RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

February 2022
Board Packet

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Agenda

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RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

Regular Board Meeting Agenda

Wednesday, February 2, 2022
6:30 PM

Due to the COVID19 pandemic, this month's board meeting will be held via the video conferencing platform Zoom. Board members, staff, consultants, and general public will be able to join in via video and/or phone. The public that wish to will be able to listen to meeting but not participate with the exception of the visitor comments portion of the agenda. If you have comments you may speak on the Zoom meeting during the visitor comments agenda item. 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 January 5, 2022 *(pg. 7)*
    B. Treasurer's Report and Bill List *(pg. 15)*
    C. Permit Program
        i. 22-02 Little Canada 2022 Street Improvements, Little Canada *(pg. 26)*
        ii. 22-04 Maplewood Gardens Garage and Parking, Maplewood *(pg. 31)*
    D. Ryan Drive & Keller Parkway Conveyance – Change Order No. 1 *(pg. 35)*
4. Visitor Comments (limited to 4 minutes each)
5. Permit Program
    A. Applications
        i. 22-03 Gervais Wood 2nd Addition, Little Canada *(pg. 39)*
        ii. 22-05 Amira Senior Apartments, Woodbury *(pg. 46)*
    B. Enforcement Action Report *(pg. 57)*
    C. Erosion and Sediment Control Inspection Example *(pg. 59)*
6. Stewardship Grant Program
    A. Applications
        i. 22-02 CS Christ Lutheran Church, North St. Paul, 5 rain gardens *(pg. 64)*
    B. Budget Status Update *(pg. 67)*
7. Action Items
    A. **Tanners Lake Outlet Coordination *(pg. 69)***
8. Attorney Report
9. Board Issues, Policies and Operation (for discussion at meeting)

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

A. Wetlands

10. Presentations
    A. District Wetlands Discussion *(pg. 75)*
    B. Flood Risk Project Scope Summary Updates *(pg. 176)*
    C. Website Update and Prototype Presentation
11. Administrator's Report *(pg. 189)*
    A. Meetings Attended
    B. Upcoming Meetings and Dates
    C. Ongoing Project/Program Updates
12. Project and Program Status Reports
    A. Ongoing Program and Project Status Updates *(pg. 212)*
        i. Interim Emergency Response Planning
        ii. Kohlman Creek and Phalen Chain of Lakes Flood Risk Reduction Feasibility Study
        iii. Grass Lake Berm Wetland Mitigation
        iv. Kohlman Permeable Weir Test System
        v. Shallow Lake Aeration Study
        vi. Keller Channel and Phalen Outlet Operations Plans
        vii. Targeted Retrofit Projects
        viii. Ryan Drive and Keller Parkway Conveyance Project
        ix. District Inspection Standardization
        x. CIP Maintenance and Repair Project 2021
        xi. CIP Maintenance and Repair Project 2022
        xii. Natural Resources Program Update
        xiii. Education Program Update
        xiv. Communications Program and Website Update
13. Manager Comments and Next Month's Meeting
14. **Adjourn**

RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

NOTICE OF BOARD MEETING
Wednesday, February 2, 2022
6:30 PM
Via Web Conference and In Lieu of an In-Person Meeting

Per Minnesota Statute 13D.021, President Lawrence Swope has determined that an in-person meeting of the RWMWD Board of Managers is not practical or prudent given the COVID-19 pandemic. In compliance with Center for Disease Control and Minnesota Department of Health guidance on minimizing potential for spread of the virus, RWMWD will conduct its regular Wednesday, February 2, 2022, meeting at 6:30 p.m. CDT, by web conference and conference call. Members of the public wishing to participate in the meeting may do so by accessing the web-based conference, or by phone. Due to the current health pandemic, President Swope has determined that attendance at the regular meeting location by members of the public is not prudent, and that the physical presence at the regular meeting location by at least one member of the organization is also not feasible.

To access the meeting via webcast, please use this link: https://us02web.zoom.us/j/87600998135?pwd=NXQyejFGLzJqNmZCenhxd2hCTE9sdz09

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 **876 0099 8135**. The meeting password is **537829**. If you have any questions, please contact Tina Carstens at tina.carstens@rwmwd.org.

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Consent Agenda

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Ramsey-Washington Metro Watershed District
Minutes of Regular Board Meeting
January 5, 2022

The Regular Meeting of January 5, 2022, was held via Zoom web conferencing. A video recording of the meeting can be found at https://youtu.be/jZUpZfDuI_g. Video time stamps included after each agenda item in minutes.

PRESENT:
Larry Swope, President
Cliff Aichinger, Vice President
Dianne Ward, Treasurer
Val Eisele, Manager

ABSENT:
Dr. Pam Skinner, Secretary

ALSO PRESENT:
Tina Carstens, District Administrator
Tracey Galowitz, Attorney for District
Brad Lindaman, Barr Engineering
Simba Blood, Natural Resources Specialist
Dave Vlasin, Project Coordinator
Paige Ahlborg, Project Manager
Erin Anderson Wenz, Barr Engineering
Nicole Soderholm, Permit Inspector
Eric Korte, Water Monitoring Coordinator

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

President Swope acknowledged that Matt Grey, a resident that has been active with the watershed, passed away before the holidays.

Tina Carstens stated that she reached out to the family to express condolences on behalf of the District.

2. APPROVAL OF AGENDA (1:05)
Motion: Manager Aichinger moved, Manager Ward seconded, to approve the agenda as presented.

A roll call vote was performed:

Manager Aichinger	aye
Manager Eisele	aye
Manager Ward	aye
President Swope	aye

Motion carried unanimously.

3. CONSENT AGENDA (1:26)
A. Approval of Minutes from December 8, 2021
B. Treasurer's Report and Bill List
C. Permit Program
   i. 22-01 – MnDOT Highway 36 Drainage Infrastructure

D. Stewardship Grant Program

i. 22-01 CS – Woodbury City Hall Improvements, Tree Trench, Native Restoration

E. District Liability Insurance Coverage Waiver

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

A roll call vote was performed:

Manager Aichinger	aye
Manager Eisele	aye
Manager Ward	aye
President Swope	aye

Motion carried unanimously.

4. VISITOR PRESENTATIONS (2:04)

There were none.

5. PERMIT PROGRAM (2:09)

A. Applications – See Consent Agenda

B. Monthly Enforcement Report

During December zero notices were sent.

C. Permit Program Summary 2019-2021

Nicole Soderholm stated that the report summarized the permit program from the previous year and included data from the year prior for comparison. She noted that permit applications were down in 2021, perhaps due to COVID or supply chain issues. She stated that there were fewer active sites, which allowed staff to increase inspections. She noted that there were five residential permit applications, which resulted in two violations. She noted that there have been fewer stormwater fund contributions which is perhaps due to the increase in cost for those credits and the matches the desire of the Board for treatment to be provided onsite. She noted that during 2021, the Board also permanently adopted the pilot program for the single lot residential permitting.

Manager Eisele asked if there has been a pattern in violations that occur year over year. Nicole Soderholm confirmed that the violations that occur most often are consistent from year to year. She stated that some violations often occur as a result of rain events while stabilization is often an uphill battle with contractors.

Manager Aichinger asked the difference between violations, verbal warnings, and percent of permits found noncompliant. Nicole Soderholm stated that verbal warnings are not used often as staff is more likely to be completing a full inspection which would include documentation. She stated that there could be three violations from one inspection. She stated that noncompliance is a result of inspections that receive a grade below C. She noted that a site can receive a violation and still receive a grade of A, B, or C. She stated that half of the sites result for all of the violations.

Tracey Galowitz stated that Nicole Soderholm and her staff do an excellent job and that can be shown in the limited funds needed for legal staff to intervene in violation issues.

6. STEWARDSHIP GRANT PROGRAM (10:02)

A. Applications – See Consent Agenda

B. Budget Status Update

Paige Ahlborg stated that one application has been received from a municipality and the remainder were carry overs. She noted that more applications will come in as the year progresses.

7. ACTION ITEMS - None

8. ATTORNEY REPORT (10:51)

Tracey Galowitz stated that this is the year in which attorney, accountant and auditor services go out for bid, therefore legal staff will ensure the notices are published prior to the March meeting. She stated that legal counsel drafted a maintenance agreement for a property in Little Canada. She noted that legal staff continue to monitor the open meeting laws.

9. BOARD ISSUES, POLICIES, AND OPERATION (FOR DISCUSSION AT MEETING) (13:55)

A. West Vadnais Lake

President Swope commented that representatives from West Vadnais will be attending the next Board meeting and encouraged Managers to provide any questions prior to that meeting. He explained that West Vadnais Lake is in the middle of the District's watershed and at the tail end of the West Vadnais watershed. He noted that while there have not been operational issues, there is a lengthy process for actions that involve that water body because of the limited meeting schedule of that organization.

Manager Eisele stated that previously there was discussion of providing history of actions that involved that group and the timeline for approvals. He stated that he would prefer to center around the data and length of time needed for interactions in attempt to keep the conversation calm and prevent groups from becoming territorial.

Tina Carstens stated that she would have to think more about that as there have been some interactions, but the length of time has not been delayed because of the actions of the Vadnais Lake Area WMO.

Manager Eisele stated that he was more curious about the data, noting that perhaps it would show that the timeline was not delayed more than a month. Tina Carstens stated that she would have to think more about it as she could not think of a specific project where that group caused a delay.

Manager Aichinger stated that he could not recall many interactions in the past ten to 20 years that had delays, noting that there have been minor collaborations, but most had been handled by staff. He was unsure that there would be enough instances to provide that data.

Manager Eisele stated that if they have been a good partner and easy to work with, he would not see a problem in continuing to collaborate.

Manager Ward commented that the world has changed since the boundaries were drawn. She noted that the District has taken over the Grass Lake area and Barr Engineering completed a study showing no connection between East and West Vadnais lakes. She stated that she has always been concerned because West Vadnais Lake sits at the top of the District and the water quality is so compromised.

President Swope welcomed any additional topics the Managers may have for that discussion prior to the next meeting. Tina Carstens stated that the representatives from West Vadnais are planning to share their plans for the lake and also hear feedback from the Board.

B. Wetlands Strategies and Policies

President Swope asked for input on strategies and policies that perhaps the District may be lacking in its protect and enhance role. He stated that the report mentions tools and surveys that were previously completed and asked

where those can be found for review. He noted that the report states that recommendations and a report were provided in December 2019 and stated that he was unable to find those.

Brad Lindaman stated that updates were made with more current information using the MnRAM assessment.

Erin Anderson Wenz stated that the information was prepared and meant to be presented in a workshop, but that workshop was delayed due to COVID. Tina Carstens noted that the data for the MnRAM assessments is kept in a database but that the data determines the District's wetland classification that can be found in our management plan and in our online maps.

President Swope commented that he would be interested in seeing that information. He stated that conditions change with flooding and droughts, and he believed the first step would be to review the current inventory. Manager Aichinger provided additional details on the MnRAM assessments and how those are used. He noted that every wetland in the District is in the inventory, scored and classified. He noted that when applications come in that would interact with those wetlands, the proper rules and regulations would be triggered.

President Swope stated that he would be interested in information on the different classifications of the wetlands and how that compares to the DNR classifications. Tina Carstens stated that the wetland classification is included in the District plan and available on the website. She stated that DNR classifications are not as detailed and therefore the most accurate information would be provided through the MnRAM assessments. She provided more details on the MnRAM assessment process and how it is completed.

President Swope asked the obligations that would be enacted to protect a wetland classified as A. Tina Carstens explained that the District rules are triggered through permitting and provided additional details on the buffers that would be required and other regulations. She noted that some of the cities have adopted the District regulations for wetland buffers and some are even more stringent.

Brad Lindaman noted that perhaps it would be helpful to have the information that is reviewed in the MnRAM assessment.

President Swope stated that he has additional concerns with the presentation related to creating new wetlands. He made reference to flood storage and noted that he would have additional questions as that would change the conditions of the site. Brad Lindaman stated that much of the scoring criteria comes from BWSR and what it uses to establish a wetland bank.

President Swope stated that he would also want to see emphasis continue on no net loss. Tina Carstens agreed that would be key in ensuring there is no net loss and increasing the overall amount of wetlands in the District.

Manager Eisele stated that he did not believe that building a wetland bank was at the top of the list for priorities from that workshop. Tina Carstens stated that it was mentioned that it is difficult to establish a bank that would be used through BWSR, but it could be used for the purposes of the District.

Erin Anderson Wenz noted that she could pull additional background information that could be provided to the Board.

Manager Ward commented that she found this information interesting and would like to see it used going forward, whether that is in projects or another manner. Tina Carstens confirmed that this work will continue.

C. Phalen Creek Daylighting

President Swope commented that an article was included in the packet related to the project.

Manager Aichinger stated that as long as the role of the District is minimal, he has no problem with the project but did not believe the District should be spending a lot of time or money on the project. He stated that if the group involved is spending the time and obtaining funding, he has no issue with the project.

Tina Carstens stated that staff meets with the group occasionally to talk about the project and will review the engineering to ensure there are no negative impacts on the District system from the project. She noted that the group has received a large grant to get started on the project and understands that this is not a priority for this District. She stated that this is a higher priority for Capital Region and therefore would not want the District to be a roadblock in that process.

Manager Ward commented that she believes that the District would follow its typical criteria to determine the priority and related contribution.

10. PRESENTATIONS (53:40)

A. Kohlman Creek & Ames Lake Flood Risk Reduction Study – Part 3

Erin Anderson Wenz stated that the last meeting focused on specific things that could be done and things that would need more detail. She stated that the focus this month will be on sequencing and proposed next steps. She stated that while the focus has been on the 100-year storm events, this presentation will also look at lesser events and the impacts those would have.

President Swope referenced the comment that they looked at the smaller storm events in addition to the 100-year events. He recognized that 100-year events would most likely require a lot of engineering and higher costs. He asked if there would be a focus on things that could address the smaller storm event issues. Erin Anderson Wenz stated that they have not yet reviewed design options that could address smaller events such as the ten- or 20-year storm events. She stated that a next step could be to discuss these areas, particularly those more prone to flooding and determine what could be done to protect those areas. She stated that if the 100-year storm event projects are not feasible from a cost perspective, they could look to target something smaller such as a 25- or 50-year storm event.

President Swope commented that perhaps a lot could be done to address issues resulting from more frequent smaller storm events at a lesser cost. Erin Anderson Wenz agreed that is something that would be reviewed as this moves forward.

Manager Eisele commented that there seems to be a diminishing return in attempting to protect all the homes. He stated that he would be interested in finding out more detailed information on the risks to different properties under different storm events. He stated that he likes the approach of reviewing a series of investments that could build to more protection for properties. Erin Anderson Wenz stated that she considered making a map with the structures and color intervals. She noted that similar work was done for NorthStar Estates and therefore she could make that map for the Board to review. Tina Carstens noted that perhaps the map could show the different inundation lines.

Manager Aichinger commented that some of the communities developed before there were floodplain maps, or the floodplain has grown beyond where it previously existed. He stated that there was a time about 15 years ago where the District believed all the flooding issues has been addressed but the updated Atlas 14 modeling changed that. He stated that because there was existing infrastructure and structures prior to the knowledge, mitigation can be planned, or those homes can be informed that they need flood insurance and that there is risk.

Manager Eisele stated that he does see the balance in finding a way to help as many people as they can using taxpayer funds. He acknowledged that not everyone will be able to be helped in a cost-effective manner that makes sense as stewards of taxpayer money.

Erin Anderson Wenz stated that this would be a good time to show the cities what they see in the models and inundation maps to highlight the risks that exist in their city. She noted that they have shared information with cities along the way, but this would be a good time to gauge reactions as much of this work would not be done on public property and would involve the cities. She displayed a flow chart highlighting potential steps for 2022, 2023, and beyond on the different levels, noting that those begin with the emergency response plans and evolve from there.

Manager Eisele asked if there are any impending predictions for the wetness of this year that might lead down one pathway over another. Erin Anderson Wenz commented that they typically do not look at a one year forecast to make decisions in terms of decision, with the exception of when they knew snowmelt would have an impact on high water. She stated that she would tend to focus on the areas that have impact from lower-level events that are being impacted most often.

