



**RAMSEY-WASHINGTON**  
METRO WATERSHED DISTRICT

# **December 2022 Board Packet**

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# Agenda

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## **Regular Board Meeting Agenda**

Wednesday, December 7, 2022

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 November 2, 2022 (pg. 7)
  - B. Treasurer's Report and Bill List (pg. 16)
  - C. Permit Program
    - i. 22-37 RWMWD 2023 CIP Maintenance and Repair (pg. 28)
  - D. 2023 BMP Service Agreement – Washington Conservation District (pg. 31)
  - E. 2023 BMP Service Agreement – Ramsey County (pg. 40)
4. Visitor Comments (limited to 4 minutes each)
5. Permit Program
  - A. Applications
    - i. 22-36 Enclave Apartments, Maplewood (pg. 48)
  - B. Enforcement Action Report (pg. 64)
6. Stewardship Grant Program
  - A. Applications – None
  - B. Budget Status Update (pg. 68)
  - C. **2022 Program Overview Presentation and 2023 Program Approval (pg. 69)**
7. Action Items
  - A. **2023 CIP Maintenance and Repair Project Bid Review and Approval (pg. 86)**
  - B. **2022 Targeted Retrofits Projects – Change Order No. 5 (pg. 92)**
  - C. **2023 Budget and Levy Final Approval – Resolution 22-02 (pg. 98)**
8. Attorney Report
9. Board Issues, Policies and Operation (for discussion at meeting)
  - A. Board Action Log: Additions, deletions
10. New Reports and/or Presentations
  - A. **Street Sweeping Prioritization Study (pg. 103)**
11. Administrator's Report (pg. 165)
  - A. Meetings Attended
  - B. Upcoming Meetings and Dates
  - C. MAWD Annual Meeting

- D. Wetland Workshop Date Planning
- E. **2023 Meeting Schedule**
- 12. Project and Program Status Reports (*pg. 168*)
  - Project Feasibility Studies*
    - A. Interim Emergency Response Planning
    - B. Kohlman Creek Flood Risk Feasibility Study
    - C. Kohlman Creek/Wakefield Lake Diversion Feasibility Study
    - D. County Ditch 17 Improvements Feasibility Study
    - E. Phalen Village Feasibility Study
    - F. Ames Lake Area Flood Risk Reduction Planning Study
    - G. Owasso Basin/North Star Estates Improvements
    - H. Double Driveway Pond Optimization Study
    - I. Carver Ponds Improvement Study
    - J. South Metro Mississippi River TSS TMDL
  - Research Projects*
    - K. Kohlman Permeable Weir Test System
    - L. Shallow Lake Aeration Study
  - Capital Improvements*
    - M. Target Store Stormwater Retrofit Projects
    - N. Targeted Retrofit Projects
    - O. Stewardship Grant Program – Street Sweeping
    - P. Lake Emily Subwatershed Regional BMP
  - CIP Project Repair and Maintenance*
    - Q. Beltline Five Year Inspection
    - R. District Inspection Standardization
    - S. 2023 CIP Maintenance and Repair Project
  - Program Updates*
    - T. Natural Resources Program
    - U. Public Involvement and Education Program
    - V. Communications Program and Website
- 13. Manager Comments and Next Month's Meeting
  - A. Board Action Log (*pg. 185*)
- 14. **Adjourn**





# RAMSEY-WASHINGTON

## METRO WATERSHED DISTRICT

### **NOTICE OF BOARD MEETING**

### **Wednesday, December 7, 2022**

### **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. 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 area. 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/88118224143?pwd=emJvZlhFejB4Yzc2Vy9obkRWS3VLdz09>

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 **881 1822 4143**. The meeting password is **046778**. If you have any questions, please contact Tina Carstens at [tina.carstens@rwmwd.org](mailto:tina.carstens@rwmwd.org).

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# Consent Agenda

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**Ramsey-Washington Metro Watershed District  
Minutes of Regular Board Meeting  
November 2, 2022**

The Regular Meeting of November 2, 2022, 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/kX-Qmf\\_WvvM](https://youtu.be/kX-Qmf_WvvM). Video time stamps included after each agenda item in minutes.

**PRESENT:**

Larry Swope, President  
Dianne Ward, Vice President  
Dr. Pam Skinner, Secretary (via Zoom)  
Val Eisele, Treasurer  
Matt Kramer, Manager

**ABSENT:**

**ALSO PRESENT:**

Tina Carstens, District Administrator  
Tracey Galowitz, Attorney for District  
Erin Anderson Wenz, Barr Engineering  
Bill Bartodziej, Natural Resource Specialist  
Marcie Weslock, Elan Design Lab

Keith Pilgrim, Barr Engineering  
Nicole Soderholm, Permit Inspector  
Dave Vlasin, Project Coordinator  
Paige Ahlborg, Project Manager

**1. CALL TO ORDER**

The meeting was called to order by President Swope at 6:30 p.m.

**2. APPROVAL OF AGENDA (00:45)**

Motion: Manager Ward moved, Manager Eisele seconded, to approve the agenda as presented.

A roll call vote was performed:

Manager Eisele	aye
Manager Kramer	aye
Manager Ward	aye
President Swope	aye

Motion carried unanimously.

**3. CONSENT AGENDA (1:03)**

A. Approval of Minutes from October 5, 2022

B. Treasurer's Report and Bill List

C. Permit Program

- i. 22-29: Villas of Gervais Lake, Little Canada
- ii. 22-30: Wells Fargo Redevelopment, Woodbury
- iii. 22-31: White Bear Lake Apartments II, White Bear Lake
- iv. 22-32: Oakdale Elementary Demolition, Oakdale

- v. 22-33: Ram Cty WBA – Larpenteur Improvements, Maplewood/St. Paul
- vi. 22-34: Pioneer Park Improvements, Little Canada
- vii. 22-35: Rosedale Estates Temporary Parking, Roseville
- D. Stewardship Grant Program
  - i. 22-31 CS: Adkins, Native Habitat Restoration
  - ii. 22-32 CS: Green, Porous Driveway
  - iii. 22-33 CS: Hutchinson, Rain Garden
- E. Lake Owasso Shoreline Restoration Project – Change Order No. 1

Motion: Manager Eisele moved, Manager Ward seconded, to approve the consent agenda as presented.

Further discussion: Manager Eisele referenced Permit #22-32 and asked if this would be an area where land could be purchased for the intention of creating wetlands. Nicole Soderholm stated that staff has met with the school district as this is part of the redevelopment of the school, therefore specific needs and uses are identified for this area.

A roll call vote was performed:

Manager Eisele	aye
Manager Kramer	aye
Manager Ward	aye
President Swope	aye

Motion carried unanimously.

#### **4. VISITOR COMMENTS (2:59)**

No comments.

#### **5. PERMIT PROGRAM (3:00)**

##### A. Applications – See Consent Agenda

##### B. Monthly Enforcement Report

During October, 12 notices were sent to address: install/maintain inlet protection (4), install/maintain perimeter control (4), contain/dispose of liquid and solid wastes (2), install/maintain construction entrance (1), implement temporary soil stabilization (1).

#### **6. STEWARDSHIP GRANT PROGRAM (3:53)**

##### A. Applications – See Consent Agenda

##### B. Budget Status Update

President Swope referenced a dollar amount shown and asked for clarification. Paige Ahlborg replied that balance should show as zero and she would make that correction.

#### **7. ACTION ITEMS (4:38)**

##### A. 2023 CIP Maintenance and Repair Project Approval of Plans and Authorization to Advertise for Bid

President Swope asked if there were projects that did not make the list. Dave Vlasin commented that everything that needed to be done made the list.

Manager Eisele asked for clarification on the scoring. He noted that some of the scores are the same, but it was not clear why those were prioritized as well as how some of the scores were normalized. Dave Vlasin stated that

he would have to look into it to determine what normalizes that score. He confirmed that he could send that information to the Board once reviewed.

Manager Eisele commented that he enjoyed seeing the use of the score. Erin Anderson Wenz replied that this is the first time they are going through the process, so she can commit to looking into that and providing information to the Board. She stated that the sites that popped, are sites that fell into line pretty logically. Manager Eisele commented that he would also be interested in seeing the rest of the list as well since this is the first time they are using it in this process.

President Swope commented that he would also find that interesting as to why some projects went to the top of the list, but others did not make the list.

Erin Anderson Wenz provided details on the anticipated cost breakdown and the assumptions that were made related to the potential for contamination of the sedimentation that would be removed. She provided details on the pond cleanouts that would be reimbursed by the cities. She stated that a 20 percent contingency was factored in for the overall project because of the volatility of costs in the market.

Manager Eisele asked for details on projects nine, 10 and 11 and whether Woodbury would be reimbursing those costs. Erin Anderson Wenz confirmed that those costs would be reimbursed. Tina Carstens commented that those projects would be sediment removal and not full dredging. Dave Vlasin commented that if there were overages for those costs, the cities would be responsible for those costs as well.

President Swope asked and received confirmation that this would return to the Board for approval once the bids are received.

Manager Eisele referenced a project and asked for additional details. Dave Vlasin noted that project would only be cleaning the filter rock and would not include replacement of the filter strip. He confirmed that filter strip replacement would come forward sometime in the future.

Manager Eisele asked the process that would be followed if the Board would want something added to the project after bids are received. Dave Vlasin commented that could be added as a change order.

President Swope commented that it seems there are a lot of smaller projects this year and commended staff for the excellent materials provided in the packet.

Motion: Manager Eisele 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 advertise the project for bid.

A roll call vote was performed:

Manager Eisele	aye
Manager Kramer	aye
Manager Ward	aye
President Swope	aye

Motion carried unanimously.

**B. 2022 Targeted Retrofit Projects – Change Order No. 4**

Tina Carstens stated that part of this pertains to the City of Saint Paul requirements that were not included in the plans as well as changes in the field due to site conditions.

Erin Anderson Wenz provided additional details on the proposed change order. She explained that the change in the asphalt and dirt amounts changed the project pricing. She also mentioned that one more change order would be included next month's Board packet as a result of an error on the original project Bid Form.

Erin Anderson Wenz commented that the contract documents do specify that the contractor is responsible for obtaining necessary permits, but that occurs after a project is awarded therefore that would not have been known prior to bid submission, therefore the bids would have been even in that regard. She stated that they are removing the cost burden to the District from Barr Engineering having to redesign under the Saint Paul permitting requirements as Barr staff did not catch that earlier in the process. She stated that they had not worked with the contractor in the past, but they did a great job and were fair and trustworthy. She noted that this has been a learning experience for the District and Barr. She noted that these change order reflect changes that were needed for the project but acknowledged that it was not the most efficient. She stated that the project was built well.

President Swope asked if there would be an increased cost for the trees to be installed in the spring. Erin Anderson Wenz replied that there would not be any extra charging.

Manager Eisele stated that when the bids come in, there is a table presented and the lowest viable bid is chosen. He asked if there are additional things considered when reviewing the bids, such as whether some contractors considered the necessary permits. Erin Anderson Wenz replied that staff only collects the papers within the bid package. Tina Carstens stated that the information also includes the bid tabulations and unit pricing.

Manager Eisele asked if the assumptions could be requested. Erin Anderson Wenz noted that could be very messy because of all the assumptions that a contractor uses. She noted that the unit prices from different contractors typically vary because of different conditions, noting that perhaps a contractor has a place they could offload dirt for a lower price. She acknowledged that this project has had some big change orders which is why it continues to be discussed.

Motion: Manager Kramer moved, Manager Eisele seconded, to approve Change Order No. 4.

A roll call vote was performed:

Manager Eisele	aye
Manager Kramer	aye
Manager Ward	aye
President Swope	aye

Motion carried unanimously.

## **8. ATTORNEY REPORT (34:30)**

Tracey Galowitz provided an update on recent activity of legal staff in the past month. She also provided details on the bid review process that is completed to ensure something is not missed without giving an unfair advantage.

## **9. BOARD ISSUES, POLICIES, AND OPERATION (FOR DISCUSSION AT MEETING) (37:30)**

### **A. Board Action Log: Additions, deletions**

Manager Ward referenced a previous idea to plant edible plants within stormwater features and stated that she has noticed different municipalities beginning to do that. She noted that perhaps that could be added under new technologies for the future.

Manager Eisele stated that there was a good conversation last week related to the proposal for street sweeping from Woodbury and asked if there should be policies in place for a grant proposal that comes forward. He noted

that perhaps a mechanism could be designed to review those proposals. Tina Carstens stated that those requests come through the Stewardship Grant Program, which has criteria that are evaluated. She noted that staff brings requests forward that they believe meet the criteria of the program.

Manager Eisele asked if another city could come forward with a similar proposal. Tina Carstens stated that if the intent of the program is met, that project is brought forward. She noted that there have been proposals that have not necessarily met the criteria but have value and therefore staff has brought those forward in another manner, using the example of a research project or public art.

Manager Ward commented that often there have been cases that are unique but when repeat requests come in, then a policy should be developed to review those requests.

Tina Carstens acknowledged that perhaps with the last request it would have been helpful to have more background information on how staff believed the request met the program criteria.

**B. Metro MAWD Updates**

President Swope provided an update on the most recent Metro MAWD meeting that he attended and reviewed the future meeting schedule for that group. He suggested that a representative from the MN Stormwater Research Council be invited back to provide the Board with an update.

**C. BWSR Grants**

No comments.

**D. Awards: BWSR and MAWA**

Tina Carstens provided an update on the nominations for awards.

Manager Eisele commented that the Board will be nominating Tina Carstens for the Administrator of the Year Award and noted that he has been working with President Swope and members of staff to complete the nomination. He stated that once completed, he would like to present the nomination to the Board for review. Tracey Galowitz noted that additional input could be emailed to Manager Eisele directly from a Manager without incident. She commented that she would also love to add input to the nomination.

President Swope referenced the nomination due date and provided a schedule for the draft to be sent to the Board for review prior to submission.

**E. Stormwater Research Council**

No further comments.

**F. Manager Topics**

No comments.

**10. NEW REPORTS AND/OR PRESENTATIONS (54:47)**

**A. Internal Load Reduction Cost Benefit – Presentation by Keith Pilgrim, Barr**

Keith Pilgrim stated that internal loading and methods of internal loading control are based upon phosphorus concentrations within the sediment and hence some background information was provided on sediment and on internal loading to provide context regarding the methodology employed and the results. He explained that organic phosphorus is different and important for shallow lakes and provided details on organic phosphorus in in this type of lake.

Keith Pilgrim reviewed an approach that could be used in attempt to keep the iron in the sediment to control the internal loading. He commented that one of the standard approaches has been to apply an alum treatment.

Manager Skinner asked if plants and animals could be used to soak up iron phosphate. Keith Pilgrim commented that plants would have that capacity.

Keith Pilgrim reviewed four strategies that could be used to control internal loading in shallow lakes.

Manager Eisele asked for details on the potential use of calcium for this purpose. Erin Anderson Wenz provided details on how calcium is used in a filtration system, such as in a weir. Keith Pilgrim commented that he would not necessarily feel comfortable adding just calcium to a lake but noted that it could be added in conjunction with another material.

Keith Pilgrim reviewed the cost-benefit analysis of load control approaches and provided more details on each of the approaches including dredging, aquatic plant harvesting, aluminum treatment, and phoslock treatment.

Manager Eisele asked if staff is aware of other proprietary solutions available. Keith Pilgrim replied that there are some metal byproducts that are being marketed for that use.

Keith Pilgrim continued to review the cost-benefit analysis and details of forced air aeration and the pilot program the District is currently completing.

Manager Skinner noted the additional benefit to the fish habitat. Bill Bartodziej replied that was one of the main reasons an aerator was placed in Bennett, in order to prevent a large fish kill during the winter. He stated that they kept it running in the summer in order to gain this additional research data. Keith Pilgrim provided additional details on the research data being collected. Bill Bartodziej commented that the aerator on Casey Lake has been in place for a number of years and they have not experienced fish kill during that time. He felt confident that similar results would be provided in the other locations when aeration has been installed.

Keith Pilgrim provided details on the phosphorus levels within Bennett Lake during different times of the year. He commented that lakes could benefit from an addition of iron (in conjunction with aeration) in order to better control the phosphorus levels. He then provided details on additional treatment methods including iron and forced air aeration, direct oxygen injection, and nanobubbles. He then summarized the cost-benefit summary for the different options with additional data such as cost of total phosphorus removed per pound, per year. He provided clarification on the ten-year lifespan estimated for each method in this report. He commented that dredging would have the most uncertainty based on the data available to make the assessment. He provided input on the different methods and how successful they are considered.

Manager Skinner commented that the aeration will also assist in habitat, noting that bluegills eat carp eggs and therefore results in less carp disturbing the bottom of the lake.

Keith Pilgrim stated that there are potential adverse effects with aluminum and provided additional details. He commented that based upon US EPA criteria there would be potential for aquatic life toxicity for certain species (e.g., zooplankton) with an alum treatment and reviewed different things that should be considered. Keith Pilgrim also noted that the fish effects were for newly hatched fish and that adult fish would not be affected by aluminum. Keith Pilgrim also noted that other considerations are important when considering the effects of an alum treatment such as exposure period and estimated in-lake aluminum concentrations. He also provided some data and information he found on human health toxicity related to aluminum. He also reviewed data collected from the Tanners Lake alum treatment plant. He stated that primary risk with aluminum treatment would be short term and likely during the actual treatment and a short-term risk to aquatic life during the treatment.

Manager Skinner referenced a 2018 review that was done reviewing data available on aluminum treatments and encouraged staff to review that document. She also provided additional information she has come across related



to the toxicity of aluminum. She noted that aluminum in the ion form is the most toxic to animals. She appreciated the presentation tonight, noting that she learned a lot.

Keith Pilgrim provided additional details on the form of aluminum that is used in treatment.

Manager Ward commented that she appreciated the details on the different treatments available and the explanation that one method would not be recommended for every shallow lake because their conditions are different.

President Swope recognized that Manager Skinner does not prefer the use of alum but noted that the District does have an alum plant. He stated that eventually the District will need to treat West Vadnais Lake and different options will need to be considered. He asked if alternate treatment methods would achieve the TMDL requirements attempting to be achieved. Tina Carstens stated that the numbers within the report provided the cost estimates to address those TMDL requirements for internal loading.

Keith Pilgrim noted that they are continuing to study Bennett to determine how effective aeration is in shallow lakes. Tina Carstens commented that some of these methods are more unknown as the District and other local entities have not used these methods. She commented that Tanners Lake is a stormwater treatment with alum, which is a different treatment than what would be recommended for a shallow lake.

Manager Ward commented that perhaps an alum policy should be added to the Board Action Log.

Manager Ward noted that perhaps these methods are used together in some cases. She also noted that perhaps reduction of external loading also assists in managing the internal loading.

President Swope commented that it was a great report and provided a lot of insight.

**B. Pioneer Park Stormwater Reuse Project Scope Summary**

Tina Carstens stated that this project was born out of the Ramsey County report which identified potential reuse sites. She stated that the work in 2023 would be planning and design with potential construction in 2024.

Erin Anderson Wenz stated that while Barr has worked on projects of this nature, Ramsey Washington has not yet done this type of project. She stated that this type of project makes sense as the water can be reused to irrigate the park land. She stated that there are not elements within the prioritization tool for reuse simply for the purpose of reuse. She commented that although there would be other benefits of interest, they used the prioritization tool as it exists to review the project.

Manager Eisele asked for details on the link to five-mile radius to White Bear Lake. Tina Carstens stated that data is part of the DNR's identification of a five-mile radius around the lake where water use must be conserved if the lake reaches a certain level because of the link in groundwater.

Manager Ward commented that they anticipated that other things may come along that should be added to the prioritization tool and perhaps this is added to the list to consider. Erin Anderson Wenz commented that Ramsey County has its own system for identifying equity areas and underserved communities. She stated that a point was not given for that because it did not land within the District's equity area, but it did fall within the equity area for the County. Tina Carstens noted that staff also discussed potentially using that same data to perhaps adjust the District's equity area.

**11. ADMINISTRATOR'S REPORT (2:32:16)**

**A. Meetings Attended**

No comments.

B. Upcoming Meetings and Dates

Tina Carstens noted the dates sent out for the wetland workshops stating that while she was not able to identify dates that would work for all five members, she did find two dates that worked for four of the members.

Manager Ward commented that she could perhaps attend on November 28<sup>th</sup>. It was the consensus of the Board to hold the wetland workshop on November 28<sup>th</sup> at 5 p.m.

C. Ongoing Project Update

No comments.

D. MAWD Annual Meeting

Motion: Manager Ward moved, Manager Kramer seconded, to appoint Manager Eisele and President Swope as the delegates for the MAWD Annual Meeting.

A roll call vote was performed:

Manager Eisele	aye
Manager Kramer	aye
Manager Ward	aye
President Swope	aye

Motion carried unanimously.

E. Conference Highlights

Tina Carstens provided details on the WEFTEC Conference that she attended which was held in New Orleans October 10<sup>th</sup> through the 12<sup>th</sup>. She also provided a summary from the Minnesota Water Resources Conference that was held October 18<sup>th</sup> through the 19<sup>th</sup> in St. Paul. She noted that District staff provided a presentation on the North and East Saint Paul Target Store Stormwater Retrofits.

Paige Ahlborg commented that she enjoyed providing the presentation and hearing input following from others that are interested in implementing similar programs.

Tina Carstens stated that Bill Bartodziej recently provided a presentation on ecological restoration in the Phalen Chain of Lakes which was well received. She stated that next week there is another conference, NALMS, where another District staff member will be giving a presentation on gauging the impact of a shallow lakes educational video.

Manager Eisele asked if these presentations could be publicized on the District website. Tina Carstens confirmed that information could be shared on the website.

Manager Kramer left the meeting.

**12. PROJECT AND PROGRAM STATUS REPORTS (2:57:00)**

***Project Feasibility Studies***

- A. Interim Emergency Response Planning
- B. Kohlman Creek Flood Risk Feasibility Study
- C. Kohlman Creek/Wakefield Lake Diversion Feasibility Study
- D. County Ditch 17 Improvements Feasibility Study
- E. Phalen Village Feasibility Study
- F. Ames Lake Area Flood Risk Reduction Planning Study

- G. Owasso Basin/North Star Estates Improvements
- H. Double Driveway Pond Optimization Study
- I. Carver Ponds Improvement Study
- J. South Metro Mississippi River TSS TMDL

***Monitoring Water Quality and Special Projects***

- K. Annual Water Quality Report Assistance

***Research Projects***

- L. Kohlman Permeable Weir Test System
- M. Shallow Lake Aeration Study

***Capital Improvements***

- N. Target Store Stormwater Retrofit Projects
- O. Targeted Retrofit Projects
- P. Stewardship Grant Program – Street Sweeping
- Q. Lake Emily Subwatershed Regional BMP

***CIP Project Repair and Maintenance***

- R. Beltline Five Year Inspection
- S. District Inspection Standardization
- T. 2023 CIP Maintenance and Repair Project

***Program Updates***

- U. Natural Resources Program
- V. Public Involvement and Education Program
- W. Communications Program and Website
- X. Citizen Advisory Committee

President Swope referenced Item Q and asked what a wetland restoration project would be. Erin Anderson Wenz noted that is an area that could be considered in the future.

**13. MANAGER COMMENTS AND NEXT MONTH'S MEETING (2:59:04)**

No comments.

**14. ADJOURN**

Motion: Manager Ward moved, Manager Eisele seconded, to adjourn the meeting at 9:29 p.m. Motion carried unanimously.

**RWMWD BUDGET STATUS REPORT**  
**Administrative & Program Budget**  
**Fiscal Year 2022**  
**11/30/2022**

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	\$8,500.00	-	-	1,409.10	\$7,090.90	16.58%
	Manager expenses	4360	4,000.00	-	-	-	4,000.00	0.00%
Committees	Committee/Bd Mtg. Exp.	4365	3,500.00	-	381.87	4,063.47	(563.47)	116.10%
	<b>Sub-Total: Managers/Committees:</b>		<b>\$16,000.00</b>	<b>\$0.00</b>	<b>\$381.87</b>	<b>\$5,472.57</b>	<b>\$10,527.43</b>	<b>34.20%</b>
Employees	Staff salary/taxes/benefits	4010	1,660,000.00	-	122,422.01	1,506,571.34	153,428.66	90.76%
	Employee expenses	4020	15,000.00	-	524.00	6,671.73	8,328.27	44.48%
	District training & education	4350	75,000.00	-	1,398.75	28,347.61	46,652.39	37.80%
	<b>Sub-Total: Employees:</b>		<b>\$1,750,000.00</b>	<b>\$0.00</b>	<b>\$124,344.76</b>	<b>\$1,541,590.68</b>	<b>\$208,409.32</b>	<b>88.09%</b>
Administration/Office	GIS system maint. & equip.	4170	10,000.00	-	-	3,134.02	6,865.98	31.34%
	Data Base/GIS Maintenance	4171	40,000.00	-	-	98.94	39,901.06	0.25%
	Equipment maintenance	4305	3,000.00	-	-	152.69	2,847.31	5.09%
	Telephone	4310	4,000.00	-	59.34	652.74	3,347.26	16.32%
	Office supplies	4320	7,000.00	-	425.94	6,194.29	805.71	88.49%
	IT/Internet/Web Site/Software Lic.	4325	75,000.00	-	6,453.33	70,743.80	4,256.20	94.33%
	Postage	4330	3,000.00	-	143.55	1,106.17	1,893.83	36.87%
	Printing/copying	4335	5,000.00	-	294.00	4,254.40	745.60	85.09%
	Dues & publications	4338	11,000.00	-	-	11,188.94	(188.94)	101.72%
	Janitorial/Trash Service	4341	15,000.00	-	594.00	9,271.54	5,728.46	61.81%
	Utilities/Bldg Contracts	4342	30,000.00	-	497.43	9,130.05	20,869.95	30.43%
	Bldg/Site Maintenance	4343	150,000.00	-	3,567.13	99,587.50	50,412.50	66.39%
	Miscellaneous	4390	5,000.00	-	-	-	5,000.00	0.00%
	Insurance	4480	55,000.00	-	-	53,156.00	1,844.00	96.65%
	Office equipment	4703	150,000.00	-	1,739.22	15,556.41	134,443.59	10.37%
	Vehicle lease, maintenance	4810-40	20,000.00	-	2,265.43	8,651.67	11,348.33	43.26%
	<b>Sub-Total: Administration/Office:</b>		<b>\$583,000.00</b>	<b>\$0.00</b>	<b>\$16,039.37</b>	<b>\$292,879.16</b>	<b>\$290,120.84</b>	<b>50.24%</b>
Consultants/Outside Services	Auditor/Accounting	4110	70,000.00	-	1,684.13	52,980.68	17,019.32	75.69%
	Engineering-administration	4121	125,000.00	-	6,935.50	72,191.00	52,809.00	57.75%
	Engineering-permit I&E	4122	10,000.00	-	126.50	4,269.50	5,730.50	42.70%
	Engineering-eng. review	4123	60,000.00	-	4,900.50	62,150.50	(2,150.50)	103.58%
	Engineering-permit review	4124	55,000.00	-	5,555.50	47,456.00	7,544.00	86.28%
	Project Feasibility Studies	4129	410,000.00	-	19,629.13	300,183.13	109,816.87	73.22%
	Attorney-permits	4130	10,000.00	-	-	-	10,000.00	0.00%
	Attorney-general	4131	40,000.00	-	2,690.00	18,619.70	21,380.30	46.55%
	Outside Consulting Services	4160	20,000.00	-	-	-	20,000.00	0.00%
	<b>Sub-Total: Consultants/Outside Services:</b>		<b>\$800,000.00</b>	<b>\$0.00</b>	<b>\$41,521.26</b>	<b>\$557,850.51</b>	<b>\$242,149.49</b>	<b>69.73%</b>
Programs	Educational programming	4370	75,000.00	-	4,709.68	41,723.14	33,276.86	55.63%
	Communications & Marketing	4371	50,000.00	-	538.73	30,684.78	19,315.22	61.37%
	Events	4372	46,000.00	-	706.18	51,469.59	(5,469.59)	111.89%
	Water QM-Engineering	4520-30	180,000.00	-	24,082.85	216,061.17	(36,061.17)	120.03%
	Project operations	4650	200,000.00	-	726.64	138,268.53	61,731.47	69.13%
	SLMP/TMDL Studies	4661	125,000.00	-	17,936.00	41,987.50	83,012.50	33.59%
	Natural Resources/Keller Creek	4670-72	120,000.00	-	6,468.79	104,948.61	15,051.39	87.46%
	Outside Prog.Support/Weed Mgmt.	44683	57,000.00	-	-	20,738.66	36,261.34	36.38%
	Research Projects	4695	225,000.00	-	5,591.50	93,458.69	131,541.31	41.54%
	Health and Safety Program	4697	3,000.00	-	-	3,663.18	(663.18)	122.11%
	<b>Sub-Total: Programs:</b>		<b>\$1,081,000.00</b>	<b>\$0.00</b>	<b>\$60,760.37</b>	<b>\$743,003.85</b>	<b>\$337,996.15</b>	<b>68.73%</b>
<b>GENERAL FUND TOTAL</b>			<b>\$4,230,000.00</b>	<b>\$0.00</b>	<b>\$243,047.63</b>	<b>\$3,140,796.77</b>	<b>\$1,089,203.23</b>	<b>74.25%</b>
CIP's	CIP Project Repair & Maintenance	516	1,500,000.00	-	54,165.51	1,128,088.31	371,911.69	75.21%
	Targeted Retrofit Projects	518	1,500,000.00	-	432,278.07	794,917.88	705,082.12	52.99%
	Flood Risk Reduction Fund	520	5,200,000.00	-	1,832.93	27,148.13	5,172,851.87	0.52%
	Debt Services-96-97 Beltline/MM/Battle Creek	526	394,710.00	-	-	393,040.40	1,669.60	99.58%
	Stewardship Grant Program Fund	529	1,000,000.00	-	154,033.73	464,701.32	535,298.68	46.47%
	Wetland Restoration Projects	540	500,000.00	-	-	-	500,000.00	0.00%
<b>CIP BUDGET TOTAL</b>			<b>\$10,094,710.00</b>	<b>-</b>	<b>\$642,310.24</b>	<b>\$2,807,896.04</b>	<b>\$7,286,813.96</b>	<b>27.82%</b>
<b>TOTAL BUDGET</b>			<b>\$14,324,710.00</b>	<b>\$0.00</b>	<b>\$885,357.87</b>	<b>\$5,948,692.81</b>	<b>\$8,376,017.19</b>	<b>41.53%</b>

**Current Fund Balances:**

Fund:	Beginning Fund Balance @ 12/31/21	Fund Transfers	Year to date Revenue	Current Month Expenses	Year to Date Expense	Fund Balance @ 11/30/22
101 - General Fund	\$2,382,780.20	-	1,771,037.35	243,047.63	3,140,796.77	1,013,020.78
516 - CIP Project Repair & Maintenance	162,659.00	-	1,348,062.95	54,165.51	1,128,088.31	382,633.64
518 - Targeted Retrofit Projects	948,555.00	-	31,185.00	432,278.07	794,917.88	184,822.12
520 - Flood Damage Reduction Fund	3,415,744.00	-	904,220.78	1,832.93	27,148.13	4,292,816.65
526 - Debt Services-96-97 Beltline/MM/Beltline-Battle Creek Tunnel Repair	944,949.00	-	-	-	393,040.40	551,908.60
529 - Stewardship Grant Program Fund	854,750.00	-	181,199.96	154,033.73	464,701.32	571,248.64
536 - Stormwater Impact Fund	309,837.00	-	-	-	-	309,837.00
540 - Wetland Restoration Projects	498,036.00	-	-	-	-	498,036.00
580 - Contingency Fund	1,465,487.00	-	-	-	-	1,465,487.00
<b>Total District Fund Balance</b>	<b>\$10,982,797.20</b>	<b>\$0.00</b>	<b>\$ 4,235,706.04</b>	<b>\$ 885,357.87</b>	<b>\$5,948,692.81</b>	<b>\$9,269,810.43</b>

**Ramsey Washington Metro Watershed Dist.**  
**Check Register**  
**For the Period From Nov 1, 2022 to Nov 30, 2022**

Check #	Date	Payee ID	Invoice #	Payee	Description	Amount
EFT	11/01/22	met008	Nov 2022	MetLife-Group Benefits	Employee Benefits	\$1,813.91
EFT	11/02/22	hea002	Dec 2022	HealthPartners	Employee Benefits	12,563.83
73385	11/09/22	ada002	3351391	Adam's Pest Control, Inc.	Utilities/Bldg. Contracts	86.11
73386	11/09/22	att002	287256653401X00252022	AT & T Mobility - ROC	Project Operations	166.54
73387	11/09/22	aws001	S1335957-110122	AWS Service Center	Utilities/Bldg. Contracts	298.82
73388	11/09/22	bol003	0x1.128585	Bolton & Menk, Inc.	Educational Program	666.67
73389	11/09/22	fle001	101166	Flemings Auto Service	Vehicle Maintenance	63.20
73390	11/09/22	fos001	P98549	Fossil Industries, Inc.	Communications & Marketing	348.00
73391	11/09/22	gil001	223639/223682/223991	Gilbert Mechanical Contractors, Inc.	Bldg./Site Maintenance	2,881.31
73392	11/09/22	hom001	611749/524379	Home Depot Credit Services	Natural Resources Project	51.85
73393	11/09/22	lan003	11/09/22	Lancer Catering	Events	704.18
73394	11/09/22	met006	0001132712	Metropolitan Council	Project Operations	150.00
73395	11/09/22	nsp001	800772741	Xcel Energy	Project Operations	36.99
73396	11/09/22	pac001	22100393842	Pace Analytical Services, Inc.	Water QM Staff	620.11
73397	11/09/22	pre003	319077357	Premium Waters, Inc.	Utilities/Bldg. Contracts	31.00
73398	11/09/22	ram002	PRK-002085/COR-003635	Ramsey County	Water QM/Stewardship/Natural Resources	49,828.35
73399	11/09/22	shi001	B15989515	SHI International Corp.	Office Equipment	672.00
73400	11/09/22	ups001	0000F4471X442	United Parcel Service	Construction Imp.-Maint. & Repair	155.73
73401	11/09/22	usb005	486150410	US Bank Equipment Finance	Printing Expense	294.00
73402	11/09/22	van001	86108	Vanguard Cleaning Systems of Minnesota	Bldg./Site Maintenance	233.52
73403	11/09/22	voy001	869293423224	US Bank Voyager Fleet Sys.	Vehicle Fuel	514.01
73404	11/29/22	ada002	36562850	Adam's Pest Control, Inc.	Bldg./Site Maintenance	86.11
73405	11/29/22	and005	21-02 MTN	Michele Anderson	Stewardship Grant Fund	167.51
73406	11/29/22	app003	19-01 MTN	Applewood Pointe of Shoreview Sr.Co-Op	Stewardship Grant Fund	1,000.00
73407	11/29/22	bar001	10/15-11/18/22	Barr Engineering	October/November Engineering Expense	132,835.81
73408	11/29/22	bar002	7/23/22-11/18/22	Bill Bartodziej	Employee Reimbursement	763.46
73409	11/29/22	blo001	Nov 2022	Simba Blood	Employee Reimbursement	316.61
73410	11/29/22	cas001	22-08 MTN	Will Castellanos	Stewardship Grant Fund	975.72
73411	11/29/22	che001	18-11 MTN	Cherokee Hills Association No. II	Stewardship Grant Fund	1,000.00
73412	11/29/22	che002	18-10 MTN	Cherokee Hills Association No. I	Stewardship Grant Fund	984.90
73413	11/29/22	cit011	231378	City of Roseville	IT/Website/Software	6,264.21
73414	11/29/22	com004	11/16/22	Comcast	Utilities/Bldg. Contracts	81.50
73415	11/29/22	dav003	148257	Davey Resource Group, Inc.	Construction Imp.-Maint. & Repair	2,855.00
73416	11/29/22	del001	10631294092	Dell Marketing, L.P.	Office Equipment	745.86
73417	11/29/22	dev001	19-10 MTN	Mark Devine	Stewardship Grant Fund	577.50
73418	11/29/22	dic001	21-17 MTN	Carrie Dickson	Stewardship Grant Fund	217.50
73419	11/29/22	don001	Nov 2022	Matthew Doneux	Employee Reimbursement	180.91
73420	11/29/22	dvs001	00-28605622	DVS Renewal	Vehicle-Miscellaneous	23.25
73421	11/29/22	fis002	22-19 CS	Fish & Waters Conservation Fund	Stewardship Grant Fund	4,790.00
73422	11/29/22	fit002	Nov 2022	Mary Fitzgerald	Employee Reimbursement	162.77
73423	11/29/22	gal001	11/23/22	Galowitz Olson, PLLC	November Legal Fees	3,104.60
73424	11/29/22	gas001	19-11 MTN	Gassen Management Company	Stewardship Grant Fund	457.50
73425	11/29/22	gra008	21-18 CS	Grandview Townhome Association	Stewardship Grant Fund	8,530.00
73426	11/29/22	hai001	21-37 CS	Deon Haider	Stewardship Grant Fund	30.00
73427	11/29/22	ham004	19-08 MTN	Hampden Woods HOA	Stewardship Grant Fund	1,000.00
73428	11/29/22	haw002	22-20	Hawkins, Inc.	Dev Escrow-General	1,280.00
73429	11/29/22	hil002	22-13 CS	Hill-Murray	Stewardship Grant Fund	8,137.50
73430	11/29/22	hol004	20-19 MTN	Hollow Pond HOA	Stewardship Grant Fund	1,000.00
73431	11/29/22	hom001	Nov 2022	Home Depot Credit Services	Water QM Staff/Natural Resources	52.57
73432	11/29/22	inn002	IN4008750	Innovative Office Solutions LLC	Bldg./Site Maintenance	112.44
73433	11/29/22	int001	W22100472	Office of MN, IT Services	Telephone Expense	59.34
73434	11/29/22	jac005	22-30 CS	Brian Jacobson	Stewardship Grant Fund	3,800.00
73435	11/29/22	joh006	18-09 MTN	Skip Johnson	Stewardship Grant Fund	188.63
73436	11/29/22	jon004	21-19 MTN	Bob & Sandy Jones	Stewardship Grant Fund	1,000.00
73437	11/29/22	kel007	20-08 MTN	Keller Property Management	Stewardship Grant Fund	1,000.00
73438	11/29/22	kel008	20-12 MTN	Jeanne & Dan Kelsey	Stewardship Grant Fund	326.68
73439	11/29/22	koo001	22-10 CS	Michael Koopmeiners	Stewardship Grant Fund	6,569.25
73440	11/29/22	kos001	19-09 MTN	Helen Kosobayashi	Stewardship Grant Fund	375.00
73441	11/29/22	kub001	Nov 2022	Kyle W. Kubitzka	Employee Reimbursement	159.50
73442	11/29/22	lan009	1578	Landbridge Ecological, Inc.	Stewardship Grant Fund	46,950.96
73443	11/29/22	lea003	15-1002	L. Tracy Leavenworth	Educational Program	2,129.67
73444	11/29/22	mat002	22-15 MTN	Anoop & Preeti Mathur	Stewardship Grant Fund	140.00
73445	11/29/22	mcc003	22-05 CS	Erin McCoy	Stewardship Grant Fund	5,303.86
73446	11/29/22	mcs001	19-04 MTN	Linda McShannock	Stewardship Grant Fund	71.13
73447	11/29/22	mel001	Nov 2022	Michelle L. Melsner	Employee Reimbursement	53.08
73448	11/29/22	mid003	594457	Roseville Midway Ford	Vehicle Maintenance	1,196.65
73449	11/29/22	min008	37119	Minnesota Native Landscapes, Inc.	Construction Imp.-Maint. & Repair	17,348.50
73450	11/29/22	msp002	21-22	MSP Tamarack III	Dev Escrow-General	12,050.00
73451	11/29/22	nep001	Nov 2022	NCPERS Group Life Ins.	Employee Benefits	16.00
73452	11/29/22	nel005	22-21 CS	Stephanie Nelson-Dusek	Stewardship Grant Fund	1,167.42
73453	11/29/22	nev001	22-05 MTN	Katherine Nevins	Stewardship Grant Fund	387.50
73454	11/29/22	new003	21-08 MTN	New Horizon Academy	Stewardship Grant Fund	187.50

**Ramsey Washington Metro Watershed Dist.**  
**Check Register**  
**For the Period From Nov 1, 2022 to Nov 30, 2022**

Check #	Date	Payee ID	Invoice #	Payee	Description	Amount
73455	11/29/22	nsp001	805020591	Xcel Energy	Project Operations	1,778.93
73456	11/29/22	one001	22-01 MTN	Ann O'Neill	Stewardship Grant Fund	150.00
73457	11/29/22	pac001	22100396678	Pace Analytical Services, Inc.	Water QM Staff	1,362.92
73458	11/29/22	pas002	Nov 2022	Carol Passi	Employee Reimbursement	223.79
73459	11/29/22	pit001	3105814359	Pitney Bowes Global Financial Serv LLC	Postage	143.55
73460	11/29/22	pra001	2229406200	Prairie Moon Nursery, Inc.	Events	2.00
73461	11/29/22	qwe001	11/10/22	CenturyLink	Project Operations	268.11
73462	11/29/22	ram002	COR-003597/PRK-002096	Ramsey County	Natural Resources/Stewardship Grant	9,467.18
73463	11/29/22	red002	150474236	Redpath & Company	October Accounting Services	1,684.13
73464	11/29/22	rey001	20-02 MTN	Thomas Reynen	Stewardship Grant Fund	1,000.00
73465	11/29/22	rmb001	B007125	RMB Environmental Laboratories	Water QM Staff	4,035.00
73466	11/29/22	roi001	20-18 MTN	Rolling Hills Homeowners Association	Stewardship Grant Fund	1,000.00
73467	11/29/22	rou002	20-01 MTN	Round Lake Trail	Stewardship Grant Fund	1,000.00
73468	11/29/22	sed001	21-14 MTN	Tom Sedlack	Stewardship Grant Fund	267.82
73469	11/29/22	sel001	10/29/22	Tim Melser	Bldg./Site Maintenance	243.75
73470	11/29/22	sha001	21-18 MTN	Melissa Sharp	Stewardship Grant Fund	675.00
73471	11/29/22	she003	18-03 MTN	Shepherd of the Hills Lutheran Church	Stewardship Grant Fund	555.00
73472	11/29/22	sho004	Progress Pay #3	Shoreline Landscaping	Construction-Targeted Retrofit	403,962.57
73473	11/29/22	sim001	Nov 2022	Emily Simmons	Employee Reimbursement	102.36
73474	11/29/22	sod001	Nov 2022	Nicole Soderholm	Employee Reimbursement	255.21
73475	11/29/22	som001	138629	Eric Sommers	Keller Creek Project	1,098.49
73476	11/29/22	svk001	18-17	SVK Development, LLC	Dev Escrow-General	7,350.00
73477	11/29/22	til002	Nov 2022	Joseph S. Tillotson	Employee Reimbursement	12.00
73478	11/29/22	tim002	M27772	Timesaver Off-Site Secretarial, Inc.	Committee/Board Meeting Expense	300.00
73479	11/29/22	tri005	20-10 MTN	Trinity Presbyterian Church	Stewardship Grant Fund	200.00
73480	11/29/22	tro002	22-11	Cathy Troendle	Educational Program	1,640.70
73481	11/29/22	usb002	Nov 2022	U.S. Bank	November Credit Card Expense	5,782.74
73482	11/29/22	van001	Nov 2022	Vanguard Cleaning Systems of Minnesota	Janitorial/Trash Service	594.00
73483	11/29/22	voy001	8692934233248	US Bank Voyager Fleet Sys.	Vehicle Fuel	456.32
73484	11/29/22	wal007	22-01 MTN	Heather Walch	Stewardship Grant Fund	274.35
73485	11/29/22	was002	5842	Washington Conservation District	Stewardship Grant Fund	1,917.00
73486	11/29/22	woo001	18-06 MTN	Woodland Hills Church	Stewardship Grant Fund	1,000.00
<b>Total</b>						<b><u>\$799,196.95</u></b>
EFT	11/10/22	myp001	11/10/22	November 10th Payroll Fees	4110-101-000	\$70.05
EFT	11/25/22	myp001	11/25/22	November 25th Payroll Fees	4110-101-000	68.10
Dir.Dep.	11/10/22	---	Payroll Expense-Net	November 10th Payroll	4010-101-000	29,936.70
EFT	11/10/22	int002	Internal Rev.Serv.	November 10th Federal Withholding	2001-101-000	10,959.45
EFT	11/10/22	mnd001	MN Revenue	November 10th State Withholding	2003-101-000	1,939.50
EFT	11/10/22	per001	PERA	November 10th PERA	2011-101-000	6,457.73
EFT	11/10/22	emp002	Empower Retirement	Employee Def. Comp. Contributions	2016-101-000	3,170.00
EFT	11/10/22	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000	400.00
Dir.Dep.	11/25/22	---	Payroll Expense-Net	November 25th Payroll	4010-101-000	29,226.18
EFT	11/25/22	int002	Internal Rev.Serv.	November 25th Federal Withholding	2001-101-000	10,720.01
EFT	11/25/22	mnd001	MN Revenue	November 25th State Withholding	2003-101-000	1,908.00
EFT	11/25/22	per001	PERA	November 25th PERA	2011-101-000	6,520.73
EFT	11/25/22	emp002	Empower Retirement	Employee Def. Comp. Contributions	2016-101-000	3,170.00
EFT	11/25/22	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000	400.00
<b>Payroll/Benefits:</b>						<b><u>\$104,946.45</u></b>
<b>Total</b>					<b>Accounts Payable/Payroll/Benefits:</b>	<b><u>\$904,143.40</u></b>

**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From November 1, 2022 - November 30, 2022**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
11/01/22	EFT	met008	MetLife-Group Benefits	4040-101-000	Employee Benefits-General	\$1,813.91	
11/02/22	EFT	hea002	HealthPartners	4040-101-000	Employee Benefits-General	12,563.83	
11/09/22	73385	ada002	Adam's Pest Control	4342-101-000	Utilities/Bldg. Contracts	86.11	
11/09/22	73386	att002	AT & T Mobility - ROC	4650-101-000	Project Operations-General	166.54	
11/09/22	73387	aws001	AWS Service Center	4342-101-000	Utilities/Bldg. Contracts	298.82	
11/09/22	73388	bol003	Bolton & Menk, Inc.	4370-101-000	Educational Program-General	666.67	
11/09/22	73389	fle001	Flemings Auto Service	4820-101-000	Vehicle Maintenance-General	63.20	
11/09/22	73390	fos001	Fossil Industries, Inc.	4371-101-000	Communications & Marketing	348.00	
11/09/22	73391	gil001	Gilbert Mechanical Contractors, Inc.	4343-101-000	Bldg./Site Maintenance	2,881.31	
11/09/22	73392	hom001	Home Depot Credit Services	4670-101-000	Natural Resources Project-General	51.85	
11/09/22	73393	lan003	Lancer Catering	4372-101-000	Events	704.18	
11/09/22	73394	met006	Metropolitan Council	4650-101-000	Project Operations-General	150.00	
11/09/22	73395	nsp001	Xcel Energy	4650-101-000	Project Operations-General	36.99	
11/09/22	73396	pac001	Pace Analytical Services, Inc.	4530-101-000	Water QM Staff-General	620.11	
11/09/22	73397	pre003	Premium Waters, Inc.	4342-101-000	Utilities/Bldg. Contracts	31.00	
11/09/02	73398	ram002	Ramsey County			49,828.35	
				4530-101-000	Water QM Staff-General		17,789.85
				4682-529-000	Stewardship Grant Fund		31,618.50
				4670-101-000	Natural Resources Project-General		420.00
11/09/22	73399	shi001	SHI International Corp.	4703-101-000	Office Equipment-General	672.00	
11/09/22	73400	ups001	United Parcel Service	4630-516-000	Construction Imp.-Maint. & Repair	155.73	
11/09/22	73401	usb005	US Bank Equipment Finance	4335-101-000	Printing-General	294.00	
11/09/22	73402	van001	Vanguard Cleaning Systems of Minnesota	4343-101-000	Bldg./Site Maintenance	233.52	
11/09/22	73403	voy001	US Bank Voyager Fleet Sys.	4830-101-000	Vehicle Fuel-General	514.01	
11/29/22	73404	ada002	Adam's Pest Control	4343-101-000	Bldg./Site Maintenance	86.11	
11/29/22	73405	and005	Michele Anderson	4682-529-000	Stewardship Grant Fund	167.51	
11/29/22	73406	app003	Applewood Pointe of Shorewood Sr.Co-Op	4682-529-000	Stewardship Grant Fund	1,000.00	
11/29/22	71407	bar001	Barr Engineering			132,835.81	
				4121-101-000	Engineering Admin-General Fund		6,935.50
				4123-101-000	Engineering-Review		4,900.50
				4129-101-000	Project Feasability-General		6,344.63
				4129-101-000	Project Feasability-General		1,400.50
				4129-101-000	Project Feasability-General		60.00
				4129-101-000	Project Feasability-General		2,745.00
				4129-101-000	Project Feasability-General		3,158.00
				4129-101-000	Project Feasability-General		243.00
				4129-101-000	Project Feasability-General		24.00
				4129-101-000	Project Feasability-General		5,654.00
				4520-101-000	Engineering-WQM		135.00
				4520-101-000	Engineering-WQM		120.00
				4122-101-000	Engineering-Permit I&E		126.50
				4124-101-000	Engineering-Permit Review		5,555.50



