- Recruited Master Gardeners and Water Stewards for planting at Round Lake and rain garden clean-ups through Sign-Up Genius with coordinator, Ed Shinbach's help.
- Scheduled and prepared the pre-lessons for classes for the Round Lake Restoration Lessons begin in late April and continue into May.
- Created the Round Lake Restoration slideshow for classes.
- Site Visit and Planning for Wilderness in the City Pollinator Garden Collaborations.
- Site Visits and Planning with Lawns to Legume grant recipients in our Watershed.
- Trained classes in using Water Quality Assessment Tools Already begun!
- More Rusty-Patched Bumble Bee Play Acting with Kathy Sidles, The Bee Lady.


Above left: Weaver fifth graders create seed packet art for WaterFest.
Center and Right: Lionsgate Academy students transplant native seedlings

Two classes at L'Etoile du Nord, 4 classes at Weaver Elementary and 1 class at Hazel Park Academy submitted designs for 2023 native seed packet covers to be distributed at WaterFest in June. Seven students' designs from three schools were chosen for the seed packet covers. **Come to WaterFest and pick up your free seeds and see their beautiful designs!** Five classes at Lionsgate and Weaver transplanted native seedlings this month. These plants will be given away at WaterFest and used in various watershed projects.

We put together the schedule for nineteen classes from L'Etoile du Nord, American Indian Magnet, Farnsworth Aerospace, Weaver Elementary, Mounds Park Academy, Hazel Park Academy, and Lionsgate Academy for pre-lessons and planting at Round Lake coming up in late April and May with planting beginning in mid-May and extending to mid-June.

Training Classes in Using Water Quality Monitoring Tools



We began training students in the use of water quality monitoring tools in three classes at Lionsgate Academy and two classes at L'Etoile du Nord in preparation for their field trips to Round Lake. Tracy Leavenworth and Sage introduced students to monitoring tools that measure dissolved oxygen, transparency, pH and temperature. More classes to come!

Wilderness in the City Pollinator Garden Planning at Battle Creek Regional Park


Sage and Tracy participated in the multi-organization team that met at Battle Creek Regional Park to begin the design process for the Wilderness in the City pollinator garden to be created and installed this spring. Staff from RWMWD, Metro Blooms, Urban Roots, Mike Goodnature from Ramsey County Parks, and two Minnesota Green Corps volunteers are the team working on this project. Three classes from L'Etoile du Nord will be involved in planting a part of this demonstration garden in late spring. Additional volunteers will be recruited to help with additional plantings this summer/fall. The goal of this project is to model projects that will inspire residents to do projects that provide habitat for the rusty-patched bumblebee, monarchs and other pollinators and engage them in volunteering to maintain the garden and encouraging and growing neighborhood participation in this kind of stewardship activity. This is one of several Wilderness in the City projects around the Metro area. The second Wilderness in the City Project in our Watershed District will be designed this summer and installed in the fall at Keller Island in Maplewood. We will be partnering with that project as well.

Large Scale Battle Creek Middle School Project

Sage and Tracy met with Jens Kvaal, St. Paul Environmental Specialist I and Marissa Shepherd, Environmental Specialist 2 in the Environmental Services Group from Saint Paul Public Schools at their office on April 6 to discuss our educational and hands-on involvement/support in the large-scale Battle Creek Middle School project behind their building designed to address serious run-off issues. This is a project that stewardship grant program is supporting with matching money from other sources at the state and other levels. Jens has offered to set up a meeting with Battle Creek Middle School's support team for this project to introduce us and discuss what roles we could play in supporting this project that is tentatively slated to go into the ground next spring 2024.

V. Citizen Advisory Committee Update – Carrie Magnuson

The Citizen Advisory Committee met on April 11th at 6:30 pm via Hybrid at RWMWD office and Zoom.

In attendance were 13 CAC members, 4 staff members, and 1 BOM member (Ben Karp). The following initiatives were discussed and further developed.

1. **Adopt-a-Drain** –This initiative was brought to the CAC from the BOM as a priority project. Sage Passi gave a history of the Watershed's relationship and progress with the Adopt-a-Drain (AAD) program. The group discussed the level of interest and possible outreach opportunities for the CAC to take on at events and in their neighborhoods. A majority of CAC members were interested and had the following key ideas for implementation:
    a. Adopt-a-drain in their neighborhood and be a local advocate
    b. Develop a display on storm drain cleaning and AAD for a display at WaterFest
    c. Assist Sage with sign distribution based on members' home subwatershed
    d. Consider logistics of an adoptee picnic/recognition event
    e. Consider logistics of an AAD contest (White Bear Lake did this)

2. **New Board Member Liaison & CAC/BOM Integration -** Announcement: Benjamin Karp will be the 2023 CAC Liaison. As discussed at the February meeting, CAC members will sign up to attend one board meeting a year if possible.

3. **Earth Day Clean Up Event** – Headed by CAC member, Stephanie Wang, a litter cleanup event was scheduled for Thursday April 20th but postponed to April 24th due to inclement weather. The cleanup incorporated two parks; Ames Lake and Sackett Park at the East Side Boys and Girls Club, and invited CAC members, staff, Boys & Girls Club youth and staff, as well as residents of the neighborhoods. About 10 bags of trash were collected at Sackett Park. About 18 bags and a pile of "too big for a bag" trash was collected at Ames Lake.

4. **Work Plan -** Each year, the CAC uses their time and expertise to assist several projects that help advance RWMWD projects and programs. Below are the 2023 priorities.
    a. Rain Garden/BMP video series – on hold until Lauren returns from leave.
    b. East Side Stewardship Relationship Building – Earth Day cleanup completed
    c. Salt Use Outreach/Education – in progress. Sage is developing materials. Stephanie actively attending webinars and contacting cities about tabling at Big Truck Day events.
    d. Create Invasive Species Education Pieces: pending
    e. CAC Rain Garden Clean Up Project: (annual event]
    f. CAC/LEAP Team Planting (annual event)
    g. Buckthorn Removal: pending
    h. Paddle the Phalen Water Trail as a group: pending
    i. Assist in planning and hosting WaterFest (annual)
    j. LEAP Program nominations and subcommittee (annual)
    k. Watershed Excellence Awards & Volunteer Recognition Dinner planning (annual)
    l. Education Topics: Invite RWMWD staff or applicable professionals in to share knowledge. This was done heavily in 2022, so focus on this will be less in 2023.

More details on these discussions will be available on the CAC website when meeting minutes are approved. Future meetings:

- June 13th
- September 26th
- October 24th
- December 5th