President Swope stated that he would be interested in the color-coded map but would like to see colors significantly different from each other in order to make it easily readable. He commented that if there is something simple that could be done that would protect 20 to 50 homes, he would see that as a high priority to begin with.

Manager Aichinger commented that he would want to begin with the two-year storm event impacts and work towards at least the 25-year impacts.

Erin Anderson Wenz stated that the next step would be to share the information with the cities and discuss their future plans for the areas, the level of communication the cities plan to have with the homeowners and provide the emergency response plans. She stated on a separate tract they could get into the planning and design for the Kohlman Creek diversion and discuss some of the more regional solutions.

Brad Lindaman stated that perhaps that could be put into a scope summary to put some boundaries into these next steps for the Board to review. He stated that there are a lot of pieces that will be moving at once and he wants to ensure that is clear for the Board.

Manager Aichinger suggested providing updates in the project and program status report section of the agenda each month.

Manager Eisele stated that he agrees with that format but would also like to see some discussions and updates on more significant aspects or perhaps on a three-month basis.

11. ADMINISTRATOR'S REPORT (1:30:32)

A. Meetings Attended

No comments.

B. Upcoming Meetings and Dates

Tina Carstens stated that the holiday party has been canceled until the COVID conditions change or the weather is warmer and allows for an outdoor gathering.

C. Ongoing Project/Program Updates

Tina Carstens provided an update on ongoing projects and programs, highlighting topics that will come before the Board in the near future. She stated that there are pipes that need to be inspected on Ramsey County parks property and the County followed a new process that the parties have been working on that makes the process smoother. She also provided an update on the Victoria Shores project timeline.

President Swope asked for details on Casey Lake. Tina Carstens stated that Casey Lake experienced more vegetation with the lower water levels. She stated that the District does harvest on the lake but was unable to harvest until later in the season because of the low water levels. She stated that the District has been providing education to the city and residents related to wetland systems and what can be done for water quality in shallow lakes/wetland systems.

D. Annual Meeting

Tina Carstens stated that they will request proposals for consultant services as previously mentioned prior to the March meeting. She stated that they will hold the annual meeting at the March meeting. She stated that they should also schedule a date to complete her review, which is typically done in early February.

Manager Aichinger stated that once a date is determined, he would meet with Tina Carstens and develop information for the Board to review related to her performance review.

12. PROJECT AND PROGRAM STATUS REPORTS (1:42:40)

A. Wetland Restoration Site Search Background Memo

B. Ongoing Project and Program Updates

i. Interim Emergency Response Planning
ii. Kohlman Creek and Phalen Chain of Lakes Flood Risk Reduction Feasibility Study
iii. Kohlman Permeable Weir Test System
iv. Shallow Lake Aeration Study
v. Keller Channel and Phalen Outlet Operations Plans
vi. North St. Paul Target Store Retrofit Project

President Swope asked who staff meets with from Target. Paige Ahlborg reviewed the representatives from Target Corporation that were involved in the meeting.

vii. East St. Paul Target Store Retrofit Project
viii. Targeted Retrofit Projects

President Swope stated that he would like to see more detail in the thought process as staff talks with the stakeholders. Paige Ahlborg stated that they look at site conditions to determine what would work for the specific site.

Tina Carstens stated that perhaps staff can provide details on how a site is approached and the opportunities that are considered. She noted that typically a surface rain garden is the first priority as it is the most cost-effective BMP. She stated that they could include a list of the things that are considered and how the stakeholders are approached.

ix. Ryan Drive and Keller Parkway Conveyance Project
x. District Inspection Standardization

President Swope commented that it appears this is following the timeline. Brad Lindaman agreed that they are on track with where they thought they would be and are working with District staff on the initial criteria that was identified in the scoring system. He stated that they will then develop the application that could be used on a tablet in the field.

xi. CIP Maintenance and Repair Project 2021

President Swope commented that it was his understanding that the contractor completed the work. Brad Lindaman confirmed that the work was completed.

Dave Vlasin confirmed that the contractor is going to drop off the required submittals for the 2022 project the following day.

Brad Lindaman noted a change order will come forward for the Keller/Ryan Drive project moving the completion date due to materials not being available.

xii. CIP Maintenance and Repair Project 2022
xiii. Natural Resources Program Update
xiv. Education Program Update
xv. Communications Program and Website Update

Manager Eisele asked if there could be information provided on the user profiles used for the website update. He stated that he would also like a link to the prototype in order to provide proactive feedback.

Manager Ward commented that she would like to see a news release on the excellent work on the budget.

13. MANAGER COMMENTS AND NEXT MONTH'S MEETING (1:55:05)

Tina Carstens reviewed the topics that are slated to come to the Board at its next meeting.

Brad Lindaman asked that the Managers complete the survey from Barr, explaining that will help to guide the information and presentations that they provide to the Board.

14. ADJOURN

Motion: Manager Aichinger moved, Manager Eisele seconded, to adjourn the meeting at 8:30 p.m. Motion carried unanimously.

RWMWD BUDGET STATUS REPORT
Administrative & Program Budget
Fiscal Year 2022
1/31/2022

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	-	-	-	$8,500.00	0.00%
	Manager expenses	4360	4,000.00	-	-	-	4,000.00	0.00%
Committees	Committee/Bd Mtg. Exp.	4365	3,500.00	-	227.00	227.00	3,273.00	6.49%
	Sub-Total: Managers/Committees:		**$16,000.00**	**$0.00**	**$227.00**	**$227.00**	**$15,773.00**	**1.42%**
Employees	Staff salary/taxes/benefits	4010	1,660,000.00	-	116,364.85	116,364.85	1,543,635.15	7.01%
	Employee expenses	4020	15,000.00	-	17.73	17.73	14,982.27	0.12%
	District training & education	4350	75,000.00	-	815.00	815.00	74,185.00	1.09%
	Sub-Total: Employees:		**$1,750,000.00**	**$0.00**	**$117,197.58**	**$117,197.58**	**$1,632,802.42**	**6.70%**
Administration/ Office	GIS system maint. & equip.	4170	10,000.00	-	987.02	987.02	9,012.98	9.87%
	Data Base/GIS Maintenance	4171	40,000.00	-	-	-	40,000.00	0.00%
	Equipment maintenance	4305	3,000.00	-	-	-	3,000.00	0.00%
	Telephone	4310	4,000.00	-	59.34	59.34	3,940.66	1.48%
	Office supplies	4320	7,000.00	-	35.87	35.87	6,964.13	0.51%
	IT/Internet/Web Site/Software Lic.	4325	75,000.00	-	6,319.21	6,319.21	68,680.79	8.43%
	Postage	4330	3,000.00	-	-	-	3,000.00	0.00%
	Printing/copying	4335	5,000.00	-	367.00	367.00	4,633.00	7.34%
	Dues & publications	4338	11,000.00	-	-	-	11,000.00	0.00%
	Janitorial/Trash Service	4341	15,000.00	-	594.00	594.00	14,406.00	3.96%
	Utilities/Bldg.Contracts	4342	30,000.00	-	592.08	592.08	29,407.92	1.97%
	Bldg/Site Maintenance	4343	150,000.00	-	-	-	150,000.00	0.00%
	Miscellaneous	4390	5,000.00	-	-	-	5,000.00	0.00%
	Insurance	4480	55,000.00	-	-	-	55,000.00	0.00%
	Office equipment	4703	150,000.00	-	-	-	150,000.00	0.00%
	Vehicle lease, maintenance	4810-40	20,000.00	-	96.25	96.25	19,903.75	0.48%
	Sub-Total: Administration/Office:		**$583,000.00**	**$0.00**	**$9,050.77**	**$9,050.77**	**$573,949.23**	**1.55%**
Consultants/ Outside Services	Auditor/Accounting	4110	70,000.00	-	-	-	70,000.00	0.00%
	Engineering-administration	4121	125,000.00	-	4,320.50	4,320.50	120,679.50	3.46%
	Engineering-permit I&E	4122	10,000.00	-	-	-	10,000.00	0.00%
	Engineering-eng. review	4123	60,000.00	-	3,590.50	3,590.50	56,409.50	5.98%
	Engineering-permit review	4124	55,000.00	-	4,176.00	4,176.00	50,824.00	7.59%
	Project Feasibility Studies	4129	410,000.00	-	1,613.00	1,613.00	408,387.00	0.39%
	Attorney-permits	4130	10,000.00	-	72.68	72.68	9,927.32	0.73%
	Attorney-general	4131	40,000.00	-	2,528.00	2,528.00	37,472.00	6.32%
	Outside Consulting Services	4160	20,000.00	-	-	-	20,000.00	0.00%
	Sub-Total: Consultants/Outside Services:		**$800,000.00**	**$0.00**	**$16,300.68**	**$16,300.68**	**$783,699.32**	**2.04%**
Programs	Educational programming	4370	75,000.00	-	634.91	634.91	74,365.09	0.85%
	Communications & Marketing	4371	50,000.00	-	50.00	50.00	49,950.00	0.10%
	Events	4372	46,000.00	-	-	-	46,000.00	0.00%
	Water QM-Engineering	4520-30	180,000.00	-	583.61	583.61	179,416.39	0.32%
	Project operations	4650	200,000.00	-	271.38	271.38	199,728.62	0.14%
	SLMP/TMDL Studies	4661	125,000.00	-	70.00	70.00	124,930.00	0.06%
	Natural Resources/Keller Creek	4670-72	120,000.00	-	-	-	120,000.00	0.00%
	Outside Prog.Support/Weed Mgmt.	44683	57,000.00	-	-	-	57,000.00	0.00%
	Research Projects	4695	225,000.00	-	2,448.00	2,448.00	222,552.00	1.09%
	Health and Safety Program	4697	3,000.00	-	-	-	3,000.00	0.00%
	Sub-Total: Programs:		**$1,081,000.00**	**$0.00**	**$4,057.90**	**$4,057.90**	**$1,076,942.10**	**0.38%**
GENERAL FUND TOTAL			**$4,230,000.00**	**$0.00**	**$146,833.93**	**$146,833.93**	**$4,083,166.07**	3.47%
CIP's	CIP Project Repair & Maintenance	516	1,500,000.00	-	21,376.52	21,376.52	1,478,623.48	1.43%
	Targeted Retrofit Projects	518	1,500,000.00	-	14,090.00	14,090.00	1,485,910.00	0.94%
	Flood Risk Reduction Fund	520	5,200,000.00	-	1,062.23	1,062.23	5,198,937.77	0.02%
	Debt Services-96-97 Beltline/MM/Battle Creek	526	394,710.00	-	271,766.25	271,766.25	122,943.75	68.85%
	Stewardship Grant Program Fund	529	1,000,000.00	-	6,368.50	6,368.50	993,631.50	0.64%
	Wetland Restoration Projects	540	500,000.00	-	-	-	500,000.00	0.00%
CIP BUDGET TOTAL			**$10,094,710.00**	-	**$314,663.50**	**$314,663.50**	**$9,780,046.50**	3.12%
TOTAL BUDGET			**$14,324,710.00**	**$0.00**	**$461,497.43**	**$461,497.43**	**$13,863,212.57**	**3.22%**

Current Fund Balances:

Fund:	Unaudited Beginning Fund Balance @ 12/31/21	Fund Transfers	Year to date Revenue	Current Month Expenses	Year to Date Expense	Unaudited Fund Balance @ 01/31/22
101 - General Fund	$2,388,311.49	-	-	146,833.93	146,833.93	2,241,477.56
516 - CIP Project Repair & Maintenance	185,792.64	-	-	21,376.52	21,376.52	164,416.12
518 - Targeted Retrofit Projects	1,238,293.49	-	-	14,090.00	14,090.00	1,224,203.49
520 - Flood Damage Reduction Fund	3,485,692.57	-	-	1,062.23	1,062.23	3,484,630.34
526 - Debt Services-96-97 Beltline/MM/Beltline-Battle Creek Tunnel Repai	643,475.91	-	-	271,766.25	271,766.25	371,709.66
529 - Stewardship Grant Program Fund	854,748.21	-	-	6,368.50	6,368.50	848,379.71
536 - Stormwater Impact Fund	314,816.50	-	-	-	-	314,816.50
540 - Wetland Restoration Projects	498,035.60	-	-	-	-	498,035.60
580 - Contingency Fund	1,436,341.00	-	-	-	-	1,436,341.00
Total District Fund Balance	**$11,045,507.41**	**$0.00**	$ -	$ 461,497.43	**$461,497.43**	**$10,584,009.98**

RWMWD BUDGET STATUS REPORT
Administrative & Program Budget
Fiscal Year 2021
12/31/2021 - Updated 01/26/22

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	-	3,675.00	6,500.00	$2,000.00	76.47%
	Manager expenses	4360	3,500.00	-	-	-	3,500.00	0.00%
Committees	Committee/Bd Mtg. Exp.	4365	3,500.00	-	299.99	3,728.83	(228.83)	106.54%
	Sub-Total: Managers/Committees:		**$15,500.00**	**$0.00**	**$3,974.99**	**$10,228.83**	**$5,271.17**	**65.99%**
Employees	Staff salary/taxes/benefits	4010	1,520,000.00	-	117,186.73	1,575,746.82	(55,746.82)	103.67%
	Employee expenses	4020	15,000.00	-	616.84	7,133.32	7,866.68	47.56%
	District training & education	4350	75,000.00	-	1,720.54	15,960.24	59,039.76	21.28%
	Sub-Total: Employees:		**$1,610,000.00**	**$0.00**	**$119,524.11**	**$1,598,840.38**	**$11,159.62**	**99.31%**
Administration/ Office	GIS system maint. & equip.	4170	10,000.00	-	400.00	2,087.02	7,912.98	20.87%
	Data Base/GIS Maintenance	4171	40,000.00	-	420.00	4,190.00	35,810.00	10.48%
	Equipment maintenance	4305	3,000.00	-	-	-	3,000.00	0.00%
	Telephone	4310	8,000.00	-	668.34	1,308.06	6,691.94	16.35%
	Office supplies	4320	7,000.00	-	468.40	4,377.26	2,622.74	62.53%
	IT/Internet/Web Site/Software Lic.	4325	70,000.00	-	5,202.78	63,556.48	6,443.52	90.79%
	Postage	4330	3,000.00	-	34.80	2,208.49	791.51	73.62%
	Printing/copying	4335	8,000.00	-	617.40	4,981.80	3,018.20	62.27%
	Dues & publications	4338	11,000.00	-	-	11,567.63	(567.63)	105.16%
	Janitorial/Trash Service	4341	15,000.00	-	1,932.00	11,787.08	3,212.92	78.58%
	Utilities/Bldg.Contracts	4342	30,000.00	-	4,337.06	14,720.17	15,279.83	49.07%
	Bldg/Site Maintenance	4343	150,000.00	-	1,147.01	34,224.72	115,775.28	22.82%
	Miscellaneous	4390	5,000.00	-	-	-	5,000.00	0.00%
	Insurance	4480	50,000.00	-	-	44,642.00	5,358.00	89.28%
	Office equipment	4703	150,000.00	-	12,582.21	154,499.28	(4,499.28)	103.00%
	Vehicle lease, maintenance	4810-40	43,000.00	-	482.83	6,679.19	36,320.81	15.53%
	Sub-Total: Administration/Office:		**$603,000.00**	**$0.00**	**$28,292.83**	**$360,829.18**	**$242,170.82**	**59.84%**
Consultants/ Outside Services	Auditor/Accounting	4110	65,000.00	-	3,985.08	53,432.56	11,567.44	82.20%
	Engineering-administration	4121	93,000.00	-	9,060.00	72,947.50	20,052.50	78.44%
	Engineering-permit I&E	4122	10,000.00	-	-	2,918.40	7,081.60	29.18%
	Engineering-eng. review	4123	55,000.00	-	5,514.00	47,391.00	7,609.00	86.17%
	Engineering-permit review	4124	55,000.00	-	3,167.50	44,874.50	10,125.50	81.59%
	Project Feasibility Studies	4129	440,000.00	-	44,538.02	244,448.97	195,551.03	55.56%
	Attorney-permits	4130	10,000.00	-	-	-	10,000.00	0.00%
	Attorney-general	4131	40,000.00	-	1,555.00	27,521.85	12,478.15	68.80%
	Outside Consulting Services	4160	20,000.00	-	-	-	20,000.00	0.00%
	Sub-Total: Consultants/Outside Services:		**$788,000.00**	**$0.00**	**$67,819.60**	**$493,534.78**	**$294,465.22**	**62.63%**
Programs	Educational programming	4370	60,000.00	-	2,244.35	23,711.33	36,288.67	39.52%
	Communications & Marketing	4371	25,000.00	-	2,267.62	26,355.71	(1,355.71)	105.42%
	Events	4372	50,000.00	-	80.83	36,556.10	13,443.90	73.11%
	Water QM-Engineering	4520-30	180,000.00	-	5,385.19	173,111.16	6,888.84	96.17%
	Project operations	4650	200,000.00	-	1,982.53	67,939.09	132,060.91	33.97%
	SLMP/TMDL Studies	4661	103,000.00	-	4,416.00	18,598.50	84,401.50	18.06%
	Natural Resources/Keller Creek	4670-72	140,000.00	-	8,121.19	103,865.81	36,134.19	74.19%
	Outside Prog.Support/Weed Mgmt.	4683-84	127,000.00	-	3,175.00	26,950.00	100,050.00	21.22%
	Research Projects	4695	95,000.00	-	6,947.50	95,676.05	(676.05)	100.71%
	Health and Safety Program	4697	3,000.00	-	-	987.89	2,012.11	32.93%
	Sub-Total: Programs:		**$983,000.00**	**$0.00**	**$34,620.21**	**$573,751.64**	**$409,248.36**	**58.37%**
GENERAL FUND TOTAL			**$3,999,500.00**	**$0.00**	**$254,231.74**	**$3,037,184.81**	**$962,315.19**	75.94%
CIP's	CIP Project Repair & Maintenance	516	1,325,000.00	-	243,326.36	1,318,784.52	6,215.48	99.53%
	Targeted Retrofit Projects	518	2,810,000.00	-	12,743.46	972,112.60	1,837,887.40	34.59%
	Flood Risk Reduction Fund	520	4,200,000.00	-	12,348.78	1,809,847.68	2,390,152.32	43.09%
	Debt Services-96-97 Beltline/MM/Battle Creek	526	394,901.00	-	-	397,795.30	(2,894.30)	100.73%
	Stewardship Grant Program Fund	529	1,000,000.00	-	50,033.07	521,522.18	478,477.82	52.15%
	Wetland Restoration Projects	540	500,000.00	-	-	-	500,000.00	0.00%
	Wakefield Park Project	553	-	-	-	5,128.50	(5,128.50)	---
	District Office Bond Payment	585	194,885.00	-	-	-	194,885.00	0.00%
CIP BUDGET TOTAL			**$10,424,786.00**	**-**	**$318,451.67**	**$5,025,190.78**	**$5,399,595.22**	48.20%
TOTAL BUDGET			**$14,424,286.00**	**$0.00**	**$572,683.41**	**$8,062,375.59**	**$6,361,910.41**	**55.89%**