**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From November 1, 2022 - November 30, 2022**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
				4661-101-000	SLMP/TMDL Studies		1,352.00
				4661-101-000	SLMP/TMDL Studies		16,584.00
				4695-101-000	Research Projects-General		2,744.50
				4695-101-000	Research Projects-General		2,847.00
				4650-101-000	Project Operations-General		105.00
				4128-518-000	Engineering-Targeted Retrofit		1,226.50
				4128-520-000	Engineering-Flood Damage		54.00
				4128-518-000	Engineering-Targeted Retrofit		9,507.50
				4128-518-000	Engineering-Targeted Retrofit		1,184.00
				4682-529-000	Engineering-Stewardship Grant Program		13,040.00
				4128-518-000	Engineering-Targeted Retrofit		16,397.50
				4128-516-000	Engineering-Maint. & Repair		15,941.18
				4128-516-000	Engineering-Maint. & Repair		351.50
				4128-516-000	Engineering-Maint. & Repair		234.00
				4128-516-000	Engineering-Maint. & Repair		256.00
				4128-516-000	Engineering-Maint. & Repair		13,609.00
11/29/22	73408	bar002	Bill Bartodziej			763.46	
				4020-101-000	Employee Expenses-General		332.28
				4040-101-000	Employee Benefits-General		145.00
				4350-101-000	Training & Education-General		187.16
				4670-101-000	Events		99.02
11/29/22	73409	blo001	Simba Blood			316.61	
				4040-101-000	Employee Benefits-General		266.62
				4020-101-000	Employee Expenses-General		19.42
				4371-101-000	Communications & Marketing		30.57
				4372-101-000	Events		
11/29/22	73410	cas001	Will Castellanos	4682-529-000	Stewardship Grant Fund	975.72	
11/29/22	73411	che001	Cherokee Hills Association No. 11	4682-529-000	Stewardship Grant Fund	1,000.00	
11/29/22	73412	che002	Cherokee Hills Association No.1	4682-529-000	Stewardship Grant Fund	984.90	
11/29/22	73413	cit011	City of Roseville	4325-101-000	IT/Website/Software	6,264.21	
11/29/22	73414	com004	Comcast	4342-101-000	Utilities/Bldg. Contracts	81.50	
11/29/22	73415	dav003	Davey Resource Group, Inc.	4630-516-000	Construction Imp.-Maint & Repair	2,855.00	
11/29/22	73416	del001	Dell Marketing, I.P.	4703-101-000	Office Equipment-General	745.86	
11/29/22	73417	dev001	Mark Devine	4682-529-000	Stewardship Grant Fund	577.50	
11/29/22	73418	dic001	Carrie Dickson	4682-529-000	Stewardship Grant Fund	217.50	
11/29/22	73419	don001	Matthew Doneux			180.91	
				4020-101-000	Employee Expenses-General		10.53
				4040-101-000	Employee Benefits-General		120.73
				4670-101-000	Natural Resources Project-General		49.65
11/29/22	73420	dvs001	DVS Renewal	4840-101-000	Vehicle Miscellaneous Expense	23.25	
11/29/22	73421	fis002	Fish & Water Conservation Fund	4682-529-000	Stewardship Grant Fund	4,790.00	
11/29/22	73422	fit002	Mary Fitzgerald			162.77	
				4020-101-000	Employee Expenses-General		5.27
				4040-101-000	Employee Benefits-General		157.50
11/29/22	73423	gal001	Galowitz Olson, PLLC			3,104.60	
				4131-101-000	Attorney General-General		2,690.00
				4131-516-000	Attorney General-Maint. & Repair		414.60
11/29/22	73424	gas001	Gassen Management Company	4682-529-000	Stewardship Grant Fund	457.50	
11/29/22	73425	gra008	Grandview Townhome Association	4682-529-000	Stewardship Grant Fund	8,530.00	
11/29/22	73426	hai001	Dean Haider	4682-529-000	Stewardship Grant Fund	30.00	
11/29/22	73427	ham004	Hampden Woods HOA	4682-529-000	Stewardship Grant Fund	1,000.00	
11/29/22	73428	haw002	Hawkins, Inc.	2024-101-000	Dev. Escrow-General Fund	1,280.00	
11/29/22	73429	hil002	Hill Murray	4682-529-000	Stewardship Grant Fund	8,137.50	
11/29/22	73430	hol004	Hollow Pond HOA	4682-529-000	Stewardship Grant Fund	1,000.00	



**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From November 1, 2022 - November 30, 2022**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
11/29/22	73431	hom001	Home Depot Credit Services			52.57	
				4670-101-000	Natural Resources Project-General		32.60
				4530-101-000	Water QM Staff-General		19.97
11/29/22	73432	inn002	Innovative Office Solutions LLC	4343-101-000	Bldg./Site Maintenance	112.44	
11/29/22	73433	int001	Office of MN, IT Services	4310-101-000	Telephone-General	59.34	
11/29/22	73434	jac005	Brian Jacobson	4682-529-000	Stewardship Grant Fund	3,800.00	
11/29/22	73435	joh006	Skip Johnson	4682-529-000	Stewardship Grant Fund	188.63	
11/29/22	73436	jon004	Bob & Sandy Jones	4682-529-000	Stewardship Grant Fund	1,000.00	
11/29/22	73437	kel007	Keller Property Management	4682-529-000	Stewardship Grant Fund	1,000.00	
11/29/22	73438	kel008	Jeanne & Dan Kelsey	4682-529-000	Stewardship Grant Fund	326.68	
11/29/22	73439	koo001	Michale Koopmeiners	4682-529-000	Stewardship Grant Fund	6,569.25	
11/29/22	73440	kos001	Helen Kosobayashi	4682-529-000	Stewardship Grant Fund	375.00	
11/29/22	73441	kub001	Kyle W. Kubitza			159.50	
				4040-101-000	Employee Benefits-General		100.00
				4530-101-000	Water QM Staff-General		59.50
11/29/22	73442	lan009	Landbridge Ecological, Inc.	4682-529-000	Stewardship Grant Fund	46,950.96	
11/29/22	73443	lea003	L. Tracy Leavenworth	4370-101-000	Educational Program-General	2,129.67	
11/29/22	73444	mat002	Anoop & Preeti Mathur	4682-529-000	Stewardship Grant Fund	140.00	
11/29/22	73445	mcc003	Erin McCoy	4682-529-000	Stewardship Grant Fund	5,303.86	
11/29/22	73446	mcs001	Linda McShannock	4682-529-000	Stewardship Grant Fund	71.13	
11/29/22	73447	mel001	Michelle Melser			53.08	
				4040-101-000	Employee Benefits-General		27.50
				4020-101-000	Employee Expenses-General		25.58
11/29/22	73448	mid003	Midway Ford	4820-101-000	Vehicle Maintenance-General	1,196.65	
11/29/22	73449	min008	Minnesota Native Landscapes, Inc.	4630-516-000	Construction Imp.-Maint. & Repair	17,348.50	
11/29/22	73450	mcp002	MSP Tamarack III	2024-101-000	Dev. Escrow-General Fund	12,050.00	
11/29/22	73451	ncp001	NCPERS Group Life Insurance	4040-101-000	Employee Benefits-General	16.00	
11/29/22	73452	nel005	Stephanie Nelson-Dusek	4682-529-000	Stewardship Grant Fund	1,167.42	
11/29/22	73453	nev001	Katherine Nevins	4682-529-000	Stewardship Grant Fund	387.50	
11/29/22	73454	new003	New Horizons Academy	4682-529-000	Stewardship Grant Fund	187.50	
11/29/22	73455	nsp001	Xcel Energy	4650-520-000	Project Operations-Flood	1,778.93	
11/29/22	73456	one001	Ann O'Neill	4682-529-000	Stewardship Grant Fund	150.00	
11/29/22	73457	pac001	Pace Analytical Services, Inc.	4530-101-000	Water QM Staff-General	1,362.92	
11/29/22	73458	pas002	Carol Passi			223.79	
				4020-101-000	Employee Expenses-General		111.15
				4040-101-000	Employee Benefits-General		90.00
				4370-101-000	Educational Program-General		22.64
11/29/22	73459	pit001	Pitney Bowes Global Financial Serv., LLC	4330-101-000	Postage-General Fund	143.55	
11/29/22	73460	pra001	Prairie Moon Nursery, Inc.	4372-101-000	Events	2.00	
11/29/22	73461	qwe001	CenturyLink	4650-101-000	Project Operations-General	268.11	
11/29/22	73462	ram002	Ramsey County			9,467.18	
				4670-101-000	Natural Resources Project-General		4,467.18
				4682-529-000	Stewardship Grant Fund		5,000.00
11/29/22	73463	red002	Redpath & Company, Ltd.	4110-101-000	Auditor/Accounting	1,684.13	
11/29/22	73464	rey001	Thomas Reyman	4682-529-000	Stewardship Grant Fund	1,000.00	
11/29/22	73465	rmb001	RMB Environmental Laboratories	4530-101-000	Water QM Staff-General	4,035.00	
11/29/22	73466	rol001	Rolling Hills Homeowners Association	4682-519-000	Stewardship Grant Fund	1,000.00	
11/29/22	73467	rou002	Round Lake Trail	4682-529-000	Stewardship Grant Fund	1,000.00	
11/29/22	73468	sed001	Tom Sedlack	4682-529-000	Stewardship Grant Fund	267.82	
11/29/22	73469	sel001	Tim Melser	4343-101-000	Bldg./Site Maintenance	243.75	
11/29/22	73470	sha001	Melissa Sharp	4682-529-000	Stewardship Grant Fund	675.00	
11/29/22	73471	she003	Shephard of the Hills Lutheran Church	4682-529-000	Stewardship Grant Fund	555.00	
11/29/22	73472	sho004	Shoreline Landscaping	4630-518-000	Construction-Targeted Retrofit	403,962.57	

**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From November 1, 2022 - November 30, 2022**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
11/29/22	73473	sim001	Emily Simmons			102.36	
				4020-101-000	Employee Expenses-General		4.56
				4040-101-000	Employee Benefits-General		40.00
				4371-101-000	Communications & Marketing		37.80
				4371-101-000	Communications & Marketing		20.00
11/29/22	73474	sod001	Nicole Soderholm			255.21	
				4020-101-000	Employee Expenses-General		15.21
				4040-101-000	Employee Benefits-General		240.00
11/29/22	73475	som001	Eric Sommers	4672-101-000	Keller Creek Project	1,098.49	
11/29/22	73476	svk001	SVK Development, LLC	2024-101-000	Dev. Escrow-General Fund	7,350.00	
11/29/22	73477	til001	Joseph Tillotson	4820-101-000	Vehicle Maintenance-General	12.00	
11/29/22	73478	tim002	Timesaver Off-Site Secretarial, Inc.	4365-101-000	Committee/Board Meeting Expense	300.00	
11/29/22	73479	tir005	Trinity Presbyterian Church	4682-529-000	Stewardship Grant Fund	200.00	
11/29/22	73480	tro002	Cathy Troendle			1,640.70	
				4370-101-000	Educational Program-General		1,636.25
				4370-101-000	Educational Program-General		4.45
11/29/22	73481	usb002	U.S. Bank			5,782.74	
				4325-101-000	IT/Website/Software		96.00
				4325-101-000	IT/Website/Software		93.12
				4320-101-000	Office Supplies		31.04
				4320-101-000	Office Supplies		26.83
				4365-101-000	Committee/Board Meeting Expense		81.87
				4343-101-000	Bldg./Site Maintenance		10.00
				4320-101-000	Office Supplies		204.63
				4320-101-000	Office Supplies		97.00
				4320-101-000	Office Supplies		15.22
				4350-101-000	Training & Education-General		155.00
				4350-101-000	Training & Education-General		125.00
				4350-101-000	Training & Education-General		120.00
				4350-101-000	Training & Education-General		615.00
				4670-101-000	Natural Resources Project-General		250.00
				4703-101-000	Office Equipment-General		321.36
				4630-516-000	Construction Imp.-Maint. & Repair		3,000.00
				4371-101-000	Communications & Marketing		19.78
				4670-101-000	Natural Resources Project-General		250.00
				4371-101-000	Communications & Marketing		23.18
				4371-101-000	Communications & Marketing		34.00
				4320-101-000	Office Supplies		5.49
				4320-101-000	Office Supplies		5.99
				4371-101-000	Communications & Marketing		63.20
				4350-101-000	Training & Education-General		137.09
				4320-101-000	Office Supplies		1.94
11/26/22	73482	van001	Vanguard Cleaning Systems of Minnesota	4341-101-000	Janitorial/Trash Service	594.00	
11/29/22	73483	voy001	US Bank Voyager Fleet Sys.	4830-101-000	Vehicle Fuel-General	456.32	
11/29/22	73484	wal007	Heather Walch	4682-529-000	Stewardship Grant Fund	274.35	
11/29/22	73485	was002	Washington Conservation District	4682-529-000	Stewardship Grant Fund	1,917.00	
11/29/22	73486	woo001	Woodland Hills Church	4682-529-000	Stewardship Grant Fund	1,000.00	
<b>Accounts Payable Total:</b>						<b>\$799,196.95</b>	

**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From November 1, 2022 - November 30, 2022**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
EFT	11/10/22	myp001	Payroll Fees	4110-101-000	November 10th Payroll Fees	\$70.05	
EFT	11/25/22	myp001	Payroll Fees	4110-101-000	November 25th Payroll Fees	68.10	
Dir.Dep.	11/10/22	---	Payroll Expense-Net	4010-101-000	November 10th Payroll	29,936.70	
EFT	11/10/22	int002	Internal Rev.Serv.	2001-101-000	November 10th Federal Withholding	10,959.45	
EFT	11/10/22	mnd001	MN Revenue	2003-101-000	November 10th State Withholding	1,939.50	
EFT	11/10/22	per001	PERA	2011-101-000	November 10th PERA	6,457.73	
EFT	11/10/22	emp002	Empower Retirement	2016-101-000	Employee Def. Comp. Contributions	3,170.00	
EFT	11/10/22	emp002	Empower Retirement	2018-101-000	Employee IRA Contributions	400.00	
Dir.Dep.	11/25/22	---	Payroll Expense-Net	4010-101-000	November 25th Payroll	29,226.18	
EFT	11/25/22	int002	Internal Rev.Serv.	2001-101-000	November 25th Federal Withholding	10,720.01	
EFT	11/25/22	mnd001	MN Revenue	2003-101-000	November 25th State Withholding	1,908.00	
EFT	11/25/22	per001	PERA	2011-101-000	November 25th PERA	6,520.73	
EFT	11/25/22	emp002	Empower Retirement	2016-101-000	Employee Def. Comp. Contributions	3,170.00	
EFT	11/25/22	emp002	Empower Retirement	2018-101-000	Employee IRA Contributions	400.00	
<b>Payroll/Benefits</b>						<b>\$104,946.45</b>	
<b>TOTAL:</b>						<b>\$904,143.40</b>	



Summary of Professional Engineering Services During the Period  
October 15, 2022 through November 18, 2022

	Total Engineering Budget (2022)	Total Fees to Date (2022)	Budget Balance (2022)	Fees During Period	District Accounting Code	Plan Implementation Task Number
<b>Engineering Administration</b>						
General Engineering Administration	\$80,000.00	\$72,191.00	\$7,809.00	\$6,935.50	4121-101	DW-13
RWMWD Health and Safety/ERTK Program	\$2,000.00	\$540.00	\$1,460.00	\$0.00	4697-101	DW-13
Educational Program/Educational Forum Assistance	\$20,000.00	\$2,847.50	\$17,152.50	\$0.00	4129-101	DW-11
Topical Workshop, Education, and Planning	\$25,000.00	\$0.00	\$25,000.00	\$0.00	4129-101	DW-13
<b>Engineering Review</b>						
Engineering Review	\$60,000.00	\$62,150.50	-\$2,150.50	\$4,900.50	4123-101	DW-13
<b>Project Feasibility Studies</b>						
Interim emergency response plan funds for top priority District flooding areas	\$30,000.00	\$23,603.00	\$6,397.00	\$0.00	4129-101	DW-19
Groundwater/Surface Water Next Steps	\$50,000.00	\$0.00	\$50,000.00	\$0.00	4129-101	DW-10, DW-16
Hillcrest Golf Course	\$20,000.00	\$72.00	\$19,928.00	\$0.00	4129-101	DW-6
Kohiman Creek flood damage reduction feasibility study	\$75,000.00	\$6,503.50	\$68,496.50	\$0.00	4129-101	DW-9, KC-2, BELT-3
Kohiman Creek- Wakefield Lake Diversion Planning and Design	\$111,600.00	\$67,558.63	\$86,010.00	\$6,344.63	4129-101	DW-9, KC-2, BELT-3
Improvements to County Ditch 17	\$20,000.00	\$34,535.50	-\$14,535.50	\$1,400.50	4129-101	DW-9, BELT-3
Improvements to Phalen Village	\$20,000.00	\$23,012.00	-\$3,012.00	\$60.00	4129-101	DW-9, BELT-3
Ames Lake Technical Assistance and Project Planning with St. Paul	\$25,000.00	\$18,422.00	\$6,578.00	\$2,745.00	4129-101	DW-9, BELT-3
694/494/94 WQ treatment feasibility study	\$30,000.00	\$0.00	\$30,000.00	\$0.00	4129-101	BCL-3
Double Driveway Optimization Study	\$25,000.00	\$8,275.50	\$16,724.50	\$3,158.00	4129-101	FC-2
Carver Pond Improvements Study (Fish Creek Subwatershed)	\$25,000.00	\$19,603.53	\$5,396.47	\$243.00	4129-101	FC-2
Evaluate compliance with South Metro Mississippi River TSS TMDL	\$30,000.00	\$2,496.00	\$27,504.00	\$24.00	4129-101	MR-2
Owasso Basin area/North Star Estates improvements (with City of Little Canada)	\$50,000.00	\$88,529.97	-\$38,529.97	\$5,654.00	4129-101	GC-3
Wetland Restoration Workshop, Education, and Planning	\$5,000.00	\$2,969.00	\$2,031.00	\$0.00	4129-101	DW-8
Contingency*	\$45,000.00	\$0.00	\$45,000.00	\$0.00	4129-101	
<b>GIS Maintenance</b>						
GIS Maintenance	\$5,000.00	\$1,047.00	\$3,953.00	\$0.00	4170-101	DW-13
<b>Monitoring Water Quality/Project Monitoring</b>						
Lake Water Quality Monitoring (Misc QA/QC)	\$10,000.00	\$34.50	\$9,965.50	\$0.00	4520-101	DW-2
Annual WQ Report Assistance	\$10,000.00	\$13,306.00	-\$3,306.00	\$0.00	4520-101	DW-2
Special Project BMP Monitoring	\$25,000.00	\$10,377.80	\$14,622.20	\$135.00	4520-101	DW-12
Grass Lake Berm Wetland Monitoring	\$10,000.00	\$9,013.08	\$986.92	\$120.00	4520-101	DW-5
<b>Permit Processing, Inspection and Enforcement</b>						
Permit Application Inspection and Enforcement	\$10,000.00	\$4,269.50	\$5,730.50	\$126.50	4122-101	DW-7
Permit Application Review	\$55,000.00	\$47,456.00	\$7,544.00	\$5,555.50	4124-101	DW-7
<b>Lake Studies/TMDL Reports</b>						
2022 Grant Applications	\$40,000.00	\$2,005.50	\$37,994.50	\$0.00	4661-101	DW-13
WMP Updates - Including Implementation Plan Updates if needed	\$20,000.00	\$6,685.00	\$13,315.00	\$1,352.00	4661-101	DW-13
Prioritization of water quality projects from subwatershed feasibility studies	\$5,000.00	\$957.00	\$4,043.00	\$0.00	4661-101	DW-13
Cost/Benefit Analysis of Treatment Options for Bennett and Wakefield in 2020 Internal Load Analysis	\$35,000.00	\$30,270.00	\$4,730.00	\$16,584.00	4661-101	WL-3, BEL-3
Phalen Chain of Lakes Changes in Water Quality	\$2,500.00	\$2,070.00	\$430.00	\$0.00	4661-101	DW-2, DW-12
Contingency for Lake Studies	\$22,500.00	\$0.00	\$22,500.00	\$0.00	4661-101	
<b>Research Projects</b>						
New Technology Mini Case Studies (average 6 per year)	\$12,000.00	\$4,174.50	\$7,825.50	\$0.00	4695-101	DW-12
Kohiman Permeable Weir Test System - Implement Monitoring Plan	\$50,000.00	\$20,086.63	\$29,913.37	\$2,744.50	4695-101	DW-12
Shallow Lake Aeration Study	\$90,000.00	\$69,197.56	\$20,802.44	\$2,847.00	4695-101	DW-12
<b>Project Operations</b>						
2022 Tanners Alum Facility Monitoring	\$15,000.00	\$19,796.77	-\$4,796.77	\$105.00	4650-101	TaL-3
<b>Capital Improvements</b>						
North St. Paul Target	\$160,000.00	\$158,012.30	\$1,987.70	\$0.00	4128-518	DW-6
East St Paul and North St. Paul Target Retrofit Projects	\$5,000.00	\$4,607.00	\$393.00	\$0.00	4128-518	DW-6
Woodbury Target Stormwater Retrofit	\$46,900.00	\$2,176.00	\$44,724.00	\$1,226.50	4128-518	DW-6
Ryan Drive-Keller Parkway Conveyance	\$194,000.00	\$226,570.20	-\$32,570.20	\$54.00	4128-520	DW-9, GC-3
2022 Targeted Retrofit Projects	\$191,000.00	\$173,953.54	\$17,046.46	\$9,507.50	4128-518	DW-6
Pioneer Park Stormwater Reuse	\$151,200.00	\$1,184.00	\$150,016.00	\$1,184.00	4128-518	DW-6
Stewardship Grant Program: Gen1 BMP Design Assistance and Review (cases where Dist is approached by landowner, or landowner is not commercial, school, church).	\$75,000.00	\$59,586.31	\$15,413.69	\$13,040.00	4682-529	DW-6
Kohiman Creek Storage and Detention	\$200,000.00	\$0.00	\$200,000.00	\$0.00	4128-520	KC-2
Wetland Restoration	\$100,000.00	\$0.00	\$100,000.00	\$0.00	4128-529	DW-8
South Owasso Boulevard East WQ Pond	\$150,000.00	\$0.00	\$150,000.00	\$0.00	4128-520	GC-3
West Industrial Park Berm and associated improvements	\$150,000.00	\$0.00	\$150,000.00	\$0.00	4128-520	GC-3
Lake Emily Subwatershed Regional BMP	\$160,000.00	\$60,786.26	\$99,213.74	\$16,397.50	4128-518	LE-3
<b>CIP Project Repair &amp; Maintenance</b>						
Routine CIP Inspection and Unplanned Maintenance Identification	\$125,000.00	\$123,456.21	\$1,543.79	\$15,941.18	4128-516	DW-5
Beltline 5-year Inspection	\$70,000.00	\$69,313.95	\$686.05	\$351.50	4128-516	BELT-2
District Inspection Standardization	\$34,200.00	\$35,811.26	-\$1,611.26	\$234.00	4128-516	DW-5
2022 CIP Maintenance and Repairs	\$150,000.00	\$94,789.92	\$55,210.08	\$256.00	4128-516	DW-5
2023 CIP Maintenance and Repairs (planning, bidding, and project setup)	\$166,800.00	\$13,609.00	\$153,191.00	\$13,609.00	4128-516	DW-5

\$132,835.81

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

Bradley J. Lindaman, Vice President

2022 SCHOOLS & FAITH-BASED SITES BMP RETROFITS  
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT  
Progress Payment Application No. 3

1.	Completed to Date:	<u>\$ 576,049.89</u>	
2.	Less Previously Billed:	<u>\$ 158,749.89</u>	
3.	Amount Completed This Period:		<u>\$ 417,300.00</u>
4.	Amount Previously Retained:	<u>\$ (15,874.99)</u>	
5.	Amount Retained This Period (See Note 1):		<u>\$ (13,337.43)</u>
6.	Total Amount Retained (See Note 2):	<u>\$ (29,212.42)</u>	
7.	Retainage Released Through This Period:		<u>\$ -</u>
8.	Less Total Retainage Remaining:	<u>\$ (29,212.42)</u>	
	Less Amounts Previously Paid		
9.	(Pay Application Nos. <u>1, 2</u> )	<u>\$ 142,874.90</u>	
10.	Amount Due This Period:		<u><u>\$ 403,962.57</u></u>

Note 1: At rate of 10% until Completed to Date equals 50% of current Contract Price and a rate of 0% thereafter.

Note 2: Maximum amount is 5% of current Contract Price (Original Contract Price is \$477,624.50; adjusted Contract Price to date is \$584,248.39)

SUBMITTED BY:

Name: Stephan McLafferty Date: 11/14/2022  
Title: President  
Contractor: Shoreline Landscaping, Inc.

Signature: 

RECOMMENDED BY:

Name: Marcy Bean Date: 11/14/2022  
Title: Project Manager  
Engineer: Barr Engineering Company

Signature: 

APPROVED BY:

Name: Lawrence Swope Date: \_\_\_\_\_  
Title: President  
Owner: Ramsey-Washington Metro Watershed District

Signature:

ST PASCAL BAYLON CATHOLIC CHURCH				BID TOTAL		INVOICE #3826, 11/9/22		
CONSTRUCTION CONTRACT AMOUNT FOR PROGRESS PAYMENT						TOTAL COMPLETED THROUGH THIS PERIOD		
Bid Item	Description	Unit	Estimated Quantity	Unit Price	Extended Cost	Unit Price	Actual Quantity*	Extended Cost
2.A	Mobilization/Demobilization/Traffic Control/Erosion Control	L.S.	1	\$15,000.00	\$15,000.00	\$15,000.00	1	\$15,000.00
2.B	Construction Entrance (P)	EA	1	\$1,500.00	\$1,500.00	\$1,500.00	1	\$1,500.00
2.C	Inlet Protection	EA	4	\$150.00	\$600.00	\$150.00	4	\$600.00
2.D	6" Sediment Control Log	L.F.	520	\$6.00	\$3,120.00	\$6.00	520	\$3,120.00
2.E	Remove Chain Link Fence	L.F.	265	\$5.00	\$1,325.00	\$5.00	265	\$1,325.00
2.F	Sawcut Pavement	L.F.	465	\$2.50	\$1,162.50	\$2.50	474	\$1,185.00
2.G	Remove and Dispose of Bituminous Pavement	S.Y.	1270	\$8.00	\$10,160.00	\$8.00	1170	\$9,360.00
<del>2.H</del>	<del>Remove and Dispose of Concrete Curb and Gutter</del>	<del>L.F.</del>	<del>40</del>	<del>\$10.00</del>	<del>\$400.00</del>	<del>\$10.00</del>	0	\$0.00
2.I	Excavate, Haul, and Dispose of Materials (P)	C.Y.	654	\$25.00	\$16,350.00	\$25.00	1100	\$27,500.00
2.J	Pre-Cast Concrete Catch Basin, Complete (48")(ST-02)	EA	1	\$2,500.00	\$2,500.00	\$7,500.00	1	\$7,500.00
2.K	Precast Concrete Manhole, Complete (60")(ST-01)	EA	1	\$7,500.00	\$7,500.00	\$8,500.00	1	\$8,500.00
2.L	Precast Concrete Tree Opening with Attached Catch Basin	EA	3	\$15,000.00	\$45,000.00	\$15,000.00	3	\$45,000.00
<del>2.M</del>	<del>Pre-Cast Concrete Catch Basin with Base Slab, Complete</del>	<del>EA</del>	<del>4</del>	<del>\$2,500.00</del>	<del>\$2,500.00</del>	<del>\$2,500.00</del>	0	\$0.00
2.N	12" RCP	L.F.	70	\$80.00	\$5,600.00	\$80.00	70	\$5,600.00
2.O	12" SDR35 PVC or dual wall CPP, slotted	L.F.	420	\$30.00	\$12,600.00	\$30.00	445	\$13,350.00
2.P	12" SDR35 PVC or dual wall CPP, solid	L.F.	10	\$30.00	\$300.00	\$30.00	5	\$150.00
2.Q	6" to 12" SDR35 PVC Cleanout w/Cover (tree trench)	EA	2	\$2,000.00	\$4,000.00	\$2,000.00	3	\$6,000.00
2.R	6" to 12" SDR35 PVC Overflow Pipe w/Atrium Inlet (tree trench)	EA	3	\$900.00	\$2,700.00	\$900.00	3	\$2,700.00
2.S	4" SDR35 PVC or dual wall CPP, slotted	L.F.	37	\$10.00	\$370.00	\$10.00	37	\$370.00
2.T	4" SDR35 PVC Drantile Cleanout w/ Cover	EA	2	\$300.00	\$600.00	\$300.00	2	\$600.00
2.U	4" SDR26 PVC, solid	L.F.	24	\$10.00	\$240.00	\$10.00	24	\$240.00
<del>2.V</del>	<del>Connect new Manhole to existing pipes</del>	<del>EA</del>	<del>4</del>	<del>\$3,500.00</del>	<del>\$3,500.00</del>	<del>\$3,500.00</del>	0	\$0.00
2.W	Remove pavement markings	L.S.	1	\$1,000.00	\$1,000.00	\$1,000.00	1	\$1,000.00
2.X	Bituminous Base Course (2" Depth)	S.Y.	1270	\$16.00	\$20,320.00	\$16.00	1000	\$16,000.00
2.Y	Bituminous Wearing Course (2" Depth), Including Tack Coat	S.Y.	1270	\$16.00	\$20,320.00	\$16.00	1000	\$16,000.00
2.Z	Painted Pavement Markings	L.S.	1	\$1,500.00	\$1,500.00	\$1,500.00	1	\$1,500.00
2.AA	MnDOT B618 Concrete Curb and Gutter	L.F.	200	\$58.00	\$11,600.00	\$58.00	120	\$6,960.00
2.BB	Concrete Valley Gutter	S.Y.	50	\$150.00	\$7,500.00	\$150.00	50	\$7,500.00
<del>2.CC</del>	<del>Concrete Walks</del>	<del>S.F.</del>	<del>140</del>	<del>\$20.00</del>	<del>\$2,800.00</del>	<del>\$20.00</del>	0	\$0.00
2.DD	Limestone Retaining Wall	S.F.F.	126	\$120.00	\$15,120.00	\$120.00	264	\$31,680.00
<del>2.EE</del>	<del>6' Chain Link Fence</del>	<del>L.F.</del>	<del>260</del>	<del>\$50.00</del>	<del>\$13,000.00</del>	<del>\$50.00</del>	0	\$0.00
2.FF	Splash Block Assembly	EA	1	\$1,500.00	\$1,500.00	\$1,500.00	1	\$1,500.00
2.GG	Class 5 Aggregate Base	TON	302	\$78.00	\$23,556.00	\$78.00	463	\$36,114.00
2.HH	2"-4" Clean Washed Angular Granite	TON	163	\$120.00	\$19,560.00	\$120.00	369	\$44,280.00
2.II	Coarse Filter Aggregate (P)	C.Y.	208	\$120.00	\$24,960.00	\$120.00	311	\$37,320.00
2.JJ	Iron Enhanced Sand	C.Y.	8	\$180.00	\$1,440.00	\$180.00	10	\$1,800.00
2.KK	Filtration Soil	C.Y.	57	\$80.00	\$4,560.00	\$80.00	90	\$7,200.00
2.LL	Planting Soil	C.Y.	29	\$38.00	\$1,102.00	\$38.00	24	\$912.00
2.MM	Soil Loosening (P)	S.Y.	442	\$4.00	\$1,768.00	\$4.00	442	\$1,768.00
2.NN	MnDOT Type 5 Woven Geotextile (P)	S.Y.	1080	\$4.50	\$4,860.00	\$4.50	1000	\$4,500.00
2.OO	MnDOT Type 5 Non-Woven Geotextile (P)	S.Y.	178	\$4.50	\$801.00	\$4.50	188	\$846.00
2.PP	Perennials - 1 Gallon (P)	EA	168	\$18.00	\$3,024.00	\$18.00	168	\$3,024.00
2.QQ	Deciduous Tree (#20 Cont.) (P)	EA	3	\$800.00	\$2,400.00	\$65.00	0	\$0.00
2.RR	Tree Guard	EA	3	\$800.00	\$2,400.00	\$90.00	0	\$0.00
2.SS	Twice-Shredded Hardwood Mulch (P)	C.Y.	5	\$80.00	\$400.00	\$80.00	5	\$400.00
C.O.2.B	Plumbing/Sewer Subcontractor (CO#2)	L.S.				\$29,574.00	1	\$29,574.00
C.O.4.B.1	Decorative Metal Fence	L.F.				\$81.20	170	\$13,804.00
C.O.4.B.2	Shrub Planting	EA				\$75.00	0	\$0.00
C.O.4.B.3	3/8" Grey Trap Rock Mulch	C.Y.				\$560.00	0	\$0.00
C.O.4.B.4	6' Pre-cast Concrete Wheel Stops	EA				\$281.25	8	\$2,250.00
C.O.4.B.5	6" Topsoil & Seed & Erosion Blanket	S.Y.				\$50.00	27	\$1,350.00
C.O.4.B.6	Subsoiling Landscape Bed	CY				\$38.00	11	\$418.00
	TOTAL			BID TOTAL	\$322,218.50	TOTAL (PAY APPLICATION #3)		\$417,300.00

\* NOTE: Items noted as **BOLD** indicate a change from original bid quantities.

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

Page: 1  
November 23, 2022  
File No: 9M

	Balance
General Account	\$2,690.00
Markham Pond Aerator/Gervais Mill Pond	\$414.60
	<u>\$3,104.60</u>

# Permit Application Coversheet

Date December 07, 2022

Project Name RWMWD 2023 CIP Maintenance/Repairs

Project Number 22-37

Applicant Name Tina Carstens, RWMWD

Type of Development Maintenance

## Property Description

This project is led by Ramsey-Washington Metro Watershed District (RWMWD) and is located at various locations throughout the District. See map included for site locations and descriptions. The project includes maintenance activities related to sediment removal, erosion repair, and filter/weir maintenance. Wetland Conservation Act (WCA) approval is required for Sites #2, 3, 8, 9, and 10 (#22-24 WCA). District staff consulted with the DNR, and a public waters permit is required for Site #6. All permits and applicable access agreements must be obtained prior to start of construction. Disturbed areas will be restored with native seed. No net fill is proposed in the 100-year floodplain, and no impervious surface will be constructed as part of this project.

## Watershed District Policies or Standards Involved:

- |                                                       |                                                                         |
|-------------------------------------------------------|-------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> <i>Wetlands</i>   | <input checked="" type="checkbox"/> <i>Erosion and Sediment Control</i> |
| <input type="checkbox"/> <i>Stormwater Management</i> | <input checked="" type="checkbox"/> <i>Floodplain</i>                   |

## Water Quantity Considerations

The proposed construction activity will result in no net loss of floodplain storage on the landscape.

## Water Quality Considerations

### *Short Term*

The proposed erosion and sediment control plan is sufficient to protect downstream water resources during construction activity. District and Barr staff will also provide regular onsite observation and be involved with restoration work.

### *Long Term*

There are no long term water quality considerations.

## Staff Recommendation

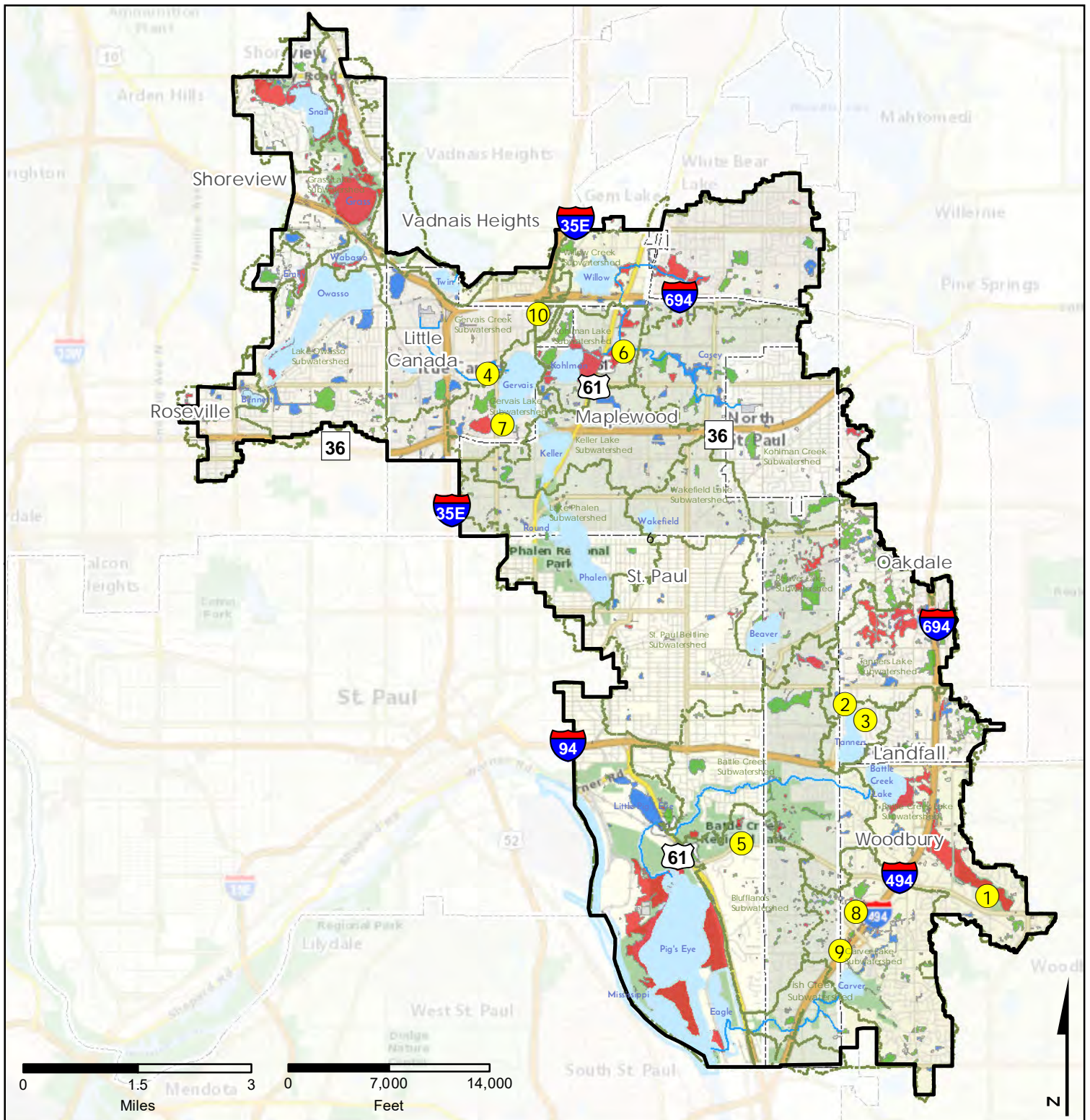
Staff recommends approval of this permit with the special provisions.

## Attachments:

- ☒ Project Location Map
- ☐ Project Grading Plan



# #22-37 RWMWD 2023 CIP Maintenance/Repairs



Note: Shaded area is outside RWMWD

Wetlands		SiteNo	Name	City	Notes
Manage A	Red	1	Tamarack Swamp PFS Basins	Woodbury	PFS Basins Paver Cleaning/Sweeping
Manage B	Green	2	Tanners Wetland	Oakdale	Weir maintenance
Manage C	Blue	3	5th Street Wetland	Oakdale	Weir maintenance
Lake	Light Blue	4	Gervais Mill Pond	Little Canada	Filter maintenance
Sediment Pond	Grey	5	Lower Afton Road	Maplewood	Drainageway sediment removal
Not Assessed	Purple	6	Kohlman Basin	Maplewood	Weirs upflow treatment system
Maintenance Sites	Yellow Circle	7	Lake Gervais County Park	Little Canada	Stormwater pond berm repair
Creeks	Blue Line	8	Woodwinds Drive	Woodbury	Pond cleanout SC846 & SC847
Subwatersheds	Green Dashed Line	9	Century Ave S.	Woodbury	Pond cleanout SC275
City Boundaries	Black Dashed Line	10	Aspen Circle	Little Canada	Pond cleanout
RWMWD Boundary	Black Solid Line				

### Special Provisions

1. The applicant shall show all construction access locations on the plans.
2. The applicant shall add the note to all sheets in the plan: "The specified erosion and sediment control practices are the minimum. Additional practices may be required during the course of construction."
3. The applicant shall submit the final, signed plans set.

# Consent Agenda Item

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**Board Meeting Date:** December 7, 2022

**Consent Agenda Item No:** 3D

**Preparer:** Tina Carstens, Administrator

---

**Item Description:** Approval of the 2023 Service Agreement with Washington Conservation District (WCD) for BMP Incentive Program and Water Quality Monitoring.

---

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## **Background:**

This is a yearly agreement with WCD to provide technical services for the Stewardship Grant Program and a small amount of water quality monitoring support in Washington County. The quality of support we receive from WCD in these two areas is economical and we have been happy with the work done by the staff. The staff meets with landowners in Washington County, provide education and potentially design BMPs for their properties. The total 2023 agreement is \$20,500 for BMP work and \$507 for water monitoring services. This the same amount as 2022 for the BMP work and \$24 increase for the water monitoring services. Additionally, \$7,500 is being planned for the completion of subwatershed analysis in the two Washington County subwatersheds to locate additional project opportunities in the county.

---

## **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 Items:** Encourage and provide technical assistance to individuals to implement water quality improvement practices at their homes and businesses and in public places.

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## **Staff Recommendation:**

Approve the service agreement.

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## **Financial Implications:**

The costs incurred under this agreement are budgeted for through the Stewardship Grant Program Fund.

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## **Board Action Requested:**

Approve the 2023 Service Agreement with Washington Conservation District.

**2023 SERVICE AGREEMENT  
BETWEEN  
WASHINGTON CONSERVATION DISTRICT  
AND RAMSEY WASHINGTON METRO WATERSHED DISTRICT**

**A. PARTIES**

This Agreement is made and entered into by Washington Conservation District, (WCD), and the Ramsey Washington Metro Watershed District (Watershed District).

**B. PURPOSE**

WHEREAS, the Watershed District has requested assistance from the WCD to implement the policies specified in MINN. STAT. §§ 103A.206 and 103D.201; and

WHEREAS, the WCD is authorized to enter agreements to provide such assistance pursuant to MINN. STAT. §§ 103C.331, SUBD. 3 and 7 and 103D.335, subd. 21.

NOW, THEREFORE, the parties agree as follows:

**C. TERM OF AGREEMENT**

The term of this agreement shall be from January 1, 2023 to December 31, 2023 unless extended or terminated earlier as provided herein.

**D. SCOPE OF SERVICES**

The WCD will perform all services and furnish and deliver work products generally described in the attached Exhibits.

**E. COST**

In full consideration for services under this agreement, the WCD shall charge the RWMWD for its services at the rate set forth in Section F. Costs for services for activities detailed in the attached Exhibits include:

Exhibit A: Technical Services for BMP Coast Share Program - \$20,500

Exhibit B: Water Monitoring Services - \$507

Exhibit C: Battle Creek Lake Sub-Watershed Analysis - \$5,000

Carver Lake Sub-Watershed Analysis - \$2,500

**Total 2023 Agreement: \$28,507**

Any additional costs for special studies or capital projects must be set forth in a written amendment to this Agreement.

## **F. BILLING RATE AND PAYMENTS**

1. Services in Exhibit A are billed on an hourly basis at the rate of \$42.00 - 92.00 per hour, based on personnel and task.

Seasonal	\$42
Technician 1/2	\$62
Technician 3	\$66
Specialist 1	\$70
Specialist 2	\$76
Specialist 3	\$82
Manager/Administrator/Engineer	\$92

Services in Exhibit B are billed on a lump sum basis, and on an actual cost basis for lab and project expenses.

Invoices for Exhibit A will be sent on a monthly basis, invoices for Exhibit B will be sent on a quarterly basis and both will list specifically the work performed.

2. Project expenses will be billed as they are accrued.
3. Invoices are payable by the RWMWD within 60 days.
4. Office supplies, normal office reproduction expenses, and transportation are included in the hourly rate. Other expenses are to be reimbursed at actual cost.

## **G. EQUAL EMPLOYMENT OPPORTUNITY- CIVIL RIGHTS**

During the performance of this Agreement, the WCD agrees to the following:

No person shall, on the grounds of race, color, religion, age, sex, disability, marital status, public assistance, criminal record, creed or national origin, be excluded from full employment rights in, be denied the benefits of, or be otherwise subjected to discrimination under any program, service, or activity under the provisions of and all applicable federal and state laws against discrimination including the Civil Rights Act of 1964.

## **H. STANDARDS**

The WCD shall comply with all applicable Federal and State statutes and regulations as well as local ordinances now in effect or hereafter adopted. Failure to meet the requirements of the above may be cause for cancellation of this contract effective the date of receipt of the Notice of Cancellation.

## **I. DATA PRIVACY**

All data collected, created, received, maintained, or disseminated, or used for any purpose in the course of the WCD's performance of the Agreement is governed by the Minnesota Government Data Practices Act, Minnesota 1984, Section 13.01, et seq. Or any other applicable state statutes and state rules adopted to implement the Act, as well as state statutes and federal regulations on data privacy. The WCD agrees to abide by these statutes, rules and regulations and as they may be amended.

## **J. AUDITS, REPORTS, AND MONITORING PROCEDURES**

The WCD will:

1. Maintain records that reflect all revenues, cost incurred and services provided in the performance of the Agreement.
2. Agree that the County, the State Auditor, or legislative authority, or any of their duly authorized representatives at any time during normal business hours, and as often as they may deem reasonably necessary, shall have access to the rights to examine audit, excerpt, and transcribe any books, documents, papers, records, etc., and accounting procedures and practices of the WCD which are relevant to the contract.

## **K. INDEMNITY**

The WCD and the Watershed District mutually agree, to the fullest extent permitted by law, to indemnify and hold each other harmless for any and all damages, liability or cost (including reasonable attorneys' fees and costs of defense) arising from their own negligent acts, errors or omissions in the performance of their services under this agreement, to the extent each party is responsible for such damages and losses on a comparative basis of fault. Parties agree to provide proof of contractual liability insurance upon request. This paragraph does not diminish, with respect to any third party, any defense, immunity or liability limit that the WCD or the Watershed District may enjoy under law.

## **L. INDEPENDENT CONTRACTOR**

It is agreed that nothing herein contained is intended or should be construed in any manner as creating or establishing the relationship of co-partners between the parties hereto or as constituting the WCD as the agent, representative, or employee of Watershed District for any purpose or in any manner whatsoever. The WCD is to be and shall remain an independent contractor with respect to all services performed under this Agreement.

The WCD represents that it has, or will secure at its own expense, all personnel required in performing services under this Agreement. Any and all personnel of the WCD or other person, while engaged in the performance of any work or services required by the WCD under this Agreement, shall have no contractual relationship with the Watershed District and shall not be considered employees of the Watershed District.