Current Fund Balances:

Fund:	Beginning Fund Balance @ 12/31/20	Fund Transfers	Year to date Revenue	Current Month Expenses	Year to Date Expense	Unaudited Fund Balance @ 12/31/21
101 - General Fund	$4,364,963.52	(1,277,181.71)	2,337,714.49	254,231.74	3,037,184.81	2,388,311.49
516 - CIP Project Repair & Maintenance	627,656.44	-	876,920.72	243,326.36	1,318,784.52	185,792.64
518 - Targeted Retrofit Projects	1,012,501.35	905,365.21	292,539.53	12,743.46	972,112.60	1,238,293.49
520 - Flood Damage Reduction Fund	3,312,849.57	-	1,982,690.68	12,348.78	1,809,847.68	3,485,692.57
526 - Debt Services-96-97 Beltline/MM/Beltline-Battle Creek Tunnel Repai	949,395.60	-	91,875.61	-	397,795.30	643,475.91
529 - Stewardship Grant Program Fund	622,020.57	57,000.00	697,249.82	50,033.07	521,522.18	854,748.21
536 - Stormwater Impact Fund	-	314,816.50	-	-	-	314,816.50
540 - Wetland Restoration Projects	-	-	498,035.60	-	-	498,035.60
553 - Wakefield Park Project	151,270.20	(146,141.70)	-	-	5,128.50	-
580 - Contingency Fund	891,682.00	544,659.00	-	-	-	1,436,341.00
585 - Certificates of Participation	204,397.98	(398,517.30)	194,119.32	-	-	-
Total District Fund Balance	**$12,136,737.23**	**$0.00**	**$ 6,971,145.77**	**$ 572,683.41**	**$8,062,375.59**	**$11,045,507.41**

Ramsey Washington Metro Watershed Dist.
Check Register
For the Period From Jan 1, 2022 to Jan 31, 2022

Check #	Date	Payee ID	Invoice #	Payee	Description	Amount
EFT	01/01/22	met008	Jan 2022	MetLife-Group Benefits	Employee Benefits	$1,728.97
EFT	01/07/22	hea002	Feb 2022	HealthPartners	Employee Benefits	12,563.83
72770	01/12/22	aws001	S1335957-010122	AWS Service Center	Utilities/Bldg.Contracts	274.57
72771	01/12/22	bur002	22-02	Tom Burns Consulting, LLC	Data Base/GIS Maintenance	420.00
72772	01/12/22	car007	RWMWD_12_31_21	Carp Solutions, LLC	Natural Resources Projecct	1,120.00
72773	01/12/22	fit001	Pay App #6 - Final	Fitzgerald Excavating & Trucking, Inc.	Construction Imp.-Maint. & Repair	11,600.00
72774	01/12/22	ger004	12/30/21	Gerdes Drywall, LLC	Bldg./Site Maintenance	700.00
72775	01/12/22	han008	1687	Hanna Enterprises, LLC	Janitorial/Trash Service	735.00
72776	01/12/22	hom001	3613548/3613588	Home Depot Credit Services	Natural Resources Projecct	14.90
72777	01/12/22	lea003	14-1003	L. Tracy Leavenworth	Educational Program	1,158.00
72778	01/12/22	mag004	12/22/21	Carrie Magnuson	Employee Reimbursement	113.41
72779	01/12/22	met004	INV1950261	Metro Sales, Inc.	Printing Expense	367.00
72780	01/12/22	nor011	12/16/21	Northland Securities, Inc.	Debt Services-Beltline	435.00
72781	01/12/22	nor016	6958	Northland Trust Services, Inc.	Debt Services-Beltline	271,331.25
72782	01/12/22	sai001	3296	Saint Paul Media	Communications & Marketing	50.00
72783	01/12/22	van001	81754	Vanguard Cleaning Systems of Minnesota	Janitorial/Trash Service	44.00
72784	01/12/22	vla001	09/01/21	Dave Vlasin	Employee Reimbursement	344.75
72785	01/25/22	ada002	01/28/22	Adam's Pest Control, Inc.	Utilities/Bldg.Contracts	79.00
72786	01/25/22	att002	287256653401X20252022	AT & T Mobility - ROC	Water QM/IT/Project Operations	167.14
72787	01/25/22	bar001	12/18/21-01/14/22	Barr Engineering	December-January Engineering	94,099.17
72788	01/25/22	ben002	106537	Benefit Extras, Inc.	Employee Benefits	765.00
72789	01/25/22	bls001	27832	B & L Supply	Bldg./Site Maintenance	53.00
72790	01/25/22	cad001	18040220	Allstream	Water WQ Staff	78.35
72791	01/25/22	cit010	12941	City of White Bear Lake	GIS System Maintenance & Equip.	987.02
72792	01/25/22	cit011	230624	City of Roseville	IT/Website/Software	6,264.21
72793	01/25/22	com007	20-05 MTN	Common Bond Communities	Stewardship Grant Fund	1,000.00
72794	01/25/22	dav003	129142	Davey Resource Group, Inc.	Construction Imp.-Maint. & Repair	9,521.25
72795	01/25/22	dvs001	Ford License Renewal	DVS Renewal	Vehicle-Miscellaneous	96.25
72796	01/25/22	fit002	01/01/22	Mary Fitzgerald	Employee Reimbursement	58.25
72797	01/25/22	gal001	01/19/22	Galowitz Olson, PLLC	December-January Legal Fees	2,708.00
72798	01/25/22	haz001	01/19/22	Lauren Hazenson	Employee Reimbursement	40.00
72799	01/25/22	int001	W21120486	Office of MN, IT Services	Telephone Expense	59.34
72800	01/25/22	mag004	11/11-12/31/21	Carrie Magnuson	Employee Reimbursement	44.99
72801	01/25/22	mel001	Dec, 2021-Jan 2022	Michelle L. Melser	Employee Reimbursement	85.45
72802	01/25/22	min008	32111	Minnesota Native Landscapes, Inc.	Construction Imp.-Maint. & Repair	9,363.48
72803	01/25/22	nsp001	762882456	Xcel Energy	Utilities/Bldg/Flood Damage/Proj.Op.	1,422.06
72804	01/25/22	oak004	2105273	Oak Meadows Landscape/Design, Inc.	Stewardship Grant Fund	1,850.00
72805	01/25/22	pas002	Jan 2022	Sage Passi	Employee Reimbursement	103.00
72806	01/25/22	qwe001	01/10/22	CenturyLink	Project Operations	257.90
72807	01/25/22	ram002	PRK-002005/001995	Ramsey County	Stewardship Grant Fund	12,031.95
72808	01/25/22	red002	150467145	Redpath & Company	December Accounting	1,863.66
72809	01/25/22	reg002	0340031051	Regents of the University of Minnesota	Research Projects	6,205.00
72810	01/25/22	sai001	3213/3233/3174-Feb, 2022	Saint Paul Media	Communications & Marketing	200.00
72811	01/25/22	sim001	Jan 2022	Emily Simmons	Employee Reimbursement	35.04
72812	01/25/22	sod001	Jan 2022	Nicole Soderholm	Employee Reimbursement	40.00
72813	01/25/22	tim002	M27024	Timesaver Off-Site Secretarial, Inc.	Committee/Board Meeting Expense	227.00
72814	01/25/22	tro002	21-12/22-1	Cathy Troendle	Educational Program	656.53
72815	01/25/22	usb002	Jan 2022	U.S. Bank	December-January Credit Card	2,069.02
72816	01/25/22	van001	Feb 2022	Vanguard Cleaning Systems of Minnesota	Janitorial/Trash Service	594.00
72817	01/25/22	was002	5480/5500	Washington Conservation District	Outside Prog.Support/Water QM	3,297.25
72818	01/25/22	was003	186412	Washington Co.-Taxation Div.	Auditor/Accounting	35.00
Total						**$459,357.99**

Ramsey Washington Metro Watershed Dist.
Check Register
For the Period From Jan 1, 2022 to Jan 31, 2022

Check #	Date	Payee ID	Invoice #	Payee	Description	Amount
EFT	12/10/21	myp001	12/10/21	December 10th Payroll Fees	4110-101-000	68.10
EFT	12/24/21	myp001	12/24/21	December 24th Payroll Fees	4110-101-000	68.10
Dir.Dep.	01/07/22	---	Payroll Expense-Net	January 7th Payroll	4010-101-000	31,482.46
EFT	01/07/22	int002	Internal Rev.Serv.	January 7th Federal Withholding	2001-101-000	10,786.28
EFT	01/07/22	mnd001	MN Revenue	January 7th State Withholding	2003-101-000	1,908.52
EFT	01/07/22	per001	PERA	January 7th PERA	2011-101-000	6,179.23
EFT	01/07/22	emp002	Empower Retirement	Employee Def.Comp. Contributions	2016-101-000	2,345.00
EFT	01/07/22	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000	400.00
Dir.Dep.	01/21/22	---	Payroll Expense-Net	January 21st Payroll	4010-101-000	28,351.53
EFT	01/21/22	int002	Internal Rev.Serv.	January 21st Federal Withholding	2001-101-000	10,074.51
EFT	01/21/22	mnd001	MN Revenue	January 21st State Withhholding	2003-101-000	1,795.11
EFT	01/21/22	per001	PERA	January 21st PERA	2011-101-000	6,179.23
EFT	01/21/22	emp002	Empower Retirement	Employee Def.Comp. Contributions	2016-101-000	2,345.00
EFT	01/21/22	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000	400.00
					Payroll/Benefits:	**$102,383.07**
Total					**Accounts Payable/Payroll/Benefits:**	**$561,741.06**

Ramsey Washington Metro Watershed Dist.

Cash Disbursements Journal

For the Period From January 1, 2022 - January 31, 2022

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail	
01/01/22	EFT	met008	MetLife-Group Benefits	4040-101-000	Employee Benefits-General	$1,728.97		
01/07/22	EFT	hea002	HealthPartners	4040-101-000	Employee Benefits-General	12,563.83		
01/12/22	72770	aws001	AWS Service Center	4341-101-000	Janitorial/Trash Service	274.57		
01/12/22	72271	bur002	Tom Burns Consulting, LLC	4171-101-000	Data Base/GIS Maintenance	420.00		2021
01/12/22	72272	car007	Carp Solutions, LLC	4670-101-000	Natural Resources Project-General	1,120.00		2021
01/12/22	72273	fit001	Fitzgerald Excavating & Trucking, Inc.	4630-516-000	Construction Imp.-Maint. & Repair	11,600.00		2021
01/12/22	72274	ger004	Gerdes Drywall, LLC	4343-101-000	Bldg/Site Maintenance	700.00		2021
01/12/22	72775	han008	Hanna Enterprises, Inc.	4341-101-000	Janitorial/Trash Service	735.00		2021
01/12/22	72776	hom001	Home Depot Credit Services	4670-101-000	Natural Resources Project-General	14.90		2021
01/12/22	72777	lea003	L. Tracy Leavenworth	4370-101-000	Educational Program-General	1,158.00		2021
01/12/22	72778	mag004	Carrie Magnuson	4040-101-000	Employee Benefits-General	113.41		2021
01/12/22	72779	met004	Metro Sales, Inc.	4335-101-000	Printing-General	367.00		
01/12/22	72780	nor011	Northland Securities, Inc.	4708-526-000	Debt Services-Beltline Tunnel	435.00		
01/12/22	72781	nor016	Northland Trust Services, Inc.	4708-526-000	Debt Services-Beltline Tunnel	271,331.25		
01/12/22	72782	sai001	Saint Paul Media	4371-000-000	Communications & Marketing	50.00		2021
01/12/22	72783	van001	Vanguard Cleaning Systems of Minnesota	4341-101-000	Janitorial/Trash Service	44.00		2021
01/12/22	72784	vla001	David Vlasin			344.75		2021
				4040-101-000	Employee Benefits-General		312.27	
				4020-101-000	Employee Expenses-General		32.48	
01/25/22	72785	ada002	Adam's Pest Control, Inc.	4342-101-000	Utilities/Bldg. Contracts	79.00		
01/25/22	72786	att002	AT & T Mobility - ROC			167.14		
				4530-101-000	Water QM Staff-General		27.60	
				4325-101-000	IT/Website/Software		55.00	
				4650-101-000	Project Operations-General		84.54	
01/25/22	72787	bar001	Barr Engineering			94,099.17		
				4121-101-000	Engineering Admin-General Fund		3,146.00	2021
				4123-101-000	Engineering-Review		1,100.00	2021
				4129-101-000	Project Feasability-General		4,429.00	2021
				4129-101-000	Project Feasability-General		2,566.50	2021
				4129-101-000	Project Feasability-General		218.50	2021
				4129-101-000	Project Feasability-General		822.00	2021
				4129-101-000	Project Feasability-General		3,740.00	2021
				4124-101-000	Engineering-Permit Review		767.50	2021
				4661-101-000	SLMP/TMDL Studies		1,835.00	2021
				4695-101-000	Research Projects-General		215.50	2021
				4650-101-000	Engineering-Project Operations		87.00	2021
				4128-518-000	Engineering-Targeted Retrofit		104.00	2021
				4128-518-000	Engineering-Targeted Retrofit		195.00	2021
				4128-518-000	Engineering-Targeted Retrofit		3,786.00	2021
				4682-529-000	Stewardship Grant Fund		672.50	2021
				4128-520-000	Engineering-Flood Damage		66.00	2021
				4128-520-000	Engineering-Flood Damage		2,940.84	2021
				4128-516-000	Engineering-Maint. & Repair		3,449.65	2021