## **M. MODIFICATIONS**

Any material alteration or variation shall be reduced to writing as an amendment and signed by the parties. Any alteration, modification, or variation deemed not to be material by written agreement of the WCD and the Watershed District shall not require written approval.

## **N. MERGER**

It is understood and agreed that the entire agreement of the parties is contained here, except as modified during the term of the Agreement by a writing under Paragraph M above concerning a non-material change, and that this contract supersedes oral agreements and negotiations between the parties relating to this subject matter. All items referred to in this contract are incorporated or attached and deemed to be part of the contract.

## **O. TERMINATION**

Either the WCD or the Watershed District may terminate this Agreement with or without cause by giving the other party ninety (90) days written notice prior to the effective date of such termination. If the Watershed District terminates this Agreement, it may specify work to be performed by the WCD before termination is effective and shall pay the WCD for services performed by the WCD up to the time specified for termination. If the WCD terminates the Agreement, it will not be compensated for part completion of a task except to the extent part completion has value to the Watershed District.

## **P. OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY**

All property of the Watershed District used, acquired or created in the performance of work under this Agreement, including documents and records of any kind, shall remain the property of the Watershed District. The Watershed District shall have the sole right to use, sell, license, publish, or otherwise disseminate any product developed in whole or in part during the performance of work under this Agreement.

**2023 SERVICE AGREEMENT  
BETWEEN  
WASHINGTON CONSERVATION DISTRICT  
AND RAMSEY WASHINGTON METRO WATERSHED DISTRICT  
  
RWMWD BMP COST-SHARE PROGRAM**

IN TESTIMONY WHEREOF the parties have duly executed this agreement by their duly authorized officers.

APPROVED:

Watershed District

WCD

BY: \_\_\_\_\_  
Board President Date

BY: \_\_\_\_\_  
Board Chair Date

BY: \_\_\_\_\_  
District Administrator Date

BY: \_\_\_\_\_  
WCD Manager Date

Approval as to form and execution:

\_\_\_\_\_  
Date

## **EXHIBIT A**

### **2023 RWMWD BMP COST-SHARE PROGRAM**

#### **TASKS**

**1. Project Oversight**

All work performed by the WCD will be at the direction of the RWMWD staff.

**2. Landowner Outreach**

Targeted and broad-based outreach techniques will be implemented through a coordinated effort of the RWMWD and WCD. Outreach will be coordinated with educational efforts by the RWMWD.

**3. Project Database**

Project information will be maintained by the RWMWD. Information on assistance provided by the WCD will be regularly communicated to the RWMWD staff Coordinator.

**4. Respond to inquiries from the public**

The RWMWD will act as the primary and first responder to inquiries from the public regarding the BMP Program. The WCD and the RWMWD will jointly provide responses to the public regarding general program information, program eligibility, best management practice information, and general watershed information.

**5. Site Reviews and Project Evaluation**

Initial site visits will be provided by the WCD County-wide and are part of the standard WCD programs and not charged under this contract. Follow-up reviews and subsequent site visits of potential BMP implementation sites will be conducted under this contract. Other activities will include: assessing BMP options which will adequately address the problem, discussing BMP alternatives with landowners, and promoting implementation of BMPs. WCD will assist program applicants with identification of supplemental funding sources if needed. Educational materials will be distributed during the site visit.

**6. BMP Design and Contractor Assistance**

The WCD will coordinate BMP design assistance. Design support will be provided by WCD technical resources and/or obtaining assistance from an appropriate technical agency, organization, or the Watershed District. WCD will assist landowners with obtaining qualified contractors to install BMPs if requested.

**7. Construction Monitoring (Site inspections)**

The WCD will monitor construction activities to verify proper implementation of BMPs.

**8. Miscellaneous Services**

Other services may be provided as requested by the Watershed District to implement and carry out the Program.



## EXHIBIT B

### 2023 WATER MONITORING SERVICES

Lake Gage Monitoring	Type	Labor	Travel Time/Mileage	Lab	Total
Battle Creek	LEA 1	\$169	\$0	\$0	\$169
Carver	LEA 1	\$169	\$0	\$0	\$169
Tanners	LEA 1	\$169	\$0	\$0	\$169
<b>Total Cost</b>		\$507		\$0	<b>\$507</b>

**EXHIBIT  
C**

**2023 RWMWD SUB-WATERSHED  
ANALYSIS**

This Task Order pertains to an Agreement by and between the Ramsey Washington Metro Watershed District, (“OWNER”), and Washington Conservation District, (“PARTNER”). The PARTNER shall perform services on the project described below as provided herein and in the Agreement. This Task Order shall not be binding until it has been properly signed by both parties or a representative of the Owner provides written authorization to proceed. Upon execution, this Task Order shall supplement the Agreement as it pertains to the project described below.

**Task Order:** 2023-WCD-01

**Project Name (s):** Battle Creek Lake Subwatershed Retrofit Analysis and Carver Lake Subwatershed Retrofit Analysis.

- 1. Project(s) Description:** Subwatershed Retrofit Analysis
- 2. Scope of Services:** WCD envisions completing the following tasks during the execution of this Task Order:
  - a. Battle Creek Lake (\$5,000)
    - i. Scoping
    - ii. WinSLAMM Modeling
    - iii. Field Assessment/BMP ID
    - iv. Field reconnaissance (WCD and RWMWD)
    - v. Practice Prioritization
    - vi. Modeling identified BMP opportunities
    - vii. Ranking - Incorporate WinSLAMM Outputs for the subwatershed
    - viii. Reporting Deliverable
  - b. Carver Lake (\$2,500)
    - i. Field Assessment/BMP ID
    - ii. Practice Prioritization
    - iii. Reporting Deliverable

**Total Cost:** not to exceed \$7,500

- 3. Owner Responsibilities:** The estimated compensation for the completion of the tasks identified within *Scope of Services to be Performed by Technical Staff on the Project* is based upon the following assumptions and owner responsibilities:
  - a. The OWNER shall provide all relevant information to be reviewed to the PARTNER at the beginning of the project.
  - b. The OWNER shall make available all previously completed impact analysis, subwatershed planning documents, construction plans, and other related unpublished information within their files considered relevant to the project.
  - c. OWNER staff shall review and provide all written or oral comments concerning the draft work products in a timely manner allowing sufficient time for incorporation into the final work products.

4. **Period of Service:** Initiating one more tasks as described within *Scope of Services to be Performed by PARTNER on the Project* occurs at the time of execution of this Task Order or written notification by a representative of the OWNER. Work described within this Task Order shall be completed by close of business on Dec 31, 2023.
5. **Payment to Partner:** PARTNER will perform the professional services identified within *Scope of Services to be Performed by PARTNER on the Project* on a time and materials basis up to a maximum amount not-to-exceed of \$7,500 (i.e. Total Compensation). PARTNER shall not exceed the Total Compensation during the completion of the task described within this Task Order without prior authorization from the OWNER's designated representative. WCD reserves the right to move dollars across tasks, while remaining within / below the Total Compensation identified within this Task Order.
6. **Other:** OWNER's designated representative for this project is Paige Ahlborg. PARTNER's designated representative for this project is Lori Tella. The designated representative is responsible for the technical work executed under this Task Order.

# Consent Agenda Item

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**Board Meeting Date:** December 7, 2022

**Consent Agenda Item No:** 3E

**Preparer:** Tina Carstens, Administrator

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**Item Description:** Approval of the 2023 Service Agreement with Ramsey County – Parks and Recreation Department – Soil & Water Conservation division (SWCD) for the BMP Incentive Program.

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## **Background:**

This is a yearly agreement with the Ramsey SWCD to provide technical services for the Stewardship Grant Program in Ramsey County. The quality of support we receive from SWCD in this area is economical and we have been happy with the work done by the staff. The staff meets with landowners in Ramsey County, provides education and potentially designs BMPs for their properties. The total 2023 agreement is a not to exceed of \$75,000 for BMP work. This amount is increased by \$5,000 from our 2022 agreement.

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## **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 Items:** Encourage and provide technical assistance to individuals to implement water quality improvement practices at their homes and businesses and in public places.

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## **Staff Recommendation:**

Approve the service agreement.

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## **Financial Implications:**

The costs incurred under this agreement are budgeted for through the Stewardship Grant Program Fund.

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## **Board Action Requested:**

Approve the 2023 Service Agreement with Ramsey County – Parks and Recreation Department – Soil & Water Conservation division (SWCD) for the BMP Incentive Program.

**2023 SERVICE AGREEMENT  
BETWEEN  
RAMSEY COUNTY  
AND RAMSEY- WASHINGTON METRO WATERSHED DISTRICT  
RWMWD BMP COST-SHARE PROGRAM**

**A. PARTIES**

This is an Agreement between Ramsey County, a political subdivision of the State of Minnesota, on behalf of its Parks & Recreation department – Soil & Water Conservation division (SWCD), 2015 Van Dyke Street, Maplewood, MN 55109, and the Ramsey-Washington Metro Watershed District (Watershed District), 2665 Noel Drive, Little Canada, MN 55117.

**B. PURPOSE**

The Watershed District has requested assistance from the SWCD to implement the policies specified in Minnesota Statutes §§ 103A.206 and 103D.201; and the SWCD is authorized to enter agreements to provide such assistance pursuant to Minnesota Statutes §§ 103C.331, subds. 3, 7 and 103D.335, subd. 21. NOW, THEREFORE, the parties agree as follows:

**C. TERM OF AGREEMENT**

The term of this agreement shall be from January 1, 2023 to December 31, 2023 unless extended or terminated earlier as provided herein.

**D. SCOPE OF SERVICES**

The SWCD will perform all services and furnish and deliver work products generally described in the attached Exhibits.

**E. COST**

In full consideration for services under this agreement, the Watershed District will compensate the SWCD for providing the services listed in Exhibit A, on an hourly basis, not to exceed \$75,000 during the term of this agreement.

Any additional costs must be approved by the Watershed District.

**F. BILLING RATE AND PAYMENTS**

The Watershed District will pay the SWCD the amount of the cost for services invoiced by the SWCD, within 35 days after receipt, based on the fee schedule listed in Exhibit B of this agreement. Project expenses will be billed as they are accrued. Office supplies, normal office reproduction expenses, and transportation are included in the hourly rate. Other expenses are to be reimbursed at actual cost.

## **G. EQUAL EMPLOYMENT OPPORTUNITY- CIVIL RIGHTS**

During the performance of this Agreement, the SWCD agrees to the following:

No person shall, on the grounds of race, color, religion, age, sex, disability, marital status, public assistance, criminal record, creed or national origin, be excluded from full employment rights in, be denied the benefits of, or be otherwise subjected to discrimination under any program, service, or activity under the provisions of and all applicable federal and state laws against discrimination including the Civil Rights Act of 1964.

## **H. STANDARDS**

The SWCD shall comply with all applicable Federal and State statutes and regulations as well as local ordinances now in effect or hereafter adopted. Failure to meet the requirements of the above may be cause for cancellation of this contract effective the date of receipt of the Notice of Cancellation.

## **I. DATA PRIVACY**

All data collected, created, received, maintained, or disseminated, or used for any purpose in the course of the SWCD's performance of the Agreement is governed by the Minnesota Government Data Practices Act, Minnesota Statutes, Chapter 13 (the Act), or any other applicable state statutes and state rules adopted to implement the Act, as well as state statutes and federal regulations on data privacy. The SWCD agrees to abide by these statutes, rules and regulations and as they may be amended.

## **J. AUDITS, REPORTS, AND MONITORING PROCEDURES**

The SWCD will:

1. Maintain records that reflect all revenues, cost incurred, and services provided in the performance of the Agreement.
2. Agree that the SWCD, the State Auditor, or legislative authority, or any of their duly authorized representatives at any time during normal business hours, and as often as they may deem reasonably necessary, shall have access to the rights to examine audit, excerpt, and transcribe any books, documents, papers, records, etc., and accounting procedures and practices of the SWCD which are relevant to the contract.

## **K. INDEMNITY**

The SWCD and the Watershed District mutually agree, to the fullest extent permitted by law, to indemnify and hold each other harmless for any and all damages, liability or cost (including reasonable attorneys' fees and costs of defense) arising from their own negligent acts, errors or omissions in the performance of their services under this agreement, to the extent each party is responsible for such damages and losses on a comparative basis of fault. Parties agree to provide proof of contractual liability insurance upon request. This paragraph does not diminish, with respect to any third party, any defense, immunity or liability limit that the SWCD or the Watershed District may enjoy under law.

## **L. INDEPENDENT CONTRACTOR**

It is agreed that nothing herein contained is intended or should be construed in any manner as creating or establishing the relationship of co-partners between the parties hereto or as constituting the SWCD as the agent, representative, or employee of Watershed District for any purpose or in any manner whatsoever. The SWCD is to be and shall remain an independent contractor with respect to all services performed under this Agreement.

The SWCD represents that it has, or will secure at its own expense, all personnel required in performing services under this Agreement. Any and all personnel of the SWCD or other person, while engaged in the performance of any work or services required by the SWCD under this Agreement, shall have no contractual relationship with the Watershed District and shall not be considered employees of the Watershed District.

#### **M. MODIFICATIONS**

Any material alteration or variation shall be reduced to writing as an amendment and signed by the parties. Any alteration, modification, or variation deemed not to be material by written agreement of the SWCD and the Watershed District shall not require written approval.

#### **N. MERGER**

It is understood and agreed that the entire agreement of the parties is contained here, except as modified during the term of the Agreement by a writing under Paragraph M above concerning a non-material change, and that this contract supersedes oral agreements and negotiations between the parties relating to this subject matter. All items referred to in this contract are incorporated or attached and deemed to be part of the contract.

#### **O. TERMINATION**

Either the SWCD or the Watershed District may terminate this Agreement with or without cause by giving the other party ninety (90) days written notice prior to the effective date of such termination. If the Watershed District terminates this Agreement, it may specify work to be performed by the SWCD before termination is effective and shall pay the SWCD for services performed by the SWCD up to the time specified for termination. If the SWCD terminates the Agreement, it will not be compensated for part completion of a task except to the extent part completion has value to the Watershed District.

#### **P. OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY**

All property of the Watershed District used, acquired or created in the performance of work under this Agreement, including documents and records of any kind, shall remain the property of the Watershed District. The Watershed District shall have the sole right to use, sell, license, publish, or otherwise disseminate any product developed in whole or in part during the performance of work under this Agreement.

**2023 SERVICE AGREEMENT  
BETWEEN  
RAMSEY COUNTY  
AND RAMSEY- WASHINGTON METRO WATERSHED DISTRICT  
  
RWMWD BMP COST-SHARE PROGRAM**

IN TESTIMONY WHEREOF the parties have duly executed this agreement by their duly authorized officers.

APPROVED:

Watershed District

Ramsey County

BY: \_\_\_\_\_  
Board President                      Date

BY: \_\_\_\_\_  
County Manager                      Date

BY: \_\_\_\_\_  
RWMWD Administrator              Date

BY: \_\_\_\_\_  
Parks and Recreation Director      Date

Approved as to form:

BY: \_\_\_\_\_  
County Attorney                      Date



## EXHIBIT A

### 2023 RWMWD BMP COST-SHARE PROGRAM

#### TASKS

**1. Project Oversight**

All work performed by the SWCD will be at the direction of the RWMWD staff.

**2. Landowner Outreach**

Targeted and broad-based outreach techniques will be implemented through a coordinated effort of the RWMWD and SWCD. Outreach will be coordinated with educational efforts by the RWMWD.

**3. Project Database**

Project information will be maintained by the RWMWD. Information on assistance provided by the SWCD will be regularly communicated to the RWMWD staff Coordinator.

**4. Respond to inquiries from the public**

The RWMWD will act as the primary and first responder to inquiries from the public regarding the BMP Program. The SWCD and the RWMWD will jointly provide responses to the public regarding general program information, program eligibility, best management practice information, and general watershed information.

**5. Site Reviews and Project Evaluation**

Initial site visits, follow-up reviews and subsequent site visits of potential BMP implementation sites will be conducted under this contract. Other activities will include: assessing BMP options which will adequately address the problem, discussing BMP alternatives with landowners, and promoting implementation of BMPs. SWCD will assist program applicants with identification of supplemental funding sources if needed. Educational materials will be distributed during the site visit.

**6. BMP Design and Contractor Assistance**

The SWCD will coordinate BMP design assistance. Design support will be provided by SWCD technical resources and/or obtaining assistance from an appropriate technical agency, organization, or the Watershed District. SWCD will assist landowners with obtaining qualified contractors to install BMPs if requested.

**7. Construction Monitoring (Site inspections)**

The SWCD will monitor construction activities to verify proper implementation of BMPs.

**8. Miscellaneous Services**

Other services may be provided as requested by the Watershed District to implement and carry out the Program.

## **EXHIBIT B**

### **FEE SCHEDULE**

Services in Exhibit A are billed on an hourly basis at the rate of \$75.00 per hour, for all SWCD staff.

\* \* \* \* \*

# Permit Program

\* \* \* \* \*

# Permit Application Coversheet

Date December 07, 2022

Project Name Enclave Apartments

Project Number 22-36

Applicant Name Patrick Brama, Enclave Companies

Type of Development Residential

## Property Description

This project is located off County Road D East and Southlawn Drive, northwest of the Maplewood Mall. The applicant is proposing to demolish the former Myth nightclub building and construct a 4-story apartment building with underground parking and associated landscaping and common space plaza. An underground infiltration system and above-ground infiltration basin are proposed to meet stormwater treatment requirements. Pretreatment methods will include an isolator row, sumped inlets, and Rain Guardian structural inlet. A wetland was delineated on the south side of the site and is immediately adjacent to a failing retaining wall. The applicant is proposing to remove and reconstruct the retaining wall. A Wetland Conservation Act (WCA) no-loss approval was granted on 10/21/22 (#22-16 WCA), and a District Rule E wetland buffer variance request was submitted for temporary disturbance in the wetland buffer. In existing conditions the site does not provide adequate buffer, and the applicant is proposing to expand the wetland buffer to meet District requirements in the final, proposed condition. In order to accommodate this work, work is required in the 100-year floodplain of the wetland. The applicant has submitted cut/fill volumes to demonstrate no net loss of flood storage on the landscape.

## Watershed District Policies or Standards Involved:

- |                                                                  |                                                                         |
|------------------------------------------------------------------|-------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> <i>Wetlands</i>              | <input checked="" type="checkbox"/> <i>Erosion and Sediment Control</i> |
| <input checked="" type="checkbox"/> <i>Stormwater Management</i> | <input checked="" type="checkbox"/> <i>Floodplain</i>                   |

## Water Quantity Considerations

The proposed stormwater management plan is sufficient to handle the runoff from the site.

## Water Quality Considerations

### *Short Term*

The proposed erosion and sediment control plan is sufficient to protect downstream water resources during the course of construction.

### *Long Term*

The proposed stormwater management plan is sufficient to protect the long term quality of downstream water resources.

## Staff Recommendation

Staff recommends approval of this permit with the special provisions and variance request (Rule E).

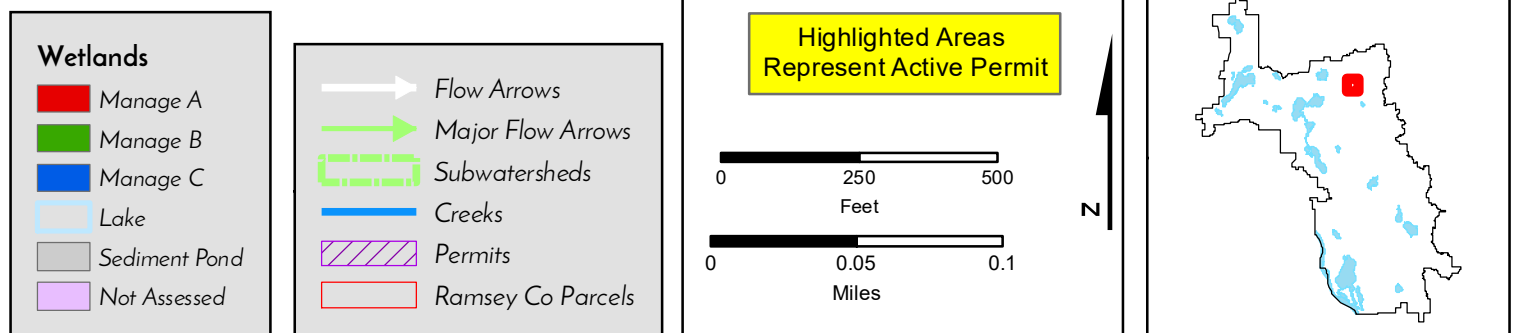
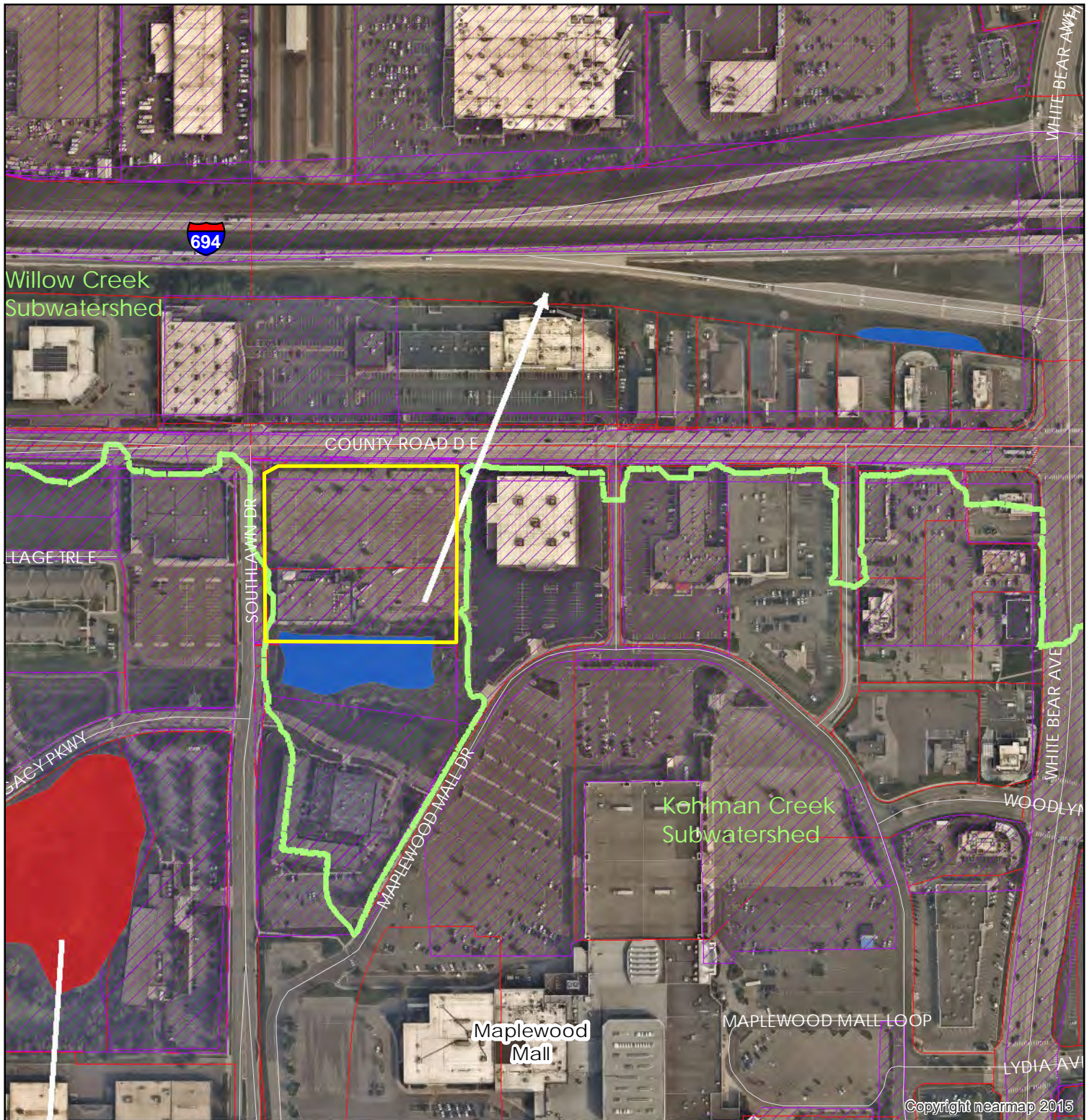
## Attachments:

- ☒ Project Location Map

☒ Project Grading Plan



# #22-36 Enclave Apartments



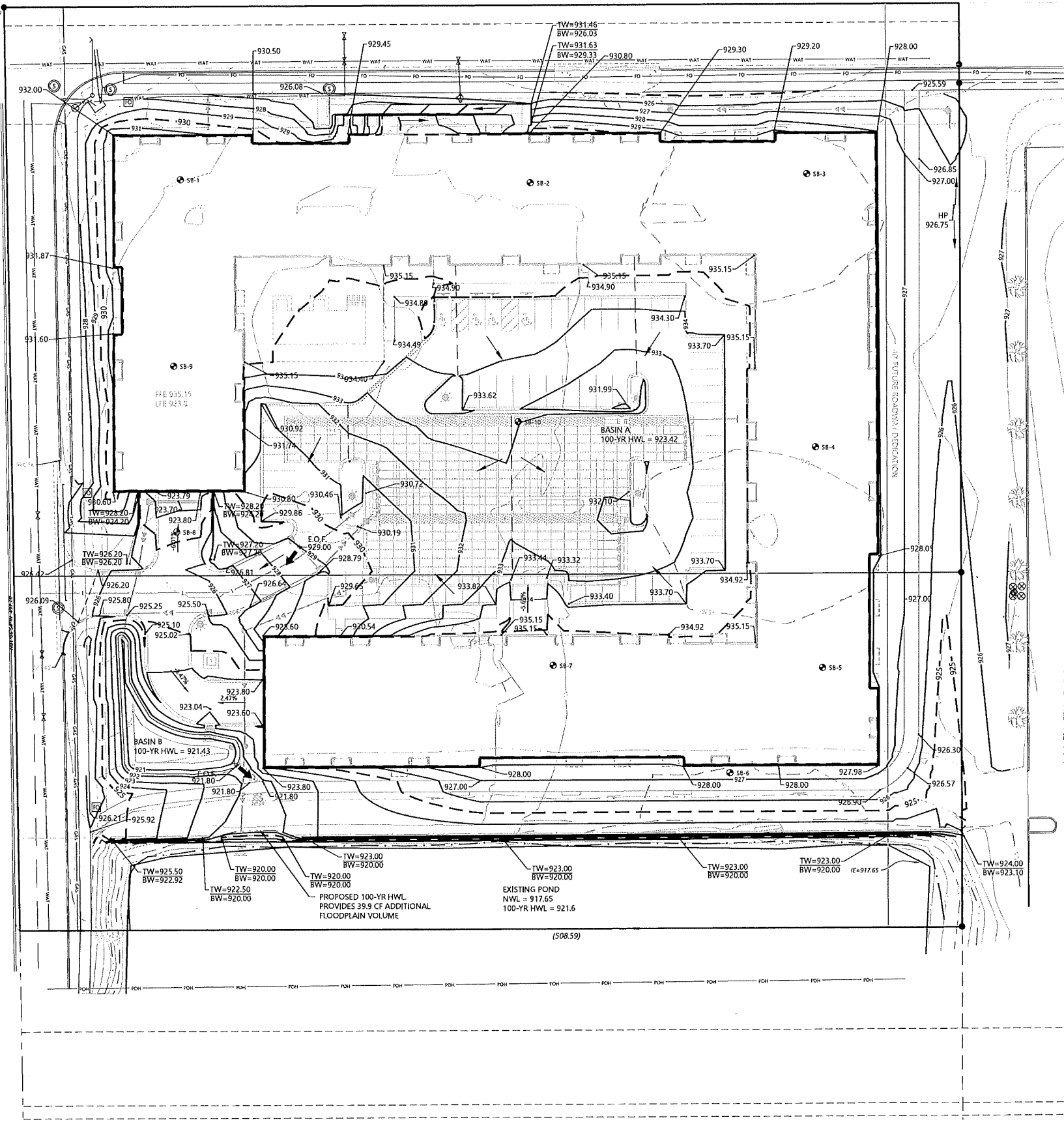


### Special Provisions

1. The applicant shall submit the escrow fee of \$23,350.
2. The applicant shall submit the signed joint stormwater maintenance agreement with the City of Maplewood.
3. The applicant shall submit the final geotechnical report.
4. The applicant shall revise the utility plan to label location of isolator row, cleanouts, inspection manholes, etc. Update the BMP O&M Plan to reflect this site-specific information.
5. The applicant shall submit contact information for the trained erosion control coordinator responsible for implementing the Stormwater Pollution Prevention Plan (SWPPP).
6. The applicant shall submit a copy of the approved Minnesota Pollution Control Agency's NPDES Construction Permit coverage for the project.
7. The applicant shall submit the final, signed plans set.

SOUTHLAWN DRIVE

COUNTY ROAD D



### GRADING LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
		INDEX CONTOUR
		INTERVAL CONTOUR
		CURB AND GUTTER
		POND NORMAL WATER LEVEL
		STORM SEWER
		FLARED END SECTION (WITH RIPRAP)
		WATER MAIN
		SANITARY SEWER
		RETAINING WALL
		DRAIN TILE
		RIDGE LINE
		GRADING LIMITS
		SPOT ELEVATION
		FLOW DIRECTION
		TOP AND BOTTOM OF RETAINING WALL
		EMERGENCY OVERFLOW
		SOIL BORING LOCATION

### GRADING NOTES

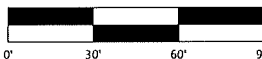
- LOCATIONS AND ELEVATIONS OF EXISTING TOPOGRAPHY AND UTILITIES AS SHOWN ON THIS PLAN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY SITE CONDITIONS AND UTILITY LOCATIONS PRIOR TO EXCAVATION/CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
- CONTRACTORS SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULE, SLOPED PAVEMENT, EXIT PORCHES, RAMPS, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY ENTRANCE LOCATIONS, AND EXACT LOCATIONS AND NUMBER OF DOWNSPOUTS.
- ALL EXCAVATION SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR TRENCH EXCAVATION AND BACKFILL/SURFACE RESTORATION" AS PREPARED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA.
- ALL DISTURBED UNPAVED AREAS ARE TO RECEIVE SIX INCHES OF TOPSOIL AND SOD OR SEED. THESE AREAS SHALL BE WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED. SEE LANDSCAPE PLAN FOR PLANTING AND TURF ESTABLISHMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, FLAGMEN AND LIGHTS TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. PLACEMENT OF THESE DEVICES SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT. TRAFFIC CONTROL DEVICES SHALL CONFORM TO APPROPRIATE MNDOT STANDARDS.
- ALL SLOPES SHALL BE GRADED TO 3:1 OR FLATTER, UNLESS OTHERWISE INDICATED ON THIS SHEET.
- CONTRACTOR SHALL UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING AND PROVIDE A SMOOTH FINISHED SURFACE WITH UNIFORM SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN OR BETWEEN SUCH POINTS AND EXISTING GRADES.
- SPOT ELEVATIONS SHOWN INDICATE FINISHED PAVEMENT ELEVATIONS & GUTTER FLOW LINE UNLESS OTHERWISE NOTED. PROPOSED CONTOURS ARE TO FINISHED SURFACE GRADE.
- SEE SOILS REPORT FOR PAVEMENT THICKNESSES AND HOLD DOWNS.
- CONTRACTOR SHALL DISPOSE OF ANY EXCESS SOIL MATERIAL THAT EXISTS AFTER THE SITE GRADING AND UTILITY CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL DISPOSE OF ALL EXCESS SOIL MATERIAL IN A MANNER ACCEPTABLE TO THE OWNER AND THE REGULATING AGENCIES.
- CONTRACTOR SHALL PROVIDE A STRUCTURAL RETAINING WALL DESIGN CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER.
- ALL CONSTRUCTION SHALL CONFORM TO LOCAL STATE AND FEDERAL RULES INCLUDING THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS.
- PRIOR TO PLACEMENT OF ANY STRUCTURE OR PAVEMENT, A PROOF ROLL, AT MINIMUM, WILL BE REQUIRED ON THE SUBGRADE. PROOF ROLLING SHALL BE ACCOMPLISHED BY MAKING MINIMUM OF 2 COMPLETE PASSES WITH FULLY-LOADED TANDEM-AXLE DUMP TRUCK, OR APPROVED EQUAL, IN EACH OF 2 PERPENDICULAR DIRECTIONS WHILE UNDER SUPERVISION AND DIRECTION OF THE INDEPENDENT TESTING LABORATORY. AREAS OF FAILURE SHALL BE EXCAVATED AND RE-COMPACTED AS SPECIFIED HEREIN.
- EMBANKMENT MATERIAL PLACED BENEATH BUILDINGS AND STREET OR PARKING AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFIED DENSITY METHOD AS OUTLINED IN MNDOT 2105.3F1 AND THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER.
- EMBANKMENT MATERIAL NOT PLACED IN THE BUILDING PAD, STREETS OR PARKING AREA, SHALL BE COMPACTED IN ACCORDANCE WITH REQUIREMENTS OF THE ORDINARY COMPACTION METHOD AS OUTLINED IN MNDOT 2105.3F2.
- ALL SOILS AND MATERIALS TESTING SHALL BE COMPLETED BY AN INDEPENDENT GEOTECHNICAL ENGINEER. EXCAVATION FOR THE PURPOSE OF REMOVING UNSTABLE OR UNSUITABLE SOILS SHALL BE COMPLETED AS REQUIRED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED SOILS TESTS AND INSPECTIONS WITH THE GEOTECHNICAL ENGINEER.
- NOTIFY NICOLE SODERHOLM, RAMSEY-WASHINGTON METRO WATERSHED DISTRICT, AT 651-792-7976 AT LEAST 48 HOURS PRIOR TO THE CONSTRUCTION OF ANY VOLUME REDUCTION BMPs.

### INFILTRATION BASIN NOTES (BASINS A AND B)

- BASIN EXCAVATION AND PIPE INSTALLATION MAY TAKE PLACE BEFORE CURB INSTALLATION. ALL OTHER BASIN CONSTRUCTION MUST WAIT UNTIL FINAL SITE LANDSCAPING. REMOVE SEDIMENT FROM EXCAVATED BASIN PRIOR TO PLACEMENT OF FILTER MEDIA. PLACE SAND BAGS OR SIMILAR ITEM IN CURB CUTS TO PRE-FILTER STORM WATER UNTIL PLANTS ARE ESTABLISHED IN BASINS. MAINTAIN INLET PROTECTION ON DOWN STREAM INLETS UNTIL BASINS ARE ON-LINE.
- BASIN EXCAVATION SHALL BE WITH TOOTHED-BUCKETS TO SCARIFY THE BOTTOM.
- PLACE SILT FENCE AROUND BASINS AS SHOWN IMMEDIATELY AFTER BASIN CONSTRUCTION.
- BASINS MUST BE TESTED FOR INFILTRATION RATE AFTER TOTAL SITE STABILIZATION. A DUAL RING INFILTROMETER SHALL BE USED FOR TESTING. MINIMUM INFILTRATION RATE IS 0.2 INCH PER HOUR (PER THE APPROVED STORMWATER MANAGEMENT PLAN) AND MAXIMUM OF 8.33 INCHES PER HOUR. IF BASIN DOES NOT MEET INFILTRATION RATE, CONTRACTOR MUST TAKE CORRECTIVE ACTION UNTIL MINIMUM AND MAXIMUM INFILTRATION RATES ARE MET. CORRECTIVE ACTION MAY INCLUDE REMOVING PLUG IN DRAIN TILE. ALL TESTING AND CORRECTIVE ACTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE INCIDENTAL TO THE CONTRACT, WITH NO DIRECT COMPENSATION MADE.



1" = 30'



NOT FOR CONSTRUCTION

Call 48 Hours before digging:  
811 or call 811.com  
Common Ground Alliance

DESIGNED:	09/23/2022
CHECKED:	10/10/2022
DRAWN:	10/24/2022
REVIEWED:	11/11/2022
APPROVED:	11/11/2022

PREPARED FOR:  
**ENCLAVE DEVELOPMENT**  
300 23RD AVE E SUITE 300  
WEST FARGO, ND 58078

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
SHARI LYNN S. JARRENS  
DATE: 11/11/2022 LICENSE NO. \_\_\_\_\_

**MAPLEWOOD ENCLAVE**  
MAPLEWOOD, MN

**Westwood**  
1270 Wilmette Drive, Suite 400  
Minneapolis, MN 55403  
(612) 825-4500  
(612) 825-4822  
(612) 825-4560  
westwood@westwood.com  
Westwood Professional Services, Inc.

**GRADING PLAN**

SHEET NUMBER:

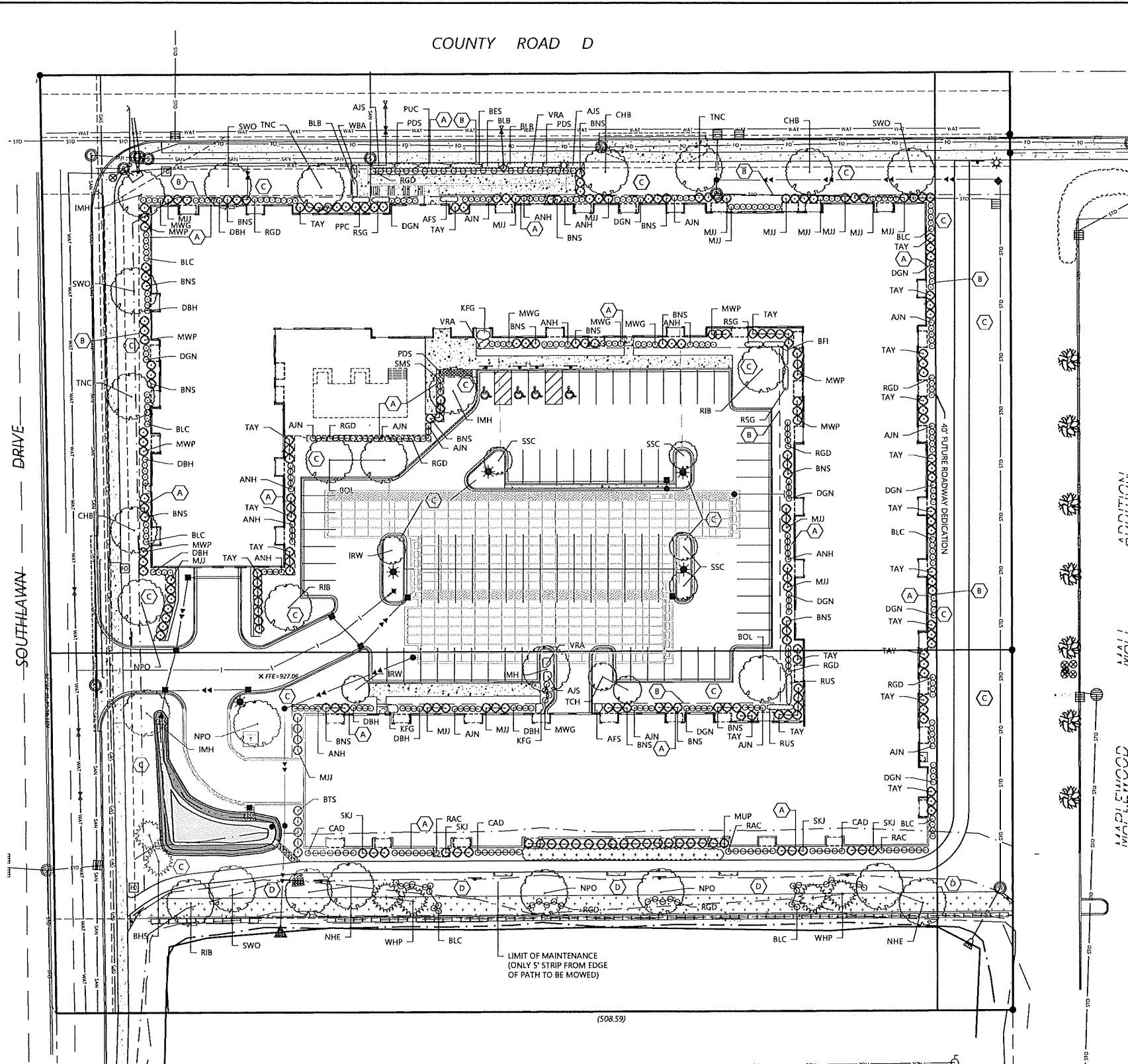
**C300**

DATE: 11/11/2022

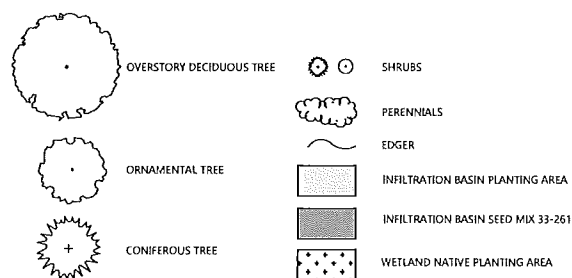
PROJECT NUMBER: 0037066.00

MAPLEWOOD ENCLAVE





## LANDSCAPE LEGEND



## LANDSCAPE KEYNOTES (A)

- A SHREDDED HARDWOOD MULCH (TYP.)  
B EDGER (TYP.)  
C SOD (TYP.)  
D POLLINATOR SEED MIX (FORBES & GRASSES)  
E SEED MIX 33-261

## LANDSCAPE SUMMARY

REPLACEMENT TREE REQUIREMENT:  
PER TREE PRESERVATION PLAN 157.8 CALIPER INCHES OF REPLACEMENT ARE REQUIRED.

OVERSTORY CALIPER INCHES PROPOSED: 81 (17 x 2.5" = 42.5, 11 x 3.5" = 38.5, 38.5 + 42.5 = 81)  
ORNAMENTAL CALIPER INCHES PROPOSED: 16 (8 x 2.0" = 16)  
CONIFEROUS INCHES PROPOSED: 15 (6 x 2.5" = 15)

TOTAL CALIPER INCHES PROPOSED: 112  
TOTAL CALIPER INCHES REQUIRED: 158  
TOTAL CALIPER INCHES SHORT: 46  
TOTAL AMOUNT TO BE PAID INTO CITY'S TREE FUND: \$2,760

TOTAL = 112

## PLANT SCHEDULE

CODE	QTY	COMMON	BOTANICAL NAME	SIZE	ROOT	SPACING	REMARKS
<b>OVERSTORY TREE 28</b>							
TNC	3	TRUE NORTH KENTUCKY COFFEE TREE	GYMNOCLADUS DIOICUS 'UMNSYNERGY'	2.5" CAL	B&B	AS SHOWN	SINGLE
NHE	4	NEW HARMONY ELM	ULMUS AMERICANA 'NEW HARMONY'	3.5" CAL	B&B	AS SHOWN	SINGLE
RIB	3	RIVER BIRCH	BETULA NIGRA	3.5" CAL	B&B	AS SHOWN	SINGLE
IMH	4	IMPERIAL HONEYLOCUST	GLEDITSIA TRIACANTHOS VAR. INERMIS 'IMPCOLE'	3.5" CAL	B&B	AS SHOWN	SINGLE
NPO	4	NORTHERN PIN OAK	QUERCUS ELIPSOIDALIS	2.5" CAL	B&B	AS SHOWN	SINGLE
SWO	4	SWAMP WHITE OAK	QUERCUS BICOLOR	2.5" CAL	B&B	AS SHOWN	SINGLE
CHB	3	HACKBERRY	CELTIS OCCIDENTALIS	2.5" CAL	B&B	AS SHOWN	SINGLE
BOL	3	BOULEVARD LINDEN	TILIA AMERICANA 'BOULEVARD'	2.5" CAL	B&B	AS SHOWN	SINGLE
<b>ORNAMENTAL TREE 8</b>							
TCH	2	THORNLESS COCKSPUR HAWTHORN	CRATAEGUS CRUGALLI 'THERMIS'	2.0" CAL	B&B	AS SHOWN	SINGLE
BBE	4	BLUE BEECH	CARPINUS CAROLIANA	2.0" CAL	B&B	AS SHOWN	CLUMP
SSC	2	SPRING SNOW CRAB	MALUS 'SPRING SNOW'	2.0" CAL	B&B	AS SHOWN	SINGLE
<b>CONIFEROUS TREE 6</b>							
BHS	2	BLACK HILLS SPRUCE	PICEA GLAUCA DENSATA	6' HT.	B&B	AS SHOWN	FULL
WHP	4	WHITE PINE	PINUS STROBUS	6' HT.	B&B	AS SHOWN	FULL
<b>CONIFEROUS SHRUB 231</b>							
BNS	--	BIRD'S NEST SPRUCE	PICEA ABIES 'NIDIFORMIS'	#5	CONT.	3'-0" O.C.	--
MWP	--	MINUTA WHITE PINE	PINUS STROBUS 'MINUTA'	#5	CONT.	4'-0" O.C.	--
SKJ	--	SKYROCKET JUNIPER	JUNIPERUS VIRGINIANA 'SKYROCKET'	#5	CONT.	5'-0" O.C.	--
MJJ	--	MINT JULEP JUNIPER	JUNIPERUS CHINENSIS 'MONLEP'	#5	CONT.	4'-0" O.C.	--
MUP	--	DWARF MUGO PINE	PINUS MUGO PUMILO	#5	CONT.	4'-0" O.C.	--
TAY	--	TALINTON YEW	TAXUS MEDII 'TAUNTON'	#5	CONT.	4'-0" O.C.	--
BTS	--	BLUE TEARDROP BLACK SPRUCE	PICEA MARIANA 'BLUE TEARDROP'	#5	CONT.	4'-0" O.C.	--
<b>DECIDUOUS SHRUB 361</b>							
DBH	--	DWARF BUSH HONEYSUCKLE	DIERVILLA LONICERA	#5	CONT.	3'-0" O.C.	--
SMS	--	SNOWMOUND SPIREA	SPIRAEA NIPPONICA 'SNOWMOUND'	#5	CONT.	3'-0" O.C.	--
MWG	--	MINUET WEIGELA	WEIGELA FLORIDA 'MINUET'	#5	CONT.	3'-0" O.C.	--
ANH	--	ANNABELLE HYDRANGEA	HYDRANGEA ARBORESCENS 'ANNABELLE'	#5	CONT.	4'-0" O.C.	--
AJN	--	AMBER JUBILEE NINEBARK	PHYSCARPUS OPULIFOLIUS 'JEFAM'	#5	CONT.	4'-0" O.C.	--
DGN	--	DART'S GOLD NINEBARK	PHYSCARPUS OPULIFOLIUS 'DART'S GOLD'	#5	CONT.	4'-0" O.C.	--
RGD	--	RED GNOME DOGWOOD	CORNUS ALBA SIBIRICA	#5	CONT.	4'-0" O.C.	--
BLC	--	BLACK CHOKEBERRY	ARONIA MELANOCARPA	#5	CONT.	4'-0" O.C.	--
RAC	--	REDWING AMERICAN CRANBERRYBUSH	VIBURNUM TRILOBUM 'J.N. SELECT'	#5	CONT.	6'-0" O.C.	--
CAD	--	CARDINAL DOGWOOD	CORNUS SERICEA 'CARDINAL'	#5	CONT.	6'-0" O.C.	--
<b>PERENNIALS 567</b>							
BFI	--	BLUE FALSE INDIGO	BAPTISIA AUSTRALIS	#1	CONT.	24" O.C.	--
BES	--	BLACK EYED SUSAN	RUDBECKIA HIRTA	#1	CONT.	16" O.C.	--
WBA	--	WOODS BLUE ASTER	ASTER 'WOODS BLUE'	#1	CONT.	12" O.C.	--
VRA	--	VISIONS IN RED ASTILBE	ASTILBE CHINENSIS 'VISIONS'	#1	CONT.	12" O.C.	--
PUC	--	PURPLE CONEFLOWER	ECHEINACEA PURPUREA	#1	CONT.	18" O.C.	--
RUS	--	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	#1	CONT.	18" O.C.	--
BFV	--	BUTTERFLY WEED	ASCLEPIAS TUBEROSA	#1	CONT.	18" O.C.	--
AJS	--	AUTUMN JOY SEDUM	SEDUM X 'AUTUMN JOY'	#1	CONT.	18" O.C.	--
AFS	--	AUTUMN FIRE SEDUM	SEDUM X 'AUTUMN FIRE'	#1	CONT.	18" O.C.	--
BLB	--	BLAZE LITTLE BLUESTEM GRASS	SCHIZACHYRIUM SCOPARIUM 'BLAZE'	#1	CONT.	18" O.C.	--
KFG	--	KARL FOERSTER FEATHER REED GRASS	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	#1	CONT.	24" O.C.	--
RSG	--	RED SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	#1	CONT.	24" O.C.	--
PDS	--	PRAIRIE DROPS EED GRASS	SPOROBOLUS HETEROLEPIS	#1	CONT.	18" O.C.	--

## INFILTRATION BASIN PLANTINGS

CODE	QTY	COMMON	BOTANICAL NAME	SIZE	ROOT	SPACING	REMARKS
<b>PERENNIALS 58</b>							
CAF	9	CARDINAL FLOWER	LOBELIA CARDINALIS	3.5"	PLUG	18" O.C.	--
CUR	4	CULVERS ROOT	VERONICA STRUM VIRGINICUM	3.5"	PLUG	24" O.C.	--
NEA	9	NEW ENGLAND ASTER	ASTER NOVAE-ANGIAE	3.5"	PLUG	18" O.C.	--
JPW	3	JOE PYE WED	EUPATORIUM MACULATUM	3.5"	PLUG	30" O.C.	--
BFI	2	BLUE FALSE INDIGO	BAPTISIA AUSTRALIS	3.5"	PLUG	36" O.C.	--
DBP	4	OBEDIENT PLANT	PHYSOTEGIA VIRGINIANA	3.5"	PLUG	18" O.C.	--
SMW	9	SWAMP MILKWEED	ASCLEPIAS INCARNATA	3.5"	PLUG	18" O.C.	--
BAR	9	BLUE ARROWS RUSH	JUNCUS INFLEXUS 'BLUE ARROWS'	3.5"	PLUG	18" O.C.	--
OPS	9	OEHRM PALM SEDGE	CAREX MUSKINGUMENSIS 'OEHRM'	3.5"	PLUG	18" O.C.	--

## WETLAND BUFFER NATIVE PLANTINGS

CODE	QTY	COMMON	BOTANICAL NAME	SIZE	ROOT	SPACING	REMARKS
<b>PERENNIALS 68</b>							
PBS	12	PRAIRIE BLAZINGSTAR	LIATRIS Pycnostachya	3.5"	PLUG	18" O.C.	--
PPH	13	PRAIRIE PHLOX	PHLOX PILOSA	3.5"	PLUG	18" O.C.	--
BFI	8	BLUE FALSE INDIGO	BAPTISIA AUSTRALIS	3.5"	PLUG	24" O.C.	--
BES	12	BLACK EYED SUSAN	RUDBECKIA HIRTA	3.5"	PLUG	16" O.C.	--
WBA	13	WOODS BLUE ASTER	ASTER 'WOODS BLUE'	3.5"	PLUG	12" O.C.	--
AAA	12	ALERT ASTER	ASTER NOVI-BELGII 'ALERT'	3.5"	PLUG	12" O.C.	--
PUC	13	PURPLE CONEFLOWER	ECHEINACEA PURPUREA	3.5"	PLUG	18" O.C.	--
PPC	12	PALE PURPLE CONEFLOWER	ECHEINACEA PALLIDA	3.5"	PLUG	18" O.C.	--
YAR	13	COMMON YARROW	ACHILLEA Millefolium	3.5"	PLUG	18" O.C.	--
BRG	12	BERGMONT	MONARDA fistulosa	3.5"	PLUG	18" O.C.	--
NJT	7	NEW JERSEY TEA	CEANTHUS americanus	3.5"	PLUG	18" O.C.	--
BFV	13	BUTTERFLY WEED	ASCLEPIAS TUBEROSA	3.5"	PLUG	18" O.C.	--
BLB	15	BLAZE LITTLE BLUESTEM GRASS	SCHIZACHYRIUM SCOPARIUM 'BLAZE'	3.5"	PLUG	18" O.C.	--
RSG	15	RED SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	3.5"	PLUG	24" O.C.	--
PDS	15	PRAIRIE DROP SEED GRASS	SPOROBOLUS HETEROLEPIS	3.5"	PLUG	18" O.C.	--

ABBREVIATIONS: B&B = BALLED AND BURLAPPED CAL = CALIPER HT. = HEIGHT MIN. = MINIMUM O.C. = ON CENTER SP. = SPREAD QTY. = QUANTITY CONT. = CONTAINER  
NOTE: QUANTITIES ON PLAN SUPERSEDE LIST QUANTITIES IN THE EVENT OF A DISCREPANCY.

Call 48 Hours before digging:  
811 or call 811.com  
Common Ground Alliance

DESIGNED	09/23/2022
CHECKED	10/10/2022
DRAWN	10/24/2022
APPROVED	11/11/2022
DATE	11/11/2022
PROJECT	0037066.00
SHEET	100
SCALE	1" = 30'

PREPARED FOR:  
ENCLAVE DEVELOPMENT  
300 23RD AVE E SUITE 300  
WEST PARGO, ND 58078

DATE: 11/11/2022 LICENSE NO. 44618  
JEFF WESTENDORF  
LANDSCAPE ARCHITECT UNDER THE LAWS  
OF THE STATE OF MINNESOTA

MAPLEWOOD ENCLAVE  
MAPLEWOOD, MN

Westwood  
Professional Services, Inc.  
12375 Wilmaster Drive, Suite 400  
Minneapolis, MN 55424  
(612) 837-6500  
(612) 837-6502  
(612) 837-6500  
www.westwoodps.com

LANDSCAPE PLAN

SHEET NUMBER:

L100

DATE: 11/11/2022

PROJECT NUMBER: 0037066.00

MAPLEWOOD ENCLAVE

NOT FOR CONSTRUCTION

October 24, 2022

Ramsey-Washington Metro Watershed District  
Board of Managers  
Attn: Nicole Soderholm  
2665 Noel Dr  
Little Canada, MN 55117

Re: Redevelopment of the Myth Night Club Site –  
Variance Request for Temporary Wetland  
Buffer Impact

File 0037066.00

Dear Board of Managers:

The proposed redevelopment requests a variance to Ramsey-Washington Metro Watershed **District's** Rule E to allow for temporary wetland buffer disturbances. While the proposed redevelopment intends to meet the requirements of the Ramsey-Washington Metro Watershed District (RWMWD) rules, temporary disturbance into the wetland buffer area is required to remove the existing structure and pavement and to establish a **25' wetland buffer** composed of native vegetation.

#### Existing Conditions

The project site is located north of an existing pond, classified as a Manage C wetland. Per RWMWD requirements, this classification requires an average buffer width of 25 feet. Current site conditions fail to comply with this buffer with the existing structure, sidewalk, and surface parking having an approximate setback of **3' to 11' from the delineated wetland edge**. A retaining wall north of the pond is in poor condition and in need of replacement due to structural instability. Existing vegetation is largely composed of invasive species and **debris litters the pond's edge, as** seen in the attached images.

Regarding stormwater management, the existing site does not address water quality, rate, and volume of stormwater runoff prior to discharge into the pond. Runoff from the site currently discharges directly into the pond without any treatment.

#### Proposed Improvements

The proposed redevelopment project includes demolition of the existing structure and parking lot and construction of a residential apartment building. The proposed redevelopment improvements include a natural pedestrian corridor for public use and enjoyment south of the proposed building. This proposed accessible trail will feature overlook benches sourced from recycled materials, native pollinator plants and shrubs, and a tree canopy native to wetland ecosystems. Although this is on private property, signage will be provided to designate the trail for public use.

The redevelopment proposes to remove and replace the existing structurally unstable retaining wall. A no loss request has already been approved per the Wetland Conservation Act for temporary wetland impacts relating to this activity.

Establishment of a **25' wetland buffer with native vegetation** seeks to comply with the RWMWD District requirements. However, this restoration will require grading activity **within 3.3' of the delineated wetland edge to remove the existing pavement and building and** to establish the area with native vegetation per the standards outlined in RWMWD Rule E.

The proposed redevelopment also improves stormwater management on site with volume, rate, and quality improvements intended to meet watershed requirements prior to discharge into the pond. These improvements significantly improve upon the existing conditions and will work towards improving water quality in the pond and flood management in the area. Additionally, the proposed redevelopment improves the overall site pervious surface coverage from approximately 8% to 36% which further improves stormwater management.

Thank you for your consideration. If you have any questions or need additional information, please contact me at (952) 697-5760, or email at [shari.ahrens@westwoodps.com](mailto:shari.ahrens@westwoodps.com).

Sincerely,

WESTWOOD PROFESSIONAL SERVICES



Shari Ahrens, PE, LEED AP





Image 1. Debris and invasive species within the existing buffer adjacent to the parking lot.



Image 2. Crumbling infrastructure and erosion along the existing parking lot creating safety hazards.



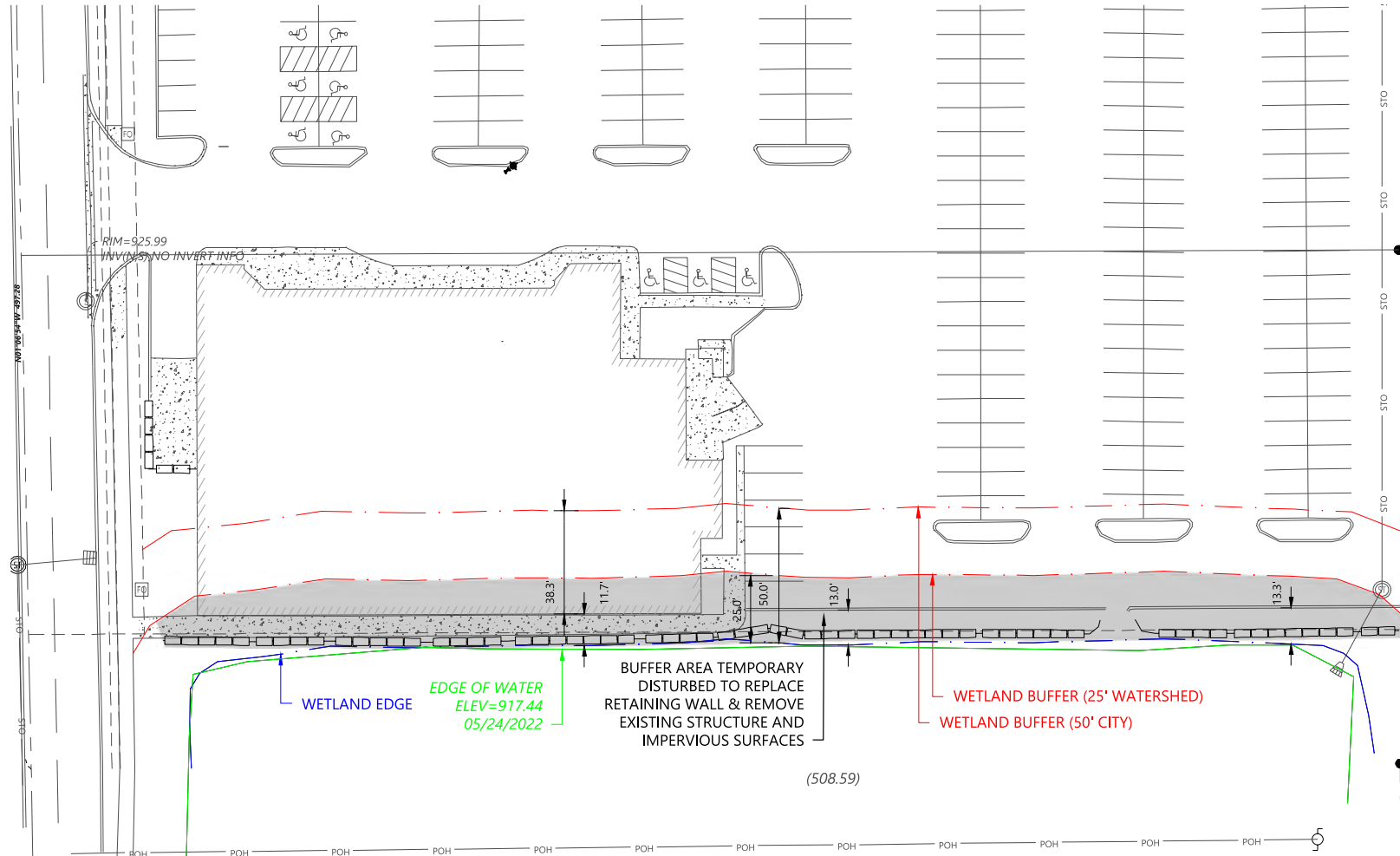


Image 3. Existing building and parking lot along pond.



Image 4. Existing building and sidewalk abutting pond.





MAPLEWOOD ENCLAVE

DESIGNED: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DRAWN: \_\_\_\_\_  
FIELD CREW: \_\_\_\_\_  
FIELD WORK DATE: \_\_\_\_\_

PREPARED FOR:

**ENCLAVE DEVELOPMENT**  
300 23RD AVE E, SUITE 300  
WEST FARGO, ND 58078

**MAPLEWOOD  
ENCLAVE**  
MAPLEWOOD, MN

**Westwood**

Phone (952) 937-5150 12701 Whitewater Drive, Suite #300  
Fax (952) 937-5822 Minnetonka, MN 55343  
Toll Free (888) 937-5150 [westwoodps.com](http://westwoodps.com)  
Westwood Professional Services, Inc.

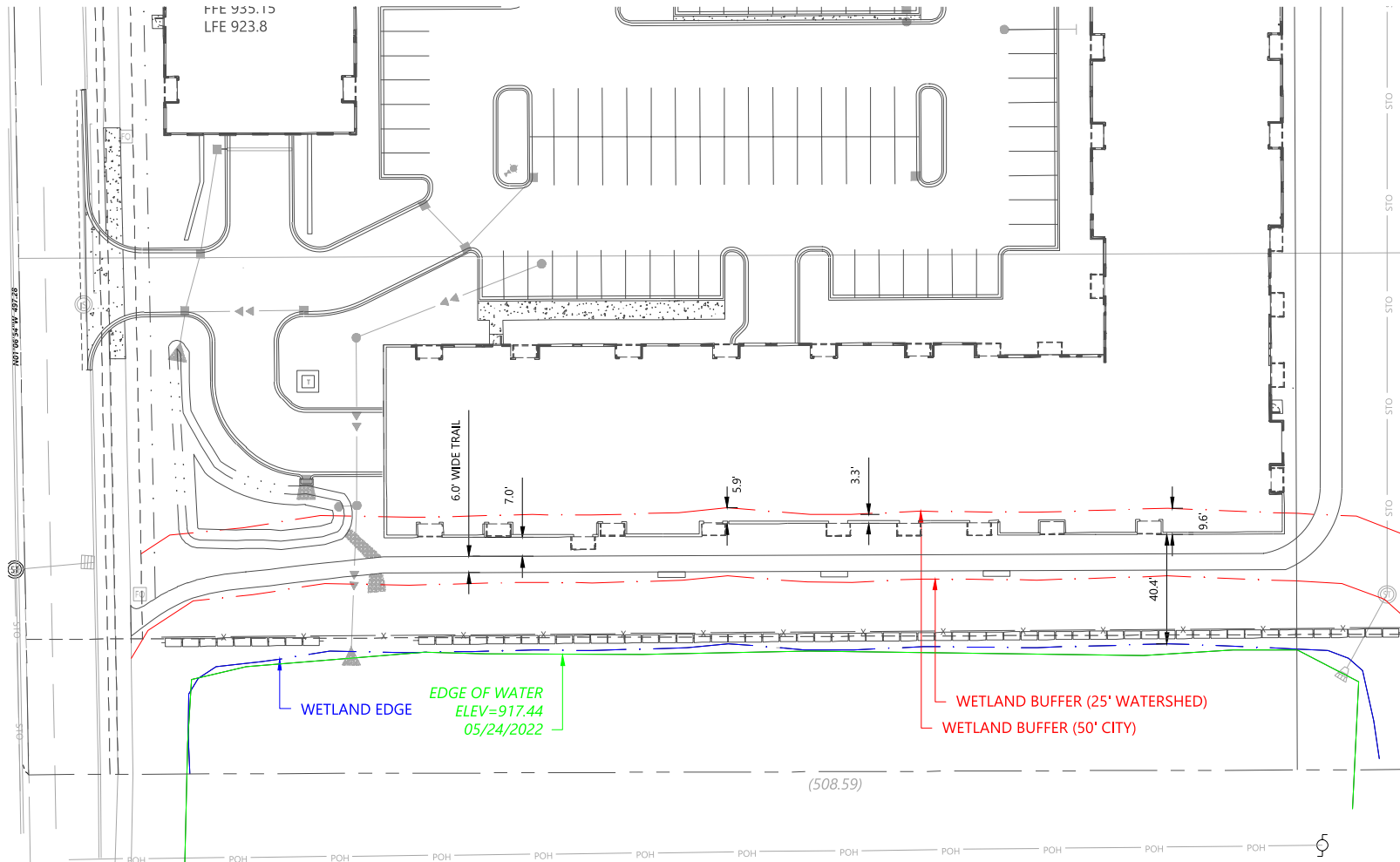
**EXHIBIT 3. WETLAND BUFFER  
EXISTING CONDITIONS**

SHEET NUMBER:

**1** OF **2**

PROJECT NUMBER: 0037066

DATE: 10/24/2022



MAPLEWOOD ENCLAVE

DESIGNED: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DRAWN: \_\_\_\_\_  
FIELD CREW: \_\_\_\_\_  
FIELD WORK DATE: \_\_\_\_\_

PREPARED FOR:

**ENCLAVE DEVELOPMENT**  
300 23RD AVE E, SUITE 300  
WEST FARGO, ND 58078

**MAPLEWOOD  
ENCLAVE**  
MAPLEWOOD, MN

**Westwood**

Phone (952) 937-5150 12701 Whitewater Drive, Suite #300  
Fax (952) 937-5822 Minnetonka, MN 55343  
Toll Free (888) 937-5150 [westwoodps.com](http://westwoodps.com)  
Westwood Professional Services, Inc.

**EXHIBIT 3. WETLAND BUFFER  
PROPOSED CONDITIONS**

SHEET NUMBER:

**2** OF **2**

PROJECT NUMBER: 0037066

DATE: 10/24/2022



## Minnesota Wetland Conservation Act Notice of Decision

<b>Local Government Unit:</b> Ramsey-Washington Metro Watershed District (RWMWD)	<b>County:</b> Ramsey
<b>Applicant Name:</b> Brian Bochman (Enclave Development) <b>Applicant Representative:</b> Bobby Cress (Westwood Professional Services)	
<b>Project Name:</b> Myth Maplewood	<b>LGU Project No. (if any):</b> 22-16 WCA
<b>Date Complete Application Received by LGU:</b> 9/23/2022	
<b>Date of LGU Decision:</b> 10/19/2022	
<b>Date this Notice was Sent:</b> 10/21/2022	

**WCA Decision Type** - check all that apply

<input checked="" type="checkbox"/> <b>Wetland Boundary/Type</b>	<input type="checkbox"/> <b>Sequencing</b>	<input type="checkbox"/> <b>Replacement Plan</b>	<input type="checkbox"/> <b>Bank Plan (not credit purchase)</b>
<input checked="" type="checkbox"/> <b>No-Loss (8420.0415)</b>	<input type="checkbox"/> <b>Exemption (8420.0420)</b>		
<b>Part:</b> <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input checked="" type="checkbox"/> H		<b>Subpart:</b> <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9	

**Replacement Plan Impacts** (replacement plan decisions only)

<b>Total WCA Wetland Impact Area:</b>
<b>Wetland Replacement Type:</b> <input type="checkbox"/> Project Specific Credits: <input type="checkbox"/> Bank Credits:
<b>Bank Account Number(s):</b>

**Technical Evaluation Panel Findings and Recommendations** (attach if any)

<input checked="" type="checkbox"/> Approve <input type="checkbox"/> Approve w/Conditions <input type="checkbox"/> Deny <input checked="" type="checkbox"/> No TEP Recommendation
<b>Nicole Soderholm (RWMWD- LGU) and Ben Meyer (BWSR) met onsite for a field review on 10/3/22. No changes were requested to the wetland type/boundary.</b>

**LGU Decision**

<input type="checkbox"/> Approved with Conditions (specify below) <sup>1</sup> List Conditions:	<input checked="" type="checkbox"/> Approved <sup>1</sup>	<input type="checkbox"/> Denied
<b>Decision-Maker for this Application:</b> <input checked="" type="checkbox"/> Staff <input type="checkbox"/> Governing Board/Council <input type="checkbox"/> Other:		
<b>Decision is valid for:</b> <input checked="" type="checkbox"/> 5 years (default) <input type="checkbox"/> Other (specify):		

<sup>1</sup> *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

**LGU Findings** – Attach document(s) and/or insert narrative providing the basis for the LGU decision<sup>1</sup>.

<input type="checkbox"/> Attachment(s) (specify): <input checked="" type="checkbox"/> Summary: <b>Findings in the field were consistent with the delineation report submitted. No changes are requested to the wetland boundary.</b>
<b>Any proposed impacts to the wetland are temporary and will result in no loss of quantity/quality of wetland area over existing conditions.</b>

<sup>1</sup> Findings must consider any TEP recommendations.

### Attached Project Documents

☒ Site Location Map    ☐ Project Plan(s)/Descriptions/Reports (specify):

### Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for \$500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator  
Minnesota Board of Water & Soils Resources  
520 Lafayette Road North  
St. Paul, MN 55155  
[travis.germundson@state.mn.us](mailto:travis.germundson@state.mn.us)

Does the LGU have a local appeal process applicable to this decision?

☐ Yes<sup>1</sup>        ☒ No

<sup>1</sup>If yes, all appeals must first be considered via the local appeals process.

**Local Appeals Submittal Requirements** (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

### Notice Distribution (include name)

*Required on all notices:*

☒ SWCD TEP Member: **Mike Goodnature (Ramsey County)**    ☒ BWSR TEP Member: **Ben Meyer**

☐ LGU TEP Member (if different than LGU contact):

☒ DNR Representative: **Jim Levitt**

☐ Watershed District or Watershed Mgmt. Org.:

☒ Applicant (notice only):    ☒ Agent/Consultant (notice only): **Eric Hansen/Britta Carlson/Shari Ahrens/Matthew Vollbrecht (Westwood)**

*Optional or As Applicable:*

☒ Corps of Engineers: **Ben Orne**

☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):

☐ Members of the Public (notice only):    ☒ Other: **Mary Fitzgerald (RWMWD)**

**Signature:**

*Nicole Soderholm*

**Date:**

10/21/2022

**This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.**



# RAMSEY-WASHINGTON

## METRO WATERSHED DISTRICT

### MEMORANDUM

**Date:** December 7, 2022

**To:** Board of Managers and Staff

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

**Subject:** November Enforcement Action Report

During November 2022:

**Number of Violations:** **10**

Install/Maintain Perimeter Control	3
Implement Temporary Soil Stabilization	2
Install/Maintain Inlet Protection	1
Install/Maintain Construction Entrance	1
Install/Maintain Energy Dissipation	1
Clean Out Temporary Sediment Basin	1
Sweep Streets	1

**Activities and Coordination Meetings:**

Collaboration with private developers and public entities, miscellaneous resident inquiries, ongoing ESC inspections/reporting, non-compliance follow-up inspections and enforcement, WCA administration/procedures and field reviews, new permit review with Barr Engineering, permit closure/final walk-throughs, vegetation establishment and 48-hour rainfall inspections, closed permit routine BMP inspections, initial erosion control walk-throughs, preconstruction meetings

**Project Updates:**

**#22-31 White Bear Lake Apartments II**

Demolition work is underway at the former Village Sports Bar in White Bear Lake, which will be the space for apartments with associated parking and an underground infiltration system when complete. Staff attended an initial erosion control walkthrough on November 15<sup>th</sup> with site contractors. Staff noted that inlet protection needed to be installed within the project's existing storm sewer, and that silt fence was not fully trenched in. Site contractors explained the soil was too frozen to dig the silt fence fabric into the ground and were wondering what a good alternative would be. Staff clarified that biologs can be used at the base of silt fence to keep it anchored, and to trench silt fence in as soon as site conditions allow. Staff will continue regular inspections through the duration of the project.

#### **#22-11 St. Paul Wheelock Parkway Improvements**

Street work and boulevard improvements began in late September, and continue through the month of November. When complete, Wheelock Parkway will have a new bike trail, as well as improved roadways, sidewalks, and an underground infiltration system for stormwater treatment. Staff conducted a routine inspection on November 10<sup>th</sup> and found the site to be compliant, and noted most exposed soil appeared to be inactive. Staff inquired on the site's timeline for getting temporary soil stabilization installed. The site's contractors confirmed it would be installed the following week. Later that week, the site received snow and was no longer able to apply a tackifier stabilization product. Luckily, due to warm weather conditions, the site had significant snow melt, and was able to apply the stabilization product on November 28<sup>th</sup>. The site will be inactive through winter, and begin work again farther along the parkway in the spring.



#### **#19-36 Luther Cadillac (Vadnais Heights)**

Site work continues through the month of November at the future Luther Cadillac dealership in Vadnais Heights. Staff visited the site on November 7<sup>th</sup> to observe the installation of the underground filtration system. These types of visits allow staff to see the systems exposed, understand their functionality, and ensure they're well protected from erosion and sediment through install, and the duration of the project. Staff revisited the site on November 15<sup>th</sup> for a routine inspection and noted a few action items needed including perimeter control and construction entrance repair/maintenance. Contractors confirmed these items would be addressed promptly.



#### **Single Lot Residential Permits Approved by Staff:**

None

#### **Permits Closed:**

18-17                      Beebe Meadows (Maplewood)

21-22	748 Bielenberg Medical Office Building (Woodbury)
22-20	Hawkins Terminal Improvements (St. Paul)

\* \* \* \* \*

# Stewardship Grant Program

\* \* \* \* \*

# Stewardship Grant Program Budget Status Update

December 7, 2022

Homeowner	Coverage	Number of Projects: 22	Funds Allocated
Habitat Restoration and rain garden w/o hard surface drainage	50% Cost Share \$15,000 Max	13	\$43,900
Rain garden w/hard surface drainage, pervious pavement, green roof	75% Cost Share \$15,000 Max	8	\$63,350
Master Water Steward Project	100% Cost Share \$15,000 Max	0	\$0
Shoreland Restoration	100% Cost Share \$15,000 Max	1	\$15,000

Commercial, School, Government, Church, Associations, etc.	Coverage	Number of Projects: 12	Funds Allocated
Habitat Restoration	50% Cost Share \$15,000 Max	3	\$25,500
Shoreland Restoration (below 100-year flood elevation w/actively eroding banks)	100% Cost Share \$100,000 Max	1 (Lake Owasso)	\$160,000
Priority Area Projects	100% Cost Share \$100,000 Max	5	\$378,540
Non-Priority Area Projects	75% Cost Share \$50,000 Max	1	\$50,000
Public Art	50% Cost Share \$15,000 Max	0	\$0
Aquatic Veg Harvest/LVMP Development	50% Cost Share \$15,000 Max	2	\$12,430

Maintenance	50% Cost Share \$5,000 Max for 5 Years	74	\$51,875
Consultant Fees			\$71,302
<b>Total Allocated</b>			<b>\$871,572</b>

2022 Stewardship Grant Program Budget	
Budget	\$1,000,000
Total Funds Allocated	\$871,572
<b>Total Available Funds</b>	<b>\$128,428</b>



## MEMORANDUM

**DATE:** December 7, 2022

**TO:** Board of Managers and Staff

**FROM:** Paige Ahlborg, Watershed Project Manager

**SUBJECT:** 2023 Stewardship Grant Program

At this meeting, staff will review the 2022 Stewardship Grant Program and discuss upcoming projects in 2023.

### **Discussion Items**

- *Priority Areas:* Staff recommends maintaining the 2022 water quality priority areas for 2023 and adding the West Vadnais Lake subwatershed as a priority area when officially incorporated. Large-scale projects in these areas are eligible for 100% funding. Projects located within flood reduction, groundwater recharge, and certain demographic areas or per board discretion may be eligible for additional funding. See Table 1 for coverage amounts.
- *Residential Project Coverage:* Staff recommends continuing the maximum coverage amounts for residential and large-scale projects. Despite increased construction costs, our coverage amounts appear to be sufficient for these types of projects. See Table 1 for coverage amounts.
- *Watershed Maintenance Grants:* Staff recommends continuing the BMP maintenance cost share grant which can be used by cost share recipients to assist with routine BMP maintenance. Applicants can receive up to 50% of the annual maintenance costs for a maximum of 5 years. Currently, the annual grant amount cannot exceed \$1,000. Staff are proposing to increase this to \$1,500 per year to account for the increased maintenance costs seen recently.
- *Enhanced Street Sweeping:* This item will be discussed later on the agenda when Michael McKinney, Barr Engineering, will be presenting a summary of the enhanced street sweeping study and providing recommendations for supporting enhanced street sweeping through our Stewardship Grant Program.

### **Action Items**

Staff is requesting action from the Board on the following items:

- Approve the 2023 priority areas as the following subwatersheds: Battle Creek Lake, Battle Creek, Beaver Lake, Bennett Lake, Carver Lake, Fish Creek, Gervais Creek, Kohlman Creek, Kohlman Lake, Lake Emily, Lake Owasso, Shoreview Pond, Wakefield Lake, West Vadnais Lake, and Willow Creek.
- Approve 2023 coverage amounts as shown in Table 1.
- Approve increase to an annual maximum amount of \$1,500 for the BMP maintenance grant.
- Following the presentation and discussion regarding the Enhanced Street Sweeping Prioritization Study, approve staff to move forward with setting funding amounts and priority areas for enhanced street sweeping in the fall of 2023.

**Table 1. Proposed 2023 Cost Share Coverage**

	<b>Type of Projects</b>	<b>Cost Share %</b>	<b>Maximum \$*</b>
<b>Homeowner Projects</b>	Habitat Restoration & raingarden w/o hard surface drainage	50%	\$15,000
	Raingarden w/ hard surface drainage, pervious pavement	75%	\$15,000
	Shoreland Restoration (below 100 yr flood elevation w/ actively eroding banks)	100%	\$15,000
	Master Water Steward	100%	\$15,000
<b>Large Scale Projects: Commercial, Church, School, Government, Associations, etc.</b>	Habitat Restoration	50%	\$15,000
	Shoreland Restoration	100% below 100 yr flood elev. with actively eroding banks	\$100,000
	Water Quality BMPs	75% in non-priority drainage areas	\$50,000
		100% in priority drainage areas*	\$100,000
	Aquatic Veg Harvest/LVMP Development	50%	\$15,000
	Public Art	50%	\$15,000

\*Projects located within RWMWD priority subwatersheds, flood reduction, groundwater recharge, and certain demographic areas may be eligible for additional funding. Contact RWMWD with your project location to determine maximum coverage amount.





# 2022 Stewardship Grant Summary

Paige Ahlborg  
December 7, 2022

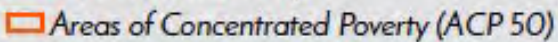


RAMSEY-WASHINGTON  
METRO WATERSHED DISTRICT





- Government: 5
- School: 1
- Church: 1
- HOAs: 3
- Residential: 24



# 2022 Project Allocation

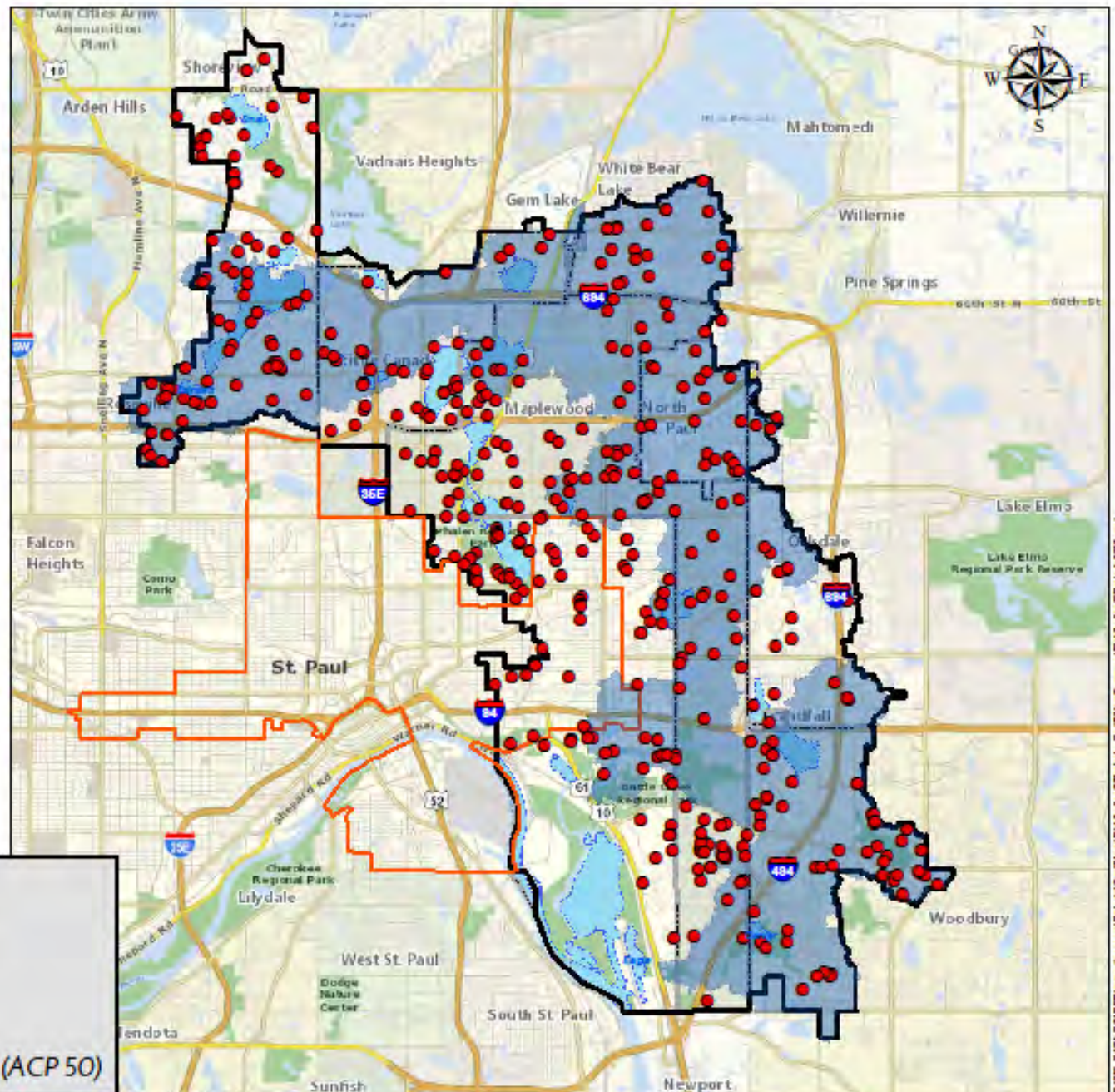
HOMEOWNER	Coverage	Number of Projects	Funds Allocated
Habitat Restoration	50% Cost Share \$15,000 Max	13	\$43,900
Raingarden w/ hard surface drainage	75% Cost Share \$15,000 Max	8	\$63,350
Shoreland Restoration	100% Cost Share \$15,000 Max	1	\$15,000
Master Water Steward Project	100% Cost Share \$15,000 Max	0	\$0
LARGE SCALE: Habitat Restoration	50% Cost Share \$15,000 Max	3	\$25,500
Shoreland Restoration (below 100 yr flood elevation w/ actively eroding banks)	100% Cost Share \$100,000 Max	1	\$160,000
PRIORITY AREAS: Infiltration/Filtration	100% Cost Share \$100,000 Max	5	\$378,540
NON-PRIORITY AREAS: Infiltration/Filtration	75% Cost Share \$50,000 Max	1	\$50,000





### Unique Stewardship Projects 2006-2022

A horizontal number line with tick marks at 0, 1, 2, and 4. The word "Miles" is written at the right end. A white rectangular segment is highlighted between the tick marks for 1 and 2.

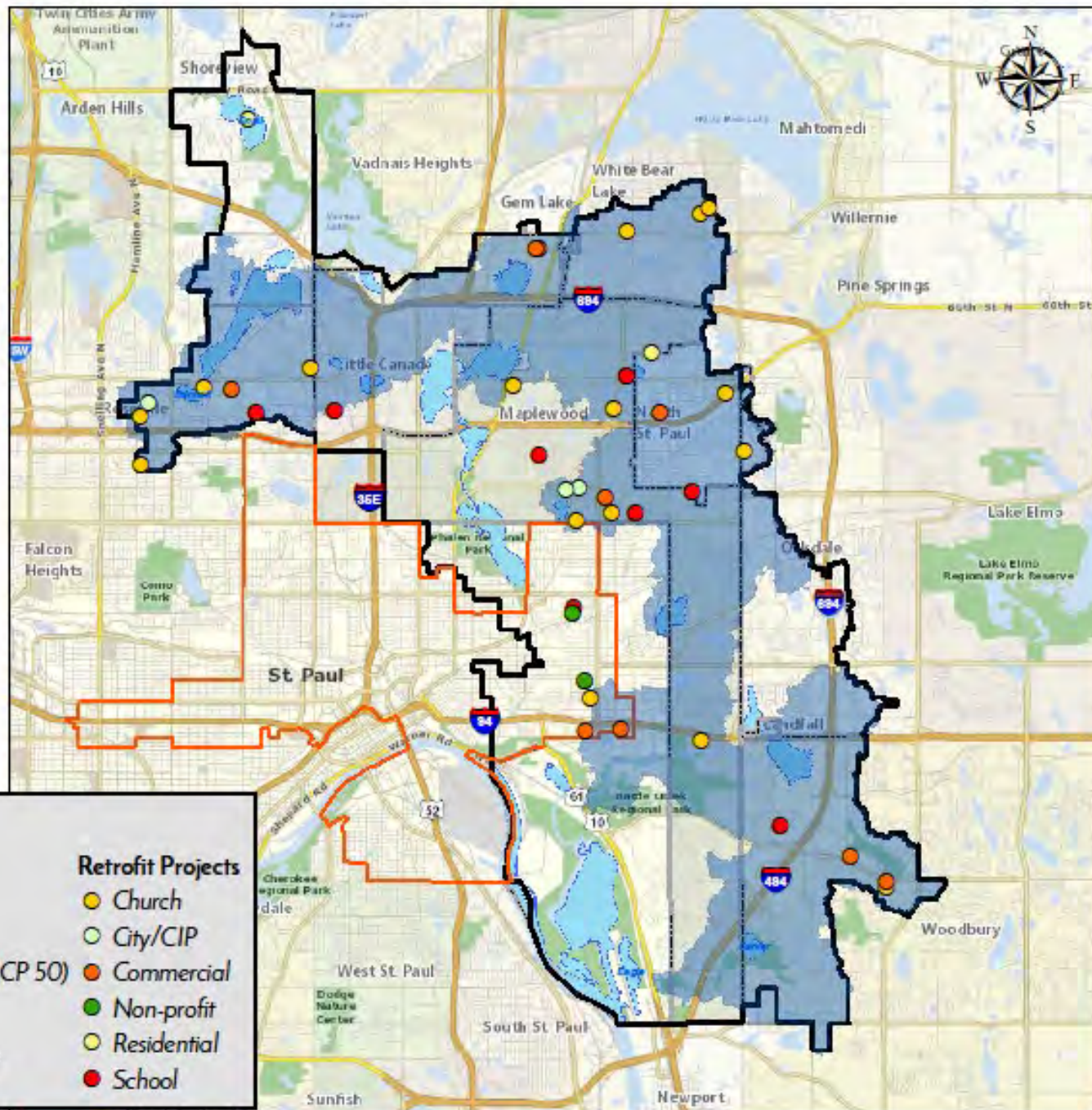






RAMSEY-WASHINGTON  
METRO WATERSHED DISTRICT

## Targeted Retrofit Projects 2013-2022



### Key

- Priority Areas (2022/2023)
- Lakes
- RWMWD Boundary
- Areas of Concentrated Poverty (ACP 50)

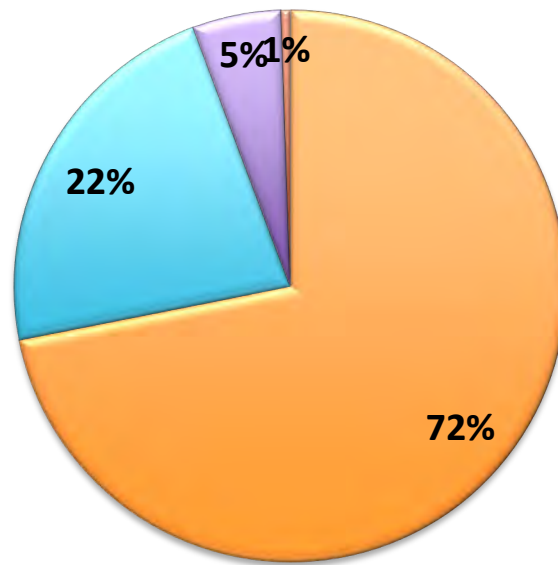
### Retrofit Projects

- Church
- City/CIP
- Commercial
- Non-profit
- Residential
- School

0 1 2 4 Miles



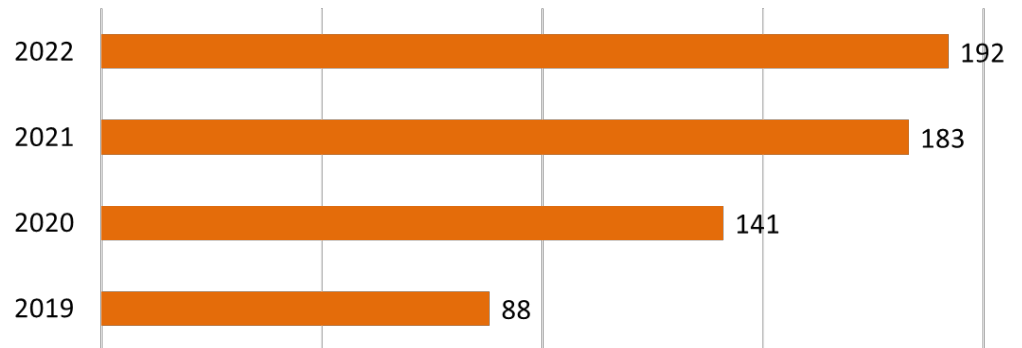
## 2022 Inspection Letter Grades (192 BMP's inspected)



■ A ■ B ■ C ■ F

## Past Stewardship Grant BMP Inspections

Comparing Stewardship Grant Inspections Across the Years



■ Number of Inspections Completed

# BMP Maintenance Program



RAMSEY-WASHINGTON  
METRO WATERSHED DISTRICT



# 2022 Targeted Retrofit Projects

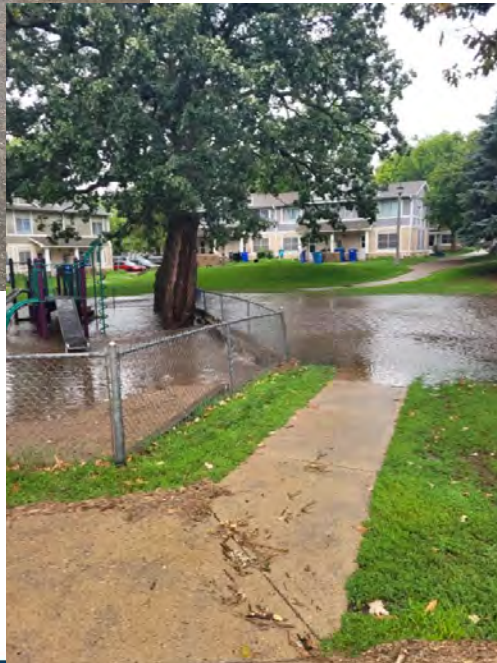


St. Pascal's Church

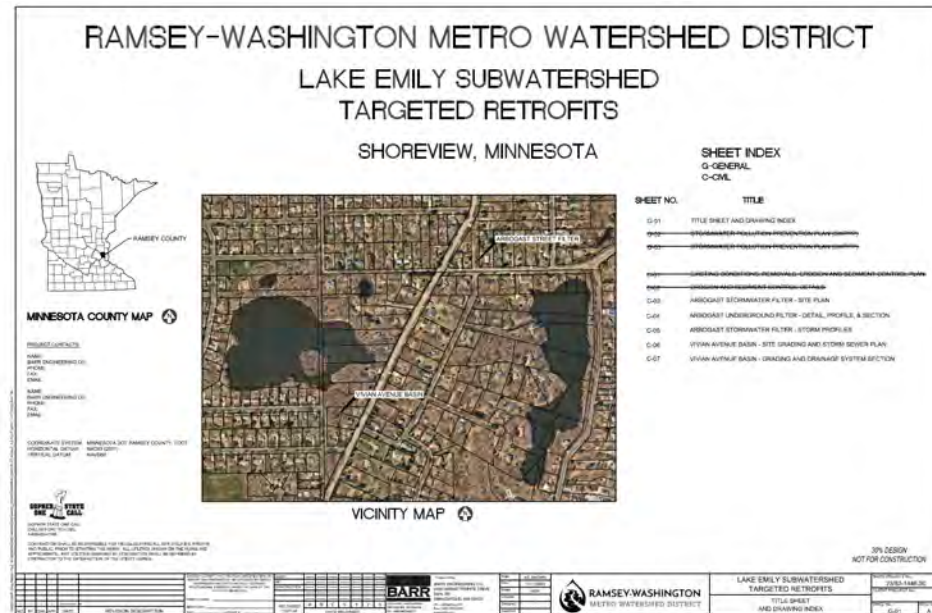
Mounds Park Academy



# Planning for 2023 Projects:



Roosevelt Homes,  
St. Paul

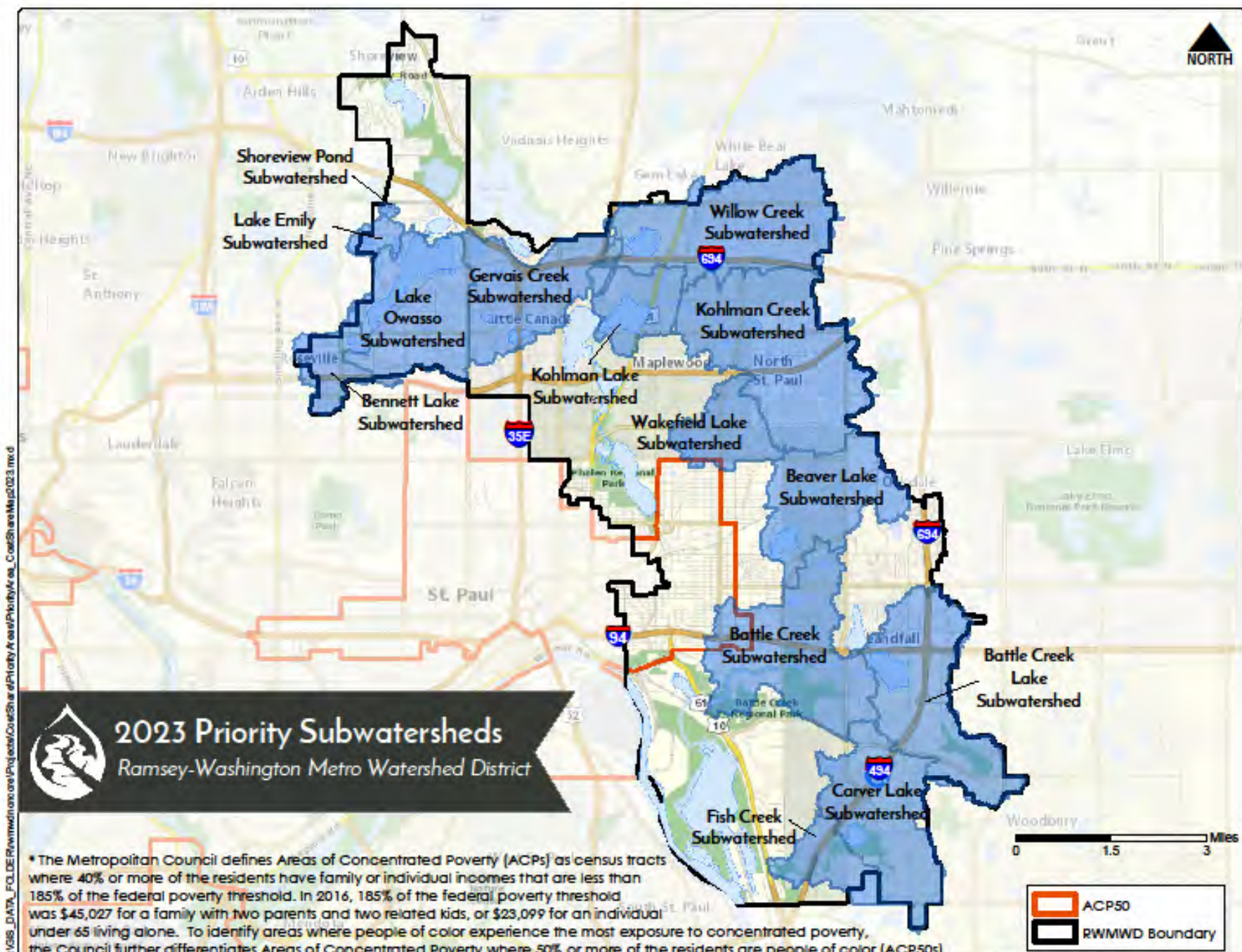


Lake Emily BMP, Shoreview



RAMSEY-WASHINGTON  
METRO WATERSHED DISTRICT





## 2023 Priority Subwatersheds

*Ramsey-Washington Metro Watershed District*

\* The Metropolitan Council defines Areas of Concentrated Poverty (ACPs) as census tracts where 40% or more of the residents have family or individual incomes that are less than 185% of the federal poverty threshold. In 2016, 185% of the federal poverty threshold was \$45,027 for a family with two parents and two related kids, or \$23,099 for an individual under 65 living alone. To identify areas where people of color experience the most exposure to concentrated poverty, the Council further differentiates Areas of Concentrated Poverty where 50% or more of the residents are people of color (ACP50s).