Ramsey Washington Metro Watershed Dist.
Cash Disbursements Journal
For the Period From January 1, 2022 - January 31, 2022

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail	
				4128-516-000	Engineering-Maint. & Repair		125.00	2021
				4128-516-000	Engineering-Maint. & Repair		1,277.50	2021
				4128-516-000	Engineering-Maint. & Repair		2,136.50	2021
				4128-516-000	Engineering-Maint. & Repair		2,820.50	2021
				4121-101-000	Engineering Admin-General Fund		4,320.50	
				4123-101-000	Engineering-Review		3,590.50	
				4129-101-000	Project Feasability-General		368.00	
				4129-101-000	Project Feasability-General		72.00	
				4129-101-000	Project Feasability-General		1,173.00	
				4520-101-000	WQM-Engineering		477.66	
				4124-101-000	Engineering-Permit Review		4,176.00	
				4661-101-000	SLMP/TMDL Studies		70.00	
				4695-101-000	Research Projects-General		2,448.00	
				4128-518-000	Engineering-Targeted Retrofit		39.00	
				4128-520-000	Engineering-Flood Damage		918.00	
				4128-518-000	Engineering-Targeted Retrofit		2,150.00	
				4128-518-000	Engineering-Targeted Retrofit		8,019.00	
				4128-518-000	Engineering-Targeted Retrofit		3,882.00	
				4682-529-000	Stewardship Grant Fund		4,518.50	
				4128-516-000	Engineering-Maint. & Repair		2,754.00	
				4128-516-000	Engineering-Maint. & Repair		9,872.52	
				4128-516-000	Engineering-Maint. & Repair		1,323.00	
				4128-516-000	Engineering-Maint. & Repair		1,497.50	
				4128-516-000	Engineering-Maint. & Repair		5,929.50	
01/25/22	72788	ben002	Benefit Extra, Inc.	4040-101-000	Employee Benefits-General	765.00		
01/25/22	72789	bls001	B & L Supply	4343-101-000	Bldg/Site Maintenance	53.00		2021
01/25/22	72790	cad001	Allstream	4530-101-000	Water QM Staff-General	78.35		
01/25/22	72791	cit010	City of White Bear Lake	4170-101-000	GIS System Maint. & Equipment	987.02		
01/25/22	72792	cit011	City of Roseville	4325-101-000	IT/Website/Software	6,264.21		
01/25/22	72793	com007	Common Bond Communities	4682-529-000	Stewardship Grant Fund	1,000.00		2021
01/25/22	72794	dav001	Davey Resource Group, Inc.	4630-516-000	Construction Imp.-Maint & Rep	9,521.25		2021
01/25/22	72795	dvs001	DVS Renewal	4840-101-000	Vehicle Misc.-General	96.25		
01/25/22	72796	fit002	Mary Fitzgerald	4040-101-000	Employee Benefits-General	58.25		
01/25/22	72797	gal001	Galowitz Olson, PLLC			2,708.00		
				4131-101-000	Attorney General-General		180.00	2021
				4131-101-000	Attorney General-General		2,528.00	
01/25/22	72798	haz001	Lauren Hazenson	4040-101-000	Employee Benefits-General	40.00		
01/25/22	72799	int001	Office of MN, IT Services	4310-101-000	Telephone-General	59.34		
01/25/22	72800	mag004	Carrie Magnuson			44.99		
				4040-101-000	Employee Benefits-General		40.00	2021
				4365-101-000	Committee/Board Meeting Expense		4.99	2021
01/25/22	72801	mel001	Michelle L. Melser			85.45		
				4020-101-000	Employee Expenses-General		30.24	2021
				4020-101-000	Employee Expenses-General		15.21	
				4040-101-000	Employee Benefits-General		40.00	

Ramsey Washington Metro Watershed Dist.

Cash Disbursements Journal

For the Period From January 1, 2022 - January 31, 2022

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail	
01/25/22	72802	min008	Minnesota Native Landscapes, Inc.	4630-516-000	Construction Imp.-Maint & Rep	9,363.48		2021
01/25/22	72803	nsp001	Xcel Energy			1,422.06		
				4630-520-000	Construction-Flood Damage		144.23	
				4650-101-000	Project Operations-General		117.66	
				4342-101-000	Utilities/Bldg. Contracts		543.59	2021
				4530-101-000	Water QM Staff-General		616.58	2021
01/25/22	72804	oak004	Oak Meadows Landscape/Desing, Inc.	4682-529-000	Stewardship Grant Fund	1,850.00		
01/25/22	72805	pas002	Sage Passi	4040-101-000	Employee Benefits-General	103.00		
01/25/22	72806	qwe001	CenturyLink	4650-101-000	Project Operations-General	257.90		2021
01/25/22	72807	ram002	Ramsey County			12,031.95		
				4682-529-000	Stewardship Grant Fund		2,599.95	2021
				4682-529-000	Stewardship Grant Fund		9,432.00	2021
01/25/22	72808	red002	Redpath & Company, Ltd.	4110-101-000	Auditor/Accounting	1,863.66		2021
01/25/22	72809	reg002	Regents of the University of Minnesota	4695-101-000	Research Projects-General	6,205.00		2021
01/25/22	72810	rjm002	St. Paul Media			200.00		
				4371-101-000	Communications & Marketing		150.00	2021
				4371-101-000	Communications & Marketing		50.00	
01/25/22	72811	sim001	Emily Simmons			35.04		
				4020-101-000	Employee Expenses-General		2.52	
				4040-101-000	Employee Benefits-General		32.52	
01/25/22	72812	sod001	Nicole Soderholm	4040-101-000	Employee Benefits-General	40.00		
01/25/22	72813	tim002	Timesaver Off-Site Secretarial, Inc.	4365-101-000	Committee/Board Meeting Expense	227.00		
01/25/22	72814	tro002	Cathy Troendle			656.53		
				4370-101-000	Educational Program-General		21.62	2021
				4370-101-000	Educational Program-General		612.50	
				4370-101-000	Educational Program-General		22.41	
01/25/22	72815	usb002	U.S. Bank			2,069.02		
				4325-101-000	IT/Website/Software		93.01	2021
				4343-101-000	Bldg/Site Maintenance		96.49	2021
				4343-101-000	Bldg/Site Maintenance		132.02	2021
				4670-101-000	Natural Resources Project-General		127.49	2021
				4320-101-000	Office Supplies-General		35.87	
				4342-101-000	Utilities/Bldg. Contracts		159.44	
				4342-101-000	Utilities/Bldg. Contracts		79.07	
				4650-101-000	Project Operations-General		69.18	
				4350-101-000	Training & Education		200.00	
				4350-101-000	Training & Education		140.00	
				4040-101-000	Employee Benefits-General		9.95	
				4040-101-000	Employee Benefits-General		270.65	
				4040-101-000	Employee Benefits-General		75.90	
				4350-101-000	Training & Education		475.00	
				4040-101-000	Employee Benefits-General		104.95	
01/25/22	72816	van001	Vanguard Cleaning Systems of Minnesota	4341-101-000	Janitorial/Trash Service	594.00		
01/25/22	72817	was002	Washington Conservation District			3,297.25		
				4530-101-000	Water QM Staff-General		122.25	2021
				4683-101-000	Outside Program Support		3,175.00	2021
01/25/21	72818	was003	Washington County-Taxation Div.	4110-101-000	Auditor/Accounting	35.00		2021
			Accounts Payable Total:			**$459,357.99**		

Ramsey Washington Metro Watershed Dist.

Cash Disbursements Journal

For the Period From January 1, 2022 - January 31, 2022

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
EFT	12/10/21	myp001	Payroll Fees	4110-101-000	December 10th Payroll Fees	68.10	
EFT	12/24/21	myp001	Payroll Fees	4110-101-000	December 24th Payroll Fees	68.10	
Dir.Dep.	01/07/22	---	Payroll Expense-Net	4010-101-000	January 7th Payroll	31,482.46	
EFT	01/07/22	int002	Internal Rev.Serv.	2001-101-000	January 7th Federal Withholding	10,786.28	
EFT	01/07/22	mnd001	MN Revenue	2003-101-000	January 7th State Withholding	1,908.52	
EFT	01/07/22	per001	PERA	2011-101-000	January 7th PERA	6,179.23	
EFT	01/07/22	emp002	Empower Retirement	2016-101-000	Employee Def.Comp. Contributions	2,345.00	
EFT	01/07/22	emp002	Empower Retirement	2018-101-000	Employee IRA Contributions	400.00	
Dir.Dep.	01/21/22	---	Payroll Expense-Net	4010-101-000	January 21st Payroll	28,351.53	
EFT	01/21/22	int002	Internal Rev.Serv.	2001-101-000	January 21st Federal Withholding	10,074.51	
EFT	01/21/22	mnd001	MN Revenue	2003-101-000	January 21st State Withhholding	1,795.11	
EFT	01/21/22	per001	PERA	2011-101-000	January 21st PERA	6,179.23	
EFT	01/21/22	emp002	Empower Retirement	2016-101-000	Employee Def.Comp. Contributions	2,345.00	
EFT	01/21/22	emp002	Empower Retirement	2018-101-000	Employee IRA Contributions	400.00	
			Payroll/Benefits			**$102,383.07**	
			TOTAL:			**$561,741.06**	

BARR

Summary of Professional Engineering Services During the Period
December 18, 2021 through December 31, 2021

	Total Engineering Budget (2021)	Total Fees to Date (2021)	Budget Balance (2021)	Fees During Period	District Accounting Code	Plan Implementation Task Number
Engineering Administration						
General Engineering Administration	$76,000.00	$72,947.50	$3,052.50	$3,146.00	**4121-101**	DW-13
RWMWD Health and Safety/ERTK Program	$2,000.00	$525.00	$1,475.00	$0.00	**4697-101**	DW-13
Educational Program/Educational Forum Assistance	$20,000.00	$17,120.00	$2,880.00	$0.00	**4129-101**	DW-11
Engineering Review						
Engineering Review	$55,000.00	$52,265.00	$2,735.00	$1,100.00	**4123-101**	DW-13
Project Feasibility Studies						
Interim emergency response plan funds for top priority District flooding areas	$60,000.00	$63,105.97	-$3,105.97	$4,429.00	**4129-101**	DW-19
Groundwater/Surface Water Next Steps	$50,000.00	$226.00	$49,774.00	$0.00	**4129-101**	DW-16
FEMA Flood Mapping Update (2020)	$109,720.00	$86,783.50	$22,936.50	$0.00	**4129-101**	DW-9
Hillcrest Golf Course (multi-use)	$20,000.00	$228.00	$19,772.00	$0.00	**4129-101**	DW-6
Gold BRT planning	$20,000.00	$0.00	$20,000.00	$0.00	**4129-101**	DW-6
Kohlman Creek flood damage reduction feasibility study	$75,000.00	$79,076.95	-$4,076.95	$2,566.50	**4129-101**	DW-9, BELT-3
Grass Lake Berm Wetland	$35,000.00	$15,862.14	$19,137.86	$218.50	**4129-101**	
Ames Lake Technical Assisstance and Project Planning with St. Paul	$25,000.00	$40,153.91	-$15,153.91	$822.00	**4129-101**	DW-9, BELT-3
Battle Creek PFAS (monitoring, source ID, meetings, communications)	$25,000.00	$0.00	$25,000.00	$0.00	**4129-101**	DW-10
694/494/94 WQ treatment feasibility study	$30,000.00	$0.00	$30,000.00	$0.00	**4129-101**	BCL-3
Subwatershed feasiblity studies for At-Risk creeks (Fish Creek and Gervais Creek)	$35,000.00	$270.00	$34,730.00	$0.00	**4129-101**	DW-1, DW-2, DW-6
Wetland Restoration Workshop, Education, and Planning	$25,000.00	$8,108.00	$16,892.00	$3,740.00	**4129-101**	DW-8
Contingency*	$50,000.00	$0.00	$50,000.00	$0.00	**4129-101**	
GIS Maintenance						
GIS Maintenance	$5,000.00	$0.00	$5,000.00	$0.00	**4170-101**	DW-13
Monitoring Water Quality/Project Monitoring						
Lake Water Quality Monitoring (Misc QA/QC)	$10,000.00	$358.18	$9,641.82	$0.00	**4520-101**	DW-2
Annual WQ Report Assistance	$10,000.00	$126.00	$9,874.00	$0.00	**4520-101**	DW-2
Special Project BMP Monitoring	$25,000.00	$18,530.00	$6,470.00	$0.00	**4520-101**	DW-12
Kohlman Permeable Weir Test System - Implement Monitoring Plan	$15,000.00	$9,993.50	$5,006.50	$0.00	**4520-101**	DW-12
Permit Processing, Inspection and Enforcement						
Permit Application Inspection and Enforcement	$10,000.00	$2,918.40	$7,081.60	$0.00	**4122-101**	DW-7
Permit Application Review	$55,000.00	$44,874.50	$10,125.50	$767.50	**4124-101**	DW-7
Lake Studies/WRPPs/TMDL Reports						
2020 Grant Applications	$40,000.00	$2,915.00	$37,085.00	$1,835.00	**4661-101**	DW-13
Tanners Flood Response Tool Model Update	$3,000.00	$3,830.00	-$830.00	$0.00	**4661-101**	TaL-1
WMP Updates - Including Implementation Plan Updates	$20,000.00	$0.00	$20,000.00	$0.00	**4661-101**	DW-13
Prioritization of water quality projects from subwatershed feasibility studies	$15,000.00	$2,379.50	$12,620.50	$0.00	**4661-101**	DW-13
Phalen Chain of Lakes Changes in Water Quality	$10,000.00	$9,474.00	$526.00	$0.00	**4661-101**	DW-2, DW-12
Contingency for Lake Studies	$25,000.00	$0.00	$25,000.00	$0.00	**4661-101**	
Research Projects						
New Technology Mini Case Studies (average 6 per year)	$12,000.00	$13,466.50	-$1,466.50	$0.00	**4695-101**	DW-12
Shallow Lake Aeration Study	$36,000.00	$46,004.55	-$10,004.55	$215.50	**4695-101**	DW-12
Project Operations						
2021 Tanners Alum Facility Monitoring	$15,000.00	$12,619.50	$2,380.50	$87.00	**4650-101**	TaL-3
Beltline Outlet and Keller Channel Operations Plans	$30,000.00	$13,322.84	$16,677.16	$0.00	**4650-101**	DW-9, BELT-3
Capital Improvements						
East St. Paul Target	$45,000.00	$54,979.23	-$9,979.23	$0.00	**4128-518**	DW-6
North St. Paul Target	$150,000.00	$156,846.80	-$6,846.80	$104.00	**4128-518**	DW-6
Cemstone	$60,000.00	$0.00	$60,000.00	$0.00	**4128-518**	DW-6
Commercial Sites Retrofit Projects 2021 (Targeted Retrofits)	$45,000.00	$7,173.50	$37,826.50	$195.00	**4128-518**	DW-6
School Sites Retrofit Projects 2021 (Targeted Retrofits)	$45,000.00	$20,222.06	$24,777.94	$3,786.00	**4128-518**	DW-6
Church Sites Retrofit Projects 2021 (Targeted Retrofit)	$45,000.00	$24,285.04	$20,714.96	$0.00	**4128-518**	DW-6
BMP Incentive Fund: Gen'l BMP Design Assistance and Review (cases where Dist is approached by landowner, or landowner is not commercial, school, church).	$75,000.00	$52,798.28	$22,201.72	$672.50	**4682-529**	DW-6
Willow Lake Area Detention (from feas. Study)	$150,000.00	$0.00	$150,000.00	$0.00	**4128-520**	DW-9, BELT-3
Kohlman Creek Storage and Detention (from feas. Study)	$200,000.00	$0.00	$200,000.00	$0.00	**4128-520**	KC-2
Aldrich Arena (soils and plantings)	$25,000.00	$24,352.89	$647.11	$0.00	**4128-518**	DW-6, WL-1
Wakefield Park/Frost Avenue Stormwater Project	$17,500.00	$23,859.77	-$6,359.77	$0.00	**4128-553**	DW-6, WL-1
Wetland Restoration	$100,000.00	$1,547.40	$98,452.60	$0.00	**4128-529**	DW-1, DW-8
Keller Channel Weir & Phalen Outet Resiliency Modifications	$250,000.00	$249,555.65	$444.35	$66.00	**4128-520**	DW-9, BELT-3
Address Internal Load in TMDL lakes	$60,000.00	$0.00	$60,000.00	$0.00	**4661-101**	KL-2, GC-2, WL-3, BL-2
Ryan Drive-Keller Parkway Conveyance	$194,000.00	$203,936.57	-$9,936.57	$2,940.84	**4128-520**	DW-9, BELT-3, GC-2
Twin Lake Outlet Easement Acquisition, Permitting, Construction Plans (2020)	$90,000.00	$75,862.87	$14,137.13	$0.00	**4128-520**	DW-9
Place holder for feas. study (other) recommendations	$25,000.00	$0.00	$25,000.00	$0.00	**4128-520**	
CIP Project Repair & Maintenance						
Routine CIP Inspection and Unplanned Maintenance Identification	$75,000.00	$162,555.79	-$87,555.79	$3,449.65	**4128-516**	DW-5
Beltline 5-year Inspection	$70,000.00	$19,534.80	$50,465.20	$125.00	**4128-516**	BELT-2
District Inspection Standardization	$34,200.00	$11,706.00	$22,494.00	$1,277.50	**4128-516**	DW-5
CR D Ravine	$32,500.00	$20,598.98	$11,901.02	$0.00	**4128-516**	DW-5
2021 CIP Maintenance and Repairs	$150,000.00	$131,767.96	$18,232.04	$2,136.50	**4128-516**	DW-5
2022 CIP Maintenance and Repairs (planning, bidding, and project setup)	$30,000.00	$38,793.60	-$8,793.60	$2,820.50	**4128-516**	DW-5
TOTAL PAYABLE FOR PERIOD 12/18/21 - 12/31/21				**$36,500.49**		