D:\GIS\_DATA\_FOLDERS\ramswmwd\onepage\maps\2023\ShareMap2023.mxd

# Street Sweeping Assistance



Separate presentation to be given by Michael McKinney, Barr Engineering



RAMSEY-WASHINGTON  
METRO WATERSHED DISTRICT

# Proposed 2023 Stewardship Grant Coverage

Homeowner	Coverage
Habitat Restoration and rain garden w/o hard surface drainage	50% Cost Share \$15,000 Max
Rain garden w/hard surface drainage, pervious pavement, green roof	75% Cost Share \$15,000 Max
Master Water Steward Project	100% Cost Share \$15,000 Max
Shoreland Restoration	100% Cost Share \$15,000 Max

Commercial, School, Government, Church, Associations, etc.	Coverage
Habitat Restoration	50% Cost Share \$15,000 Max
Shoreland Restoration (below 100-year flood elevation w/actively eroding banks)	100% Cost Share \$100,000 Max
Priority Area Projects	100% Cost Share \$100,000 Max
Non-Priority Area Projects	75% Cost Share \$50,000 Max
Public Art	50% Cost Share \$15,000 Max
Aquatic Veg Harvest/LVMP Development	50% Cost Share \$15,000 Max
Maintenance	50% Cost Share \$1,500/year Max of 5 Years



# Board Action Items:

Approve 2023 Stewardship Grant  
Program with requested changes





\* \* \* \* \*

# Action Items

\* \* \* \* \*

# Request for Board Action

---

**Board Meeting Date:** December 7, 2022

**Agenda Item No:** 7A

**Preparer:** Tina Carstens, Administrator

---

**Item Description:** 2023 CIP Maintenance and Repair Project Bid Award

---

## **Background:**

Annually, the District completes a project to maintain the existing infrastructure owned and operated by the District, and to assist and facilitate stormwater pond cleanouts to allow other public entities to meet their municipal separate storm sewer system (MS4) requirements.

At the November meeting, staff presented the plans and cost estimate. The board directed Barr to finalize design, prepare the bidding package, and advertise the project for bid. The board also requested to see the inspection results for all projects – see attached. The following information is also being shared from Barr Engineering regarding the normalized scoring.

The scoring process multiplies the conditional assessment score by the timeframe score for each site component and sums the score from each component to calculate a total score for a site. This total score is then normalized (divided) by the number of components for each site. Using this system, the normalized scores can range from 1 to 16. A score of 1 indicates that the inspector did not find any structural defects or maintenance needs, nor were any needs time sensitive for addressing. A score of 16 indicates that the inspector found significant structural defects and that maintenance/repairs need to be made as soon as possible.

The project was advertised, and the bids are scheduled to be received on December 6th. We will review the bids shortly thereafter and present them to the board for consideration at the December 7th meeting. If awarded, the contracting process will occur and construction will begin soon thereafter.

---

## **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:** Maintain District projects and consider opportunities to support the maintenance activities of others.

**Goal: Manage Risk of Flooding** – The District will reduce the public's risk to life and property from flooding through programs and projects that protect public safety and economic well-being.

**Action Item:** Maintain District flood storage facilities and storm sewer systems.

---

**Staff Recommendation:**

Staff recommends that the Board award the project to the responsive bidder whose bid was the lowest and whose involvement would be in the best interest of the District. Staff also recommends the Board direct staff to prepare and mail the Notice of Award, prepare the draft agreement and request and review the required submittals.

---

**Financial Implications:**

The CIP Maintenance and Repair project is included in the 2023 budget.

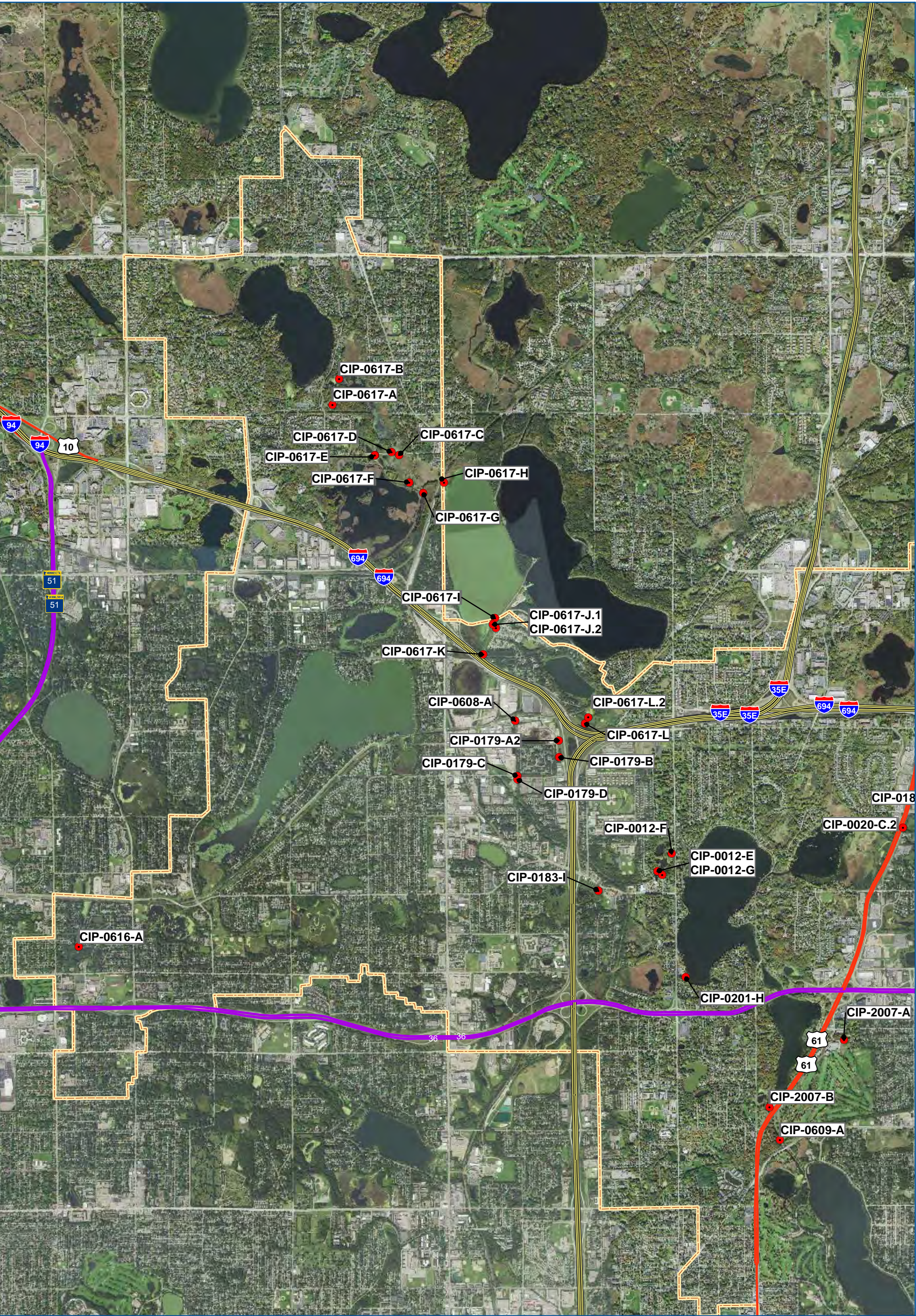
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**Board Action Requested:**

Accept the bids and award the 2023 CIP Maintenance and Repair Project to \_\_\_\_\_. Direct staff to prepare and mail the notice of award, prepare the draft agreements and review the required submittals.

BMP ID	CIP Unique ID number	Total Score	Normalized Score	Selected for 2023 CIP?	Review Notes
Lower Afton Rd Drainageway at Winthrop; Basin and Rock Channel	CIP-2002-F	34	8.5	Yes	
Gervais Mill Pond, steep slope repair by watertower	CIP-0012-G	13	6.5	Yes	
PFS Basin East	CIP-0164-A	19	6.3	Yes	
PFS Basin West	CIP-0164-B	19	6.3	Yes	
Lake outlet, yard drain and berm	CIP-2007-B	25	6.3	No	Site was redesigned and altered by owner (not RWMWD)
Wetland - 7th St permeable weirs near horseshoe park	CIP-0170-A.2	8	4.0	Yes	
5th Street Wetland Weirs - west	CIP-0170-B.2	7	3.5	Yes	
Dual arch pipes under Grass Lake trail east of overflow	CIP-0617-G	17	2.8	No	Ramsey County took responsibility
PFS East: outlet	CIP-0164-C.1	7	2.3	No	Was selected and is part of 2023 CIP (East and West always done together)
Gervais Beach stormwater pond	CIP-0201-H	10	2.0	Yes	
Borrow Pit pipe & silo structures	CIP-0169-E	4	2.0	No	Infrastructure in good condition, some erosion on trails due to pedestrian and mtn bike use, Parks responsibility
PCU/Target Pond	CIP-0199-A	7	1.8	No	
Kenard Street control structure	CIP-0027-B	5	1.7	No	
Casey Lake Outlet Structure	CIP-0008-A	5	1.7	No	
5th Street Wetland pond outlet	CIP-0170-B	5	1.7	No	
Johnson Pond Outlet	CIP-2003-H	5	1.7	No	
C Street basin and inlet/ski jump	CIP-0185-D	5	1.7	No	
Frost/Kennard Spent Lime Chamber	CIP-0614-B	6	1.5	No	
Gramsie Rd box culvert stoplog structure	CIP-0617-E	3	1.5	No	
Kohlman Basin, permeable weirs and concrete weir	CIP-0020-C	3	1.5	Yes	Selected for installation of expanded CC17 treatment system
Wetland - 7th St permeable weirs near horseshoe park	CIP-0170-A.1	3	1.5	Yes	Part of the site scored higher than threshold
5th Street Wetland Weirs - east	CIP-0170-B.1	3	1.5	Yes	Part of the site scored higher than threshold
McKnight Basin - Pool 1 Outlet	CIP-0624-G.2	3	1.5	No	
Macbeth paver culdesac	CIP-0034-B	4	1.3	No	
Juliet paver culdesac	CIP-0034-C	4	1.3	No	
West Vadnais Lake outlet pipe	CIP-0617-K	4	1.3	No	
PFS Wast: outlet	CIP-0164-C.2	4	1.3	No	
Double Driveway Pond - Inlet	CIP-2004-D.1	4	1.3	No	
Beltline Interceptor Outfall Structure	CIP-0011-B.1	4	1.3	No	
Vogel Manufacturing, Pond, valve, ditch, trash racks, metal wall	CIP-0177-J	5	1.3	No	
Tanners Lake Boat ramp pond	CIP-0170-C	5	1.3	No	
Suburban Pond Large Diameter Pipe and Channel	CIP-2001-C	5	1.3	No	
Berm and structure that outlets Machete Pond	CIP-0167-A	6	1.2	No	
Pipe under Gramsie Rd	CIP-0617-C	7	1.2	No	
Owasso Basin, Large culvert conc. weir structure under Country Dr and Pond	CIP-0179-B	7	1.2	No	
Battle Creek Lake Inlet	CIP-2000-A	7	1.2	No	
Battle Creek Lake Inlet	CIP-2000-A	7	1.2	No	
Beltline Interceptor Bike path culvert	CIP-0011-B.2	7	1.2	No	
Owasso Basin, backflow prevention valve between Owasso Basin and Porky Pond	CIP-0179-A2	2	1.0	No	
Vogel Manufacturing, Pond, valve, ditch, trash racks, metal wall	CIP-0177-J	2	1.0	No	
Twin Lake outlet channel - part 2	CIP-0617-L.2	4	1.0	No	
Vogel Manufacturing, Pond, valve, ditch, trash racks, metal wall	CIP-0177-J	4	1.0	No	
"Back Door" overflow from Snail to Crestview area	CIP-0617-A	5	1.0	No	
Gramsie Rd berm	CIP-0617-D	5	1.0	No	
Tanners Lake	CIP-0170-D.3	5	1.0	No	
Battle Creek Lake flood control berm and lift station	CIP-0173-I	5	1.0	No	
C-Street Pipe outlent manhole along trail	CIP-0185-D.1	4	1.0	No	
Snail to Wetland A overflow	CIP-0617-B	5	1.0	No	
Grass Lake overflow	CIP-0617-F	5	1.0	No	
Five Star Estates rip-rap overflow	CIP-0617-J.2	5	1.0	No	
Gervais Mill Pond, Noel Drive culvert cross, filter strip	CIP-0012-E	4	1.0	Yes	Part of the site scored higher than threshold
Kohlman Basin, Sand Filter	CIP-0186-D	4	1.0	No	
Granite sand with iron basin	CIP-0614-A	4	1.0	No	
Willow Pond CMAC	CIP-0616-A	4	1.0	No	
Owasso Basin, low flow pipeline	CIP-0179-C	5	1.0	No	
Yard Drain	CIP-0170-D.1	5	1.0	No	
Headwaters at Bailey's (large beehive structure)	CIP-2006-A	5	1.0	No	
Day Basin	CIP-2007-A	4	1.0	No	
Valley Creek Road Infiltration Project	CIP-0184-A	4	1.0	No	
Five Star Estates sump and silo structure	CIP-0617-J.1	3	1.0	No	
East Savage Lake outlet	CIP-0183-I	3	1.0	No	
Beaver Lake Outlet Structure	CIP-0181-A	3	1.0	No	
ABI Pond outlet	CIP-0176-A.1	3	1.0	No	
ABI overflowrack	CIP-0176-A.3	3	1.0	No	
Tanners Lake outlet	CIP-0170-D.2	3	1.0	No	
McKnight Basin - Outlet and Overflow	CIP-0624-G.3	3	1.0	No	
Berm and structure that outlets Machete Pond	CIP-0167-A	3	1.0	No	
Double Driveway Pond - Outlet	CIP-2004-D.2	3	1.0	No	
Creek headwaters at Bailey Nursery Pond	CIP-2007-A	3	1.0	No	
Twin Lake outlet channel	CIP-0617-L	4	1.0	No	
Casey Lake	CIP-2005-A.1	4	1.0	No	
Kohlman Basin Outlet Weir	CIP-0020-C.2	2	1.0	Yes	Part of the site scored higher than threshold
Kohlman Basin Weirs and test cells	CIP-0020-C.3	2	1.0	Yes	Part of the site scored higher than threshold
Keller Channel Control Weir	CIP-0609-A	2	1.0	No	
ABI Diversion- Weir diversion	CIP-0176-A.2	2	1.0	No	
McKnight Basin - Basin Inlet	CIP-0624-G.1	2	1.0	No	
Vogel Manufacturing, Pond, valve, ditch, trash racks, metal wall	CIP-0177-J	2	1.0	No	
Dual pipes under Vadnais Blvd	CIP-0617-I	6	1.0	No	
Gervais Mill Pond, twin culvert crossing near Edgerton	CIP-0012-F	6	1.0	No	
North Saint Paul Ecology Center Outfall basin and slope stability	CIP-0168-A	6	1.0	No	
Double Driveway Pond -Pipe under driveway	CIP-2004-D.4	6	1.0	No	
12c Channel at Rice St into West Vadnais Lake	CIP-0617-H	--	--	No	Misc. infrastructure no score, independent evaluation by staff
Casey Lake boat launch	CIP-2005-A.2	--	--	No	Misc. infrastructure no score, independent evaluation by staff
Frost/Kennard Spent Lime Chamber	CIP-0614-B	--	--	No	Misc. infrastructure no score, independent evaluation by staff
Double Driveway Pond - Driveway	CIP-2004-D.3	--	--	No	Misc. infrastructure no score, independent evaluation by staff
Storm sewer crossing under Sterling Street	CIP-2007-B	--	--	No	Misc. infrastructure no score, independent evaluation by staff
Lower ravine bird cages	CIP-0185-B	--	--	No	Misc. infrastructure no score, independent evaluation by staff





2022 CIP Inspection Sites

0

1

2

Miles

N

2022 CIP Inspection Locations  
Ramsey-Washington Metro Watershed District  
FIGURE 1



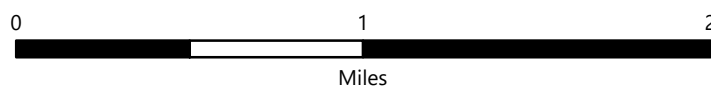
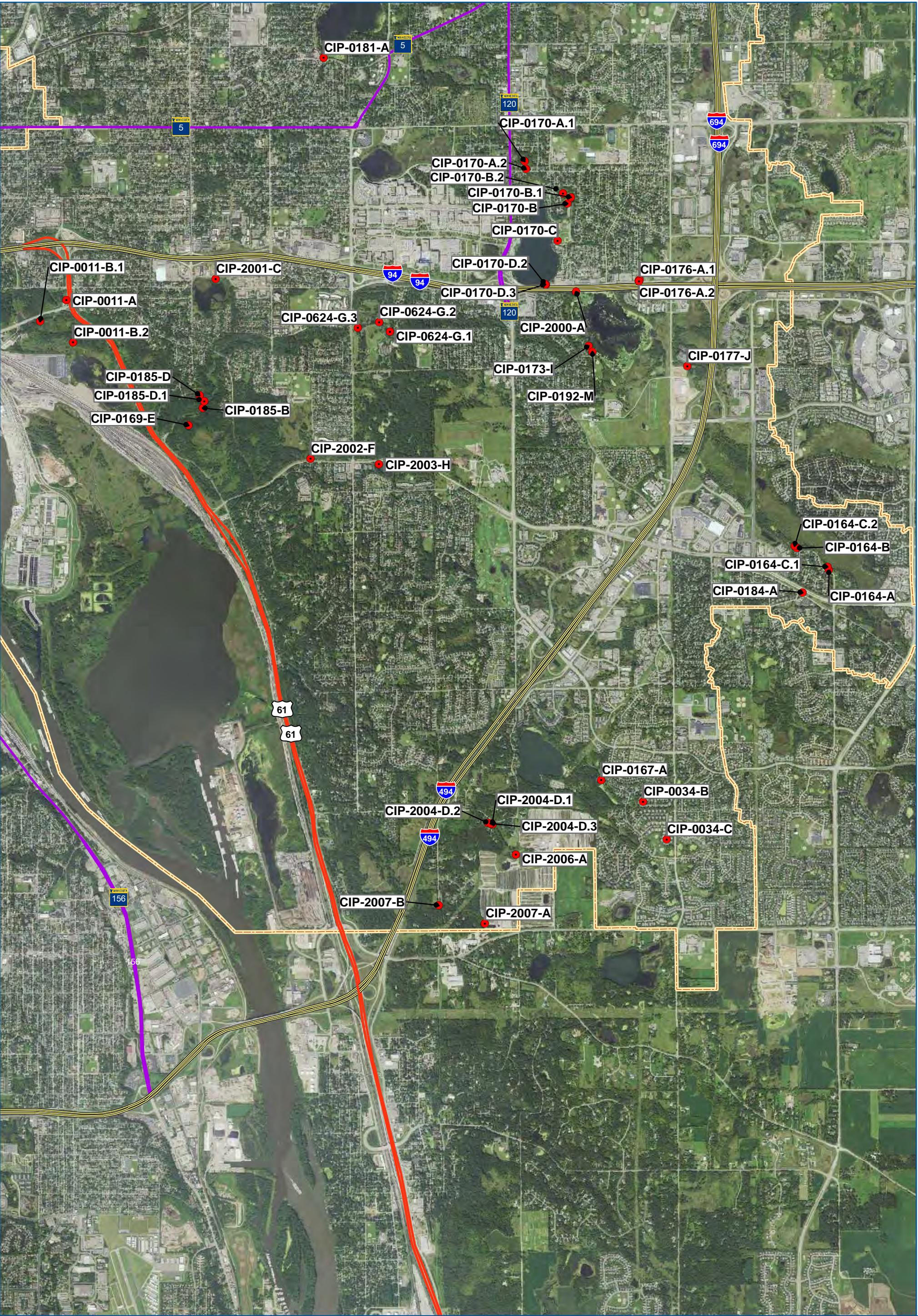


FIGURE 2





2022 CIP Inspection Sites

0

1

2

Miles

Prioritized District Projects  
2022 Planning  
Ramsey-Washington  
Metro Watershed District

FIGURE 3



# Request for Board Action

---

**Board Meeting Date:** December 7, 2022

**Agenda Item No:** 7B

**Preparer:** Tina Carstens, Administrator

---

**Item Description:** Change Order No. 5 for the 2022 Targeted Retrofit Projects

---

## **Background:**

Attached is change order number 5 for the 2022 Targeted Retrofit Project. This one in particular is for the St. Pascal Church portion of the project. The attached memo describes the changes in more detail for your review. The total change in contract price with this change order is \$48,078.

---

## **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:**

Approve Change Order No. 5.

---

## **Financial Implications:**

This change order increases the total contract price by \$48,078.

---

## **Board Action Requested:**

Approve Change Order No. 5.



## Memorandum

**To:** RWMWD Board of Managers  
**From:** Marcy Bean, Erin Anderson Wenz, and Brad Lindaman  
**Subject:** Change Order 5 for the St. Pascal's Baylon Church Project  
**Date:** November 30, 2022  
**Project:** 23621172.00  
**c:** Tina Carstens and Paige Ahlborg (RWMWD)

Last month, the Board approved a change order for the St. Pascal stormwater retrofit project that was a result of design changes required by the City of St. Paul, as well as an unexpected field condition that affected the volume of excavated material at the site. As Erin Anderson Wenz mentioned at that meeting, this month, another change order is needed. An error in our estimated quantity calculation was discovered during construction when it became apparent that there was a significant underestimate of certain bid quantities needed at the site. As mentioned last month, the variability of actual quantities from the estimated quantities is expected. However, due to the significance of this variance from that shown on the bid form, we believe a change order is appropriate, although not required by the contract. Our calculation error results in a significant increase in the anticipated project price (\$48,078) that was not accounted for in the original estimate for the project. Although the price increase reflects the actual quantities necessary to complete the work, we thought it might be helpful to walk through the evolution of the project cost for this site in the remainder of this memo to provide some context for this change.

An engineer's opinion of cost (90% design), shown in the table below, was first presented to the Board of Managers in the March, 2022 Board packet (in the Project and Program Status Report – March 2022).

**Summary of 90% opinion of costs and water quality treatment estimate**

Proposed concept	Engineer opinion of cost for construction	Engineer opinion of cost range (-5% to +10%)	BMP average annual TP removal (lb/year)	Annualized cost per pound of TP removal
St. Pascal's (tree trench and rain garden)	\$ 407,000	\$387,000 to \$448,000	1.1	\$26,500
Mounds Park Academy (rain garden)	\$160,000	\$152,000 to \$176,000	4.4	\$2,500

The current engineer's opinion of cost for the project ranges from -5% to +10%. These opinions of cost include a 20% contingency and reflect a 90% design level of accuracy.

In the same memo, some historical context for the annualized cost per pound of TP removal over past RWMWD retrofit projects was provided:

**To:** RWMWD Board of Managers

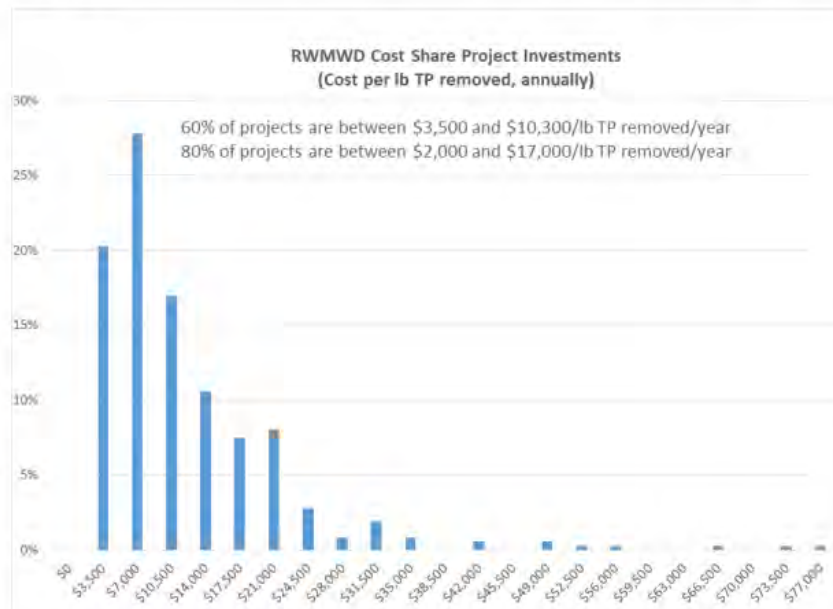
**From:** Marcy Bean, Marcy Bean, Erin Anderson Wenz, and Brad Lindaman

**Subject:** Change Order 5 for the St. Pascal's Baylon Church Project

**Date:** November 30, 2022

**Page:** 2

The range for RWMWD larger-scale CIP projects have been between \$400 to \$14,000 per lb TP removed per year. These tend to be less expensive due to their regional nature (more cost-effective). The RWMWD cost share projects have been distributed as follows (see below chart reflecting data through 2019). These projects tend to be more expensive because they are at a site-level scale (rather than regional). In the past, we have tended to use simpler surficial features (like rain gardens) due to their high cost-effectiveness. This is the case for the Mounds Park Academy site. Where tree trenches or other features with more underground components are needed (due to lack of space), projects tend to have a higher cost (and therefore lower cost effectiveness). This is the case for the St. Pascal's Baylon Church site.



In the April, 2022 Board packet, an updated engineer's opinion of cost (95% design), shown in the table below, was presented to the Board of Managers in a memo dated March 31, 2022 (Subject: 2022 Targeted Retrofit Projects- Request for Bidding Authorization).

### Engineer's Opinion of Cost and Water Quality Treatment Estimate

A summary of the updated (95%) engineer's opinion of probable cost and water quality treatment estimate is included in the table below.

**Table 1: Summary of 95% opinion of probable costs and water quality treatment estimate**

Proposed concept	Engineer opinion of cost for construction	Engineer opinion of cost range (-5% to +10%)	BMP average annual TP removal (lb/year)	Annualized cost per pound of TP removal
St. Pascal's (tree trench and rain garden)	\$ 366,000	\$348,000 to \$403,000	1.1	\$23,700
Mounds Park Academy (rain garden)	\$163,000	\$155,000 to \$179,000	4.4	\$2,500

The current engineer's opinion of probable cost for the project ranges from -5% to +10%. These opinions of cost include a 20% contingency and reflect a 95% design level of accuracy. This contingency reflects the current uncertainty in bid prices, which have recently been elevated due to supply chain issues.

**To:** RWMWD Board of Managers

**From:** Marcy Bean, Marcy Bean, Erin Anderson Wenz, and Brad Lindaman

**Subject:** Change Order 5 for the St. Pascal's Baylon Church Project

**Date:** November 30, 2022

**Page:** 3

---

The managers authorized the bidding of the project (at both sites) and bids were received, and presented in the April Board packet in a memo dated April 27, 2022 (Subject: 2022 Targeted Retrofit Projects-Recommendation to Award Project).

As the project got underway, change orders documented some changes for the project, including Change Order 2 and 4 that have already been presented to the Board for approval. With the inclusion of Change Order 5, the final contract price for the St. Pascal's Baylon Church project totals \$430,004.

**Project Budget Tracking for St. Pascal Baylon Church 2022 Construction -Shoreline Landscaping**

ST PASCAL's BAYLON CHURCH Item	Cost
Original Bid (from Shoreline Landscaping)	\$322,219
Change Order 2: (August 3, 2022)	\$29,500
Change Order 4: (October 27, 2022)	\$30,207
Change Order 5: (November, 2022) IN PROCESS	\$48,078
<b>Final Contract Price (Anticipated, Subject to Change)</b>	<b>\$430,004</b>

Given this increase, the cost per lb TP removed was recalculated for the St. Pascal's Baylon Church project with the updated, actual project cost and was found to be **\$27,500 per lb TP removed per year (as opposed to our original estimate of \$23,700 per lb TP removed per year)**, cited in our March 31, 2022 memo included in the April 2022 Board packet.

The ultimate cost for this project discussed here represents the true cost of the project. The increase in project price is due to the placement of actual quantity of materials that were needed for the execution of the project. However, as discussed at last month's board meeting, in acknowledgment of the errors and inefficiencies experienced at times during this particular project, Barr will not be charging RWMWD for Barr's fees to prepare and execute Change Orders 2, 4 or 5 for the project, including their associated changes to plans and specifications. This amount will be deducted from the Barr's invoice submitted in advance of the January 2023 board meeting.

We sincerely apologize for these errors and inefficiencies, and the resulting issues they created during the execution of this construction project. Barr has made process changes to minimize the chance of this happening in the future. We are happy to discuss this in more detail with the managers at the December Board meeting, if desired.

**Change Order No. 5 – St. Pascal Baylon Catholic Church  
Ramsey-Washington Metro Watershed District  
2022 School and Faith-Based Retrofit Sites**

**DATE OF ISSUANCE:** November 30, 2022

**Owner:** Ramsey-Washington Metro Watershed District  
2665 Noel Drive  
Little Canada, MN 55117  
Attn: Lawrence Swope

**Contractor:** Shoreline Landscaping  
29159 Ivywood Trail  
Chisago City, MN 55013  
Attn: Stephan McLafferty

**Engineer:** Barr Engineering Company  
4300 MarketPointe Drive, Suite 200  
Minneapolis, MN 55435  
Attn: Marcy Bean, Senior Landscape Architect

All items within this change order apply to the St Pascal Baylon Catholic Church site.

**C.O.5.A Changes to Quantities**

Description of Change:

An error in the estimated quantity calculation was discovered during construction. This error resulted in a significant underestimate of certain bid item quantities needed at the site. Due to the extent of this variance from the original estimated quantity amounts on the bid form, and the resulting increase in expected costs, a change order was deemed appropriate. As such, the following quantities require a change in portions of the bid form.

**Bid Form:**

Remove the following from Section 00 41 00 ARTICLE 4, 4.01.A. BID ITEMS - 2022 BMP Retrofits – St. Pascal Baylon Catholic Church:

Bid Item	Description	Unit	Estimated Quantity	Unit Price	Estimated Cost
2.GG	Class 5 Aggregate Base	TON	302	\$78.00	\$23,556.00
2.HH	2"-4" Clean Washed Angular Granite	TON	163	\$120.00	\$19,560.00
2.II	Coarse Filter Aggregate	CY	208	\$120.00	\$24,960.00

Add in its place, the following to Section 00 41 00 ARTICLE 4, 4.01.A. BID ITEMS - 2022 BMP Retrofits – St. Pascal Baylon Catholic Church:

Bid Item	Description	Unit	Estimated Quantity	Unit Price	Estimated Cost
2.GG	Class 5 Aggregate Base	TON	463	\$78.00	\$36,114.00
2.HH	2"-4" Clean Washed Angular Granite	TON	369	\$120.00	\$44,280.00
2.II	Coarse Filter Aggregate	CY	298	\$120.00	\$35,760.00

### Change in Contract Time:

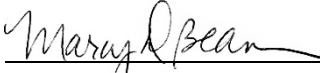
#### Description of Change:

There is no change to contract time as a result of this change order.

### Total Impact on Contract Price:

These changes increase the total contract price by \$48,078.00.

This Change Order No. 5 is:

Submitted By: (ENGINEER)	 _____ Marcy Bean, Senior Landscape Architect Barr Engineering Company	Date: <u>November 30, 2022</u>
Authorized By: (OWNER)	_____ Lawrence Swope, President Ramsey-Washington Metro Watershed District	Date: _____
Approved By: (CONTRACTOR)	_____ Stephan McLafferty Shoreline Landscaping	Date: _____

# Request for Board Action

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**Board Meeting Date:** December 7, 2022

**Agenda Item No:** 7C

**Preparer:** Tina Carstens, Administrator

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**Item Description:** Adopt Final FY 2023 Budget and Certify Final Levy.

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**Background:**

The District Board of Managers adopted the draft budget at the September Board meeting for review and comment by the cities and counties. No written or verbal comments have been received.

The board held its required public hearing on September 7, 2022. No comments were received at the public hearing or after the hearing. The preliminary budget was placed on the website, and the final will also be placed there for public information.

At the September meeting, the board directed me to adjust the levy amount to achieve around a 5% increase in levy funds from 2022 to 2023. The items adjusted in the final budget from the preliminary budget are highlighted in purple on the attached table. Some line items were adjusted to reflect a new understanding of budget needs like the Dues and Publications line 16. This was increased to reflect the change in MAWD annual dues. The water quality monitoring line 42 was also increased to reflect a change in lab costs for 2023. The items highlighted in the capital improvements section of the budget were adjusted to show the anticipated carry-over from 2022.

With those changes, the proposed final levy increase is 5.22%.

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**Applicable District Goal and Action Item:**

The District budget relates to all facets of the District operations since it provides the funds for staff and project activities.

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**Staff Recommendation:**

Approve the Final General Fund and CIP budgets and approve the final levy certification as indicated in the budget table and attached Resolution 22-02.

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**Financial Implications:**

The 2023 proposed final levy reflects an increase from the 2022 levy of 5.22%.

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**Board Action Requested:**

Approve the proposed FY 2023 General Fund and CIP budgets and adopt resolution 22-02.



## RESOLUTION 22-02

### RESOLUTION APPROVING THE 2023 BUDGET AND FINAL PAYABLE 2023 TAX LEVY

WHEREAS, the Ramsey-Washington Metro Watershed District Board of Managers adopted a proposed budget and payable 2023 levy on September 7, 2022; and

WHEREAS, the Ramsey-Washington Metro Watershed District distributed the proposed budget and levy for review and comment to all Cities and Counties; and

WHEREAS, The District held a public hearing on the budget, Capital Improvements Program and proposed levy on September 7, 2022;

NOW, THEREFORE, BE IT RESOLVED by the Board of Managers of the Ramsey-Washington Metro Watershed District that the General Fund and Capital Improvements Budget be approved and the following final levy be certified to Ramsey and Washington Counties.

General Revenue Levy	\$7,116,500
<u>Debt Service Levy</u>	<u>\$0</u>
Total Levy	\$7,116,500

Adopted by the Board of Managers of the Ramsey-Washington Metro Watershed District this 7<sup>th</sup> day of December, 2022.

---

Lawrence Swope, President

Attest:

---

Dr. Pam Skinner, Secretary



Fiscal Year 2023 Budget V4  
December Final Levy Approval

Budget ID Number	Budget Item	FY 2022 Budget	General Fund	Capital Improvements	Carry-over Funds	Other Funds	Total Proposed 2023 Budget	Increase (decrease) from 2022 Budget
1	Engineering							
2		125,000	132,000				132,000	7,000
3		60,000	70,000				70,000	10,000
4		55,000	59,000				59,000	4,000
5		10,000	10,000				10,000	0
6		410,000	395,000				395,000	(15,000)
7		5,000	5,000				5,000	0
8	Attorney							
9		40,000	40,000				40,000	0
10		10,000	5,000				5,000	(5,000)
11	Managers							
12		8,500	7,000				7,000	(1,500)
13		4,000	3,000				3,000	(1,000)
14	Auditor/Accounting							
15		70,000	75,000				75,000	5,000
16	Miscellaneous							
17		11,000	15,000				15,000	4,000
18		55,000	60,000				60,000	5,000
19		3,500	3,500				3,500	0
20		5,000	5,000				5,000	0
21	Administrative							
22		1,660,000	1,860,000				1,860,000	200,000
23		15,000	15,000				15,000	0
24		15,000	15,000				15,000	0
25		150,000	125,000				125,000	(25,000)
26		30,000	30,000				30,000	0
27		7,000	7,000				7,000	0
28		5,000	5,000				5,000	0
29		3,000	2,000				2,000	(1,000)
30		150,000	100,000				100,000	(50,000)
31		3,000	2,000				2,000	(1,000)
32		75,000	75,000				75,000	0
33		4,000	2,000				2,000	(2,000)
34		20,000	20,000				20,000	0
35		5,000	5,000				5,000	0
36		40,000	20,000				20,000	(20,000)
37		75,000	85,000				85,000	10,000
38		57,000	57,000				57,000	0
39		20,000	20,000				20,000	0
40	Program							
41		125,000	142,000				142,000	17,000
42	Activities							
43		120,000	120,000				120,000	0
44		180,000	240,000				240,000	60,000
45		225,000	155,000				155,000	(70,000)
46		200,000	200,000				200,000	0
47		75,000	70,000				70,000	(5,000)
48		50,000	50,000				50,000	0
49		46,000	51,000				51,000	5,000
50		3,000	4,000				4,000	1,000
51	Capital Improvements							
52		91,848		0	92,441		92,441	593
53	Summary			0	302,963		302,963	101
54		1,500,000		1,500,000	0		1,500,000	0
55		1,000,000		800,000	200,000		1,000,000	0
56		0		200,000	475,000		675,000	675,000
57		1,500,000		700,000	800,000		1,500,000	0
		500,000		0	500,000		500,000	0
		5,200,000		200,000	5,000,000		5,200,000	0
	Totals	14,324,710	4,361,500	3,400,000	7,370,404	0	15,131,904	807,194

	Budget Total	Budget Total By Fund		Proposed Levy
		General Fund	CIB	
2023 Budget Total and totals by fund	15,131,904	4,361,500	10,770,404	7,116,500
2022 Budget Total and totals by fund	14,324,710	4,230,000	10,094,710	6,763,498
2023 Budget Increase or (Decrease) from 2022 Budget	807,194	131,500	675,694	353,002
2023 Budget % change from 2022 Budget	5.63%	3.11%	6.69%	5.22%

\* \* \* \* \*

# New Reports/ Presentations

\* \* \* \* \*

## RWMWD Street Sweeping Prioritization Study: Executive Summary

Street sweeping is a critical best management practice (BMP) employed by cities throughout Minnesota for the purposes of maintaining road surfaces, improving public safety through clearing of walking lanes and trash removal, and improving water quality through the removal of accumulated sediment (e.g., sand application from winter road maintenance) and vegetation detritus (e.g., leaf litter). The water quality impact of street sweeping is a topic of emerging research in the state on Minnesota, with recent studies promoting the practice as a highly cost-effective BMP for phosphorus reduction (Hobbie et al, 2020; EOR, 2022).

To understand the impact of street sweeping efforts throughout the Ramsey-Washington Metro Watershed District (District), a modeling analysis was performed to (a) evaluate existing street sweeping operations, (b) rank and prioritize street sweeping areas or zones throughout the District, and (c) develop recommendations to RWMWD Stewardship Grant program to support funding of enhanced street sweeping operations. The following outlines major elements of the study and summarizes key project deliverables:

- A survey of RWMWD municipal partners was conducted to evaluate existing street sweeping programs. Survey results were summarized and used to (a) develop modeling of existing street sweeping operations, (b) identify challenges to implementing street sweeping operations and (c) identify potential requests for funding support to enhance existing sweeping operations.
- Existing street sweeping modeling and a seasonal modeling cost-benefit analysis were used to develop a baseline street sweeping recommendation for member cities (i.e., 1 summer sweeping, 1 spring sweeping, and 2-3 fall sweepings). Baseline modeling results were used to develop strategies to identify and rank high priority street sweeping areas throughout the District.
- Street sweeping prioritization strategies were reviewed with District staff and used to develop programmatic recommendations for updates to the RWMWD Stewardship Grant Program. It is recommended that prioritization strategies outlined in Section 4 and street sweeping prioritization rankings and results (Table 4-1, Appendix C) be used to inform support of enhanced street sweeping operations through the Stewardship Grant Program.

A complete summary of study methodology, model development, key deliverables, and recommendations related to the RWMWD Stewardship Grant program to support enhanced street sweeping is provided in the following technical memorandum.

## RWMWD Street Sweeping Prioritization Study: Technical Memorandum

**To:** Paige Ahlborg - Ramsey Washington Metro Watershed District Project Manager  
**From:** Michael McKinney, Erin Anderson Wenz, and Timothy Anderson – Barr Engineering Co.  
**Project:** RWMWD Street Sweeping Prioritization Study  
**Date:** November 16<sup>th</sup>, 2022  
**c:** Brad Lindaman – Barr Engineering Co.

Street sweeping is a critical non-structural best management practice (BMP) employed by cities throughout Minnesota for the purposes of maintaining road surfaces, improving public safety through clearing of walking lanes and trash removal, and improving water quality through the removal of accumulated sediment (e.g., sand application from winter road maintenance) and vegetation detritus (e.g., leaf litter). The water quality impact of street sweeping is a topic of emerging research in the state on Minnesota, with recent studies promoting the practice as a highly cost-effective BMP for phosphorus reduction (Hobbie et al, 2020; EOR, 2022). In consideration of recent research and focus on street sweeping program development, Ramsey-Washington Metro Watershed District (RWMWD) is considering supporting street sweeping program enhancement requests through their existing Stewardship Grant Program.

The Ramsey-Washington Metro Watershed District (RWMWD) [Stewardship Grant Program \(2022\)](#) offers financial, educational, and technical assistance to protect and improve water resources throughout the District. To provide a basis for consideration of street sweeping program enhancement requests, a study was performed to (a) evaluate existing street sweeping programs throughout the District, (b) develop a methodology to rank and prioritize street sweeping areas / zones, and (c) summarize findings and outline recommendations for updates to the Stewardship Grant Program. The following technical memorandum summarizes methodology used to evaluate street sweeping throughout the District and provides recommendations for related programmatic updates to support street sweeping through the Stewardship Grant Program.

### 1 Street Sweeping Survey: District Partners

Before development of a street sweeping strategy could begin, it was first critical to understand existing municipal street sweeping operations throughout the District. In the summer of 2022, Barr Engineering Co. (Barr) and District staff developed a list of programmatic street sweeping survey questions and provided them to all member Cities within the District. A total of nine cities (out of 10) responded to the street sweeping survey. A complete record of all survey responses is included in **Appendix A**. Key questions from the survey and a summary of general responses to each are provided below:

- a) How often and in what seasons is street sweeping being performed? What types of sweepers are being used?
- Table 1-1 provides a summary of street sweeping operations conducted per season. According to the Minnesota Stormwater Manual [MS4 Street & Parking Lot Sweeping Fact Sheet](#), the typical Minnesota municipality performs two sweepings per year. Table 1-1 indicates that a majority of cities within the District are performing more sweepings per year than the state average.
- b) What are the goals of your street sweeping program? What are the annual expenses?
- Responses varied, but nearly all surveyed noted water quality as a key goal of street sweeping. Other responses included public safety, trash removal, aesthetics, improving drainage through catch basins and inlets, and fulfilling MS4 requirements.
  - Annual expenses varied based primarily on city size (\$47K to \$4.5M). Some cities contract out street sweeping while others perform operations in-house.
- c) What are the barriers to implementing or expanding street sweeping operations?
- Responses were highly varied (see **Appendix A**). Barriers included:
    - Lack of staffing / funding / vehicle acquisition / vehicle maintenance
    - Finding disposal sites / cost of disposal / cost of screening of material
    - Weather and optimal timing of street sweeping related to leaf drop
    - Logistics and on-street parking
- d) What type of support would be most helpful to maintain or improve street sweeping operations?
- Responses were highly varied (see **Appendix A**). Cost share requests included:
    - Assistance with staffing costs / costs to acquire and maintain equipment
    - Assistance with contracting street sweeping in high priority areas
    - Assistance with disposal costs / screening costs
    - Study of material reuse requirements / advanced screening to allow for more material reuse (offset disposal costs)

Information obtained from the street sweeping of District partners was critical to elements of the study described in the following sections. Survey results are directly referenced in the evaluation of existing operations (Section 2), development of prioritization strategies (Section 3), and development of Stewardship Grant Recommendations (Section 4).

**Table 1-1 RWMWD member City street sweeping survey response**

Municipality	Response: street sweeping program summary	Response: sweeper type	Sweepings per Season Assumptions for Modeling (#/season) <sup>1</sup>		
			Spring	Summer	Fall
Little Canada	3 times/year. Spring, summer, and fall	Johnston VT651 sweeper: combination mechanical/vacuum sweeper	1	1	1
Maplewood	Goal of 5 times/year. 2 in spring, 3 in fall.	2 Elgin Mechanical	2	0	3
North St. Paul	6-7 times per year. 2 in spring, 2 in summer, 3 in fall.	1 Elgin Pelican mechanical street sweeper	2	2	3
Oakdale	At least 3 times per year (one in each season)	1 Elgin Pelican mechanical sweeper, 1 Tymco 500X regenerative air sweeper	1	1	1
Roseville	4-6 full city sweeps per year. 1 in spring, 2-4 in summer, 1 in fall.	2 Pelican sweepers, 1 regenerative sweeper/vacuum	1	3	1
Shoreview	4-6 citywide sweeps per year. Sweeping starts after snow melt in spring and continues until snow starts in fall.	1 mechanical sweeper, 1 regenerative air sweeper.	2	1	2
St. Paul	Most swept in spring and fall. Arterial streets swept 4-8 times per year	15 Elgin Pelican and 1 Elgin Crosswind	1	0	1
White Bear Lake	We do a complete sweep of the entire city twice a year Spring & Fall. During that time, we are able to sweep all the city streets at least once sometimes twice. Also, throughout the summer we sweep high volume areas every Friday and touch up problems as they occur.	One sweeper it is a Tymco 500X regenerative air truck mount on a Freightliner chassis.	1	1	1
Woodbury	In spring after the snow melt, in fall before leaves drop from the trees.	1 mechanical, 1 regenerative air sweeper. 8 contractual sweepers in the spring and 6 contractual sweepers in the fall.	1	0	1

<sup>1</sup> Note: an assumption of one sweeping in the Spring, one sweeping in the Fall was assumed for all member Cities with no survey response.



## 2 District-Wide Street Sweeping: Evaluation of Existing Conditions

Prior to development of street sweeping prioritization strategies, it was first critical to develop a methodology to evaluate existing conditions throughout the District. The following subsections outline methodology used to evaluate (a) pollutant loading, (b) street sweeping pollutant recovery, and (c) street sweeping pollutant reduction based on existing street sweeping operations. An overview of the models and calculations used to evaluate existing street sweeping performance is included, below:

- 1) The GIS-based water quality model (GIS WQM) was used to evaluate (a) pollutant loading throughout the District and (b) street sweeping removal based on existing seasonal street sweeping operations (Table 1-1) (Section 2.2).
- 2) Existing P8 models were used to estimate the cumulative pollutant reduction from existing water quality BMPs in all modeled subwatersheds (Section 0).
- 3) Results from the GIS WQM and P8 models were combined to estimate the pollutant load recovery and pollutant load reduction to all District waterbodies (Section 2.4).