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

BARR

Summary of Professional Engineering Services During the Period
January 1, 2022 through January 14, 2022

	Total Engineering Budget (2022)	Total Fees to Date (2022)	Budget Balance (2022)	Fees During Period	District Accounting Code	Plan Implementation Task Number
Engineering Administration						
General Engineering Administration	$80,000.00	$4,320.50	$75,679.50	$4,320.50	**4121-101**	DW-13
RWMWD Health and Safety/ERTK Program	$2,000.00	$0.00	$2,000.00		**4697-101**	DW-13
Educational Program/Educational Forum Assistance	$20,000.00	$0.00	$20,000.00		**4129-101**	DW-11
Topical Workshop, Education, and Planning	$25,000.00	$0.00	$25,000.00		**4129-101**	DW-13
Engineering Review						
Engineering Review	$60,000.00	$3,590.50	$56,409.50	$3,590.50	**4123-101**	DW-13
Project Feasibility Studies						
Interim emergency response plan funds for top priority District flooding areas	$30,000.00	$368.00	$29,632.00	$368.00	**4129-101**	DW-19
Groundwater/Surface Water Next Steps	$50,000.00	$0.00	$50,000.00		**4129-101**	DW-10, DW-16
Hillcrest Golf Course	$20,000.00	$72.00	$19,928.00	$72.00	**4129-101**	DW-6
Kohlman Creek flood damage reduction feasibility study	$75,000.00	$0.00	$75,000.00		**4129-101**	DW-9, KC-2, BELT-3
Kohlman Creek- Wakefield Lake Diversion Planning and Design	$111,600.00	$0.00	$111,600.00		**4129-101**	DW-9, KC-2, BELT-3
Improvements to County Ditch 17	$20,000.00	$0.00	$20,000.00		**4129-101**	DW-9, BELT-3
Improvements to Phalen Village	$20,000.00	$0.00	$20,000.00		**4129-101**	DW-9, BELT-3
Ames Lake Technical Assisstance and Project Planning with St. Paul	$25,000.00	$1,173.00	$23,827.00	$1,173.00	**4129-101**	DW-9, BELT-3
694/494/94 WQ treatment feasibility study	$30,000.00	$0.00	$30,000.00		**4129-101**	BCL-3
Double Driveway Optimization Study	$25,000.00	$0.00	$25,000.00		**4129-101**	FC-2
Carver Pond Improvements Study (Fish Creek Subwatershed)	$25,000.00	$0.00	$25,000.00		**4129-101**	FC-2
Evaluate compliance with South Metro Mississippi River TSS TMDL	$30,000.00	$0.00	$30,000.00		**4129-101**	MR-2
Owasso Basin area/North Star Estates improvements (with City of Little Canada)	$50,000.00	$0.00	$50,000.00		**4129-101**	GC-3
Contingency*	$50,000.00	$0.00	$50,000.00		**4129-101**	
GIS Maintenance						
GIS Maintenance	$5,000.00	$0.00	$5,000.00		**4170-101**	DW-13
Monitoring Water Quality/Project Monitoring						
Lake Water Quality Monitoring (Misc QA/QC)	$10,000.00	$0.00	$10,000.00		**4520-101**	DW-2
Annual WQ Report Assistance	$10,000.00	$0.00	$10,000.00		**4520-101**	DW-2
Special Project BMP Monitoring	$25,000.00	$477.66	$24,522.34	$477.66	**4520-101**	DW-12
Grass Lake Berm Wetland Monitoring	$10,000.00	$0.00	$10,000.00		**4520-101**	DW-5
Permit Processing, Inspection and Enforcement						
Permit Application Inspection and Enforcement	$10,000.00	$0.00	$10,000.00		**4122-101**	DW-7
Permit Application Review	$55,000.00	$4,176.00	$50,824.00	$4,176.00	**4124-101**	DW-7
Lake Studies/TMDL Reports						
2022 Grant Applications	$40,000.00	$70.00	$39,930.00	$70.00	**4661-101**	DW-13
WMP Updates - Including Implementation Plan Updates if needed	$20,000.00	$0.00	$20,000.00		**4661-101**	DW-13
Prioritization of water quality projects from subwatershed feasibility studies	$5,000.00	$0.00	$5,000.00		**4661-101**	DW-13
Cost/Benefit Analysis of Treatment Options for Bennett and Wakefield in 2020 Internal Load Analysis	$35,000.00	$0.00	$35,000.00		**4661-101**	WL-3, BeL-3
Contingency for Lake Studies	$25,000.00	$0.00	$25,000.00		**4661-101**	
Research Projects						
New Technology Mini Case Studies (average 6 per year)	$12,000.00	$0.00	$12,000.00		**4695-101**	DW-12
Kohlman Permeable Weir Test System - Implement Monitoring Plan	$50,000.00	$0.00	$50,000.00		**4695-101**	DW-12
Shallow Lake Aeration Study	$90,000.00	$2,448.00	$87,552.00	$2,448.00	**4695-101**	DW-12
Project Operations						
2021 Tanners Alum Facility Monitoring	$15,000.00	$0.00	$15,000.00		**4650-101**	TaL-3
Capital Improvements						
North St. Paul Target	$160,000.00	$156,885.80	$3,114.20	$39.00	**4128-518**	DW-6
Ryan Drive-Keller Parkway Conveyance	$194,000.00	$204,854.57	-$10,854.57	$918.00	**4128-520**	DW-9. GC-3
Commercial Sites Retrofit Projects 2022 (Targeted Retrofits)	$45,000.00	$2,150.00	$42,850.00	$2,150.00	**4128-518**	DW-6
School Sites Retrofit Projects 2022 (Targeted Retrofits)	$45,000.00	$8,019.00	$36,981.00	$8,019.00	**4128-518**	DW-6
Church Sites Retrofit Projects 2022 (Targeted Retrofit)	$45,000.00	$3,882.00	$41,118.00	$3,882.00	**4128-518**	DW-6
Stewardship Grant Program: Gen'l BMP Design Assistance and Review (cases where Dist is approached by landowner, or landowner is not commercial, school, church).	$75,000.00	$4,518.50	$70,481.50	$4,518.50	**4682-529**	DW-6
Kohlman Creek Storage and Detention	$200,000.00	$0.00	$200,000.00		**4128-520**	KC-2
Wetland Restoration	$100,000.00	$0.00	$100,000.00		**4128-529**	DW-8
South Owasso Boulevard East WQ Pond	$150,000.00	$0.00	$150,000.00		**4128-520**	GC-3
West Industrial Park Berm and associated improvements	$150,000.00	$0.00	$150,000.00		**4128-520**	GC-3
South Lake Judy Filtration- Regional BMP	$160,000.00	$0.00	$160,000.00		**4128-529**	LE-3
CIP Project Repair & Maintenance						
Routine CIP Inspection and Unplanned Maintenance Identification	$125,000.00	$2,754.00	$122,246.00	$2,754.00	**4128-516**	DW-5
Beltline 5-year Inspection	$70,000.00	$29,407.32	$40,592.68	$9,872.52	**4128-516**	BELT-2
District Inspection Standardization	$34,200.00	$13,029.00	$21,171.00	$1,323.00	**4128-516**	DW-5
2021 CIP Maintenance and Repairs	$150,000.00	$133,265.46	$16,734.54	$1,497.50	**4128-516**	DW-5
2022 CIP Maintenance and Repairs	$150,000.00	$65,322.08	$84,677.92	$5,929.50	**4128-516**	DW-5
2023 CIP Maintenance and Repairs (planning, bidding, and project setup)	$40,000.00	$0.00	$40,000.00		**4128-516**	DW-5
				$57,598.68		

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

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

January 19, 2022
File No: 9M

	Balance
General Account	$2,708.00

Permit Application Coversheet

Date February 02, 2022

Project Name Little Canada 2022 SIP Project Number 22-02

Applicant Name Eric Seaburg, City of Little Canada

Type of Development Linear

Property Description

This project is located on Woodlynn Avenue, east of Rice Street in the City of Little Canada. The applicant is proposing to reconstruct this section of Woodlynn Avenue with the addition of a 10' emergency vehicle access trail on the east end of the road in the event of a train-related blockage. Due to space limitations the applicant is proposing to withdraw 3,914 cubic feet in available banked credits to meet volume reduction requirements. Rate control requirements will be met onsite via construction of a retention swale north of the trail. The total site area is 1.3 acres.

Watershed District Policies or Standards Involved:

- ☐ *Wetlands*
- ☑ *Erosion and Sediment Control*
- ☑ *Stormwater Management*
- ☐ *Floodplain*

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 construction.

Long Term

The applicant will withdraw from available banked volume reduction credits to meet Rule C requirements.

Staff Recommendation

Staff recommends approval of this permit with the attached special provisions.

Attachments:

- ☑ Project Location Map
- ☑ Project Grading Plan

#22-02 Little Canada 2022 SIP

Wetlands
- Manage A
- Manage B
- Manage C
- Lake
- Sediment Pond
- Not Assessed

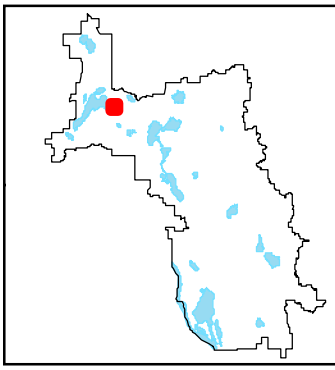
- Flow Arrows
- Major Flow Arrows
- Subwatersheds
- Creeks
- Permits
- Ramsey Co Parcels

Highlighted Areas Represent Active Permit

0 150 300
Feet

0 0.03 0.06
Miles

N



22-02

Special Provisions

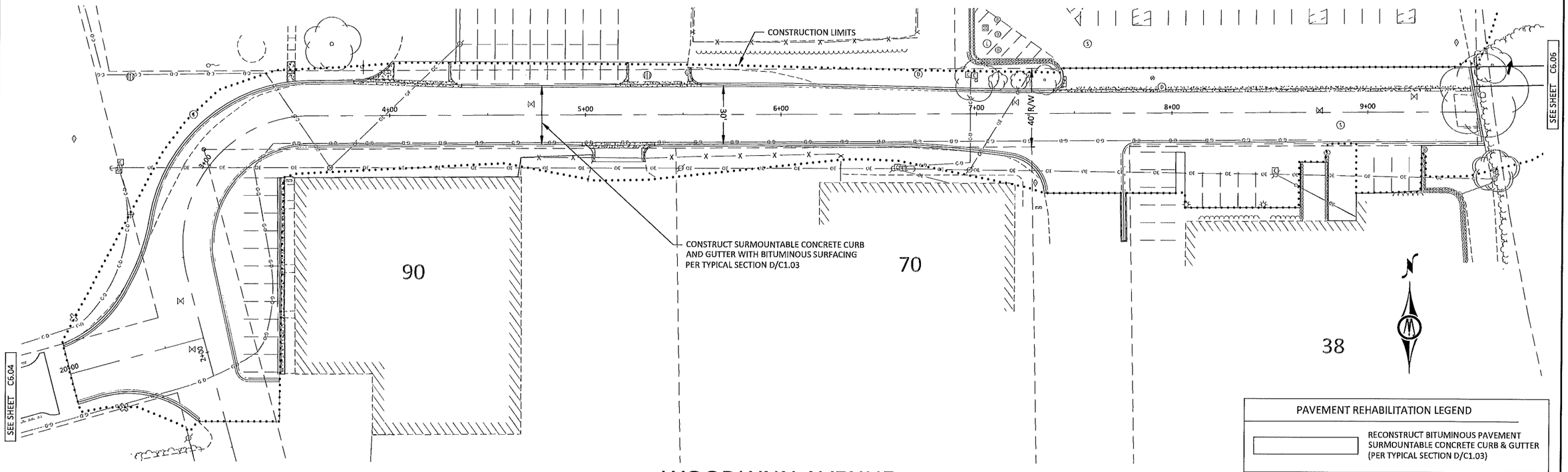
1. The applicant shall add notes to the plans:
   A. Notify Nicole Soderholm, Ramsey-Washington Metro Watershed District, at 651-792-7976 prior to beginning construction activity for an initial SWPPP inspection.
   B. The specified erosion and sediment control practices are the minimum. Additional practices may be required during the course of construction.

2. The applicant shall include construction details for erosion and sediment control practices (perimeter control, inlet protection, construction entrance, etc).

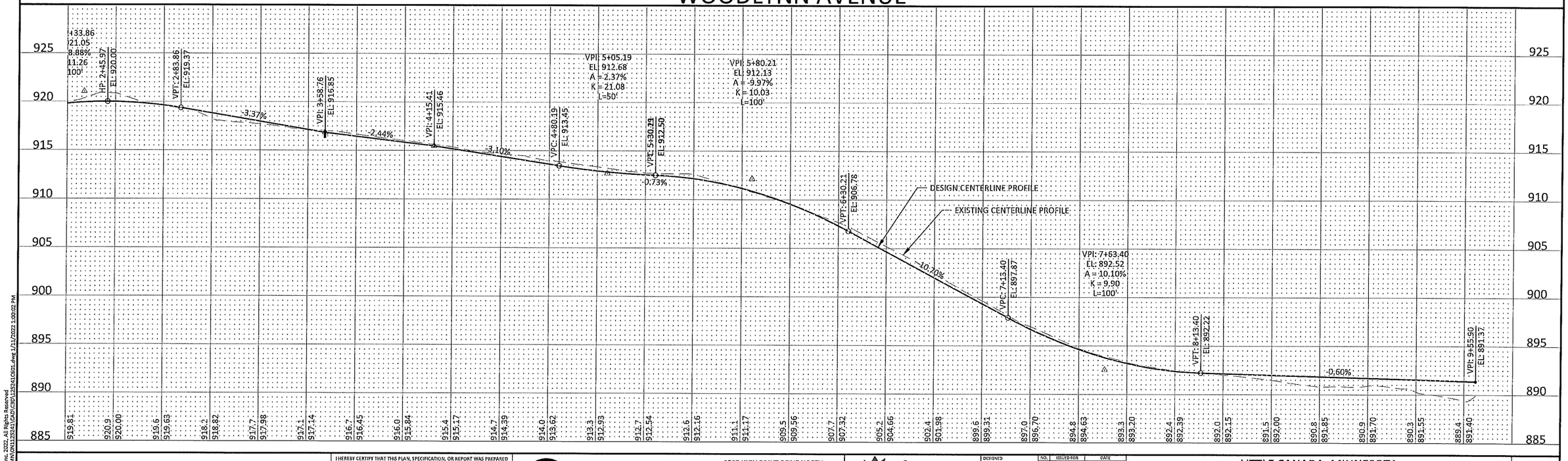
3. The applicant shall submit the final, signed plans set.