### 2.1 Street sweeping: pollutant recovery vs reduction

Recent studies have made an effort to differentiate street sweeping pollutant “recovery” versus pollutant “reduction” (EOR, 2022). Within this study, the terms are defined as follows:

- **Pollutant recovery:** the mass of pollutants collected during street sweeping operations.
- **Pollutant reduction:** the mass of pollutants prevented from reaching downstream waterbodies.

Many recent studies have been utilized to develop street sweeping reduction “calculators” to estimate pollutant load recovery associated with street sweeping operations (Kalinovsky et al., 2014; Hobbie et al, 2020), including the recently published [MPCA Street Sweeping Calculator](#). While the estimation of pollutant mass recovery is critical to evaluating the performance of street sweeping operations, it is important to acknowledge that not every pound of pollutant “recovered” via street sweeping equates to a pound of pollutant “reduced” to downstream waterbodies. Examples of processes impacting the relationship between recovery and reduction include:

- **Downstream water quality treatment:** if BMPs exist downstream of street sweeping operations, material removed via street sweeping may have instead been removed by the downstream BMP.
- **Bioavailability:** total phosphorus (TP) held in leaf litter and other sources may not decompose and become biologically available in receiving waterbodies.
- **Pollutant delivery:** some fraction of pollutant residing in a street may not be conveyed to downstream waterbodies. E.g., wind action may move leaf material from the street into a park where it degrades over the winter and following spring, never traveling to downstream waterbodies

The purpose of this section and definitions are to highlight that (a) a majority of modern studies have focused on pollutant recovery and that (b) pollutant reduction is equal to or less than pollutant recovery.

While this study attempts to account for the impact of downstream water quality treatment, it does not account for processes related to bioavailability or pollutant delivery, which have not been well studied and are outside of the focus of this study. For this reason, pollutant reduction cited in the study should only be used for relative comparison and prioritization of street sweeping efforts.

## 2.2 GIS WQM: pollutant loading and street sweeping recovery

The Barr developed GIS WQM is a GIS-based water quality model used to estimate pollutant loading and BMP performance on an annualized basis using methodology developed for the MIDS calculator and pollutant loading areal empirical equations developed from the P8 water quality model. For this study, only the pollutant loading and street sweeping modules were utilized. A complete description of methodology utilized in the GIS WQM can be found in the City of Richfield Street Sweeping Prioritization Study technical memorandum (Barr, 2021).

To analyze pollutant loading and street sweeping recovery using the GIS WQM, the following datasets were required:

- **Watershed imperviousness:** Directly connected imperviousness was estimated using land use based assumptions and impervious surface data from Ramsey County 2021 land use data.
- **Canopy cover:** Barr developed canopy cover estimates using 2022 aerial imagery processing techniques.
- **Road surfaces:** Barr developed road surface polylines (GIS delineations that identify the locations of road surfaces) using best available road surface datasets, including those requested from and provided by member cities.
- **Street sweeping frequency:** The seasonal street sweeping frequency assumed for member cities was developed using survey responses and assumptions outlined in Table 1-1.

The following provides a high-level overview of processing used to develop areal pollutant loading values and estimates of street sweeping recovery:

- **Pollutant loading:** Areal total phosphorus (TP) and total suspended sediment (TSS) loadings were estimated using empirical equations developed from P8 simulations relating pollutant loading to watershed directly connected imperviousness (Barr, 2020).
- **Street sweeping recovery:** street sweeping pollutant recovery is estimated using empirical relationships for TSS and TP developed by Sutherland and Jelen, 1997 and Kalinosky et al., 2015. Empirical relationships are a function of canopy cover, average sweeping interval, and regression coefficients which vary by month to reflect seasonal phosphorus loading conditions.

Figure 2-1 provides an example of the District-wide road surface and tree canopy spatial datasets generated during this project. Figure 2-2 and Figure 2-3 show percent canopy cover and areal TP loading rate for all areas within the District legal boundary, respectively.



Figure 2-1 Example of District-wide road surface and canopy cover datasets

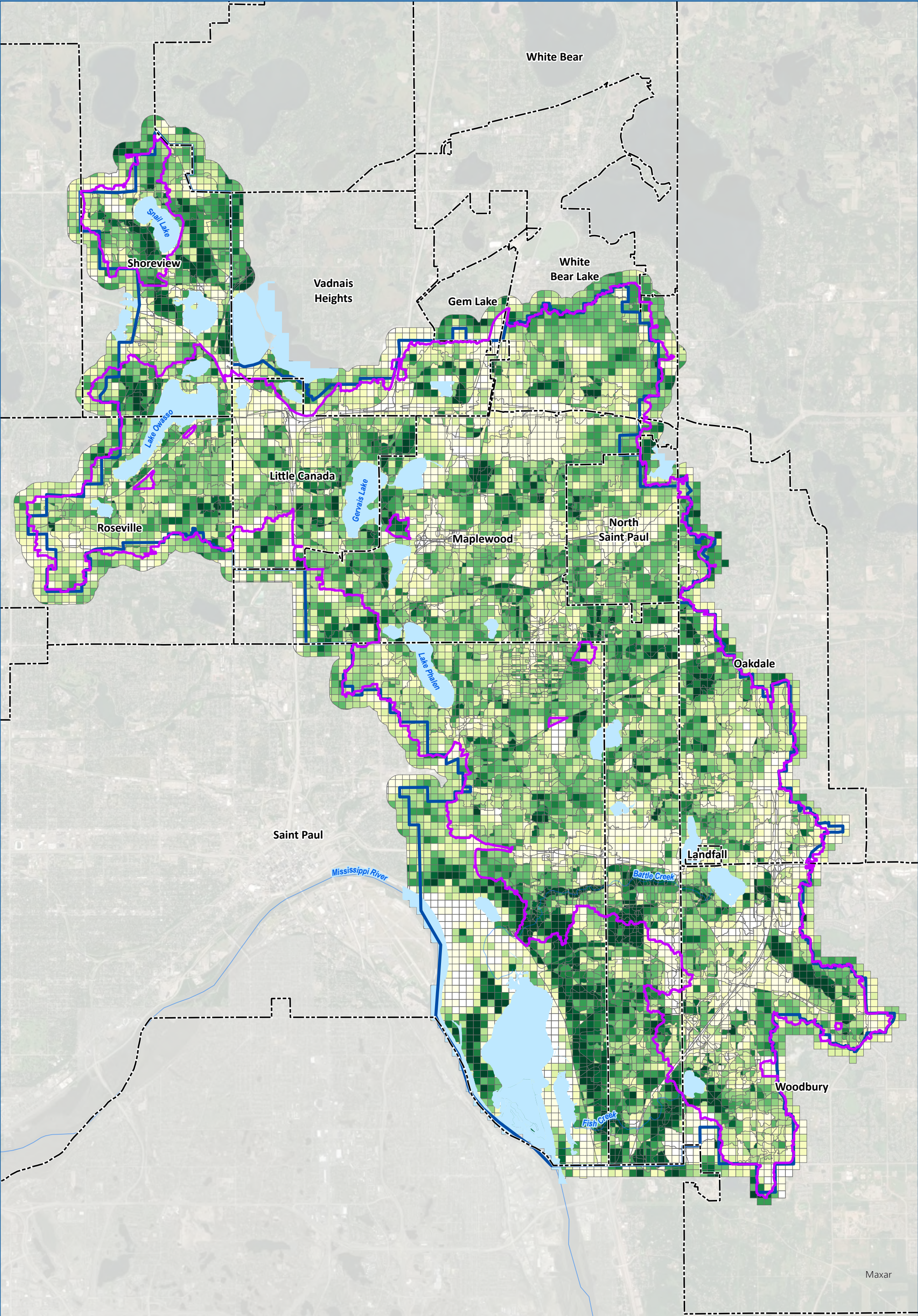
### 2.3 P8: downstream treatment from existing BMPs


Existing, best-available P8 water quality models that have been developed for the RWMWD in recent years were used to evaluate the pollutant reduction achieved by water quality BMPs throughout the District. Results from these models were used to estimate the cumulative pollutant reduction (%) occurring downstream from all modeled P8 catchments. This information was then used to calculate street sweeping pollutant reduction to downstream waterbodies as follows:















$$\text{Pollutant Reduction (lbs/yr)} = \text{Pollutant Recovery (lbs/yr)} \times \text{Cumulative Pollutant Reduction (\%)}$$

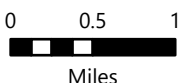

Calculation of pollutant reduction is critical to prioritization steps, as this value more closely approximates the actual pounds of pollutant reduction to a downstream waterbody achieved via street sweeping. Figure 2-4 shows the cumulative TP pollutant reduction calculated in all modeled catchments throughout the District. Note that not all areas of the District have been modeled in P8. In these areas, pollutant reduction is not calculated and these areas are not considered in prioritization strategies based on pollutant reduction. Additionally, as noted above, all P8 modeling was completed using best-available P8 models. These P8 models may not account for all recent development and BMP implementation throughout the District.







 P8 Modeled Areas	 0.1% - 10%	 50.1% - 60%
 Municipal Boundary	 10.1% - 20%	 60.1% - 70%
 Ramsey-Washington Metro WD	 20.1% - 30%	 70.1% - 80%
<b>Percent Tree Canopy</b>	 30.1% - 40%	 80.1% - 90%
 0.0%	 40.1% - 50%	 90.1% - 100%



Miles

**RMMWD PERCENT CANOPY COVER**  
Street Sweeping Prioritization  
RMMWD

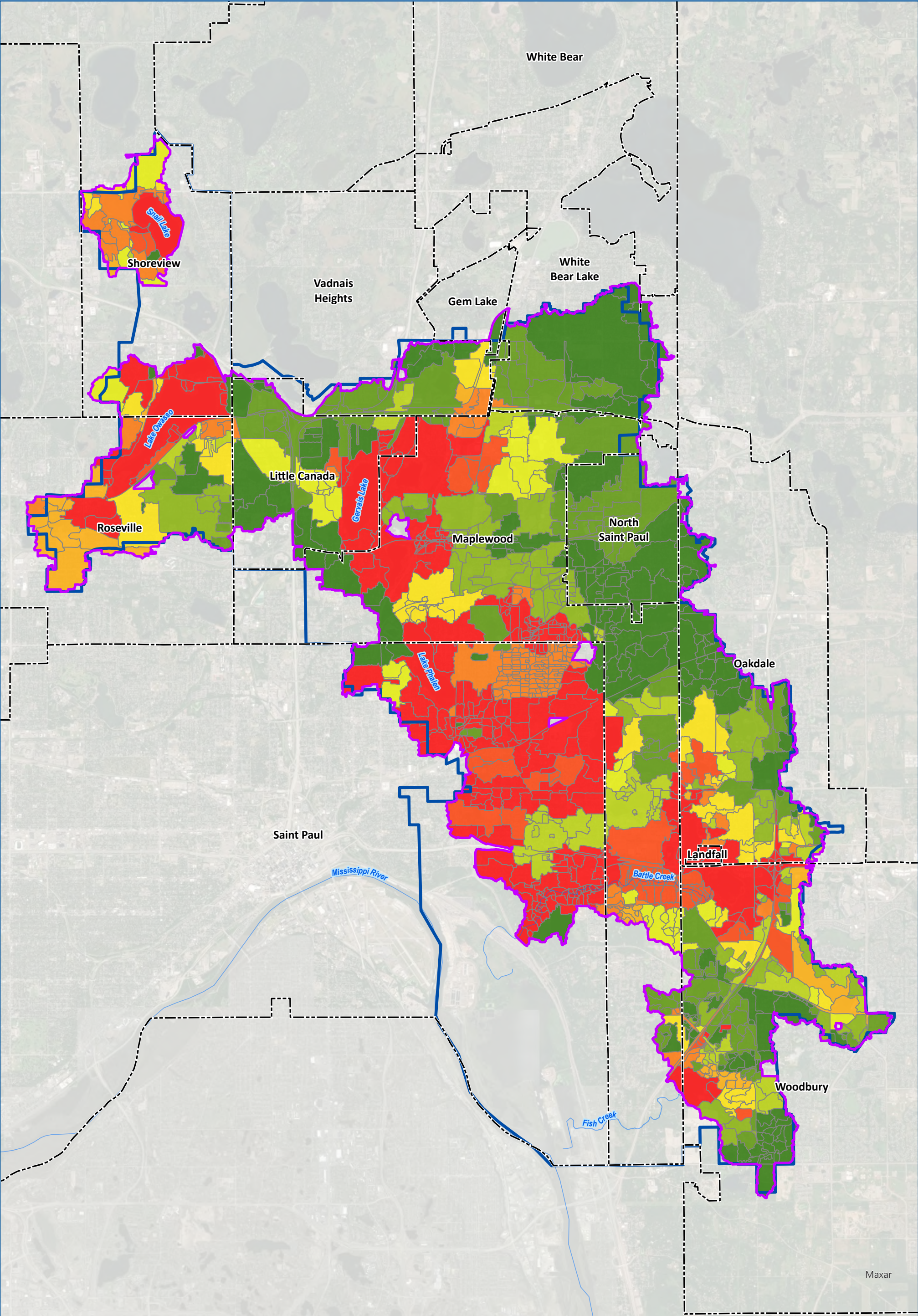
FIGURE 2-2








FIGURE 2-3










 P8 Modeled Areas


 Municipal Boundary


 Ramsey-Washington Metro WD


**Cumulative Reduction (%)**


 0% - 10%


 11% - 20%


 21% - 30%


 31% - 40%


 41% - 50%


 51% - 60%

 61% - 70%


 71% - 80%

 81% - 90%

 91% - 100%



00.51

 Miles

**RWMWD CUMULATIVE POLLUTANT REDUCTION: TP**

Street Sweeping Prioritization

RWMWD

**FIGURE 2-4**



## 2.4 District-wide street sweeping summary: existing conditions

Using methodology described in Section 2.2 and 2.3, street sweeping pollutant recovery and reduction was evaluated for all areas within the RWMWD legal boundary. Table 2-1 through Table 2-3 provides a summary of (a) street sweeping TSS and TP recovery, (b) reduction, and (c) reduction specifically in “impaired” or “at risk” waterbodies (impairment status as determined by the 2017 RWMWD WRAPS report and the MPCA’s 2022 impaired waterbodies list). As shown, model results estimate that existing street sweeping operations recover over 4% of TSS and nearly 11% of total phosphorus loading annually.

Table 2-1 RWMWD existing street sweeping performance: pollutant recovery

Pollutant	Street Sweeping: Recovery		
	Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)
TSS	6,827,556	286,886	4.2%
TP	22,759	2,491	10.9%

Table 2-2 RWMWD existing street sweeping performance: pollutant reduction

Pollutant	Street Sweeping: Reduction <sup>1</sup>		
	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)
TSS	5,541,974	59,474	1.1%
TP	18,433	1,017	5.5%

<sup>1</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8.

Table 2-3 RWMWD existing street sweeping performance: pollutant reduction in Impaired or At Risk watersheds

Pollutant	Street Sweeping: Reduction <sup>1</sup> [impaired / at risk watersheds]		
	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
TSS	2,773,367	37,302	1.3%
TP	9,231	655	7.1%

<sup>1</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8. Table 2-3 accounts for pollutant reduction only within impaired or at risk watersheds.

Results shown in Table 2-1 through Table 2-3 are shown by (a) municipality and (b) major watershed in **Appendix B**. Existing conditions model results inform the baseline sweeping recommendations and street sweeping prioritization discussed in Section 3.

### 3 District-Wide Street Sweeping: Prioritization

To inform potential future street sweeping grant funding via the Stewardship Grant Program, Barr performed an analysis to evaluate the cost-effectiveness of street sweeping throughout the District. Specifically, the following steps were complete:

- 1) Seasonal street sweeping and cost-benefit analyses were performed to determine the optimal number of sweeping operations per season.
- 2) Results from the seasonal street sweeping analysis and survey responses were used to develop a “baseline” street sweeping recommendation for the District.
- 3) The baseline street sweeping recommendation was modeled District-wide and results were used to develop prioritization ranking strategies.

The following subsections outline process used to develop a baseline street sweeping recommendation and the methodology used to develop street sweeping prioritization strategies.

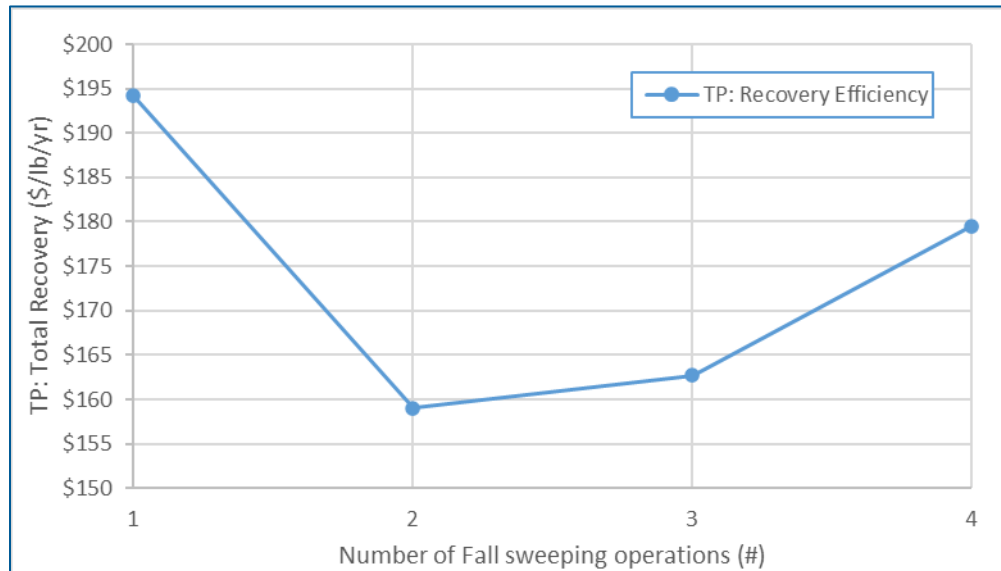
#### 3.1 Development of baseline street sweeping recommendation

Development of a “baseline” street sweeping recommendation for the District was considered for the following reasons: (1) to create a “baseline” recommendation to member cities on how often street sweeping should be performed seasonally, and (2) to develop a street sweeping approach that could be modeled to inform prioritization (i.e., have a consistent street sweeping modeling scenario to allow for equivalent comparison of relative street sweeping priority throughout the District). The process used to evaluate the optimal number of sweepings per season is described, below:

- **Seasonal sweeping modeling:** Iterations of the District-wide GIS WQM were performed to evaluate pollutant recovery per sweeping, per season (e.g., one spring sweeping, two spring sweepings, etc.). Based on the methodology used to estimate TP and TSS recovery (Kalinovsky et al., 2014; Sutherland and Jelen, 1997), the cumulative recovery of TSS and TP always goes up with successive sweepings, but the recovery per sweeping degrades (based on the assumption there is less recoverable material following each sweeping event). The cost-benefit of each sweeping was then evaluated to determine the optimal number of sweepings each season (see below).
- **Cost-benefit analysis:** Because a detailed, municipality-specific cost evaluation of street sweeping operations was outside the scope of this analysis, cost-efficiency information for the recently completed City of Woodbury: Enhanced Street Sweeping Plan (EOR, 2022) were used to estimate the cumulative cost of successive sweepings per season per lane-mile swept. Note: cost estimation information from the EOR study is highly specific to the City of Woodbury and should not be used to estimate actual cost per sweeping for other municipalities. However, because the goal of analysis was to have an equivalent basis of cost comparison of cost across all RWMWD municipalities, this methodology was deemed sufficient for development of this cost-benefit analysis.



Figure 3-1 shows the cost-benefit analysis of fall street sweeping operations for the District. As can be seen the optimal number of sweepings (i.e., sweepings resulting in the lowest cost per pound to TP removed) is 2 sweepings per fall season.



**Figure 3-1 TP removal cost efficiency for the RWMWD: Fall Season**

Using this methodology, the average cost efficiency was calculated for each season for one through four sweepings per season. District-wide results of this analysis are shown in Table 3-1. As shown in Figure 3-1, assuming sweeping equipment is owned (i.e., assuming street sweeping is not contracted out), the optimal number of sweeping each season is two. This finding as well as the following considerations were used to develop a District-wide, baseline street sweeping recommendation:

- **Seasonal cost efficiency:** the optimal number of sweepings to perform based on cost-efficiency values evaluated within a season is two sweepings per season. This frequency results in the lowest combined cost per pound per year of TP recovered for all three seasons evaluated (spring, summer, and fall).
- **Overall cost efficiency:** Fall pollutant recovery values produces the highest cost efficiency per season, followed by spring, then summer.
- **Existing street sweeping operations:** based on results of the District street sweeping survey, a majority of municipalities sweep four to five times per year.

**Table 3-1 TP recovery cost efficiency by season and number of sweepings.**

Season	No. Sweepings (#)	Recovery Efficiency (\$/lb TP/yr)	
		Sweeping Equipment: Owned	Sweeping Equipment: Contracted
SPRING	1	\$324.88	\$230.34
	2	\$261.50	\$306.28
	3	\$265.15	\$396.78
	4	\$291.78	\$507.01
SUMMER	1	\$448.39	\$317.91
	2	\$356.23	\$417.22
	3	\$360.02	\$538.75
	4	\$395.75	\$687.68
FALL	1	\$194.15	\$137.65
	2	\$159.03	\$186.26
	3	\$162.70	\$243.47
	4	\$179.55	\$312.00

In consideration of the cost benefit analysis, results of the street sweeping survey, and coordination with District staff, the following baseline street sweeping recommendation was developed:

- District-wide baseline recommendation:** 1 spring sweeping, 1 summer sweeping, and 2 to 3 fall sweepings.

The baseline recommendation serves as a minimum sweeping recommendation to member cities. The baseline recommendation can be considered within the Stewardship Grant Program (e.g., does the proposed enhanced sweeping program meet District baseline sweeping recommendations?). Additionally, the baseline recommendation is used as the default modeling assumption the sweeping prioritization analysis, discussed in the following section.

Street sweeping pollutant recovery and reduction results calculated using the District-wide baseline assumption are compared to existing condition recovery and reduction results in Table 3-2 through Table 3-4. As can be seen, the baseline recommendation results in higher removal and recovery values than existing street sweeping operations. Results in **Appendix C** (see related discussion in Section 3.2) indicate that only two municipalities have existing street sweeping operations which meet or exceed the baseline recommendation (North Saint Paul and Shoreview, see Table 1-1).

**Table 3-2 RWMWD baseline street sweeping recommendation compared to existing conditions: TP Recovery**

Pollutant	Loading (lbs/yr)	Street Sweeping: Recovery			
		Existing Conditions		Baseline Recommendation	
		Recovery (lbs/yr)	Recovery (%)	Recovery (lbs/yr)	Recovery (%)
TSS	6,827,556	286,886	4.2%	537,056	7.9%
TP	22,759	2,491	10.9%	2,988	13.1%

**Table 3-3 RWMWD baseline street sweeping recommendation compared to existing conditions: TP Reduction**

Pollutant	Loading (lbs/yr)	Street Sweeping: Reduction <sup>1</sup>			
		Existing Conditions		Baseline Recommendation	
		Reduction (lbs/yr)	Reduction (%)	Reduction (lbs/yr)	Reduction (%)
TSS	5,541,974	59,474	1.1%	141,997	2.6%
TP	18,433	1,017	5.5%	1,296	7.0%

<sup>1</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8.

**Table 3-4 RWMWD baseline street sweeping recommendation compared to existing conditions: TP Reduction in impaired or at risk watersheds**

Pollutant	Loading (lbs/yr)	Street Sweeping: Reduction [impaired / at risk watersheds] <sup>1</sup>			
		Existing Conditions		Baseline Recommendation	
		Reduction (lbs/yr)	Reduction (%)	Reduction (lbs/yr)	Reduction (%)
TSS	2,773,367	37,302	1.3%	94,773	3.4%
TP	9,231	655	7.1%	875	9.5%

<sup>1</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8. Table 3-3 accounts for pollutant reduction only within impaired or at risk watersheds.

### 3.2 District-wide street sweeping prioritization

During development of this study, Barr and District staff coordinated to discuss many different prioritization strategies (e.g., prioritize by total pollutant recovery? Prioritize by pollutant loading reduction to nutrient impaired water bodies? Etc.). Eventually, the following three strategies were developed. Pros and cons of each strategy are described, below:

- 1) **Total recovery:** prioritize street sweeping by evaluating total TSS and TP pollutant recovery across the District.
  - o **Pros:** Priority areas can be identified District-wide (not reliant on P8 results).
  - o **Cons:** does not account for pollutant reduction to downstream waterbodies (i.e., does not account for treatment opportunities in BMPs downstream of street sweeping areas).
- 2) **Total reduction:** prioritize street sweeping by evaluating total TSS and TP pollutant reduction to District managed waterbodies.
  - o **Pros:** accounts for downstream treatment / attempts to approximate actual pollutant load reduction to District managed waterbodies.
  - o **Cons:** Priority areas can only be identified in P8-modeled areas (i.e., areas where cumulative downstream reduction can be evaluated).
- 3) **Total reduction to impaired / at risk waterbodies:** prioritize street sweeping by evaluating total TSS and TP pollutant reduction to impaired or at-risk District managed waterbodies (as defined by the 2017 WRAPS report and review of MPCA's 2022 draft list of impaired waterbodies).
  - o **Pros:** accounts for downstream treatment / attempts to approximate actual pollutant load reduction to impaired and at-risk District managed waterbodies.
  - o **Cons:** Priority areas can only be performed in P8-modeled areas (i.e., areas where cumulative downstream reduction can be evaluated) and only applies to watersheds classified as impaired or at risk.

Using GIS WQM and P8 results, total recovery and reduction values were calculated at the scale of subwatershed segments (average size: 2.5-acres) for all areas throughout the District. Specifically, recovery and reduction values were calculated for all modeled GIS WQM subwatersheds segments, normalized, and ranked to produce a final ranking value (1 = highest priority ranked area, 0 = lowest ranked priority area).

Because prioritization calculations were conducted at a small resolution, prioritization values can be evaluated at a very small scale (e.g., street-by-street analysis). However, results at this fine of a scale are not useful for street sweeping prioritization, as it is inefficient for cities to vary sweeping operations street-by-street. Based on coordination with the District, prioritization calculations were rasterized and recalculated at the scale of Public Land Survey System (PLSS) **quarter sections** (160 acres). Quarter sections were chosen as they match more-closely to the size of typical street sweeping "zones" used by Cities to implement street sweeping operations. Note: because prioritization calculations have been calculated at the scale of subwatershed segments, it requires minimal effort to recalculate prioritization ranking based on actual street sweeping zones used by Cities (street sweeping zones were requested as



part of this study but were not provided by enough municipalities to use within this study). Figure 3-2 below shows an example of the TP total recovery ranking calculated and displayed specifically for the City of Woodbury.

Figure 3-3 through Figure 3-5 display results based on the three prioritization methodologies listed above at the quarter section scale. Prioritization ranking for total recovery is a function of canopy cover and street density, while prioritization ranking for total reduction is additionally a function of cumulative reduction (%) (see Figure 2-2). Because ranking results are rasterized, relative street sweeping ranking can be evaluated at any scale (e.g., municipal scale, major watershed scale, etc.). **Appendix C** provides a summary of removal, reduction, and ranking values at the municipal and major watershed scale. Results summarized in Appendix C are discussed in respect to the Stewardship Grant program and funding consideration in the following section.

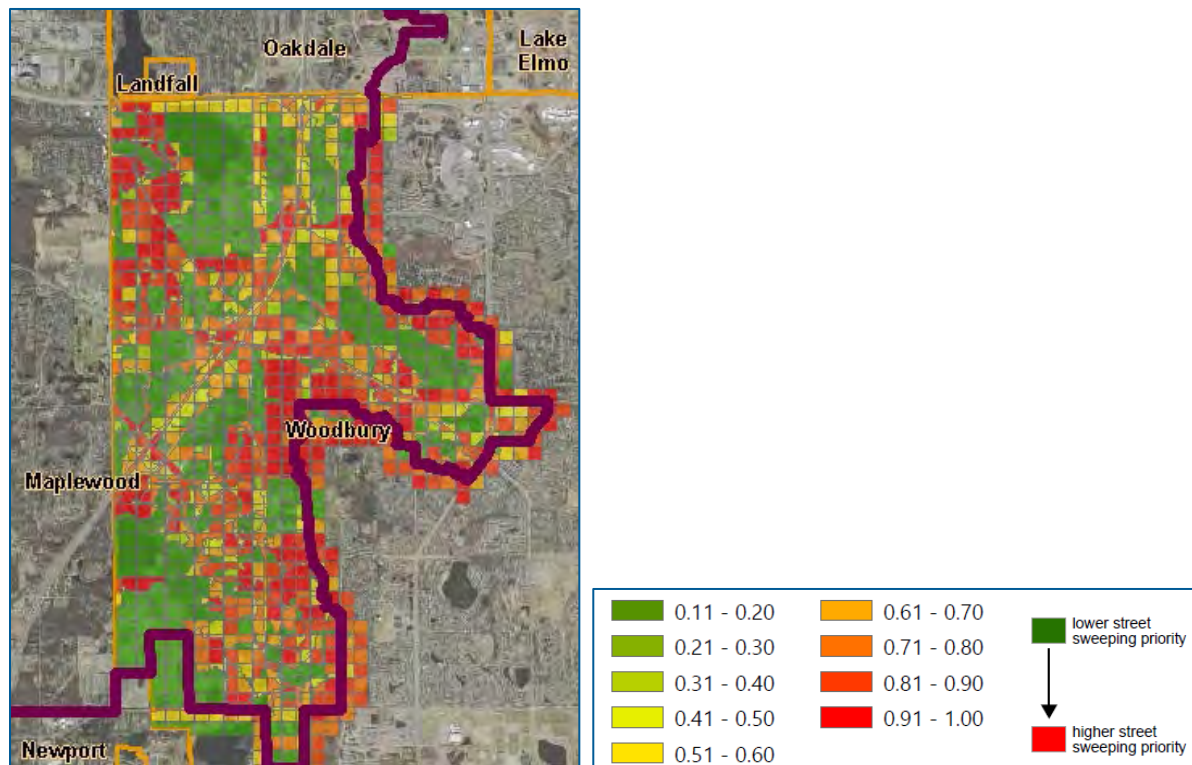
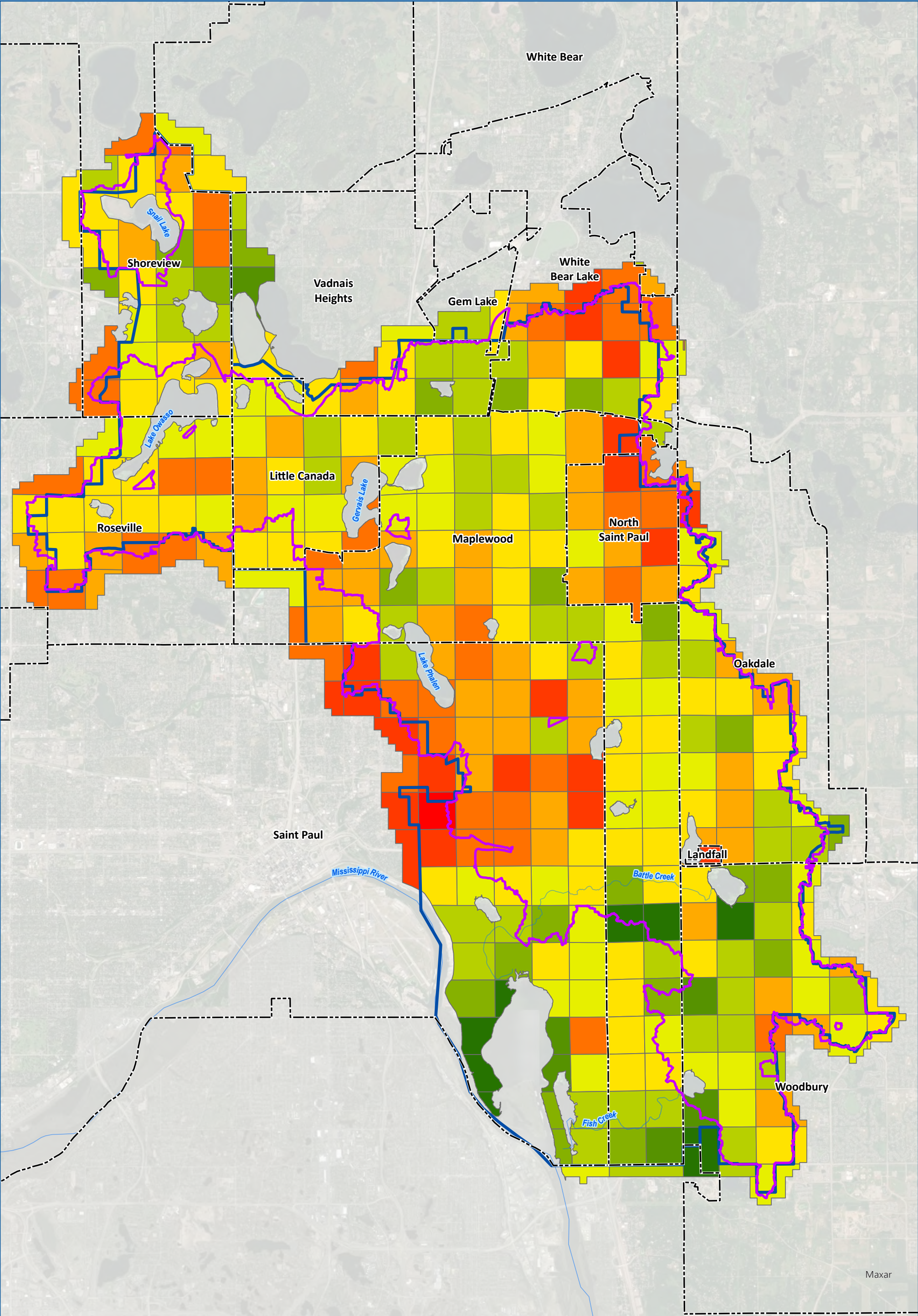



Figure 3-2 TP recovery ranking values: City of Woodbury







**Ramsey-Washington Metro WD**

Municipal Boundary

P8 Modeled Areas

**Rank: TP Raw Recovery**

0.00 - 0.10

0.11 - 0.20

0.21 - 0.30

0.31 - 0.40

0.41 - 0.50

0.51 - 0.60

0.61 - 0.70

0.71 - 0.80

0.81 - 0.90

0.91 - 1.00

lower street sweeping priority

higher street sweeping priority

0 0.5 1

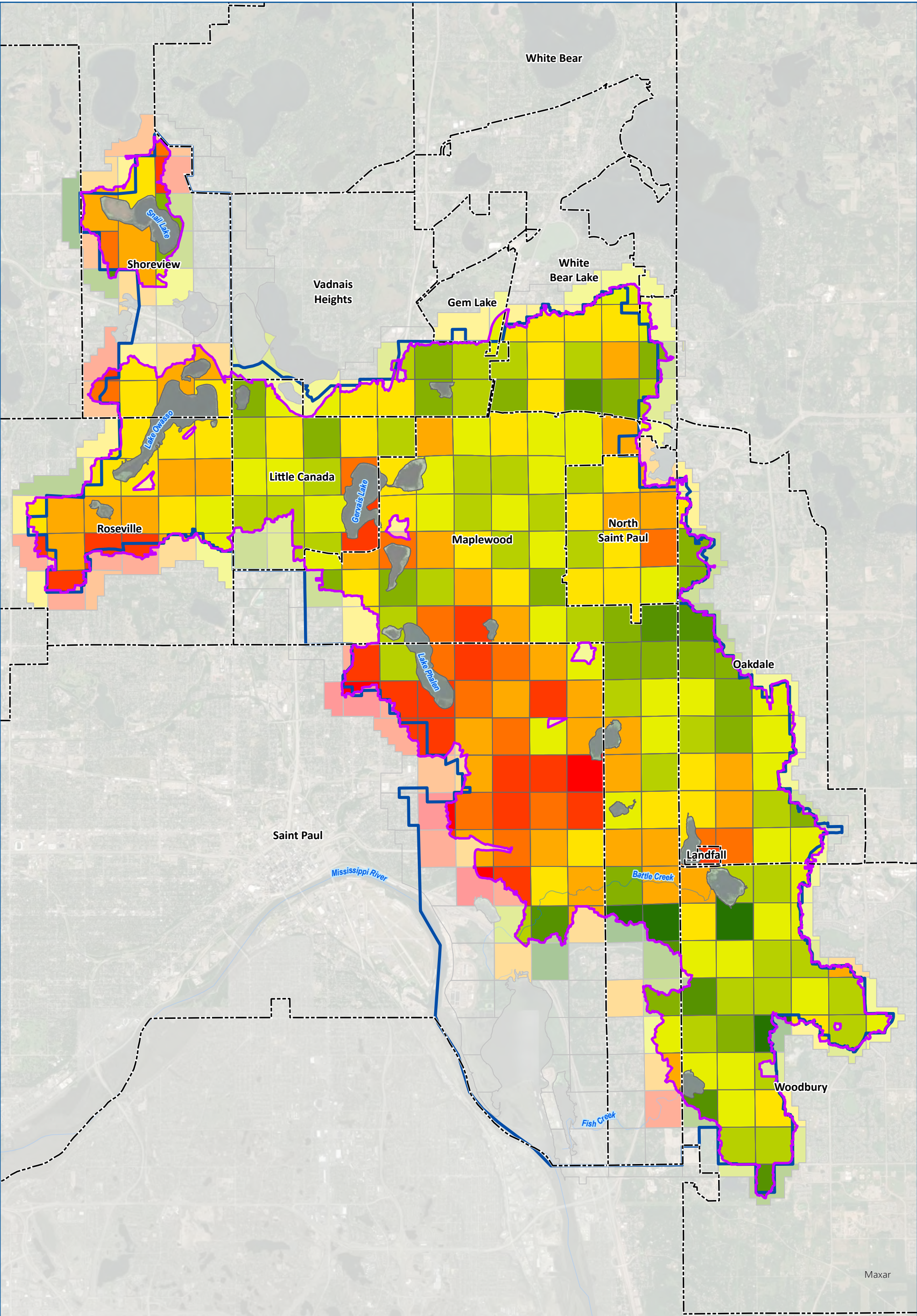
Miles


**DISTRICT-WIDE PRIORITIZATION RANKING: TP RECOVERY**


Street Sweeping Prioritization RWMWD

FIGURE 3-3











Ramsey-Washington Metro WD




Municipal Boundary




P8 Modeled Areas


**Rank: TP Effective Removal**




Null




0.00 - 0.10




0.11 - 0.20




0.21 - 0.30




0.31 - 0.40




0.41 - 0.50




0.51 - 0.60




0.61 - 0.70




0.71 - 0.80




0.81 - 0.90




0.91 - 1.00



lower street sweeping priority



higher street sweeping priority



0 0.5 1

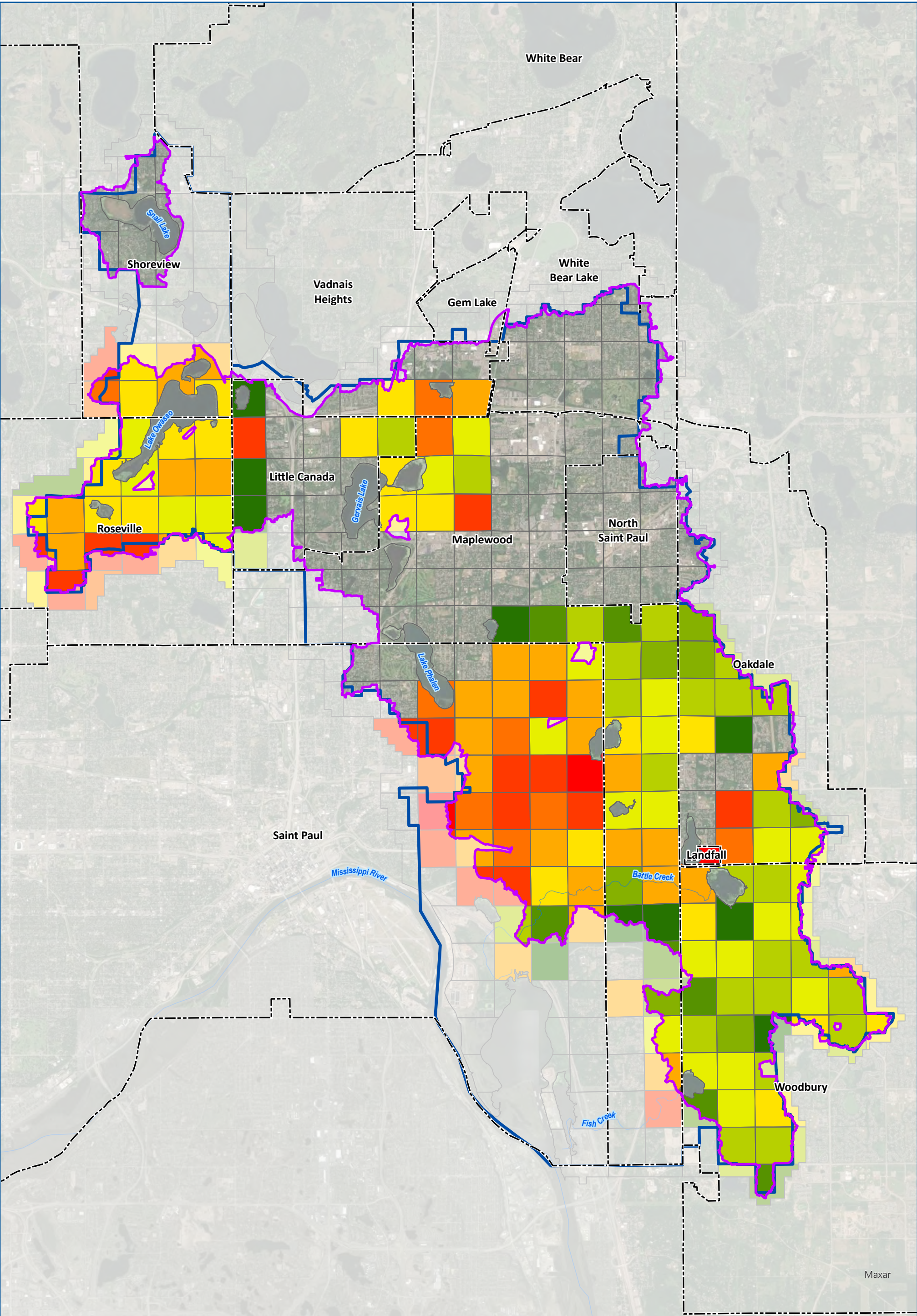
Miles


**DISTRICT-WIDE  
PRIORITIZATION RANKING:  
TP REDUCTION**


Street Sweeping Prioritization  
RWMWD


FIGURE 3-4



















 Ramsey-Washington Metro WD


 Municipal Boundary


 P8 Modeled Areas


**Rank: TP Effective Removal-Impaired Waters**

 Null

	0.00 - 0.10		0.51 - 0.60
	0.11 - 0.20		0.61 - 0.70
	0.21 - 0.30		0.71 - 0.80
	0.31 - 0.40		0.81 - 0.90
	0.41 - 0.50		0.91 - 1.00

 lower street sweeping priority

 higher street sweeping priority



00.51Miles

**DISTRICT-WIDE  
PRIORITIZATION RANKING:  
TP REDUCTION FOR IMPAIRED  
& AT RISK WATERSHEDS**  
Street Sweeping Prioritization  
RWMWD

FIGURE 3-5



## 4 Stewardship Grant Recommendations

As outlined in Section 1, the District is considering supporting street sweeping operations and street sweeping program enhancement requests in priority areas through their existing Stewardship Grant Program. The following subsections outline how street sweeping performance review (Section 2) and prioritization (Section 3) may be used by the District to help inform the Stewardship Grant Program and evaluation of grant requests related to street sweeping.

### 4.1 Strategies for awarding Stewardship Grant Funding

Throughout development of this Study, Barr and District staff discussed several strategies to incorporate street sweeping program enhancement into the Stewardship Grant program. Strategies discussed are briefly described, below:

- **Targeted:** This strategy involves evaluating street sweeping prioritization results and actively selecting geographic areas to approach with grant opportunities (e.g., cities, major watershed, priority areas, etc.). This strategy is based on the grant funding approach utilized for the RWMWD Targeted Retrofit Program. Prioritization results and mapping presented in this study could be used to determine which partners to actively approach with grant opportunities.
- **Application Based:** This strategy involves advertising street sweeping grant opportunities to member cities and allowing cities to apply for grant funding. If grant funding is not sufficient to support all grant requests within a given funding year, a list of pre-developed criteria could be used to evaluate and prioritize funding support. Criteria could include the prioritization analysis presented in this technical memorandum and programmatic questions including the following:
  - Does the applicant's proposed street sweeping plan meet or exceed baseline street sweeping recommendations (Section 3.1)?
  - Does the applicant demonstrate the ability to execute the proposed street sweeping plan? E.g., do they have sufficient sweeping equipment and staff in place?
  - Is the applicant planning enhanced sweeping in high priority areas?

Based on discussion from an internal RWMWD meeting to discuss 2023 implementation of the Stewardship Grant Program, District staff propose to initially incorporate street sweeping grant opportunities utilizing the "Targeted" approach, outlined above. To support active evaluation of street sweeping partners within the District, Table 4-1 and Table 4-2 provide a summary of prioritization ranking by municipality and major watershed, respectively. Note: these tables summarize the complete prioritization analysis results summarized in **Appendix C**. In addition to prioritization ranking values, the tables also include a comparison of pollutant reduction and recovery values (pounds of pollutant per year) from the suggested baseline sweeping condition (Section 3.1) to existing conditions sweeping operations (Section 2.4). A combined ranking values which considers both the (a) prioritization results from the GIS WQM and (b) the difference in pollutant recovery and reduction from existing to baseline conditions is also included in the tables. Combined ranking values may be used to determine municipalities and/or watersheds to target via the "Targeted" grant funding approach.

Table 4-1 Street sweeping prioritization values for total phosphorus: by municipality.

Municipality	Area (acres)	TP Prioritization Ranking Strategies								
		Street Sweeping Recovery & Reduction Comparison [Baseline - Existing Conditions] (lbs/yr)			Recovery / Reduction Ranking Number (#) <sup>1</sup>			Combined Ranking Number [Rank based on Baseline Change & Recovery / Reduction Ranking] (#) <sup>2</sup>		
		Recovery	Reduction <sup>3</sup>	Reduction [imp. / at risk] <sup>4</sup>	Recovery	Reduction <sup>3</sup>	Reduction [imp. / at risk] <sup>4</sup>	Recovery	Reduction <sup>3</sup>	Reduction [imp. / at risk] <sup>4</sup>
Gem Lake	45.6	+0.8	+0.1	0.0	6	8	--	4	7	--
Landfall	53.0	+2.5	+2.5	+2.1	5	2	1	2	1	1
Little Canada	2,882.3	+34.0	+9.2	+0.9	7	6	7	6	4	5
Maplewood	10,840.4	+12.2	+8.6	+4.9	11	7	9	13	10	9
North Saint Paul	1,774.7	-47.4	-3.6	0.0	1	5	--	6	10	--
Oakdale	3,328.8	+37.9	+12.8	+4.6	9	9	6	8	5	7
Roseville	2,603.2	+20.6	+10.8	+10.8	3	3	3	5	3	4
Saint Paul	10,431.9	+323.7	+214.6	+176.7	4	1	5	3	1	3
Shoreview	3,409.1	-4.8	-3.1	-1.2	8	4	4	11	7	8
Vadnais Heights	1,320.3	+17.2	+2.7	+0.4	12	10	2	10	9	2
White Bear	6.5	+0.0	+0.0	0.0	10	13	10	11	13	10
White Bear Lake	1,956.2	+35.6	+2.5	0.0	2	11	--	1	12	--
Woodbury	4,670.2	+63.1	+21.2	+21.2	13	12	8	9	6	6

<sup>1</sup> Ranking value based on TP recovery or reduction values calculated from GIS WQM results.  
<sup>2</sup> Combined ranking value considering both (a) ranking of TP recovery or reduction values calculated in from GIS WQM results and (b) recovery / reduction ranking values.  
<sup>3</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8.  
<sup>4</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8. Table 2-3 accounts for pollutant reduction only within impaired or at risk watersheds.