4. The applicant shall submit contact information for the trained erosion control coordinator responsible for implementing the SWPPP.

5. The applicant shall submit a copy of the Minnesota Pollution Control Agency's NPDES Construction Permit coverage for the project.



WOODLYNN AVENUE



HORZ. SCALE 0 25 50 FEET
VERT. SCALE 0 5 10 FEET

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ERIC SEABURG
LIC. NO. 53712 DATE 01/26/2022

BOLTON & MENK
3507 HIGH POINT DRIVE NORTH
BLDG. 1 SUITE E130
OAKDALE, MINNESOTA 55128
Phone: (651) 704-9970
Email: Oakdale@bolton-menk.com
www.bolton-menk.com

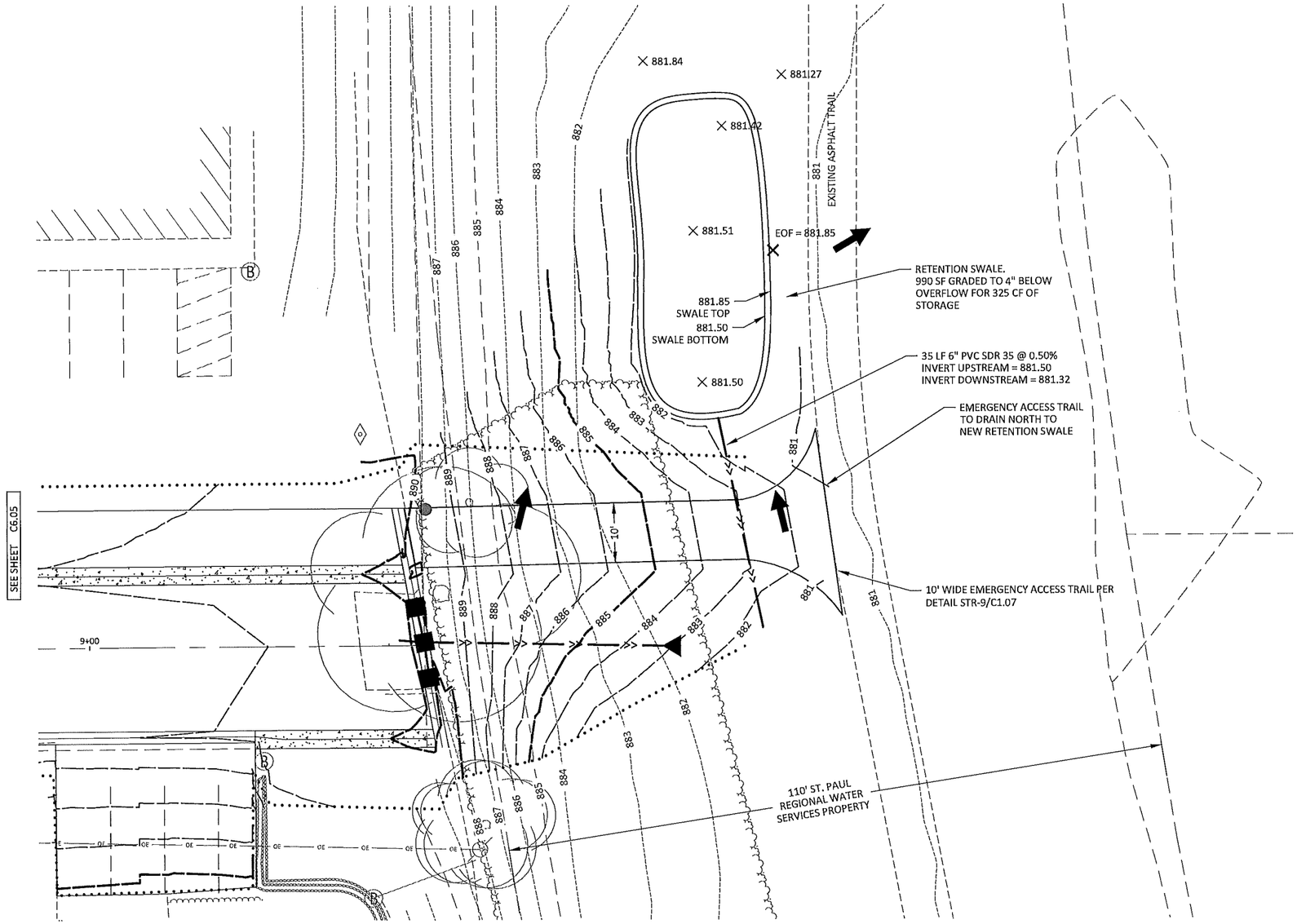
City of Little Canada

DESIGNED	EJS
DRAWN	CRL
CHECKED	EJS
CLIENT PROJ. NO.	ON1.125241

NO.	ISSUED FOR	DATE

LITTLE CANADA, MINNESOTA
2022 STREET IMPROVEMENTS
STREET IMPROVEMENTS
WOODLYNN AVENUE (EAST)

SHEET C6.05



HORZ. SCALE 0 10 20 FEET

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ERIC SEABURG
LIC. NO. 53712 DATE 01/26/2022

BOLTON & MENK
3507 HIGH POINT DRIVE NORTH
BLDG. 1 SUITE E130
OAKDALE, MINNESOTA 55128
Phone: (651) 704-9970
Email: Oakdale@bolton-menk.com
www.bolton-menk.com

City of Little Canada

DESIGNED	EJS
DRAWN	CRL
CHECKED	EJS
CLIENT PROJ. NO.	ON1.125241

NO.	ISSUED FOR	DATE

LITTLE CANADA, MINNESOTA
2022 STREET IMPROVEMENTS
STREET IMPROVEMENTS
WOODLYNN TRAIL EXTENSION

SHEET C6.06

Permit Application Coversheet

Date February 02, 2022

Project Name Maplewood Gardens Garage and Parking Project Number 22-04

Applicant Name Ken Isaacson, Twin Cities Housing Development Corporation

Type of Development Parking Lot

Property Description

This project is located off McKnight Road South and Pond Avenue East in the City of Maplewood. The applicant is proposing to reconstruct existing parking lots and sidewalks in addition to a new garage and playground. The total site area is 1.6 acres. An iron-enhanced filtration basin is proposed to meet stormwater treatment requirements. Filtration is being proposed due to poor soils. Pretreatment methods include a sediment forebay and Rain Guardian inlet. A wetland delineation and incidental designation was approved on 9/29/20 (#20-14 WCA) for a basin south of the project area.

Watershed District Policies or Standards Involved:

- [x] *Wetlands*
- [x] *Erosion and Sediment Control*
- [x] *Stormwater Management*
- [ ] *Floodplain*

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 construction.

Long Term

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

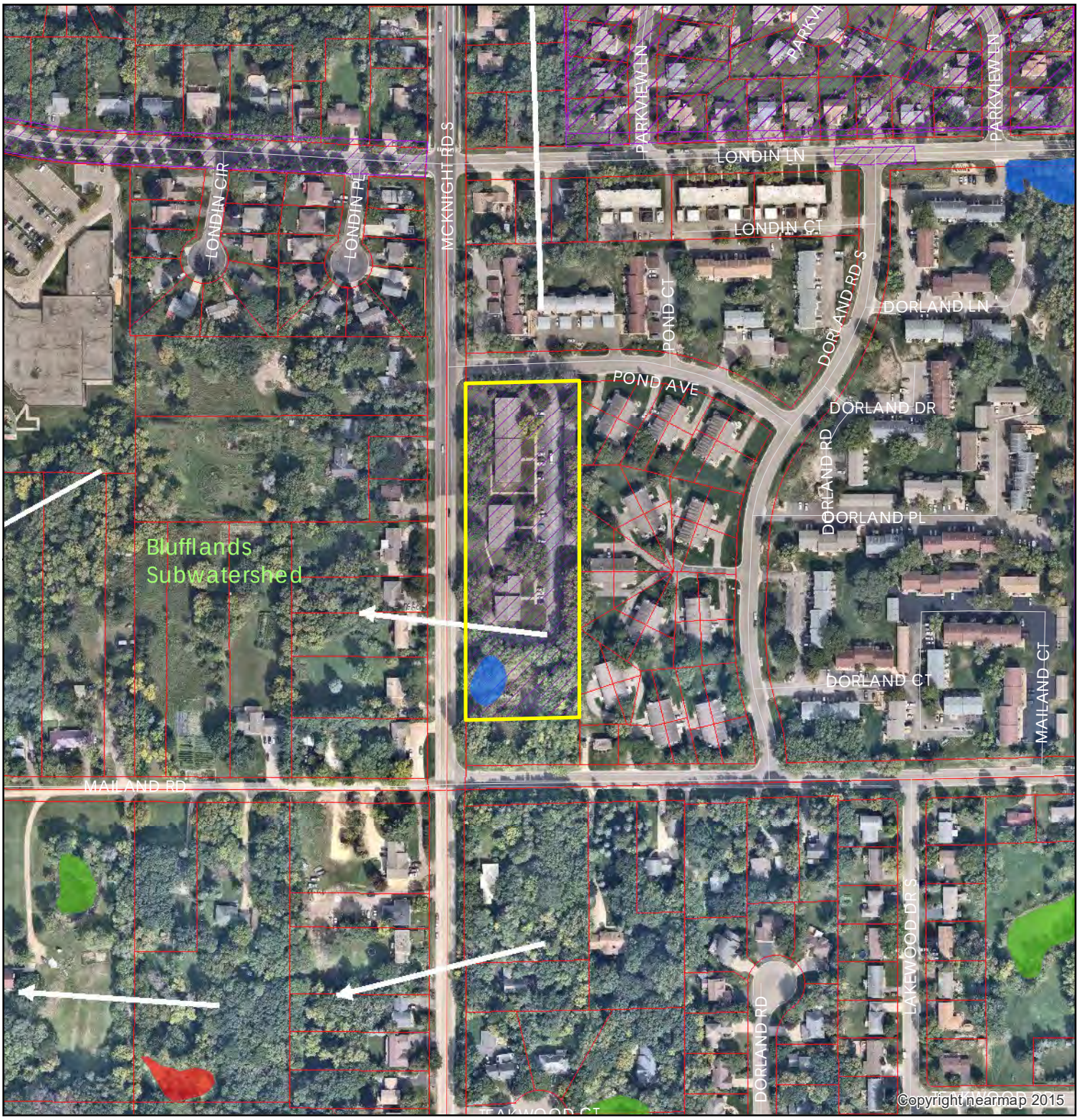
Staff Recommendation

Staff recommends approval of this permit with the special provisions.

Attachments:

- [x] Project Location Map
- [x] Project Grading Plan

#22-04 Maplewood Gardens Garage and Parking



Wetlands
- Manage A
- Manage B
- Manage C
- Lake
- Sediment Pond
- Not Assessed

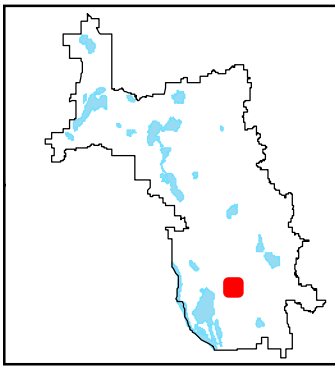
- Flow Arrows
- Major Flow Arrows
- Subwatersheds
- Creeks
- Permits
- Ramsey Co Parcels

Highlighted Areas Represent Active Permit

0 200 400
Feet

0 0.04 0.08
Miles

N



22-04

Special Provisions

1. The applicant shall submit a copy of the approved Minnesota Pollution Control Agency's NPDES Construction Permit coverage for the project.

2. The applicant shall submit the escrow fee of $7,925.

3. The applicant shall submit the executed joint stormwater maintenance agreement with the City of Maplewood.

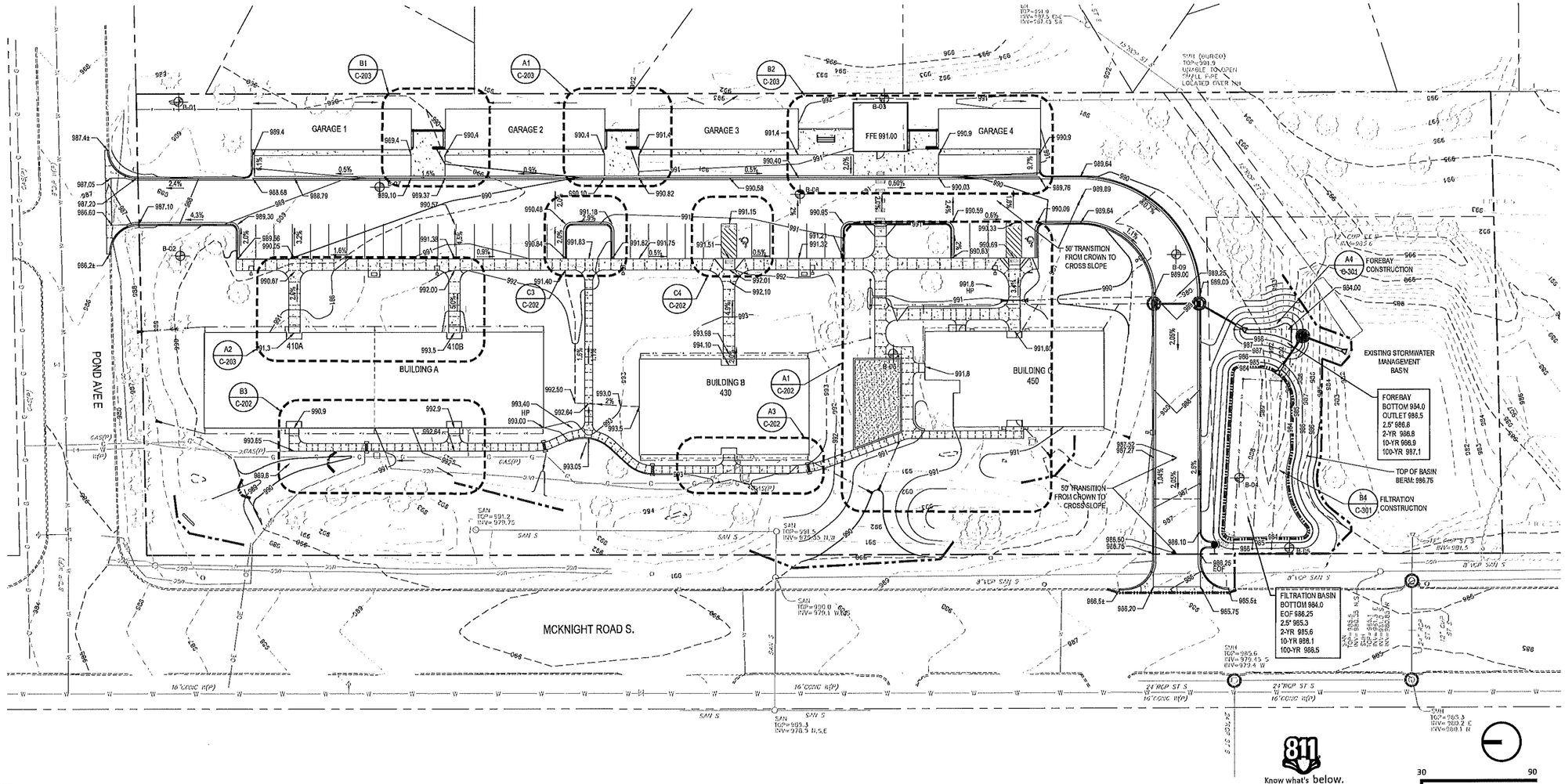
GRADING NOTES

1. VERIFY ALL FIELD CONDITIONS AND UTILITY LOCATIONS PRIOR TO EXCAVATION/CONSTRUCTION. IF ANY DISCREPANCIES OR UNKNOWN UTILITIES ARE FOUND THAT IMPACT DESIGN OR IMPAIR CONSTRUCTION, THE ENGINEER AND OWNER SHOULD BE IMMEDIATELY NOTIFIED.
2. FOLLOW ALL RECOMMENDATIONS PRESENTED IN GEOTECHNICAL EVALUATION REPORT PREPARED BY CHOSEN VALLEY TESTING DATED JULY 24, 2020.
3. SUFFICIENT HIGH QUALITY TOPSOIL SHALL BE PRESERVED TO INSTALL 6 INCHES OVER ALL DISTURBED GREENSPACES OF THE SITE.
4. SIDEWALLS SHALL BE RETAINED BENCHED OR SLOPED TO PROVIDE SAFE WORKING CONDITIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ASSESSING THE STABILITY OF AND EXECUTING PROJECT EXCAVATIONS USING SAFE METHODS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR NAMING THE "COMPETENT INDIVIDUAL" AS PER SUBPART P OF 29 CFR 1926.6 (FEDERAL REGISTER - OSHA).
5. THE TOP OF ALL EXCAVATIONS LEFT OPEN OVERNIGHT SHALL BE MARKED WITH ORANGE SAFETY FENCE.
6. ALL PAVEMENT GRADES SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
   ASPHALT PAVEMENT - 1.5% MINIMUM, 5% MAXIMUM
   CONCRETE PAVEMENT - 0.5% MINIMUM, 5% MAXIMUM
7. SEE SHEET C-204 FOR SWPPP REQUIREMENTS. CONTRACTOR, SUB-CONTRACTORS, SUPERVISORY PERSONNEL AND OPERATORS ARE RESPONSIBLE FOR FOLLOWING ALL INFORMATION AND CRITERIA THAT EFFECT GRADING AND DRAINAGE CONSTRUCTION.
8. SEE SHEET C-205 FOR EROSION CONTROL REQUIREMENTS.
9. SEE LANDSCAPE PLANS AND SWPPP FOR REVEGETATION REQUIREMENTS.
10. UPON COMPLETION OF THE PROJECT, A CERTIFICATION LETTER AND AS-BUILT SURVEY, FROM A REGISTERED ENGINEER OR LAND SURVEYOR SHALL BE PROVIDED TO THE CITY AND WATERSHED CERTIFYING THAT THE SITE GRADES ARE AS SHOWN.
11. THE AREAS ON THE EAST SIDE OF THE GARAGE STRUCTURES SHALL BE REGARDED AS NEEDED TO DIRECT RUNOFF AWAY FROM THE STRUCTURES.

LEGEND

- PROPERTY LINE
- 990 MAJOR CONTOUR
- 991 MINOR CONTOUR

	EXISTING	PROPOSED
IMPERVIOUS		
BUILDING	0.541 ACRES	0.559 ACRES
PAVEMENT	0.830 ACRES	0.885 ACRES
TOTAL IMPV	1.371 ACRES	1.443 ACRES
PERVIOUS	2.519 ACRES	2.447 ACRES
TOTAL	3.890 ACRES	3.890 ACRES
TOTAL DISTURBED CONSTRUCTION		1.565 ACRES
TOTAL CUT VOLUME		1,432.05 CU.YD.
TOTAL FILL VOLUME		365.97 CU.YD.



A1 GRADING PLAN
1" = 30'

LHB
PERFORMANCE DRIVEN DESIGN.
LHBcorp.com
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

Élan DESIGN LAB
Civil Engineering | Landscape Architecture | Construction Services
310 4th AVENUE S, SUITE 1006
MINNEAPOLIS, MN 55415
p 612.260.7980 | www.elanlab.com

CLIENT:
TWIN CITIES HOUSING DEVELOPMENT CORPORATION

1360 ENERGY PARK DRIVE, SUITE 210
ST.PAUL, MN 55108

THIS SQUARE APPEARS 1/2"x1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
03	01/20/2022	WATERSHED & CITY PERMITS
02	7/29/2020	BID SET
01	7/2/2020	80% SET

NO	DATE	REVISION
05	08/02/2021	PBA 2
04	06/15/2021	PBA 1
03	8/14/2020	BID ADDENDUM #3
02	8/10/2020	BID ADDENDUM #2

CERTIFICATION

I hereby certify that this plan was prepared by me, or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the state of MINNESOTA.

Stephan M. Johnston
REGISTRATION NO. 18914
DATE 01/20/2022

PROJECT NAME:
MAPLEWOOD GARDENS
APARTMENT RENOVATION

450 MCKNIGHT RD S
MAPLEWOOD, MN 55119

DRAWING TITLE:
GRADING PLAN

FILE: M:\LHB\200111400 Drawings\420 Site
DRAWN BY: PKS
CHECKED BY: SMJ
PROJ. NO: 190805
DRAWING NO:

C-201

Consent Agenda Action Item

Board Meeting Date: February 2, 2022 **Agenda Item No:** 3D

Preparer: Tina Carstens, Administrator

Item Description: Change Order No. 1 for the Ryan Drive and Keller Parkway Conveyance Upgrades Project

Background:

Attached is change order number 1 for the Ryan Drive and Keller Parkway Conveyance Upgrades Project. This change order changes the substantial completion date to December 10, 2021 and the final completion date to April 29, 2022. This is due to a delay in supply delivery, relocation of utilities and inclement weather which prevented site restoration. There is no change in contract price with this change order.

Applicable District Goal and Action Item:

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 well-being.

Action Item: Cooperate with appropriate stakeholders to identify, assess, and address potential flooding problems in the District.

Staff Recommendation:
Approve Change Order No. 1.

Financial Implications:
This change order does not change the contract price.

Board Action Requested:
Approve Change Order No. 1.

Change Order No. 01
Ramsey-Washington Metro Watershed District
Ryan Drive & Keller Parkway Conveyance Upgrades Project

DATE OF ISSUANCE: January 25, 2022

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

Contractor: Fitzgerald Excavating & Trucking, Inc.
21432 350th Street
Goodhue, MN 55027
Attn: Jason Fitzgerald

Engineer: Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
Attn: Sam Redinger, PE

C.O.1.A Contract Time Extension

Description of Change:

The project is substantially complete; both the Ryan Drive and Keller Parkway sites are fit and ready for their intended use. However, the project duration has exceeded the originally allowed contract time and the project has not reached final completion.

The original contract times provided 10 weeks of active construction once commencing, a Substantial Completion date of October 1, 2021, and Final Completion two (2) weeks after Substantial Completion. The contractor was unable to meet the original contract times due to reasons beyond their control: (1) delays in supply of critical construction materials due to ongoing COVID-19 pandemic delaying the commencement of construction; (2) coordinating public utility conflicts within the project excavation limits requiring relocation increased the duration of construction beyond the 10-week allowance; and (3) inclement weather prevented the full completion of the project scope and site restoration following substantial completion.

This change order modifies the contract times of this project to modify the substantial completion date to match with when this milestone was accomplished and extend the final completion date to when the project may be fully completed under more favorable conditions.

Measurement and Payment:

None - No tangible scope is being added to the project as part of this change order.

Change in Contract Time:

Substantial Completion: December 10, 2021
Final Completion: April 29, 2022

Total Impact on Contract Price:

None

This Change Order No. 1 is:

Submitted By: _____ Date: January 25, 2022
(ENGINEER) Samuel Redinger, PE, Project Engineer
Barr Engineering Co.

Authorized By: _____ Date: _____
(OWNER) Lawrence Swope, President
Ramsey-Washington Metro Watershed District

Approved By: _____ Date: 1-26-2022
(CONTRACTOR) Jason Fitzgerald, President
Fitzgerald Excavating & Trucking, Inc.

****

Permit Program

****

Permit Application Coversheet

Date February 02, 2022

Project Name Gervais Woods 2nd Addition Project Number 22-03

Applicant Name Nathan Fair, Landmark of Little Canada, LLC

Type of Development Residential

Property Description

This project is located off Labore Road and south of County Road D in the City of Little Canada. The applicant is proposing to construct 15 single family homes with associated driveways, cul-de-sac, and utilities. The total site area is 9 acres. A filtration basin and wet pond are proposed to meet stormwater treatment requirements. Filtration is being proposed due to poor soils. A delineation for the wetland east of the proposed development was approved on 10/19/20 (#20-17 WCA). A utility exemption application was approved on 1/25/22 (#22-02 WCA) for wetland disturbance associated with the installation of a sanitary sewer line to service the development. The sewer line will be buried, and disturbed wetland areas will be restored with a native wetland seed mix. A variance request for temporary disturbance in the wetland buffer is also enclosed in order to accommodate access, grading, and erosion control placement. Disturbed buffer areas will be restored with a native upland seed mix.

Watershed District Policies or Standards Involved:

- ☑ *Wetlands*
- ☑ *Erosion and Sediment Control*
- ☑ *Stormwater Management*
- ☐ *Floodplain*

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 construction.

Long Term

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

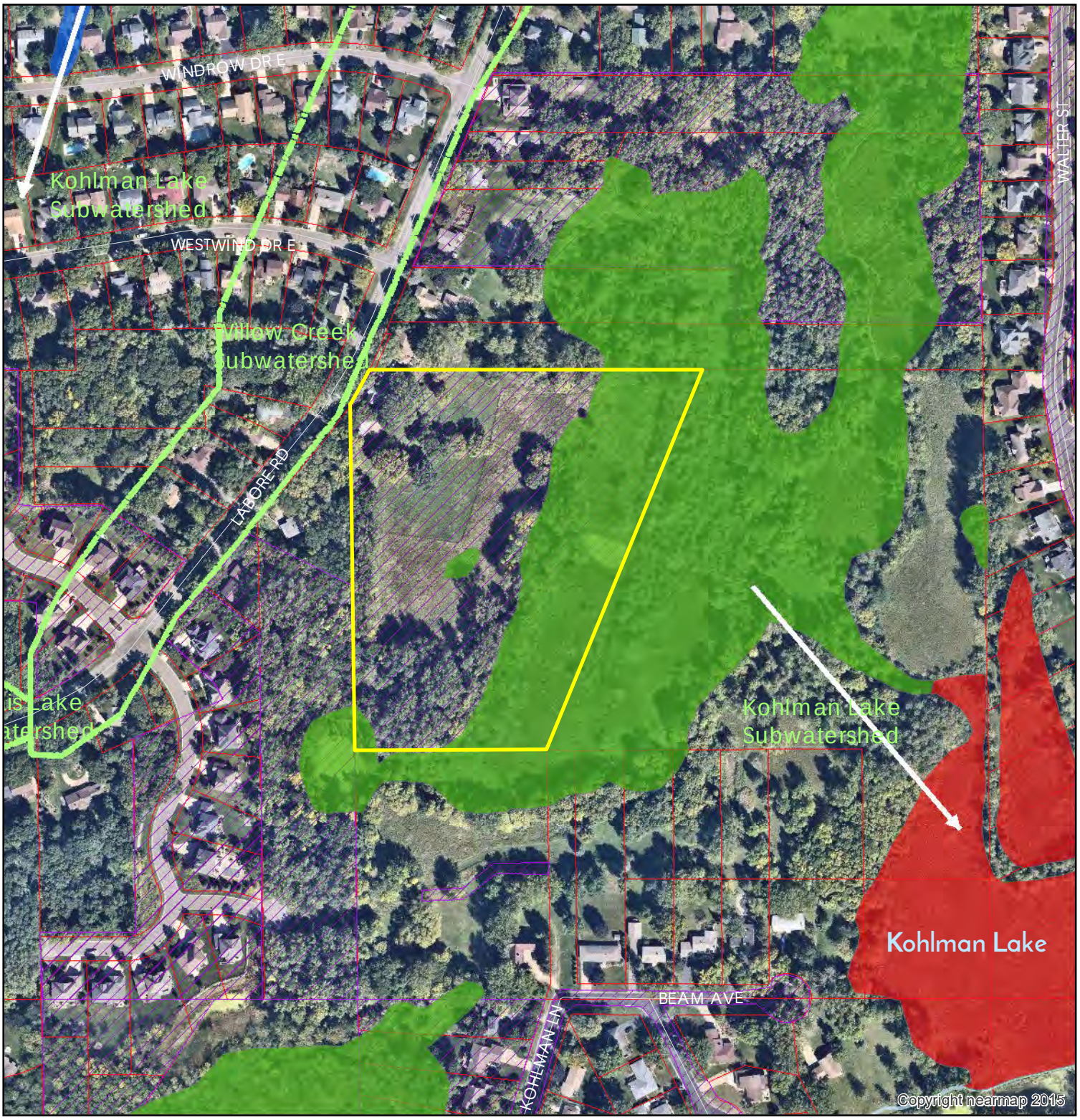
Staff Recommendation

Staff recommends approval of this permit with the special provisions and variance request.

Attachments:

- ☑ Project Location Map
- ☑ Project Grading Plan

#22-03 Gervais Woods 2nd Addition



Wetlands
- Manage A
- Manage B
- Manage C
- Lake
- Sediment Pond
- Not Assessed

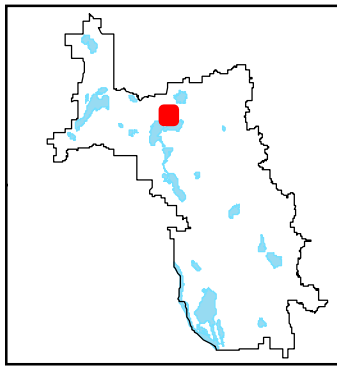
- Flow Arrows
- Major Flow Arrows
- Subwatersheds
- Creeks
- Permits
- Ramsey Co Parcels

Highlighted Areas Represent Active Permit

0 200 400
Feet

0 0.04 0.08
Miles

N



22-03

Special Provisions

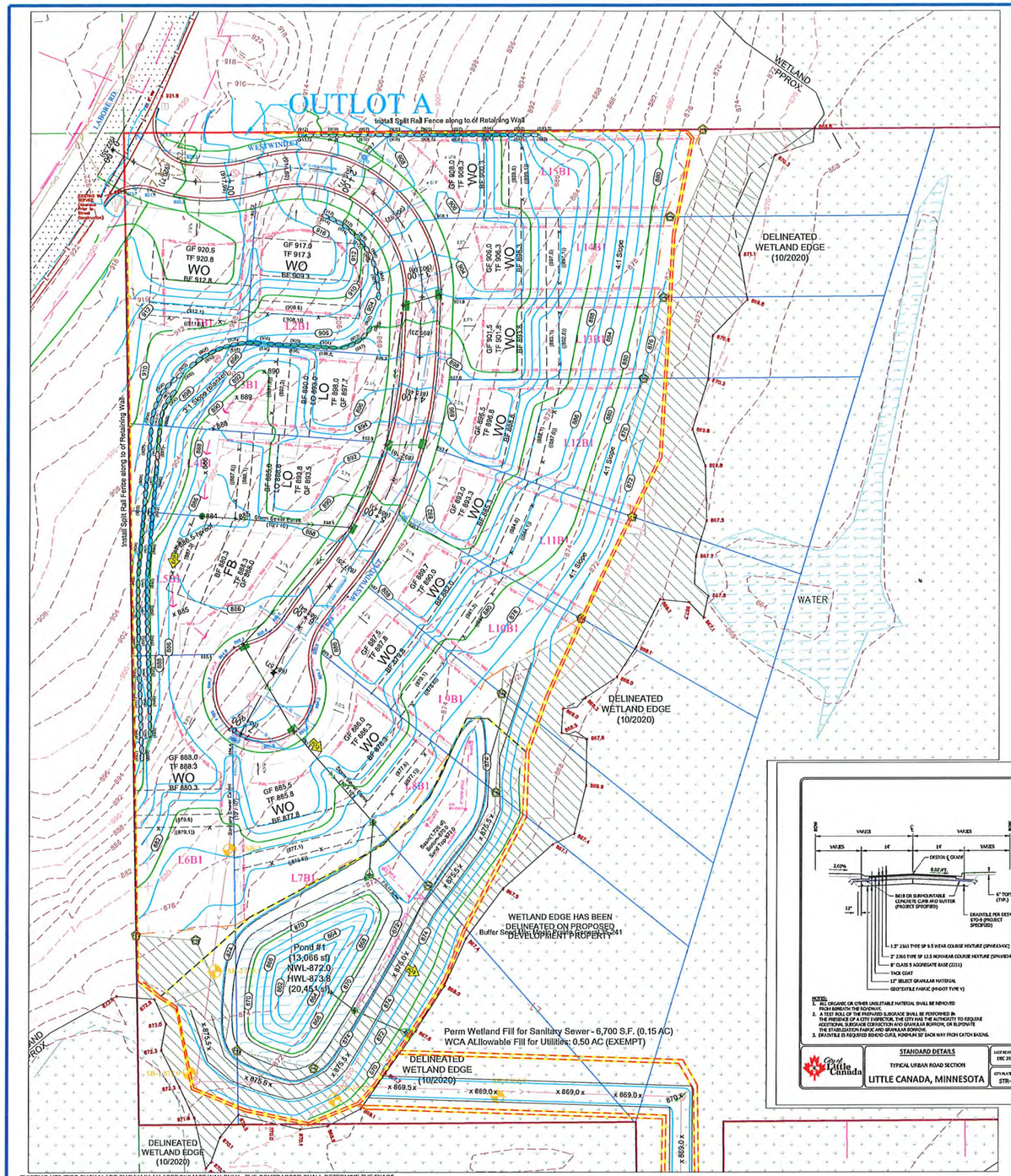
1. The applicant shall submit the final, signed plans set.