Table 4-2 Street sweeping prioritization values for total phosphorus: by major watershed.

Major Watershed	RWMWD Impairment Status <sup>3</sup>	TP Prioritization Ranking Strategies								
		Street Sweeping Reduction & Removal Comparison [Baseline - Existing Conditions] (lbs/yr)			Recovery / Reduction Ranking Number (#) <sup>1</sup>			Combined Ranking Number [Rank based on Baseline Change & Recovery / Reduction Ranking] (#) <sup>2</sup>		
		Recovery	Reduction <sup>4</sup>	Reduction [imp. / at risk] <sup>5</sup>	Recovery	Reduction <sup>4</sup>	Reduction [imp. / at risk] <sup>5</sup>	Recovery	Reduction <sup>4</sup>	Reduction [imp. / at risk] <sup>5</sup>
Battle Creek	Impaired	+46.0	+32.3	+32.3	17	13	5	6	6	1
Battle Creek Lake	At Risk	+28.3	+15.1	+15.1	19	15	4	12	5	2
Beaver Lake	At Risk	+13.0	+5.6	+5.6	15	18	6	11	10	6
Blufflands	Impaired	+30.5	0.0	0.0	11	--	--	3	--	--
Carver Lake	At Risk	+28.3	+7.7	+7.7	18	17	7	8	7	4
Fish Creek	At Risk	+2.2	0.0	0.0	21	--	--	15	--	--
Gervais Creek	Stable	+22.1	+3.7	0.0	7	14	--	9	12	--
Gervais Lake	Stable	+9.9	+5.3	0.0	3	4	--	5	2	--
Grass Lake	Stable*	+0.3	0.0	0.0	14	--	--	19	--	--
Keller Lake	Stable	+3.3	+2.8	0.0	10	9	--	17	13	--
Kohlman Creek	Stable	-43.4	-2.7	0.0	2	10	--	14	16	--
Kohlman Lake	Impaired	+5.0	+4.3	+4.3	16	8	3	13	4	3
Lake Owasso	At Risk	+17.4	+9.8	+9.8	6	5	2	16	9	5
Lake Phalen	Stable	+47.2	+36.6	0.0	8	6	--	4	3	--
Lake Wabasso	Stable	+0.0	+0.2	0.0	4	2	--	20	15	--
Snail Lake	Stable	-3.3	-2.0	0.0	12	7	--	21	17	--
Snake Creek	Stable*	+0.1	0.0	0.0	22	--	--	18	--	--
St. Paul Beltline	Impaired	+153.1	+145.6	+145.6	1	1	1	22	18	7
Tanners Lake (North)	Stable	+12.9	+4.6	0.0	13	12	--	10	8	--
Tanners Lake (South)	Stable	+6.0	+5.1	0.0	5	3	--	1	1	--
West Vadnais Lake	Stable*	+1.9	+0.0	0.0	20	11	--	2	11	--
Willow Creek	Stable*	+41.9	+4.5	0.0	9	16	--	7	14	--

<sup>1</sup> Ranking value based on TP recovery or reduction values calculated from GIS WQM results.

<sup>2</sup> Combined ranking value considering both (a) ranking of TP recovery or reduction values calculated in from GIS WQM results and (b) recovery / reduction ranking values.

<sup>3</sup> Impairment status as determined by the 2017 RWMWD WRAPS report and the MPCA’s 2022 draft impaired waterbodies list. (\*) indicates that waterbody status is not listed in the 2017 RWMWD WRAPS report and impairment status was determined via review of the MPCA’s 2022 draft impaired waterbodies list

<sup>4</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8.

<sup>5</sup> Pollutant reduction (accounting for downstream treatment) can only be calculated for portions of the District modeled in P8. Table 2-3 accounts for pollutant reduction only within impaired or at risk watersheds.

## 4.2 Street sweeping activities to support via Stewardship Grant Funding

Based on results from the street sweeping survey (Section 1), District partners experience unique barriers to conducting street sweeping operations. For this reason, it is anticipated partners will request funding to support a variety of program improvements to help overcome challenges unique to each City. The following list outlines a variety of activities which the District may decide to support via Stewardship Grant funding. When considering support, it is recommended the District assign higher priority to activities that improve street sweeping operations or assist in meeting or maintaining baseline standards:

- Purchasing additional street sweeping equipment / support of funding for additional street sweeping personnel.
- Contracting of additional street sweeping operations.
- Funding to support enhanced sweeping in priority areas.
- Assistance with vehicle maintenance costs / labor costs.
- Assistance with material disposal / screening costs to support sweeping efforts.
- Assistance with public education and outreach (e.g., pre-sweeping operation signage).
- Assistance with research and analysis related to material testing and disposal / reuse.

This list above is intended to outline types of activities that the District may choose to support via the Stewardship grant program. This is not a complete list, and funding consideration should remain flexible to allow for consideration of unique requests to enhance or maintain street sweeping operations.

## 4.3 Stewardship Grant Funding: Progress Tracking

Tracking progress related to application of grant funds is critical to the success of any grant program. Below is a list of strategies that may be used to track enhanced sweeping efforts associated with Steward grant funding:

- **Street sweeping logs and reporting:** request that the grantee submit existing street sweeping tracking documentation and outline a strategy for tracking enhanced street sweeping efforts. This may include operator logs of streets swept including dates and number of passes.
- **GPS tracking:** some Cities have implemented GPS tracking units on street sweeping equipment to help track streets swept, log timing of sweepings, and track operator progress during sweeping operations. GPS tracking could be utilized to demonstrate enhanced street sweeping efforts.
- **Material weight tracking:** many Cities weigh material as part of screening and disposal processes. Requesting applicants to collect swept material may be utilized to demonstrate the effectiveness of enhanced street sweeping efforts. As discussed in Section 5, weight may also be used to estimate pollutant reduction utilizing the [MPCA Street Sweeping Calculator](https://barr-my.sharepoint.com/personal/mmckinney_barr_com/Documents/RWMWD%20Street%20Sweeping%20Prioritization/Memo%20&%20Board%20Materials/RWMWD_StreetSweepingPrioritization_2022-11-21.docx).

## 5 General Street Sweeping Guidance and Recommendations

During research and development related to this study, Barr reviewed many references, fact sheets, and studies related to the development, implementation, and improvement of street sweeping programs. The



**To:** Paige Ahlborg - Ramsey Washington Metro Watershed District Project Manager  
**From:** Michael McKinney, Erin Anderson Wenz, and Timothy Anderson – Barr Engineering Co.  
**Project:** RWMWD Street Sweeping Prioritization Study  
**Date:** November 16th, 2022  
**Page:** 24

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following table provides a summary of key recommendations from reviewed references (see Section 7) as well as the following sources:

- [MPCA MS4 Fact Sheet: Street and Parking Lot Sweeping](#)
- [North American Sweeper Magazine: Top Tips for Street Sweeping](#)
- [Adopt a Storm Drain](#)
- [MCPA Managing Street Sweepings](#)

**Table 5-1 General street sweeping program recommendations**

Category	Street Sweeping Recommendation
Sweeping Frequency and Timing	<ul style="list-style-type: none"> <li>Street sweeping operations should be targeted at the following critical times each year:               <ul style="list-style-type: none"> <li>Early spring: immediately following snowmelt to capture sand, leaf litter from the previous season, and other deicing materials.</li> <li>Mid-June: following release of summer flowering material and seeds (e.g., maple seeds)</li> <li>Fall: timed with leaf drop to the extent practicable.</li> </ul> </li> </ul>
Regenerative Air versus Mechanical Sweepers	<ul style="list-style-type: none"> <li>Regenerative air sweepers are more effective for capturing small particulate but less effective than mechanical sweepers during wet conditions.</li> <li>Tandem sweeping (one sweeper followed by another, e.g., mechanical sweeper followed by regenerative air) can greatly increase sweeping efficiency.</li> <li>A recent Minnesota Stormwater Research Council study did not find a statistically significant difference in total nutrient recovery between mechanical broom and regenerative air sweepers (Hobbie et al, 2020)</li> </ul>
Operations	<ul style="list-style-type: none"> <li>Coordinate with street sweeping operators to determine what are the most significant barriers to effective curb sweeping (for example):               <ul style="list-style-type: none"> <li>Interruptions caused by on-street parking</li> <li>Distance to storage/disposal facility</li> <li>Asset management/route tracking</li> <li>Timing of street sweeping operations, etc.</li> </ul> </li> </ul>
Policy	<ul style="list-style-type: none"> <li>Enact policies to discourage tree placement along boulevards (i.e., enact policies to reduce street canopy overhang and encourage a buffer between street surfaces and trees). Note: this policy recommendation does not account for other benefits of canopy cover, including rainfall interception and heat island reduction.</li> <li>Use off-street signage to inform residents when streets are being swept and remind residents to move vehicles.</li> </ul>
Public Outreach	<ul style="list-style-type: none"> <li>Consider incorporating the following public outreach objectives into a comprehensive street sweeping program:               <ul style="list-style-type: none"> <li>Encourage residents to rake/bag June and fall leaf litter.</li> <li>Include a link to MN <a href="#">adopt a drain</a> (i.e., encourage residents to "adopt" and clean debris/clear ice from a nearby catch basin).</li> <li>Consider adding functionality for residents to request street sweeping/report issues (e.g., sediment loading from a nearby construction site, etc.). Information gathered in aggregate can be used to evaluate high sediment/pollutant loading areas.</li> </ul> </li> </ul>
MPCA Street Sweeping Calculator	<ul style="list-style-type: none"> <li>Consider recording collected material weights (wet or dry) for pollutant removal evaluation using the recently developed <a href="#">MPCA Street Sweeping Calculator</a>.               <ul style="list-style-type: none"> <li>The calculator utilizes empirical relationships developed from the 2020 Minnesota Stormwater Research Council study (Hobbie et al., 2020) to estimate phosphorus recovery associated with wet or dry weight sweeping mass totals.</li> </ul> </li> </ul>

## 6 Conclusions and Recommendations

A modeling analysis was performed to evaluate the performance of existing street sweeping operations throughout the District. Results of this analysis were used to (a) evaluate existing street sweeping programs throughout the District, (b) develop a methodology to rank and prioritize street sweeping areas / zones, and (c) develop recommendations to RWMWD Stewardship Grant program to support funding of enhanced street sweeping operations. A summary of key conclusions and recommendations presented in this technical memorandum is included, below:

- A survey of RWMWD municipal partners was conducted to evaluate existing street sweeping programs. Survey results were summarized and used to (a) develop modeling of existing street sweeping operations and (b) identify challenges to implementing street sweeping operations and potential requests for funding support to enhance operations.
- Existing street sweeping modeling and a seasonal modeling cost-benefit analysis was used to develop a baseline street sweeping recommendation for member cities (i.e., 1 summer sweeping, 1 spring sweeping, and 2-3 fall sweepings). Baseline modeling results were used to develop strategies to identify and rank high priority street sweeping areas throughout the District.
- Street sweeping prioritization strategies were reviewed with District staff and used to develop programmatic recommendations for updates to the RWMWD Stewardship Grant Program. It is recommended that prioritization strategies outlined in Section 4 and street sweeping prioritization rankings and results (Table 4-1, Appendix C) be used to inform support of enhanced street sweeping operations through the Stewardship Grant Program.
- Consider summarizing and sharing general street sweeping guidance and recommendations summarized in Section 5 with partner cities.
- Prioritization results developed during this study can be re-evaluated at any scale. If member Cities have operational street sweeping areas (street sweeping “zones”), prioritization values could be used to develop a unique ranking analysis for each City based on existing street sweeping zones.

### List of Appendices

**Appendix A – RWMWD street sweeping survey responses.**

**Appendix B – Existing condition street sweeping recovery and reduction results.**

**Appendix C – Baseline condition recovery, reduction, and ranking results.**



## 7 References

- Barr Engineering Co. (Barr). 2020. Development and Validation of GIS WQM and P8 Water Quality Models. Prepared for the City of Richfield. December 11, 2020.
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Appendix A – RWMWD street sweeping survey responses.

Municipality	RWMWD street sweeping survey question to municipal partners										
	1. Curb Miles Maintained	2. Sweepings per year	3. Certain areas more frequent	4. Annual expenses	5. Type and number of sweepers	6. Annual staff hours	7. Barriers	8. Data collected	9. Reasons for sweeping	10. Cost share options	11. Additional comments
Little Canada	58	3 times/year. Spring, summer, and fall	Some areaswith excessive leaves and tree seeds are hit twice during each sweeping event	Not available	Johnston VT651 sweeper: combination mechanical/vacuum sweeper	250	1) Staff availability. 2) Timing sweepings to be the most efficient in collecting leaves. 3) Cost of disposal	Not at this time.	Aesthetics and water quality	Further study of the material that is collected and help offset disposal costs	<b>Roseville:</b> 350 lane miles are swept each full sweep. Roseville has a 126 centerline miles of road, but we sweep all lanes (turn lanes, center/left turn lanes, etc.) 1,400 – 2,100 lane miles annually. Expanding the street sweeping program may be difficult, but we could likely look at efficiencies and capturing more materials off the road with newer equipment. Any funding the city saves in street sweeping, could be used to add sumped catch basins with hoods/baffles to help capture what we don't pick up from the streets before it gets to our surface waters. Roseville also operates a leaf drop off site that residents use, and the city also puts leaves that are collected in the fall there. Currently we are looking to purchase a new compost turner (~\$250,000) that we use to help speed up the break down of leaves and turn it into compost of residents to pick up at no charge. Educating the public on why we are sweeping as frequently as we do, and why we are sweeping more often if we add additional sweepings.
Maplewood	275	Goal of 5 times/year. 2 in spring, 3 in fall.	Isolated sweeping in summer for maintenance operations or storm cleanup.	2022 budget: \$318,000	2 Elgin Mechanical	1734. Includes haul truck	Weather	No, material is screened and disposed of	Public safety, water quality, maintenance	Disposal and screening cost	
North St. Paul	91	6-7 times per year. 2 in spring, 2 in summer, 3 in fall.	Sweep by lakes and ponds more frequently because of the immediate drainage into them. Possible additional clean ups after storms.	Approximately \$150,000	1 Elgin Pelican mechanical street sweeper	1,100	1) Finding places to dispose of material and cost of disposal. 2) staff because they juggle multiple duties and can't always get the sweeper out when they would like.	2021: collected approximately 400 yards of leaves and 350-400 tons of street sweepings (sand, road debris)	To remove trash, sand, leaves, and debris from our roadways to help prevent these things from entering storm drains, lakes, and ponds	1) Assist with staffing costs to increase sweeping in priority areas. 2) Disposal costs.	
Oakdale	200	At least 3 times per year. Spring sweeping is done in late March and April, Summer sweeping is more random but done from late May into July, Fall sweeping is done in mid to late October into November or as long as weather allows.	some areas are swept 4-6 times per year due to leaves and other organic debris. They are swept more frequently for appearance as well as water quality.	Approximately \$75,000	1 Elgin Pelican mechanical sweeper, 1 Tymco 500X regenerative air sweeper	1,000	1) lack of staffing. 2) lack of funding.	We tend to track miles swept more than amount of material collected, but we have a good idea of amount collected as we are charged per yard to dump.	Water quality and appearance/cleanliness, also safety for bike riders and motorcyclists	Assist with staffing costs to increase sweeping	
Roseville	250	4-6 full city sweeps per year. 1 in spring, 2-4 in summer, 1 in fall.	Sensitive areas (adjacent to lakes, wetlands, etc.) & critical areas (areas adjacent to known drainage/flooding issues). potential for smaller clean up areas throughout the year due to do construction, weather, accidents, etc.	Approximately \$250,000	2 Pelican sweepers, 1 regenerative sweeper/vacuum	1,850	1) On street parking. 2) disposal of materials. 3) staff time. 4) budget.	Roseville currently collects the material, tests it, and then hires a contractor to haul the material to be reused and/or landfilled depending on the type.	Improve and protect water quality, reduce drainage/flooding issues, and helps keep the city looking clean.	1) Upgrade equipment. 2) purchase another sweeper. 3) pay staff. 4) purchase a screen so we can reuse more material (priority for the city), etc.	
Shoreview	110	4-6 citywide sweeps per year. Sweeping starts after snow melt in spring and continues until snow starts in fall.	Yes, permeable pavement areas, typically once per month. Require additional sweeping to maintain permeability.	\$60,000	1 mechanical sweeper, 1 regenerative air sweeper. Both sweepers are used throughout the city, but the mechanical sweeper will be used in areas where there is larger material or many leaves and the regenerative air is used for the permeable pavement.	600	1) Maintenance of equipment. 2)available staff time. 3) distance to dispose of material during the fall when collecting mainly leaves. Typically take swept up leaves directly to the compost site.	Yes, we screen the swept up material and the screened material is sent to the landfill and used as daily cover. The material that is removed by the screen is landfilled. The weight for both types of material is determined when taken to the landfill. Material is also tested annually to determine if a special disposal of the material is required.	Water quality and reduce maintenance required for city BMPs.	Potentially use to hire company to complete additional sweeping in high priority areas.	<b>Shoreview:</b> We charge developers \$75/hour if we need to use city equipment to clean a street. Typical citywide sweeper requires two staff for two weeks, total of 160-hours. Assuming 5 citywide sweeps a total of 600-hours annually.
St Paul	2,000 curb miles, 2000 alleys	Most swept in spring and fall. Arterial streets swept 4-8 timesper year	Higher volume traffic areas	\$4.5 million	15 Elgin Pelican and 1 Elgin Crosswind	30 FTEs	parking and staffing	track loads per shift	Clean streets of debris and trash, Fulfill the City's MS4 permit requirements	open to discuss opportunities.	<b>STP:</b> spring/summer has more trash, silt, and dirt. Fall is heavy on leaves.
White Bear Lake	183	We do a complete sweep of the entire city twice a year Spring & Fall. During that time we are able to sweep all the city streets at least once sometimes twice. Also throughout the summer we sweep high volume areas every Friday, and touch up problems as they occur.	Yes, our downtown area is swept more frequently because of the activities that are a constant in that area. A lot of trees and foliage in this area and runoff from much of the area flows to White Bear Lake.	47000	one sweeper it is a Tymco 500X regenerative air truck mount on a Freightliner chassis.	720	1) Finding places to dispose of material and cost of disposa. 2) weather 3) the man hours to get the job done; it's a very slow time-consuming process, the sweeper doesn't pick up sticks so the operator has to get out and move them or it jams the equipment. We do have a follow truck to collect the sweepings and that helps; they try and pave the way for the operator. 4) Residents are always parked on the street so we can't do a thorough job also. 5) Barriers that prevent sweeping from happening more often include the cost to purchase a second sweeper. 6) cost of additional driver and maintenance staff, and finding qualified staff to operate the sweeper. 7) More research would need to be done to determine the need for additional sweeping, optimal timing for additional sweeping, and specific target areas. There is limited staff time to complete this analysis.	Not at this time.	Pollution control and preventative maintenance to help maintain street integrity.	1 ) disposal costs 2) staffing for additional sweeping in priority areas 3)additional sweeper 4) staff for operation and maintenance 5) hire someone to complete an initial analysis to determine the need for additional sweeping, targeted areas, and timing.	<b>White Bear Lake:</b> Maintenance and fuel costs run approximately \$16,949.47, labor costs to run the machine is approximately \$29,851.20. There are also costs associated with street sweeper training for the driver and mechanic. Providing a location to dump the street sweepings would be very helpful. It's good that we collect the pollution off of the street but now we need a way to dispose of the pollution. Public Works staff have talked about other options for sweeping streets. For example, is there a sweeping attachment for a 1 ton truck that can be used in smaller priority areas for the entire season? This may reduce the need for specialized training for the driver and mechanic and may allow for a seasonal person to operate. Environmental impacts from running an additional sweeper should be considered and mitigated if possible. The City looks for
Woodbury	722	In spring after the snow melt, in fall before leaves drop from the trees.	Some roads are swept during months after any type of road maintenance has been performed.	2021 expenses : \$117,250-equipment, labor and contractual services that are brought in to complete the spring and fall sweep.	1 mechanical, 1 regenerative air sweeper. 8 contractual sweepers in the spring and 6 contractual sweepers in the fall.	450 for spring and fall staff sweepings.	Finding places to dispose of material.	We currently only track how many tons of material are collected not the type of material collected.	To keep material from the roadways from entering our ponds and to meet the requirements of our MS4 permit.	Assist with staff time to sweep more often during the summer months and to possibly do a leaf sweep after the leaves have fallen off of the trees.	ways to reduce our environmental impact, which includes lowering emissions from our vehicles. City staff toured Zeus Electric Chassis in WB Township this spring and they may be offering an electric street sweeper in the future. We asked them to

**Complete list of survey questions:**

- 1) How many curb miles are maintained annually?
- 2) How many times per year are streets swept and when does sweeping usually occur (e.g., how many street sweeping operations are conducted in the Spring / Summer / Fall)?
- 3) Are certain areas swept more frequently than others? How are those areas determined?
- 4) What are approximate street sweeping expenses annually, including equipment and labor costs?
- 5) What type(s) of sweepers (e.g., mechanical sweeper, regenerative air, vacuum, etc.) and how many pieces of street sweeping equipment are used?
- 6) How many full time staff hours are used each year to operate the sweepers?
- 7) What are the biggest barriers encountered while street sweeping especially those that may prevent sweeping from happening more often (e.g., interruptions caused by on-street parking, distance to storage/disposal facility, time / staff / budget, etc.)?
- 8) Is any data currently collected to assess the type and amount of material collected?
- 9) What are the main reasons for street sweeping in this city?
- 10) If RWMWD could offer cost share dollars to help increase street sweeping in priority areas to help improve water quality, how can you imagine using that money?
- 11) Any additional comments to share?



Appendix B – Existing condition street sweeping recovery and reduction results.

Table B-1 Existing condition street sweeping results by municipality: TSS recovery and reduction

Municipality	Area (acres)	Total Suspended Sediment (TSS) Loading and Removal								
		Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
		Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Gem Lake	45.6	8,730	125	1.4%	20,990	5	0.0%	0	0	0.0%
Landfall	53.0	13,604	414	3.0%	13,604	414	3.0%	11,019	332	3.0%
Little Canada	2,882.3	485,332	21,847	4.5%	405,678	3,782	0.9%	16,165	556	3.4%
Maplewood	10,840.4	1,675,210	54,129	3.2%	1,438,099	14,805	1.0%	513,231	5,018	1.0%
North Saint Paul	1,774.7	364,669	17,113	4.7%	364,361	234	0.1%	0	0	0.0%
Oakdale	3,328.8	537,506	31,363	5.8%	495,495	4,643	0.9%	233,385	2,256	1.0%
Roseville	2,603.2	357,145	31,785	8.9%	338,452	6,357	1.9%	338,260	6,357	1.9%
Saint Paul	10,431.9	1,507,700	35,068	2.3%	970,903	19,177	2.0%	811,745	15,903	2.0%
Shoreview	3,409.1	396,296	33,705	8.5%	167,255	4,848	2.9%	46,216	2,160	4.7%
Vadnais Heights	1,320.3	275,828	4,399	1.6%	228,571	320	0.1%	16,270	45	0.3%
White Bear	6.5	327	22	6.6%	515	3	0.6%	1	0	0.0%
White Bear Lake	1,956.2	311,926	19,507	6.3%	310,549	198	0.1%	0	0	0.0%
Woodbury	4,670.2	867,449	36,747	4.2%	787,496	4,688	0.6%	787,077	4,676	0.6%

Table B-2 Existing condition street sweeping results by municipality: TP recovery and reduction

Municipality	Area (acres)	Total Phosphorus (TP) Loading and Removal								
		Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
		Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Gem Lake	45.6	8,730	125	1.4%	20,990	5	0.0%	0	0	0.0%
Landfall	53.0	13,604	414	3.0%	13,604	414	3.0%	11,019	332	3.0%
Little Canada	2,882.3	485,332	21,847	4.5%	405,678	3,782	0.9%	16,165	556	3.4%
Maplewood	10,840.4	1,675,210	54,129	3.2%	1,438,099	14,805	1.0%	513,231	5,018	1.0%
North Saint Paul	1,774.7	364,669	17,113	4.7%	364,361	234	0.1%	0	0	0.0%
Oakdale	3,328.8	537,506	31,363	5.8%	495,495	4,643	0.9%	233,385	2,256	1.0%
Roseville	2,603.2	357,145	31,785	8.9%	338,452	6,357	1.9%	338,260	6,357	1.9%
Saint Paul	10,431.9	1,507,700	35,068	2.3%	970,903	19,177	2.0%	811,745	15,903	2.0%
Shoreview	3,409.1	396,296	33,705	8.5%	167,255	4,848	2.9%	46,216	2,160	4.7%
Vadnais Heights	1,320.3	275,828	4,399	1.6%	228,571	320	0.1%	16,270	45	0.3%
White Bear	6.5	327	22	6.6%	515	3	0.6%	1	0	0.0%
White Bear Lake	1,956.2	311,926	19,507	6.3%	310,549	198	0.1%	0	0	0.0%
Woodbury	4,670.2	867,449	36,747	4.2%	787,496	4,688	0.6%	787,077	4,676	0.6%

Table B-3 Existing condition street sweeping results by major watershed: TSS recovery and reduction

Major Watershed	RWMWD Impairment Status	Area (acres)	Total Suspended Sediment (TSS) Loading and Removal								
			Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
			Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Battle Creek	Impaired	2,978.0	516,624	15,876	3.1%	490,052	5,371	1.1%	490,052	5,371	1.1%
Battle Creek Lake	At Risk	2,622.5	549,789	20,127	3.7%	555,059	5,056	0.9%	555,059	5,056	0.9%
Beaver Lake	At Risk	1,942.8	231,880	10,049	4.3%	231,882	1,404	0.6%	231,882	1,404	0.6%
Blufflands	Impaired	1,844.5	209,305	7,893	3.8%	0	0	0.0%	0	0	0.0%
Carver Lake	At Risk	2,273.3	394,478	19,047	4.8%	390,603	1,876	0.5%	390,603	1,876	0.5%
Fish Creek	At Risk	708.3	52,130	1,395	2.7%	0	0	0.0%	0	0	0.0%
Gervais Creek	Stable	1,815.7	382,707	15,026	3.9%	382,882	1,156	0.3%	0	0	0.0%
Gervais Lake	Stable	893.1	82,956	5,118	6.2%	82,956	2,416	2.9%	0	0	0.0%
Grass Lake	Stable*	1,384.1	194,084	12,303	6.3%	0	0	0.0%	0	0	0.0%
Keller Lake	Stable	1,698.4	271,645	8,973	3.3%	269,049	3,274	1.2%	0	0	0.0%
Kohlman Creek	Stable	3,526.2	723,903	26,978	3.7%	730,046	1,115	0.2%	0	0	0.0%
Kohlman Lake	Impaired	1,011.4	138,205	3,772	2.7%	138,205	2,552	1.8%	138,205	2,552	1.8%
Lake Owasso	At Risk	3,016.4	371,173	33,836	9.1%	389,754	8,555	2.2%	389,754	8,555	2.2%
Lake Phalen	Stable	2,814.2	422,079	14,560	3.4%	377,014	7,699	2.0%	0	0	0.0%
Lake Wabasso	Stable	146.7	13,080	1,563	11.9%	13,080	1,353	10.3%	0	0	0.0%
Snail Lake	Stable	922.6	91,814	10,531	11.5%	102,504	1,335	1.3%	0	0	0.0%
Snake Creek	Stable*	149.7	9,143	241	2.6%	0	0	0.0%	0	0	0.0%
St. Paul Beltline	Impaired	2,875.6	573,083	14,897	2.6%	577,812	12,488	2.2%	577,812	12,488	2.2%
Tanners Lake (North)	Stable	1,352.2	217,733	11,979	5.5%	218,839	1,365	0.6%	0	0	0.0%
Tanners Lake (South)	Stable	349.4	52,311	3,389	6.5%	52,311	1,990	3.8%	0	0	0.0%
West Vadnais Lake	Stable*	134.1	20,230	1,009	5.0%	2,449	2	0.1%	0	0	0.0%
Willow Creek	Stable*	2,796.1	510,226	21,302	4.2%	537,476	465	0.1%	0	0	0.0%

Table B-4 Existing condition street sweeping results by major watershed: TP recovery and reduction

Major Watershed	RWMWD Impairment Status	Area (acres)	Total Phosphorus (TP) Loading and Removal								
			Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
			Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Battle Creek	Impaired	2,978.0	1,720.0	164.5	9.6%	1,628.5	105.3	6.5%	1,628.5	105.3	6.5%
Battle Creek Lake	At Risk	2,622.5	1,816.1	58.1	3.2%	1,833.3	32.7	1.8%	1,833.3	32.7	1.8%
Beaver Lake	At Risk	1,942.8	784.0	101.4	12.9%	784.0	31.4	4.0%	784.0	31.4	4.0%
Blufflands	Impaired	1,844.5	712.3	121.7	17.1%	0.0	0.0	0.0%	0.0	0.0	0.0%
Carver Lake	At Risk	2,273.3	1,312.4	63.8	4.9%	1,299.3	18.6	1.4%	1,299.3	18.6	1.4%
Fish Creek	At Risk	708.3	183.2	16.4	9.0%	0.0	0.0	0.0%	0.0	0.0	0.0%
Gervais Creek	Stable	1,815.7	1,263.9	65.1	5.1%	1,264.6	11.2	0.9%	0.0	0.0	0.0%
Gervais Lake	Stable	893.1	280.3	47.1	16.8%	280.3	25.5	9.1%	0.0	0.0	0.0%
Grass Lake	Stable*	1,384.1	649.2	74.3	11.4%	0.0	0.0	0.0%	0.0	0.0	0.0%
Keller Lake	Stable	1,698.4	905.3	94.3	10.4%	896.1	44.3	4.9%	0.0	0.0	0.0%
Kohlman Creek	Stable	3,526.2	2,395.5	406.1	17.0%	2,416.2	42.6	1.8%	0.0	0.0	0.0%
Kohlman Lake	Impaired	1,011.4	463.1	28.3	6.1%	463.1	22.2	4.8%	463.1	22.2	4.8%
Lake Owasso	At Risk	3,016.4	1,246.4	178.9	14.4%	1,308.1	106.0	8.1%	1,308.1	106.0	8.1%
Lake Phalen	Stable	2,814.2	1,409.5	204.6	14.5%	1,257.1	127.9	10.2%	0.0	0.0	0.0%
Lake Wabasso	Stable	146.7	44.2	9.8	22.2%	44.2	8.7	19.7%	0.0	0.0	0.0%
Snail Lake	Stable	922.6	311.5	74.9	24.0%	346.6	51.5	14.9%	0.0	0.0	0.0%
Snake Creek	Stable*	149.7	32.8	4.4	13.4%	0.0	0.0	0.0%	0.0	0.0	0.0%
St. Paul Beltline	Impaired	2,875.6	1,899.9	357.8	18.8%	1,914.7	338.6	17.7%	1,914.7	338.6	17.7%
Tanners Lake (North)	Stable	1,352.2	727.1	41.3	5.7%	730.8	17.2	2.4%	0.0	0.0	0.0%
Tanners Lake (South)	Stable	349.4	173.7	24.3	14.0%	173.7	20.4	11.8%	0.0	0.0	0.0%
West Vadnais Lake	Stable*	134.1	67.5	16.8	24.8%	8.1	0.1	0.7%	0.0	0.0	0.0%
Willow Creek	Stable*	2,796.1	1,694.5	143.4	8.5%	1,784.2	12.6	0.7%	0.0	0.0	0.0%

Appendix C – Baseline condition recovery, reduction, and ranking results.

Table C-1 RWMWD baseline condition street sweeping results by municipality: TSS recovery and reduction

Municipality	Area (acres)	Total Suspended Sediment (TSS) Loading and Removal								
		Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
		Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Gem Lake	45.6	8,730	465	5.3%	20,990	19	0.1%	0	0	0.0%
Landfall	53.0	13,604	1,532	11.3%	13,604	1,532	11.3%	11,019	1,226	11.1%
Little Canada	2,882.3	485,332	32,443	6.7%	405,678	5,154	1.3%	16,165	668	4.1%
Maplewood	10,840.4	1,675,210	123,678	7.4%	1,438,099	34,986	2.4%	513,231	12,076	2.4%
North Saint Paul	1,774.7	364,669	33,109	9.1%	364,361	455	0.1%	0	0	0.0%
Oakdale	3,328.8	537,506	40,466	7.5%	495,495	6,265	1.3%	233,385	3,325	1.4%
Roseville	2,603.2	357,145	33,535	9.4%	338,452	6,791	2.0%	338,260	6,790	2.0%
Saint Paul	10,431.9	1,507,700	129,759	8.6%	970,903	70,932	7.3%	811,745	58,824	7.2%
Shoreview	3,409.1	396,296	35,508	9.0%	167,255	4,708	2.8%	46,216	2,088	4.5%
Vadnais Heights	1,320.3	275,828	16,328	5.9%	228,571	1,190	0.5%	16,270	168	1.0%
White Bear	6.5	327	36	11.1%	515	6	1.2%	1	0	0.0%
White Bear Lake	1,956.2	311,926	25,819	8.3%	310,549	306	0.1%	0	0	0.0%
Woodbury	4,670.2	867,449	62,791	7.2%	787,496	9,653	1.2%	787,077	9,608	1.2%

Table C-2 RWMWD baseline condition street sweeping results by municipality: TP recovery and reduction

Municipality	Area (acres)	Total Phosphorus (TP) Loading and Removal								
		Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
		Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Gem Lake	45.6	29.0	2.0	6.9%	68.2	0.3	0.4%	0.0	0.0	0.0%
Landfall	53.0	44.5	6.6	14.7%	44.5	6.6	14.7%	35.9	5.6	15.6%
Little Canada	2,882.3	1,610.6	149.6	9.3%	1,347.0	46.7	3.5%	55.8	3.9	7.1%
Maplewood	10,840.4	5,597.3	551.8	9.9%	4,787.5	214.6	4.5%	1,716.3	86.9	5.1%
North Saint Paul	1,774.7	1,207.0	261.0	21.6%	1,206.1	20.5	1.7%	0.0	0.0	0.0%
Oakdale	3,328.8	1,793.2	172.6	9.6%	1,651.6	58.5	3.5%	775.5	20.1	2.6%
Roseville	2,603.2	1,197.2	165.5	13.8%	1,134.7	80.6	7.1%	1,134.1	80.6	7.1%
Saint Paul	10,431.9	5,028.4	1,045.7	20.8%	3,223.2	697.1	21.6%	2,693.3	583.0	21.6%
Shoreview	3,409.1	1,332.8	240.5	18.0%	565.5	92.7	16.4%	156.8	34.3	21.9%
Vadnais Heights	1,320.3	911.1	45.1	4.9%	754.1	7.2	0.9%	53.3	1.0	1.8%
White Bear	6.5	1.2	0.1	7.1%	1.8	0.0	2.5%	0.0	0.0	0.0%
White Bear Lake	1,956.2	1,042.2	171.0	16.4%	1,037.2	10.9	1.1%	0.0	0.0	0.0%
Woodbury	4,670.2	2,878.2	172.1	6.0%	2,611.4	60.0	2.3%	2,610.0	59.8	2.3%



Table C-3 RWMWD baseline condition street sweeping results by watershed: TSS recovery and reduction

Major Watershed	RWMWD Impairment Status	Area (acres)	Total Suspended Sediment (TSS) Loading and Removal								
			Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
			Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Battle Creek	Impaired	2,978.0	516,624	40,464	7.8%	490,052	15,952	3.3%	490,052	15,952	3.3%
Battle Creek Lake	At Risk	2,622.5	549,789	34,559	6.3%	555,059	10,425	1.9%	555,059	10,425	1.9%
Beaver Lake	At Risk	1,942.8	231,880	19,492	8.4%	231,882	4,111	1.8%	231,882	4,111	1.8%
Blufflands	Impaired	1,844.5	209,305	21,546	10.3%	0	0	0.0%	0	0	0.0%
Carver Lake	At Risk	2,273.3	394,478	32,012	8.1%	390,603	3,481	0.9%	390,603	3,481	0.9%
Fish Creek	At Risk	708.3	52,130	3,482	6.7%	0	0	0.0%	0	0	0.0%
Gervais Creek	Stable	1,815.7	382,707	25,231	6.6%	382,882	1,818	0.5%	0	0	0.0%
Gervais Lake	Stable	893.1	82,956	8,674	10.5%	82,956	3,847	4.6%	0	0	0.0%
Grass Lake	Stable*	1,384.1	194,084	14,152	7.3%	0	0	0.0%	0	0	0.0%
Keller Lake	Stable	1,698.4	271,645	20,530	7.6%	269,049	7,755	2.9%	0	0	0.0%
Kohlman Creek	Stable	3,526.2	723,903	53,124	7.3%	730,046	2,512	0.3%	0	0	0.0%
Kohlman Lake	Impaired	1,011.4	138,205	8,415	6.1%	138,205	5,794	4.2%	138,205	5,794	4.2%
Lake Owasso	At Risk	3,016.4	371,173	35,010	9.4%	389,754	8,939	2.3%	389,754	8,939	2.3%
Lake Phalen	Stable	2,814.2	422,079	39,026	9.2%	377,014	21,874	5.8%	0	0	0.0%
Lake Wabasso	Stable	146.7	13,080	1,526	11.7%	13,080	1,337	10.2%	0	0	0.0%
Snail Lake	Stable	922.6	91,814	10,331	11.3%	102,504	1,284	1.3%	0	0	0.0%
Snake Creek	Stable*	149.7	9,143	571	6.3%	0	0	0.0%	0	0	0.0%
St. Paul Beltline	Impaired	2,875.6	573,083	54,977	9.6%	577,812	46,071	8.0%	577,812	46,071	8.0%
Tanners Lake (North)	Stable	1,352.2	217,733	16,187	7.4%	218,839	2,186	1.0%	0	0	0.0%
Tanners Lake (South)	Stable	349.4	52,311	5,010	9.6%	52,311	3,380	6.5%	0	0	0.0%
West Vadnais Lake	Stable*	134.1	20,230	1,677	8.3%	2,449	7	0.3%	0	0	0.0%
Willow Creek	Stable*	2,796.1	510,226	33,320	6.5%	537,476	1,226	0.2%	0	0	0.0%

Table C-4 RWMWD baseline condition street sweeping results by watershed: TP recovery and reduction

Major Watershed	RWMWD Impairment Status	Area (acres)	Total Phosphorus (TP) Loading and Removal								
			Street Sweeping: Recovery			Street Sweeping: Reduction			Street Sweeping: Reduction [impaired / at risk watersheds]		
			Loading (lbs/yr)	Recovery (lbs/yr)	Recovery (%)	Loading in P8 Modeled Areas (lbs/yr)	Reduction (lbs/yr)	Reduction (%)	Loading in P8 Modeled Areas [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (lbs/yr)	Reduction [imp. / at risk] (%)
Battle Creek	Impaired	2,978.0	1,720.0	210.6	12.2%	1,628.5	137.6	8.5%	1,628.5	137.6	8.5%
Battle Creek Lake	At Risk	2,622.5	1,816.1	86.3	4.8%	1,833.3	47.9	2.6%	1,833.3	47.9	2.6%
Beaver Lake	At Risk	1,942.8	784.0	114.5	14.6%	784.0	37.0	4.7%	784.0	37.0	4.7%
Blufflands	Impaired	1,844.5	712.3	152.3	21.4%	0.0	0.0	0.0%	0.0	0.0	0.0%
Carver Lake	At Risk	2,273.3	1,312.4	92.1	7.0%	1,299.3	26.3	2.0%	1,299.3	26.3	2.0%
Fish Creek	At Risk	708.3	183.2	18.7	10.2%	0.0	0.0	0.0%	0.0	0.0	0.0%
Gervais Creek	Stable	1,815.7	1,263.9	87.2	6.9%	1,264.6	14.9	1.2%	0.0	0.0	0.0%
Gervais Lake	Stable	893.1	280.3	57.0	20.3%	280.3	30.9	11.0%	0.0	0.0	0.0%
Grass Lake	Stable*	1,384.1	649.2	74.6	11.5%	0.0	0.0	0.0%	0.0	0.0	0.0%
Keller Lake	Stable	1,698.4	905.3	97.6	10.8%	896.1	47.1	5.3%	0.0	0.0	0.0%
Kohlman Creek	Stable	3,526.2	2,395.5	362.7	15.1%	2,416.2	39.9	1.7%	0.0	0.0	0.0%
Kohlman Lake	Impaired	1,011.4	463.1	33.4	7.2%	463.1	26.5	5.7%	463.1	26.5	5.7%
Lake Owasso	At Risk	3,016.4	1,246.4	196.3	15.8%	1,308.1	115.9	8.9%	1,308.1	115.9	8.9%
Lake Phalen	Stable	2,814.2	1,409.5	251.8	17.9%	1,257.1	164.6	13.1%	0.0	0.0	0.0%
Lake Wabasso	Stable	146.7	44.2	9.8	22.2%	44.2	8.9	20.1%	0.0	0.0	0.0%
Snail Lake	Stable	922.6	311.5	71.6	23.0%	346.6	49.5	14.3%	0.0	0.0	0.0%
Snake Creek	Stable*	149.7	32.8	4.5	13.8%	0.0	0.0	0.0%	0.0	0.0	0.0%
St. Paul Beltline	Impaired	2,875.6	1,899.9	510.9	26.9%	1,914.7	484.2	25.3%	1,914.7	484.2	25.3%
Tanners Lake (North)	Stable	1,352.2	727.1	54.1	7.4%	730.8	21.8	3.0%	0.0	0.0	0.0%
Tanners Lake (South)	Stable	349.4	173.7	30.3	17.4%	173.7	25.5	14.7%	0.0	0.0	0.0%
West Vadnais Lake	Stable*	134.1	67.5	18.7	27.7%	8.1	0.1	1.1%	0.0	0.0	0.0%
Willow Creek	Stable*	2,796.1	1,694.5	185.3	10.9%	1,784.2	17.1	1.0%	0.0	0.0	0.0%

Table C-5 RWMWD baseline condition street sweeping prioritization ranking by municipality: TSS recovery and reduction

Municipality	Area (acres)	TSS Prioritization Ranking Strategies								
		Street Sweeping Reduction & Removal Comparison [Baseline - Existing Conditions] (lbs/yr)			Reduction / Recovery Ranking Value [1 = high priortiy, 0 = low priority]			Reduction / Recovery Ranking Number (#)		
		Recovery	Reduction	Reduction [imp. / at risk]	Recovery	Reduction	Reduction [imp. / at risk]	Recovery	Reduction	Reduction [imp. / at risk]
Gem Lake	45.6	+340	+14	0	0.37	0.39	--	8	4	--
Landfall	53.0	+1117	+1117	+895	0.44	0.50	0.78	4	2	1
Little Canada	2,882.3	+10596	+1372	+112	0.40	0.38	0.36	5	5	6
Maplewood	10,840.4	+69549	+20181	+7058	0.33	0.36	0.22	13	6	9
North Saint Paul	1,774.7	+15996	+221	0	0.51	0.36	--	1	7	--
Oakdale	3,328.8	+9103	+1622	+1069	0.38	0.30	0.33	7	11	7
Roseville	2,603.2	+1750	+434	+433	0.46	0.39	0.39	2	3	4
Saint Paul	10,431.9	+94691	+51755	+42921	0.39	0.52	0.41	6	1	3
Shoreview	3,409.1	+1802	-139	-72	0.37	0.36	0.38	9	8	5
Vadnais Heights	1,320.3	+11929	+870	+123	0.34	0.35	0.47	12	9	2
White Bear	6.5	+15	+3	0	0.34	0.18	0.00	10	13	10
White Bear Lake	1,956.2	+6312	+108	0	0.44	0.27	--	3	12	--
Woodbury	4,670.2	+26044	+4965	+4933	0.34	0.31	0.30	11	10	8

Table C-6 RWMWD baseline condition street sweeping prioritization ranking by municipality: TP recovery and reduction

Municipality	Area (acres)	TP Prioritization Ranking Strategies								
		Street Sweeping Reduction & Removal Comparison [Baseline - Existing Conditions] (lbs/yr)			Reduction / Recovery Ranking Value [1 = high priortiy, 0 = low priority]			Reduction / Recovery Ranking Number (#)		
		Recovery	Reduction	Reduction [imp. / at risk]	Recovery	Reduction	Reduction [imp. / at risk]	Recovery	Reduction	Reduction [imp. / at risk]
Gem Lake	45.6	+1	+0	0	0.39	0.33	--	6	8	--
Landfall	53.0	+3	+3	+2	0.40	0.45	0.72	5	2	1
Little Canada	2,882.3	+34	+9	+1	0.39	0.35	0.29	7	6	7
Maplewood	10,840.4	+12	+9	+5	0.32	0.34	0.21	11	7	9
North Saint Paul	1,774.7	-47	-4	0	0.53	0.40	--	1	5	--
Oakdale	3,328.8	+38	+13	+5	0.36	0.32	0.31	9	9	6
Roseville	2,603.2	+21	+11	+11	0.44	0.43	0.43	3	3	3
Saint Paul	10,431.9	+324	+215	+177	0.42	0.51	0.40	4	1	5
Shoreview	3,409.1	-5	-3	-1	0.37	0.41	0.42	8	4	4
Vadnais Heights	1,320.3	+17	+3	+0	0.32	0.31	0.43	12	10	2
White Bear	6.5	+0	+0	0	0.34	0.16	0.00	10	13	10
White Bear Lake	1,956.2	+36	+2	0	0.44	0.30	--	2	11	--
Woodbury	4,670.2	+63	+21	+21	0.29	0.28	0.28	13	12	8

# RWMWD Street Sweeping Prioritization for Implementation in Stewardship Grant Program

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*MAWD Conference*

*December 2, 2022*



RAMSEY-WASHINGTON  
METRO WATERSHED DISTRICT





## Background: Impetus for Study

### Impetus for study:

- Area of active research in Minnesota
  - Very high cost-effective non-structural BMP
  - Interest from Municipal partners
- Opportunity: RWMWD Stewardship Grant Program Funding



Overview:  
Street  
Sweeping  
Prioritization  
Study

## Project Outline:

- Street sweeping survey of municipal partners
- Street sweeping modeling analysis:
  - Evaluation of existing conditions
  - Development of “**baseline**” street sweeping recommendation
  - Street sweeping **prioritization** analysis
- Develop recommendations for Stewardship Grant Program



# Street Sweeping Survey

## Street sweeping survey:

- Survey provided to member cities (9 of 10 responded)

## Summary of key responses:

- Goals of street sweeping?
  - Pollutant reduction
  - Trash removal
  - Public safety
  - Trash control
  - Aesthetics
  - CB drainage
- Barriers / challenges?
  - Lack of staffing / funding / vehicle acquisition / vehicle maintenance
  - Finding disposal sites / cost of disposal / cost of screening of material
  - Weather and optimal timing of street sweeping related to leaf drop
  - Logistics and on-street parking
- What grant support would be most useful?



# Summary of existing operations:

Municipality	Response: street sweeping program summary	Response: sweeper type	Sweepings per Season Assumptions for Modeling (#/season)		
			Spring	Summer	Fall
Little Canada	3 times/year. Spring, summer, and fall	Johnston VT651 sweeper: combination mechanical/vacuum sweeper	1	1	1
Maplewood	Goal of 5 times/year. 2 in spring, 3 in fall.	2 Elgin Mechanical	2	0	3
North St. Paul	6-7 times per year. 2 in spring, 2 in summer, 3 in fall.	1 Elgin Pelican mechanical street sweeper	2	2	3
Oakdale	At least 3 times per year (one in each season)	1 Elgin Pelican mechanical sweeper, 1 Tymco 500X regenerative air sweeper	1	1	1
Roseville	4-6 full city sweeps per year. 1 in spring, 2-4 in summer, 1 in fall.	2 Pelican sweepers, 1 regenerative sweeper/vacuum	1	3	1
Shoreview	4-6 citywide sweeps per year. Sweeping starts after snow melt in spring and continues until snow starts in fall.	1 mechanical sweeper, 1 regenerative air sweeper.	2	1	2
St. Paul	Most swept in spring and fall. Arterial streets swept 4-8 times per year	15 Elgin Pelican and 1 Elgin Crosswind	1	0	1
White Bear Lake	We do a complete sweep of the entire city twice a year Spring & Fall. During that time we are able to sweep all the city streets at least once sometimes twice. Also throughout the summer we sweep high volume areas every Friday, and touch up problems as they occur.	One sweeper it is a Tymco 500X regenerative air truck mount on a Freightliner chassis.	1	1	1
Woodbury	In spring after the snow melt, in fall before leaves drop from the trees.	1 mechanical, 1 regenerative air sweeper. 8 contractual sweepers in the spring and 6 contractual sweepers in the fall.	1	0	1



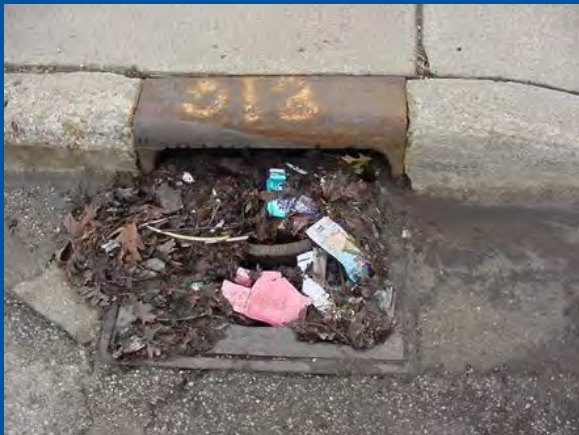
## Street Sweeping Evaluation

# Street sweeping analysis

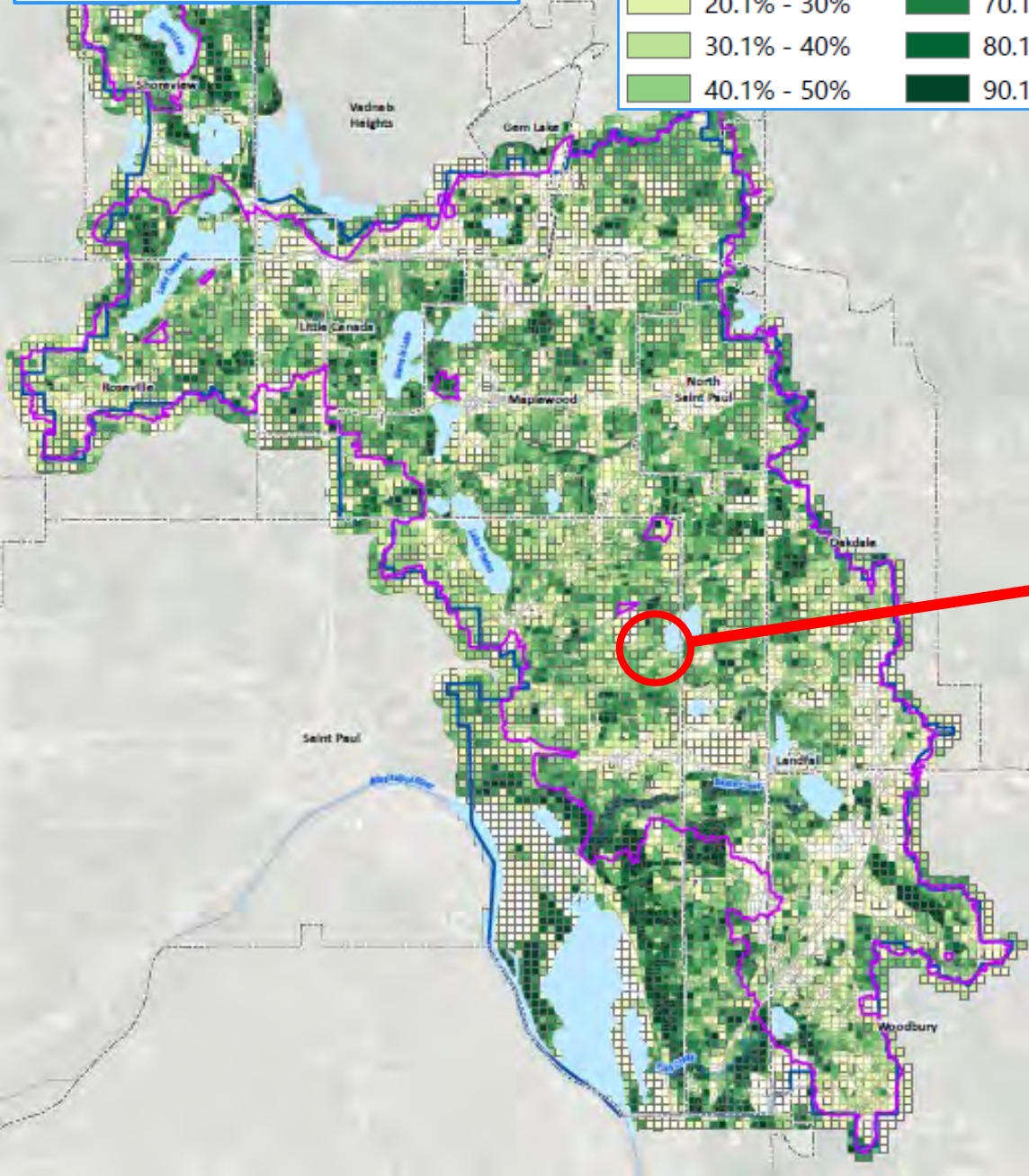
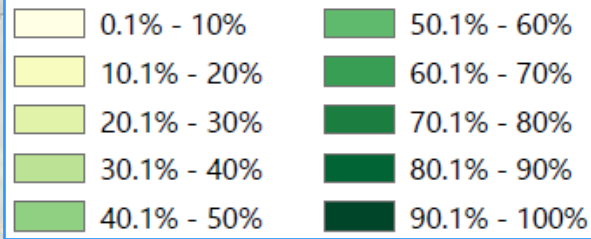
- Street sweeping evaluated using the Barr developed GIS-Based Water Quality Model (GIS WQM)

## What data is required?

- Watershed imperviousness
- Canopy cover\*
- Road surfaces\*
- Seasonal street sweeping frequency



## RWMWD: Percent Road Canopy Cover Overhang





## Street Sweeping Evaluation

# Existing Conditions vs Prioritization

- With existing conditions summarized, a street sweeping prioritization analysis was performed to develop:
  - 1) “**Baseline**” sweeping **recommendation**
  - 2) **Prioritization** strategies
  - 3) Strategies to incorporate into existing **Stewardship Grant Program**



## Street Sweeping Evaluation

# Baseline sweeping recommendation

- What's the purpose of developing "baseline" recommendation?
  - Default recommendation for member cities
  - Allowed for consistent, District wide modeling approach ("apples to apples" comparison for next steps related to **prioritization** analysis).
  - "**Optimal**" number of sweepings per season determined using seasonal modeling and cost-benefit analysis.





## Street Sweeping Evaluation

# Baseline sweeping recommendation

- Final baseline recommendation:
  - **1** spring sweeping, **1** summer sweeping, and **2 to 3** fall sweepings.
  - Based on cost-benefit analysis
  - Based on fall having highest efficiency
  - Based on goal of not exceeding 5 sweepings per year
- Next step: **prioritization**

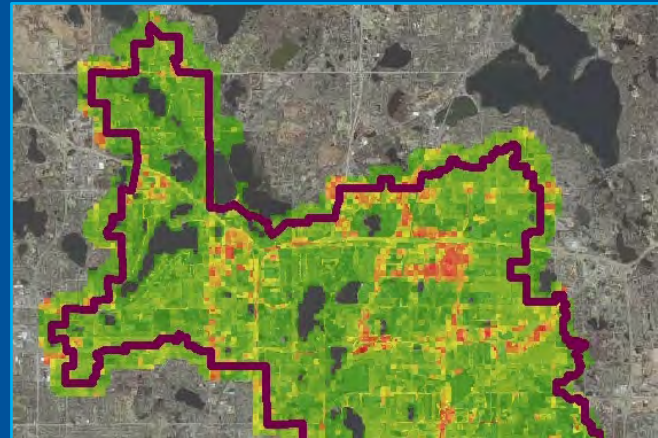


Figure credit: Sarah Hobbie, UMN Minnesota Stormwater Seminar Series, Nov 11<sup>th</sup>, 2022

## Street Sweeping Prioritization

# Street sweeping prioritization

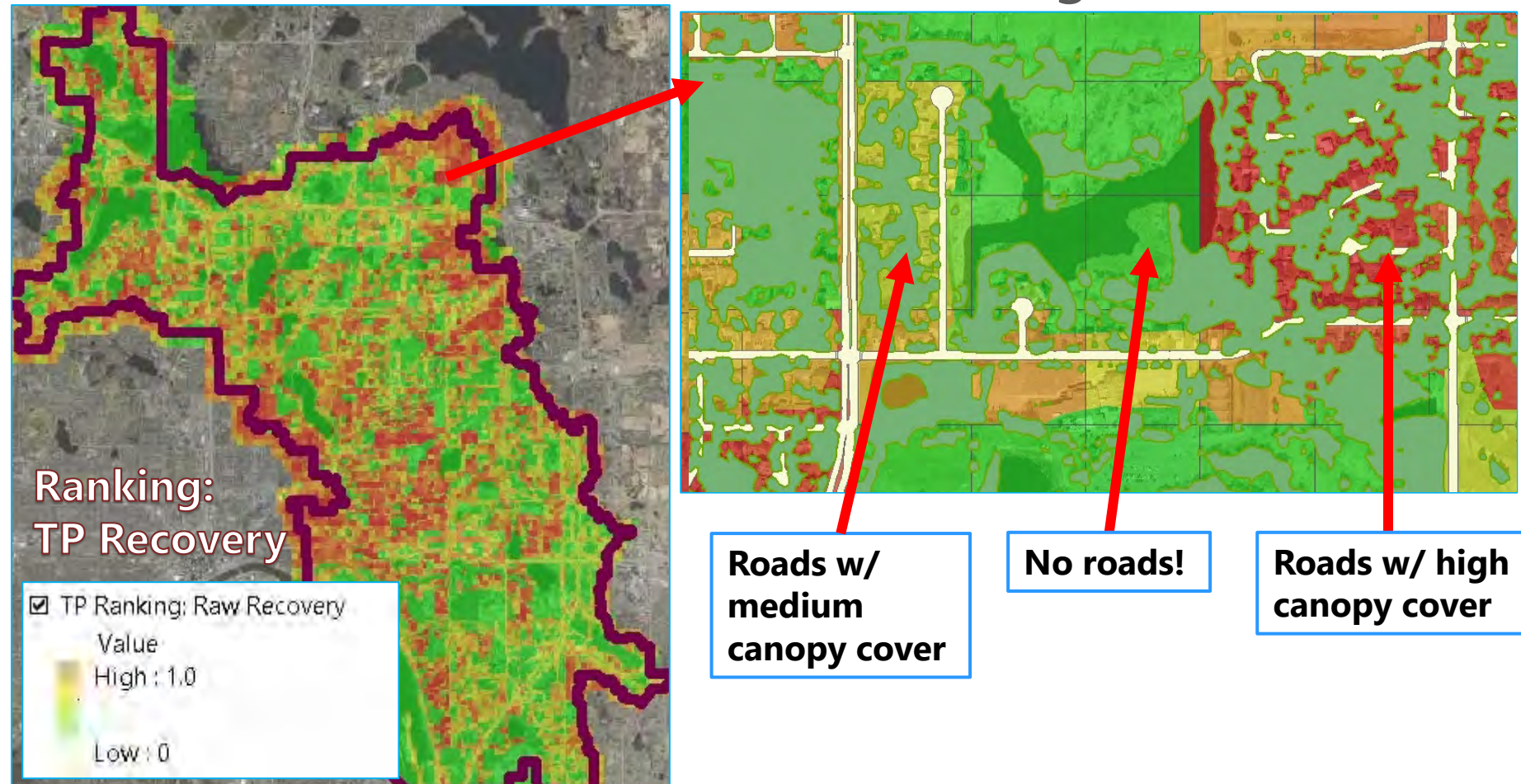
- Developed 3x prioritization strategies:
  - 1) **Total Recovery**
  - 2) **Total Reduction to RWMWD managed waterbodies**
  - 3) **Total Reduction to impaired / at risk RWMWD managed waterbodies**
- Pond prioritization study considered?
  - “Recovery” summarizes reduction to all downstream features, including priority ponds.
  - Priority pond ranking is not “static”
  - Can develop street sweeping recovery heat map to any priority pond as needed.



## Street Sweeping Prioritization

# Street sweeping prioritization

- Recovery & reduction values calculated for all areas of the District at small\* scale (< 500x500 ft grid)
- Values ranked and normalized (1 = high, 0 = low)





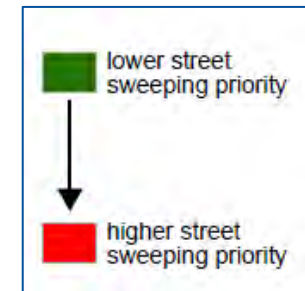
# Street Sweeping Prioritization

# Street sweeping prioritization

## TP recovery ranked for District, Quarter-Sections

- Prioritization results can be recalculated at any scale:
  - By municipality
  - Individually by major watershed
  - By municipal street sweeping “zones”

## TP recover ranked for City of Woodbury





## Stewardship Grant Program

# Stewardship Grant Program

- 2022 efforts: Woodbury enhance street sweeping program
  - Swept compostable material collected: **80.35 tons**
  - TP recovery: **72.31 lbs TP**
    - As determined from MPCA Street Sweeping Calculator
  - Stewardship Grant Funding Awarded: \$50,000
  - Cost/Benefit: **\$691 per lb TP removed**
    - For comparison, RWMWD uses \$10,300 / lb TP as qualifier in RWMWD BMP prioritization tool
  - Lane-miles swept = 332 lane-miles
  - Funding per lane-mile = **\$150 / lane-mile**



# Stewardship Grant Program

## Stewardship Grant Program

- 2023 and onward...
- Key elements requiring Board input / feedback:
  - 1) "Baseline" recommendation
    - 1 spring sweeping, 1 summer sweeping, and 2 to 3 fall sweepings.
  - 2) Implementation strategy (2023 and onward)
    - **Targeted vs Application Based**
  - 3) Stewardship Grant Program Funding
    - Program budget to support enhanced sweeping.



# Stewardship Grant Program

## Stewardship Grant Program

- Key elements requiring Board input / feedback:
  - 1) “Baseline” recommendation
    - 1 spring sweeping, 1 summer sweeping, and 2 to 3 fall sweepings.

## Suggested approach for Board review:

- **Suggestion:** use baseline recommendation as default recommendation to member cities.
- **Suggestion:** use baseline recommendation as evaluation criteria for grant support (e.g., does applicant’s enhanced sweeping plan meet or exceed baseline recommendation?)





# Stewardship Grant Program

## Stewardship Grant Program

- Key elements requiring Board input / feedback:
  - 2) "Implementation strategy (2023 and onward)"
    - **Targeted:** use prioritization results to select cities / geographic areas to approach with grant opportunities
    - **Application Based:** accept applications for grant funding. Develop criteria for grant consideration.

## Suggested approach for Board review:

- **Suggestion:** for 2023, utilize the "targeted" approach to select Cities to reach out to with grant opportunities, based on available budget.
- **Suggestion:** for future years, continue "targeted" approach, segue to "application based".



Change from Existing  
Conditions to Baseline  
(+/- TP reduction)

# Stewardship Grant Program

- One potential strategy for **targeted** approach: use prioritization rank by **TP Recovery Rank** **Combined Rank:**  
TP Recovery x Change from Baseline

Municipality	Area (acres)	TP Prioritization Ranking Strategies								
		Street Sweeping Reduction & Removal Comparison [Baseline - Existing Conditions] (lbs/yr)			Recovery / Reduction Ranking Number (#)			Combined Ranking Number [Rank based on Baseline Change & Recovery / Reduction Ranking] (#)		
		Recovery	Reduction	Reduction [imp. / at risk]	Recovery	Reduction	Reduction [imp. / at risk]	Recovery	Reduction	Reduction [imp. / at risk]
Gem Lake	45.6	+0.8	+0.1	0.0	6	8	--	4	7	--
Landfall	53.0	+2.5	+2.5	+2.1	5	2	1	2	1	1
Little Canada	2,882.3	+34.0	+9.2	+0.9	7	6	7	6	4	5
Maplewood	10,840.4	+12.2	+8.6	+4.9	11	7	9	13	10	9
North Saint Paul	1,774.7	-47.4	-3.6	0.0	1	5	--	6	10	--
Oakdale	3,328.8	+37.9	+12.8	+4.6	9	9	6	8	5	7
Roseville	2,603.2	+20.6	+10.8	+10.8	3	3	3	5	3	4
Saint Paul	10,431.9	+323.7	+214.6	+176.7	4	1	5	3	1	3
Shoreview	3,409.1	-4.8	-3.1	-1.2	8	4	4	11	7	8
Vadnais Heights	1,320.3	+17.2	+2.7	+0.4	12	10	2	10	9	2
White Bear	6.5	+0.0	+0.0	0.0	10	13	10	11	13	10
White Bear Lake	1,956.2	+35.6	+2.5	0.0	2	11	--	1	12	--
Woodbury	4,670.2	+63.1	+21.2	+21.2	13	12	8	9	6	6

# Stewardship Grant Program

## Stewardship Grant Program

- Key elements requiring Board input / feedback:
  - 3) Stewardship Grant Program Funding
    - Program budget to support enhanced sweeping.

## Suggested approach for Board review:

- **Suggestion:** 2023: determine percentage of available Stewardship Grant funding to apply to street sweeping applications.
- **Suggestion:** 2024-onward: determine if expansion of Stewardship grant is required to support street sweeping efforts.





# Stewardship Grant Program

- How much funding should we expect to contribute to enhanced sweeping efforts?
  - The cost to perform sweeping (\$ / lane-mile) is highly variable...
    - Is sweeping contracted?
    - How many sweepers does the City own?
    - Labor costs / staff availability for sweeping?

## Stewardship Grant Program



# Stewardship Grant Program

## Stewardship Grant Program

- Examples of cost / lane-mile from various sources...
  - Woodbury Study (EOR, 2022):
    - Contracted: **\$102** / lane-mile
    - Owned\* = **\$93** / lane-mile
  - Woodbury 2022 enhanced sweeping:
    - **\$150** / lane-mile
  - Maplewood from survey:
    - **\$140** / lane-mile
  - North Saint Paul from survey:
    - **\$187** / lane-mile



# Stewardship Grant Program

- How much funding should we expect to contribute to enhanced sweeping efforts?
  - Little Canada Example: 1 spring / 1 summer/ 1 Fall
  - Cost to increase from 1x to 3x in fall:
    - Lane-miles = 120.6 lane-miles
    - Cost = from ~\$90 to 175 / lane-mile
    - Cost for 2x more Fall sweepings:
      - Low =  $2 \times 120.6 \times \$90 = \mathbf{\$21,700}$
      - High =  $2 \times 120.6 \times \$175 = \mathbf{\$42,200}$

## Stewardship Grant Program





# Stewardship Grant Program

- Potential activities to support through the Stewardship Grant program:
  - Purchasing additional street sweeping equipment
  - Support of funding for additional street sweeping personnel.
  - Contracting of additional street sweeping operations.
  - Funding to support enhanced sweeping in priority areas.
  - Assistance with vehicle maintenance and labor costs.
  - Assistance with material disposal and screening costs.
  - Assistance with public education and outreach.

## Stewardship Grant Program



# Questions / Comments?

## RWMWD Street Sweeping Prioritization Study

### **Contact Info:**

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Michael McKinney

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\* \* \* \* \*

# Administrator's Report

\* \* \* \* \*



## MEMO

**TO:** Board of Managers and Staff  
**FROM:** Tina Carstens, Administrator  
**SUBJECT:** November Administrator's Report  
**DATE:** November 30, 2022

### A. Meetings Attended

Tuesday, November 1	9:00 AM	MAWA Executive Committee Meeting
	10:00 AM	Washington County Commissioners Meeting
Wednesday, November 2	6:30 PM	Board Meeting
Thursday, November 3	2:00 PM	Purple Line BRT Meeting
Friday, November 4	9:00 AM	MAWA Fall Meeting
Thursday, November 10	8:30 AM	Mae Davenport's U of M Class Presentation
Tuesday, November 15	1:00 PM	Benefits Renewal Meeting
	5:00 PM	Watershed Excellence Awards
Thursday, November 17	2:00 PM	Purple Line BRT Meeting
Monday, November 28	9:00 AM	Benefits Open Enrollment Meeting w/ Staff
Tuesday, November 29	2:00 PM	Long Term Maintenance Discussion w/ MWMO
Wednesday, November 30	ALL DAY	MAWD – MAWA Meeting
Thursday, December 1	ALL DAY	MAWD Annual Meeting
Friday, December 2	ALL DAY	MAWD Annual Meeting

### B. Upcoming Meetings and Dates

Staff/Board Holiday Party	Wednesday, December 21 – 11:30 AM
January Board Meeting	January 4, 2023

### C. MAWD Annual Meeting

The MAWD annual meeting is being held December 1-3. This is a placeholder for staff to report back to the board on the takeaways from the conference and business meetings.

### D. Wetlands Workshop Scheduling

The decision was made to postpone the planned wetlands workshop for a time after the New Year. I would like to find a new date in January that would work for the board and staff. I will pass around a blank calendar at the next meeting for you to indicate what dates will not work for you. If you aren't at the meeting, I will be in touch specifically about

planning this meeting. If by chance the 3<sup>rd</sup> Wednesday of the month, January 18<sup>th</sup>, would work, that would be a good date to keep it between the January and February board meeting. If that could be the consensus, we can plan for that. Otherwise we will use the calendar approach to find a date.

**E. 2023 Meeting Schedule**

As we solidify our meeting calendar for 2023, it came to attention that the July board meeting is planned for July 5<sup>th</sup>. This is the day after the holiday. I would like to determine if we should move that meeting to the week before the holiday on June 28<sup>th</sup>? If so, we would take a motion to move the July meeting date.

\* \* \* \* \*

# Project and Program Status Reports

\* \* \* \* \*

## Memorandum

**To:** Board of Managers and Staff  
**From:** Tina Carstens and Brad Lindaman  
**Subject:** Project and Program Status Report – November 2022  
**Date:** November 30, 2022

**Note:** *The location, brief description, and current status of each project described below can be found on the [2022 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.*

This month and into early winter, Barr is creating plan sheets for placing emergency flood risk mitigation measures. We anticipate completing the plans this winter and 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: Brandon Barnes; 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.*

The Kohlman Creek flood risk reduction feasibility study focuses on concept development of the types of system improvements near PCU Pond that the city would support and that would complement North Saint Paul's other ongoing studies. The city's study is being conducted in parallel with the Kohlman Creek/Wakefield Lake diversion study (upstream of PCU Pond and the North Saint Paul Urban Ecology Center), so system modifications around PCU Pond will not be further developed until next year when the Kohlman Creek/Wakefield Lake diversion concept is better defined and resulting design flows are determined.



Barr has provided the district's stormwater model to the city of North Saint Paul for reference in the city's flood risk reduction study. After learning about the city's planned approach for flood risk mitigation in these areas and better understanding the change in peak flow rates following the Kohlman Creek/Wakefield Lake diversion study, Barr will begin evaluating potential flood risk mitigation options for PCU Pond and the wetland complex west of White Bear Avenue. In 2023, we will continue working with the city to identify flood risk reduction opportunities that accomplish both RWMWD and city goals and objectives.

**C. Kohlman Creek/Wakefield Lake diversion feasibility study (Barr project manager: Brandon Barnes; RWMWD project manager: Tina Carstens)**

*The purpose of this study is to complete a feasibility evaluation of modifications to reduce flood risk on Kohlman Creek by diverting high flows to the historic County Ditch 17. Work includes coordination with stakeholders, evaluation of alternatives to reduce flood risk, preparation of cost estimates for each alternative, and identification of permitting requirements. This feasibility study is a follow-up study of a flood-prone area identified in the Beltline resiliency study.*

This month, Barr revised the stormwater model with updated pond sizes provided by Ramsey County and the county's contractor. The pond sizes provided by the county were smaller than ponds initially included in the analysis. The smaller ponds result in a smaller diversion as well as smaller reductions to peak water surface elevations on Kohlman Creek. Following stormwater model updates, Barr and the RWMWD met with Ramsey County and the county's golf course contractor to discuss pond sizes—specifically, the maximum ponds that could be constructed given existing site constraints and playability considerations. Ramsey County is discussing pond sizes with its contractor and will provide direction to Barr and the RWMWD next month.

Barr had planned a design charrette with stakeholders for this fall. While we will still reconvene the stakeholder group, discussions with the county are guiding modifications to basin size and location as well as the size of the diversion pipe that conveys stormwater from Kohlman Creek to Goodrich Golf Course.

Next month, Barr expects to start reviewing the water quality monitoring data that the RWMWD collected last summer. Water quality information will inform whether additional treatment is required before diverting stormwater from Kohlman Creek into Wakefield Lake. We will continue evaluating and refining alternatives through the winter. The feasibility study is scheduled to continue through summer 2023.

**D. County Ditch 17 improvements feasibility study (Barr project manager: Brandon Barnes; RWMWD project manager: Tina Carstens)**

*The purpose of this study is to complete a feasibility evaluation of modifications to reduce flood risk northeast of Wakefield Lake along historic County Ditch 17 to remove structures from the 100-year floodplain. Work includes coordination with the City of Maplewood, evaluation of alternatives to reduce flood risk, preparation of cost estimates for each alternative, and identification of permitting requirements. This feasibility study is a follow-up study of a flood-prone area identified in the Beltline resiliency study.*

This month, Barr shared with the City of Maplewood the draft memorandum that documents the methodology, alternatives for system modifications for flood risk reduction, and opinions of probable construction cost to confirm that recommended system modifications will have city support. The

memorandum will be updated with city comments, if needed, and then the findings will be presented to the RWMWD managers at the January board meeting.

**E. Phalen Village feasibility study (Barr project manager: Brandon Barnes; RWMWD project manager: Tina Carstens)**

*The purpose of this study is to complete a feasibility evaluation of modifications to reduce flood risk near Phalen Village north of Lake Phalen to remove structures from the 100-year floodplain. Work includes coordination with the City of Maplewood, evaluation of alternatives to reduce flood risk, preparation of cost estimates for each alternative, and identification of permitting requirements. This feasibility study is a follow-up study of a flood-prone area identified in the Beltline resiliency study.*

This month, Barr shared with the City of Maplewood the draft memorandum that documents the methodology, alternatives for system modifications for flood risk reduction, and opinions of probable construction cost to confirm that recommended system modifications will have city support. Following review, Barr will revise the memorandum, if needed, and then the findings will be presented to the RWMWD managers at the January board meeting.

**F. 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.*

This month, Barr prepared a memorandum summarizing stakeholder coordination and possible opportunities for flood risk reduction projects near Ames Lake. Following discussions with the Saint Paul Housing and Redevelopment Authority, two parcels were identified near Ames Lake as potential locations for regional flood risk reduction best management practices (BMPs). The memorandum summarizes stakeholder coordination, opportunities for flood risk reduction projects near Ames Lake, and recommendations for next steps to be completed in 2023. Barr provided a draft memorandum to the RWMWD; following review, we will revise the memorandum and provide an updated version to the managers during the January board meeting.

**G. 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 drafted a technical memorandum to summarize the flood risk reduction alternatives evaluated in and around North Star Estates and Owasso Basin. The document is in the final stages of review, and cost estimates are being developed. Barr will share the technical memorandum first with RWMWD staff for

review and comment, followed by the City of Little Canada, and then distribute to the RWMWD board in early 2023.

#### **H. Double Driveway Pond optimization study (Barr project manager: Tyler Olsen; RWMWD project manager: Tina Carstens)**

*The purpose of this study is to evaluate the benefit-cost of water quality improvements in Double Driveway Pond in the Fish Creek subwatershed. These improvements will be targeted at sediment reduction strategies that will benefit downstream Fish Creek, which is considered impaired by excess sediment. An important part of this study is tying strategies to the findings of a current Department of Agriculture study (currently under review) that is assessing the water quality of runoff from upstream areas.*

This month, Barr prepared a scope summary for RWMWD staff and the board of managers for the 2023 work around Double Driveway Pond as well as the tributary to Fish Creek that flows from the Bailey Nursery property to Double Driveway Pond. The scope includes an erosion inventory of the creek, coordination with the MDA to dredge Double Driveway Pond, vegetation restoration, and targeted stream restoration. An erosion inventory of the tributary creek (task 1) is planned for December 9 and will involve two Barr staff members walking the creek to identify sites of significant erosion and collect data on a GPS-enabled iPad. We met with the RWMWD this month to discuss this approach. The district notified property owners along the creek of the inspection; they were positive about this task and will be engaged as the project progresses.

Barr also met with the Bailey/MDA design team to review its proposed schedule. The MDA is requiring further sampling and laboratory analysis of the sediment samples taken from Double Driveway Pond, which may delay planned excavation of the pond. This schedule will be coordinated with task 2 of the scope for providing additional dredging beyond what the MDA requires Bailey to remove. The RWMWD will pay for this extra work, while Bailey will pay for the required dredging.

#### **I. 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.*

There was no new activity this period.

#### **J. Evaluation of compliance with South Metro Mississippi River total suspended solids (TSS) total maximum daily load (TMDL) (Barr project manager: Tyler Olsen; RWMWD project managers: Eric Korte, Nicole Soderholm)**

*The purpose of this study is to evaluate the RWMWD's compliance with the South Metro Mississippi River TSS TMDL. As a regulated municipal separate storm sewer system (MS4), the district is required to meet the waste load allocations (WLA) of 154 pounds of TSS per acre per year. The WLA is applicable to the RWMWD for the Saint Paul Beltline Interceptor and its contributing drainage area, as the district owns and operates the infrastructure.*

There was no new activity this period. Barr will continue working with the RWMWD to evaluate the TSS data for 2023 TMDL reporting requirements.

## Research projects

### **K. Kohlman permeable weir test system (Barr project manager: Keith Pilgrim; RWMWD project manager: Bill Bartodziej)**

*The objective of this current investigation is to design a full-scale permeable weir treatment system for installation in the Kohlman Basin.*

Final design for implantation of the permeable weir was completed during this period. Ongoing efforts include wetland permitting and initial steps in the development of a property access liability agreement with Hubbard Broadcasting.

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

*The purpose of this study is to evaluate the potential effectiveness of aeration in shallow lakes by studying the effect of aeration in three smaller shallow systems (Markham Pond, Bennett Lake, and Gervais Mill Pond) in detail during 2021 and 2022. This approach is being pursued as an alternative to whole-lake alum treatments.*

The fieldwork portion of this project is complete for 2022. The data have been received and are being compiled into a report. Monitoring recommendations for next year will be provided in the first quarter of 2023.

## Capital improvements

### **M. 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.*

On October 26, Barr contracted the topographic, utility, and tree survey with Alliant Engineering, Inc. Throughout early November, we coordinated the survey tasks with Alliant and provided schedule updates to Target. In mid-November, Alliant presented the survey deliverables to Barr for review. We will review the documents at the end of November and begin concept design work in early December.

### **N. Targeted retrofit projects (Barr project manager: Marcy Bean; RWMWD project manager: Paige Ahlborg)**

*The purpose of this project is to design, provide bid assistance for, and oversee construction of BMP retrofits on previously identified commercial, school, and faith-based properties throughout the district.*

Construction at St. Pascal Baylon Catholic Church is complete. Only trees remain, which will be planted in spring 2023. As Erin Anderson Wenz mentioned last month, there is one final project change order this month. Change order 5 documents the changes in detail and is included in the packet for consideration.

Design for Roosevelt Homes (owned by the Saint Paul Public Housing Authority) is awaiting a detailed site survey, anticipated in November 2022. Barr and the RWMWD are coordinating with the City of Saint Paul to help inform improvements.



**O. Stewardship grant program – street sweeping (Barr project manager: Marcy Bean and Michael McKinney; RWMWD project manager: Paige Ahlborg)**

*The purpose of this project is to 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.*

Barr coordinated with the RWMWD to complete a) development of a street sweeping prioritization strategy, b) development of a “baseline” street sweeping strategy, and c) related recommendations for updates to the stewardship grant program to support enhanced street sweeping efforts beginning in 2023. We created a technical memorandum that summarizes methodology and all related recommendations. Barr and the RWMWD are in the process of finalizing the memorandum and a presentation for the Minnesota Association of Watershed Districts meeting (December 2) and the December RWMWD board meeting (December 7).

In addition, Barr and the RWMWD met with Woodland Hills Church owners, who are interested in reducing parking spaces and retrofitting the highly impervious site to demonstrate a tiny homes neighborhood. The potential to reduce parking spaces has been confirmed with the City of Maplewood. Barr is developing preliminary concepts for stormwater management alongside pavement removal. Preliminary stormwater calculations and spatial diagrams are being developed to help determine the potential for grant funding in 2023.

**P. Lake Emily subwatershed regional 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.*

This period, Barr finalized conceptual designs for both the Arbogast Street and the Vivian Avenue/Cobb Street sites to a 30-percent design level using additional survey information collected in the field, geotechnical information obtained from site soil borings and laboratory testing, additional hydrologic and hydraulic modeling, and water quality modeling. We also finalized the 30-percent engineer’s opinion of probable cost and cost-benefit for each project. The 30-percent design summary will be in the January meeting packet for manager consideration. The managers will be asked if they approve moving the Arbogast underground filter design to final design, plans, and specifications.

## **CIP project repair and maintenance**

**Q. Beltline five-year inspection (Barr project manager: Sam Redinger, RWMWD project manager: Dave Vlasin)**

*The purpose of this project is to maintain the existing Beltline and Battle Creek tunnel systems and infrastructure owned and operated by the RWMWD.*

Over the next few periods, Barr will evaluate findings to develop the inspection report. The report will likely be complete in early 2023.

**R. District inspection standardization (Barr project manager: Tyler Olsen; RWMWD project manager: Tina Carstens)**

*The purpose of this project is to standardize the district's creek and facilities inspection process, evaluation, and related data collection effort. Work includes review of current methods, development of a scoring system, and implementation of mobile data collection.*

This period, Barr created a summary table of the normalized scores for each inspection site, per a request from the managers at the November board meeting. The table also includes notes for sites that were either selected for the CIP that were not above the threshold score of 2, or sites that were not selected for CIP but were above the threshold score. This table is included in this month's board packet.

**S. 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.*

As directed by the board last month, Barr finalized design, prepared bidding documents, and advertised the project for bid. A bid opening date has been set for December 6 at 10:30 a.m. We will present the bids to the managers for consideration at the December 7 board meeting. If they determine it appropriate, the board should award the work to the lowest responsive and responsible bidder deemed to be in the best interest of the project. If an award is made at the December meeting, construction will likely begin in early January.

## **T. Natural Resources Update – Bill Bartodziej and Matt Doneux**

### **Ecological Restoration in Keller Regional Park is Underway**

We are pleased to report the Watershed and Ramsey County secured \$72,000 through *DNR's Conservation Partners Legacy Grant Program* to continue restoration efforts that will establish high quality, natural buffers in Keller Regional Park.

#### ***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).

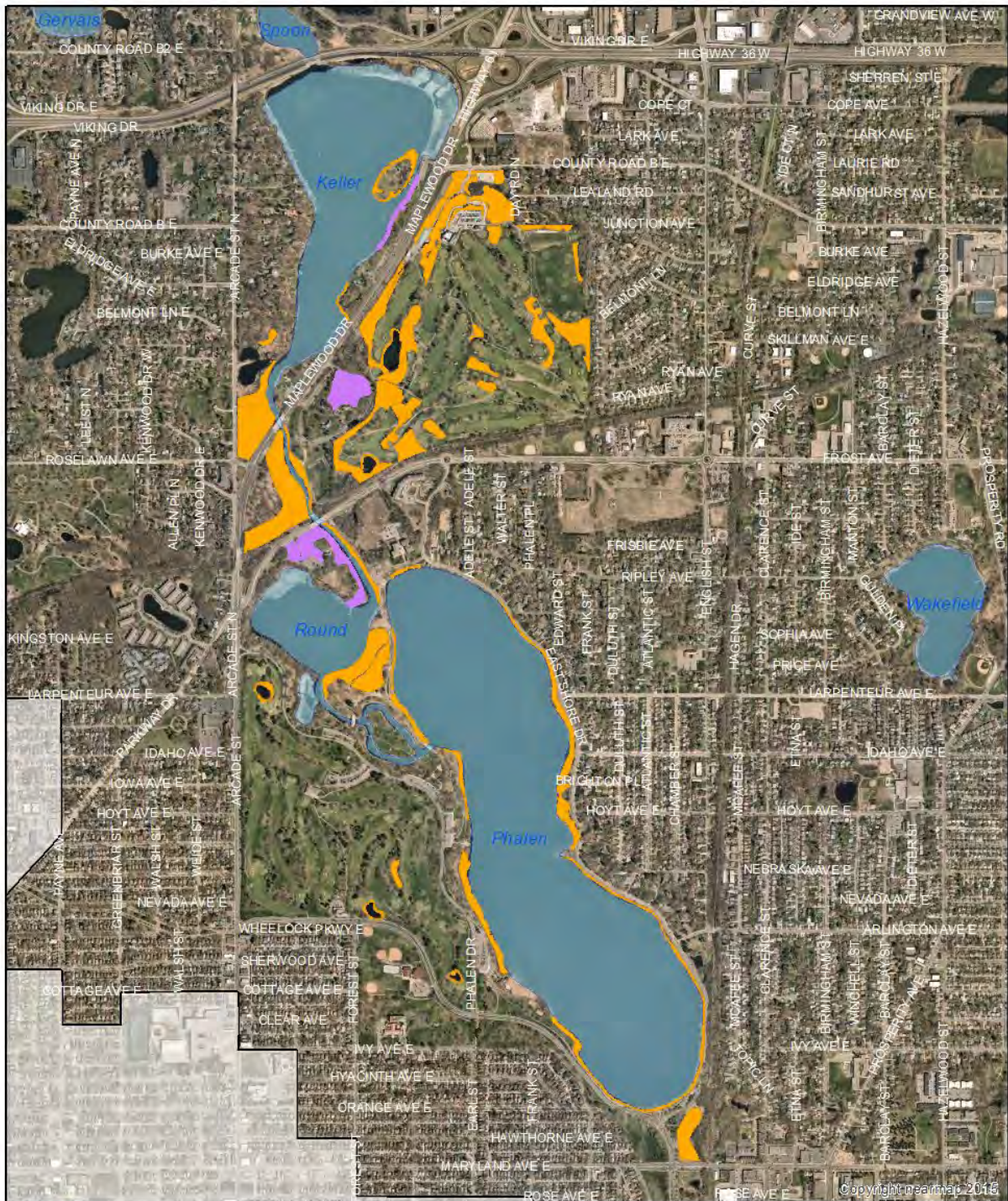
#### ***Objectives***

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.





**Keller Regional Park - Ecological Restoration**  
Ramsey-Washington Metro Watershed District

0 500 1,000 2,000  
Feet

**Key**

- Established Restoration Areas (62 acres)
- 2023-24 Restoration Sites (6 acres)
- RWMWD Boundary
- Lakes





Buckthorn was removed in the purple highlighted creek buffer area this fall.



A pre-control photo showing the dense buckthorn cover in the creek buffer.





**A remote-control brush mower was tested on a steep slope. The results were encouraging.**



**A majority of the buckthorn control was done by hand with NR and CCM crews. Approximately 60% of the buffer is now cleared of buckthorn. The remainder will be address in December.**



## **U. Public Involvement and Education Program – Sage Passi**

### **Central Park Fifth and Sixth Graders Adopt a Street and their School Rain Garden**



Stuart Knappmiller, a St. Paul Water Steward (above left) assists two fifth/sixth grade classes from Central Park Elementary in helping clean storm drains and a street near their school on November 1 and 2. (Below) Two classes from the school replaced the hardwood mulch in their large school rain garden on October 27 with the help of Watershed staff and Water Stewards, Lee Bauer, Phyllis Webster, Rachel Hanks and Bette Danielsen. Teachers involved in both these projects include Anders Johnson, Jameson Sevelius, Rachael Johnson and Carly Heras. Watershed Education staff came into the classes ahead of time to teach a lesson about the school's watershed, stormwater run-off, pollution and the route the water takes through the watershed when it leaves the school property. The classes did a demonstration activity to compare the volume of run-off from pervious and impervious surfaces.



### **Mounds Park Academy Students Tackle Willow in their Raingarden Basin**

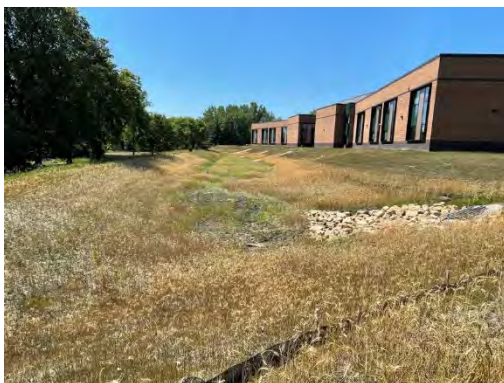


Mitch Thomsen's science classes at Mounds Park Academy have been working to remove the extensive willow trees in the rain garden basin behind their school for the past several years. They took on a large area of it on October 27 with the help of RWMWD education staff. Eventually they plan to sow a mix of wet meadow seeds in the basin where these invasive trees have over time filled in the area.

### Exploring the Lay of the Land and Flow of Water at Justice Alan Page School



Through multiple site visits through the summer and this fall, Education staff Sage, Cathy and Tracy have been exploring the major land transformations and flow of water where this new school was built on the former site of Maplewood Middle School in North St. Paul. It's been a learning curve to understand how run-off is being directed and how the "watershed" has been modified at this school in order to explain and interpret this site for the fifth grade classes and their teachers who we've been introduced to over the past month. We initially met with the classroom teachers and the school's science specialist to talk about what we could provide for education and service learning experiences this year. Since then we have presented our introductory watershed lesson to two classrooms and are returning to provide this hands on lesson and map study for the other two fifth grade classes on November 30. More activities and a field trip are to come this winter and spring!



**Above left: A large permitted filtration basin installed to treat stormwater from the new school building. Above right: Tracy leads an experiment in comparing run-off from pervious and impervious surfaces.**



## **In Search of Demonstration Garden Sites in Ramsey County Regional Parks**



For the past two months, Sage has been working in collaboration with Blue Thumb director Becky Rice, Wilderness in the City representative, Maryann Passe, Mike Goodnature from Ramsey County Regional Parks and Pat Williamson from St. Paul Parks and Recreation Natural Resources Division to identify three sites (each up to .25 acres in size) in Ramsey County Regional Parks in our Watershed District for a large LCCMR funded project to restore turf to native pollinator gardens across the metro area. Goals for the project are to increase habitat using the best available science to transition ecologically degrading turf into pollinator friendly habitat in the form of resilient native gardens. These demonstration gardens are intended to engage, educate and inspire people of all backgrounds to take on similar projects in their own yards or local parks. The desire is for these gardens along with other projects in this grant program across the metro area to serve as “seeds” for future gardens outside regional park boundaries. Integral to this project is the engagement of diverse communities in the planting, creating communities of stewards for ongoing care, placing these gardens in highly visible locations to improve the ecology of the park and to enrich visitor experiences. Currently we have finalized one of the sites in Battle Creek Regional Park in the Water Works area in our Watershed District and we are still exploring several sites in Lake Phalen and Keller Regional Parks.

## **Connecting with High School Environmental Clubs in Woodbury and Roseville**



In November, Sage met with two high school environmental clubs to explore possible collaboration and support of several projects. The first meeting was set up by science teacher, Nour Sinada at Woodbury High School. She is seeking assistance and help in supporting her large team of high school girls who have been working on plans for a pollinator garden on their property. Sage, Angie Hong and Anna Barker (top left photo with Nour) visited Sinada’s team on November 9 to explore ways to assist this group in getting up to speed to design and build their garden and seek funding sources. We offered to teach them the art of stratifying seeds at an upcoming meeting this winter and engage them in helping plant John Chikkala’s Water Steward capstone rain garden project at his home this spring. This school and

John's property are both in the Carver Lake subwatershed. (The middle photo above shows their efforts at killing the grass for this pollinator garden project on their campus)

The other club we met with is at Roseville High School. Emilia Gusdahl, a senior at this school met us this summer at our outreach event at Lake Owasso. Her family is scheduled to get a shoreline restoration at their home in Shoreview. Emilia approached us about helping her club get involved in some kind of environmental, watershed related project. Lee Bauer and Sage met with three of this club's members on November 21 after school. We explained some details about recent permit projects on their campus including a large raingarden basin on the south side of their campus and talked about potential ways to improve its care and plant mix.

## **V. Communications and Outreach Program Report – Lauren Hazenson**

### **Content Creation**

#### **Recognition Dinner**

LEAP and Excellence Award videos

For this recognition award year, we produced nine videos. We interviewed thirteen subjects across various backgrounds, including school principals, a mayor, a senior center director, middle school students, and a grounds manager. They all provided valuable stories and perspectives on our awardees' impact on their communities and our local waters. We also captured the Landscape Ecology Awards locations to illustrate the experience of walking through these beautiful contributions to local ecology and water quality. The videos were played during the awards dinner and are now posted on our Youtube channel for audiences to view throughout the year: <https://youtube.com/rwmwd>.

#### **Media Coverage**

We coordinated with the Public Relations staff at Waters of Oakdale Senior Living to cover a story on Georgiana Harris, one of this year's Watershed Excellence Awards recipients. Georgie is an 89-year-old resident at the Waters who takes care of the native plant gardens next to her building. KMSP picked up the story and aired an interview with Georgie on their 10 pm news: <https://bit.ly/3tBpJmM>. We provided photos and footage from the event to supplement the newscast.

#### **Event Management**

Lauren drafted schedules for the speakers and volunteers, sent the videos to speakers so they could plan their words to coordinate with the content, created the event script, and created and finalized the event PowerPoint except for the LEAP awards. She also fielded event management and registration questions throughout the event day.

**To:** Board of Managers and Staff  
**From:** Tina Carstens and Brad Lindaman  
**Subject:** Project and Program Status Report November 2022  
**Date:** November 30, 2022

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Page 16

## **E-newsletter**

Audience: 1,606

Opens: 47.9%

Link clicks: 1.3%

## **Social Media (Facebook, Twitter, Instagram)**

**Numbers as of 11/28 :**

### **Facebook**

Reach: 524

Engagement (likes, shares, comments): 40

Audience: 1,326

### **Instagram**

Reach: 324

Engagement: 22

Audience: 719

### **Twitter**

Reach: 259

Engagement: 11

Audience: 1,003

Note: We had a drop in Twitter followers this month as the overall users on the site declined. This happened with Facebook a few years and the numbers eventually returned, but we will track the overall trends to see if we need to recalibrate our social media strategy.

## **Resident Communications/Professional Development/ Public Meetings, Misc.**

- Staff public communications support
- East Metro Communicators Meeting(11/3)

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# Board Action Log

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**Board of Managers Action Log**  
Wednesday, December 7, 2022

<b>Date Added</b>	<b>Item</b>	<b>Anticipated Action Date</b>	<b>Means of Action</b>	<b>Completed</b>
November 2022	Planting of Edible Plants in Restoration Areas	Winter 2022	Barr new technology report	
November 2022	Alum Use Policy	Spring 2022	Proposed policy discussion.	
July 2022	PFAS (Per- and polyfluoroalyl substances) in MN and RWMWD's role.	Fall/Winter 2022	Presentation – invite MPCA representative	
July 2022	Miyawaki Mini-Forest Assessment	Fall 2022	Barr new technology report	Oct 2022 PSR
July 2022	Alum use for internal load control along with information on alternative solutions.	Fall/Winter 2022	Memo/Presentation	Nov 2022