2. The applicant shall submit the executed stormwater maintenance agreement.

3. The applicant shall submit the draft, site-specific BMP Operations & Maintenance Plan. A final, as-built O&M Plan will be required prior to permit closure.

4. The applicant shall submit contact information for the trained erosion control coordinator responsible for implementing the SWPPP.

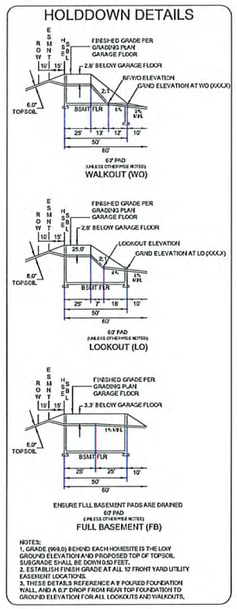
5. The applicant shall submit a copy of Minnesota Pollution Control Agency's NPDES Construction Permit coverage for the project.



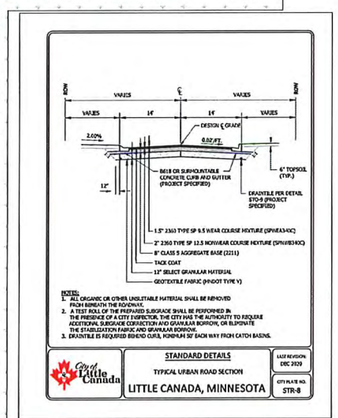
SYMBOL LEGEND

DESCRIPTION	PROPOSED	EXISTING
MINOR CONTOUR	872	858
MAJOR CONTOUR	870	860
LOT LINE		
BUILDING SETBACK LINE	BSBL	BSBL
GARAGE SETBACK LINE	GSBL	GSBL
PARCEL BOUNDARY LINE		
DRAINAGE AND UTILITY EASEMENTS		
CURB AND GUTTER		
RIGHT-OF-WAY		
BACKYARD CATCH BASIN		
CATCH BASIN		
STORM SEWER MANHOLE		
FLARED END SECTION W/RIP-RAP		
SANITARY SEWER MANHOLE		
HYDRANT		
GATE VALVE		
DRAIN TILE / CLEANOUT		
PLASTIC CATCH BASIN		
DRAIN FLOW /RUNOFF ARROW		
EMERGENCY OVERFLOW SWALE	EOF	
SILT FENCE -PRE CONSTRUCTION)		
SILT FENCE -POST CONSTRUCTION)		
SPOT ELEVATION	x 960.0	x 960.0
TBC SPOT ELEVATION	x 960.00	

HOLDDOWN DETAILS



NOTES:
1. GRADE (999.0) BEHIND EACH HOUSESITE IS THE LOW GROUND ELEVATION AND PROPOSED TOP OF TOPSOIL SUBGRADE SHALL BE DOWN 0.50 FEET.
2. ESTABLISH FINISH GRADE AT ALL 10' FRONT YARD UTILITY EASEMENT LOCATIONS.
3. THESE DETAILS REFERENCE A 9' POURED FOUNDATION WALL, AND A 6.0' DROP FROM REAR TOP FOUNDATION TO GROUND ELEVATION FOR ALL LOOKOUTS AND WALKOUTS.



RWMWD NOTES

- KEEP STORMWATER SYSTEMS OFFLINE AND PROTECTED FROM CONSTRUCTION ACTIVITY AND CLOGGING BY SEDIMENT UNTIL ALL CONTRIBUTING AREAS ARE PERMANENTLY RESTORED.
- 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

GENERAL NOTES:

1. INSTALL SILT FENCE AS SHOWN ON PLAN, AS REQUIRED BY CITY STAFF OR DIRECTED BY THE ENGINEER. DUAL SILT FENCE TO BE INSTALLED ADJACENT TO WETLAND.
2. THE WATER QUALITY POND MUST BE EXCAVATED AT THE BEGINNING OF GRADING OPERATIONS TO PROVIDE TEMPORARY STORM WATER DETENTION DURING CONSTRUCTION. SAND AND SILT MUST BE REMOVED FROM THE POND AS NECESSARY DURING CONSTRUCTION AND AT THE COMPLETION OF THE PROJECT.
3. BEGIN GRADING, INSTALL PERFORATED RISER PIPE IN POND WHEN POND GRADING IS COMPLETE. TEMPORARY DRAINAGE PIPE SHALL BE USED FOR INTERMEDIATE DRAINAGE DURING THE CONSTRUCTION PERIOD AS NECESSARY AND DIRECTED BY THE ENGINEER. INSTALL SILT FENCE AROUND EXCAVATED PONDS. SILT FENCE AROUND PERIMETER OF POND & BASIN TO REMAIN IN PLACE UNTIL UPSTREAM TURF HAS BEEN ESTABLISHED.
4. INSPECT POND, SILT FENCE, AND ROCK ENTRANCE BERM AFTER ALL RAINFALL EVENTS AS REQUIRED BY THE NPDES PERMIT.
5. LINE ALL PONDS WITH A MINIMUM 3" ORGANIC SOILS & SEED SLOPES BETWEEN NWL AND 100 YR HWL WITH A WATER TOLERANT MIX. (OR AS NOTED)
6. REMOVE PERFORATED RISER PIPE WHEN STORM SEWER AND OUTLET STRUCTURE FOR PONDS ARE INSTALLED.
7. POND - 10:1 BENCH (1 FOOT) THEN 3:1 MAX
8. LO & WO PADS 3:1 MAX. ALL OTHER SLOPES 4:1 MAX (UNLESS NOTED)
9. THE GRADING CONTRACTOR IS RESPONSIBLE FOR ALL STORM WATER INSPECTIONS ACCORDING TO THE MPCA STORM WATER PERMIT. THIS INCLUDES BOTH WEEKLY INSPECTIONS AND INSPECTIONS DONE AFTER A 0.5" RAIN EVENT. A COPY OF THE INSPECTION REPORT MUST BE EMAILED TO THE ENGINEER AND DEVELOPER ON A WEEKLY BASIS.
10. THE CONTRACTOR SHALL PLACE INLET PROTECTION DEVICES IN ACCORDANCE WITH THE CITY OF LITTLE CANADA DETAILS FOR ALL STORM SEWER INLETS AND MAINTAIN THEM AS AN EFFECTIVE SILT CONTROL DEVICE. INLET PROTECTION SHALL BE REMOVED WHEN RESTORATION HAS BEEN ESTABLISHED.
11. ALL RETAINING WALLS GREATER THAN 4' WILL REQUIRE A STRUCTURAL DESIGN, A BUILDING PERMIT & A FINAL INSPECTION REPORT.
12. ALL RETAINING WALLS 30" HIGH OR HIGHER WILL REQUIRE A FENCE OR SAFETY BARRIER, APPROVED BY THE CITY.
13. A 1"-2" CRUSHED ROCK ENTRANCE BERM SHALL BE PLACED AT THE SITE ENTRANCE, TO REPLACE SILT FENCE, AND MINIMIZE EROSION ON TO THE STREETS. THE ROCK BERMS SHALL BE THE WIDTH OF THE ENTRANCE AND 2 FEET HIGH WITH 4:1 SLOPES.
14. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING PAD AND STREET AREAS THROUGHOUT CONSTRUCTION.
15. THE CONTRACTOR SHALL ATTEMPT TO PREVENT SOIL MATERIALS FROM LEAVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. HE SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE ANY ERODED OR TRACKED SOIL MATERIAL OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.
16. EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.
17. BUILDING PADS ARE 60' DEEP, UNLESS OTHERWISE NOTED. THE FRONT AND REAR BUILDING PAD LINES ARE SHOWN ON THE PLAN. THE ENGINEER SHOULD BE CONTACTED IF THE CONTRACTOR HAS ANY QUESTIONS REGARDING BUILDING PADS.
18. CONTRACTOR MUST COMPLY WITH CITY OF LITTLE CANADA WETLAND REPLACEMENT REQUIREMENTS.

RESTORATION NOTES

RESTORATION - 5.3 ACRES

A. RESTORE ALL DISTURBED AREAS WITH 4" TO 6" OF TOPSOIL, OR EXISTING ON-SITE ORGANIC MTRL.
B. SEED POND SLOPES AND DETENTION AREAS WITH MN/DOT 310 OR BWSR P8 SEED MIX AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE.
C. SEED BASIN AREAS WITH MN/DOT 33-261 SEED MIX AT A RATE OF 35 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE.
D. SEED ALL OTHER DISTURBED AREAS WITH MNDOT 250 SEED MIX AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. (UNLESS OTHERWISE NOTED)
E. ONLY PHOSPHOROUS FREE FERTILIZER IS TO BE USED ON SITE.
F. MULCH WITH TYPE 1 AT A RATE OF 2 TONS/ACRE AND DISC ANCHOR IMMEDIATELY AFTER PLACEMENT. USE WOODFIBER BLANKET ON ALL SLOPES 3:1 (FT) OR GREATER.
G. PLACE APPROVED STORM SEWER INLET PROTECTION IN OR AROUND ALL STORM SEWER INLETS AND MAINTAIN UNTIL STREET CONSTRUCTION IS COMPLETED. REFER TO CITY DETAILS ST-22 & ST-23 FOR APPROVED DEVICES.
H. MAINTAIN ALL SILT FENCE UNTIL TURF HAS BEEN ESTABLISHED.
I. RESTORATION WORK WILL BE COMPLETED WITHIN 72 HOURS OF GRADING COMPLETION.
J. SILT FENCE, BEFORE GRADING - 3,080 LF
AFTER GRADING - 375 LF
K. WOODFIBER BLANKET - xxx SY

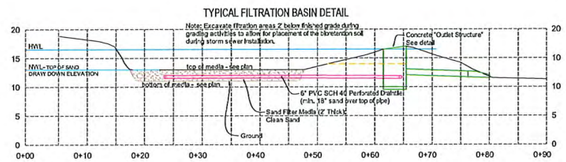
ON-SITE BMPS

1. NURP POND - NURP POND WILL BE UTILIZED TO MEET OR EXCEED QUALITY AND RATE CONTROL REQUIREMENTS.
2. SKIMMERS - THE POND OUTLET STRUCTURE INCLUDES A SUBMERGED INLET PIPE TO ALLOW SKIMMING.
3. RIP RAP - RIP RAP WILL BE UTILIZED AT ALL APRONS FOR ENERGY DISSIPATION AND PROVIDE SEDIMENT CONTROL.
4. INLET PROTECTION - INLET PROTECTION WILL BE INSTALLED AND MAINTAINED IN ALL CATCH BASINS & REAR YARD STRUCTURES. REFER TO THE CITY DETAILS TO DETERMINE WHICH INLET PROTECTION DEVICE IS APPLICABLE.
5. SLOPE STABILIZATION - SILT FENCE WILL BE INSTALLED ALONG DOWN GRADIENT GRADING LIMITS AND WOODFIBER BLANKET WILL BE UTILIZED ON ALL SLOPES 3:1 OR GREATER TO PROVIDE ADEQUATE SLOPE STABILIZATION.
6. BIOROLLS - BIOROLLS WILL BE INSTALLED ALONG REAR YARD SWALES TO PREVENT SEDIMENT FROM REACHING THE NURP POND AND ULTIMATELY DOWNSTREAM WETLANDS.
7. INFILTRATION/RETENTION AREAS - INFILTRATION/RETENTION AREAS WILL BE UTILIZED TO REDUCE/RETAIN THE RUNOFF FROM THE INCREASED HARD SURFACE.
8. STREET SWEEPING - STREET SWEEPING WILL BE DONE A MINIMUM OF ONCE PER WEEK OR MORE FREQUENTLY TO MINIMIZE DUST CONTROL AND VEHICLE TRACKING.
10. PHOSPHOROUS FREE FERTILIZER - PHOSPHOROUS FREE FERTILIZER WILL ALSO BE USED ON SITE.

FILTRATION BASIN NOTES:

1. Initial excavation of the basin shall be dug 2' below the finished final grade.
2. The filtration soil within the filtration basin will be installed after the storm sewer outlet control structure is installed.
3. To prevent soil compaction, heavy equipment shall not be allowed within the basins at any time.
4. The bottom of the filtration basin shall be tilled a minimum of 12" prior to placing the filtration soil.
5. Relatively light equipment with tracks shall be used to excavate the filtration basins
6. Immediately upon completion of grading the filtration basins, silt fence shall be installed per the plan to establish perimeter control.
7. The filtration material shall be clean washed sand.
8. Maximum 45° bend allowed in draintile
9. Install cleanouts at all pipe ends
10. Cleanout risers shall be left 2ft above grade.
11. Draintile shall be 3 hole, 120° perforation pattern, no sock.

TYPICAL FILTRATION BASIN DETAIL



DRAWING NAME	NO.	BY	DATE	REVISIONS
GP	01	ERJ	01/12/22	CITY & WATERSHED REVIEW COMMENT REVISIONS
DRAWN BY				
ERJ				
CHECKED BY				
RSM				
DATE				
10/27/2021				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ROBERT S. MOLSTAD, P.E.
Date: 10/27/21 Lic. No. 24428

SATHRE-BERGQUIST, INC.
150 SOUTH BROADWAY WAYZATA, MN. 55391 (952) 476-6000

CITY PROJECT NO. —

LITTLE CANADA, MINNESOTA

GRADING PLAN
GERVAIS WOODS 2ND ADDITION
LANDMARK OF LITTLE CANADA, LLC

FILE NO. 49368-060

7 / 12

SATHRE-BERGQUIST, INC.
14000 25th Ave N Suite 120, Plymouth, MINNESOTA, 55447
TEL:(952)476-6000 FAX:(952)476-0104
WEB:WWW.SATHRE.COM

Date: January 20, 2022

To: Ramsey-Washington Metro Watershed District Board of Managers

From: Sathre Bergquist – Eric Johnson – Professional Engineer

Subject: Gervais Woods 2nd Addition (Little Canada) – Wetland Buffer Variance Request

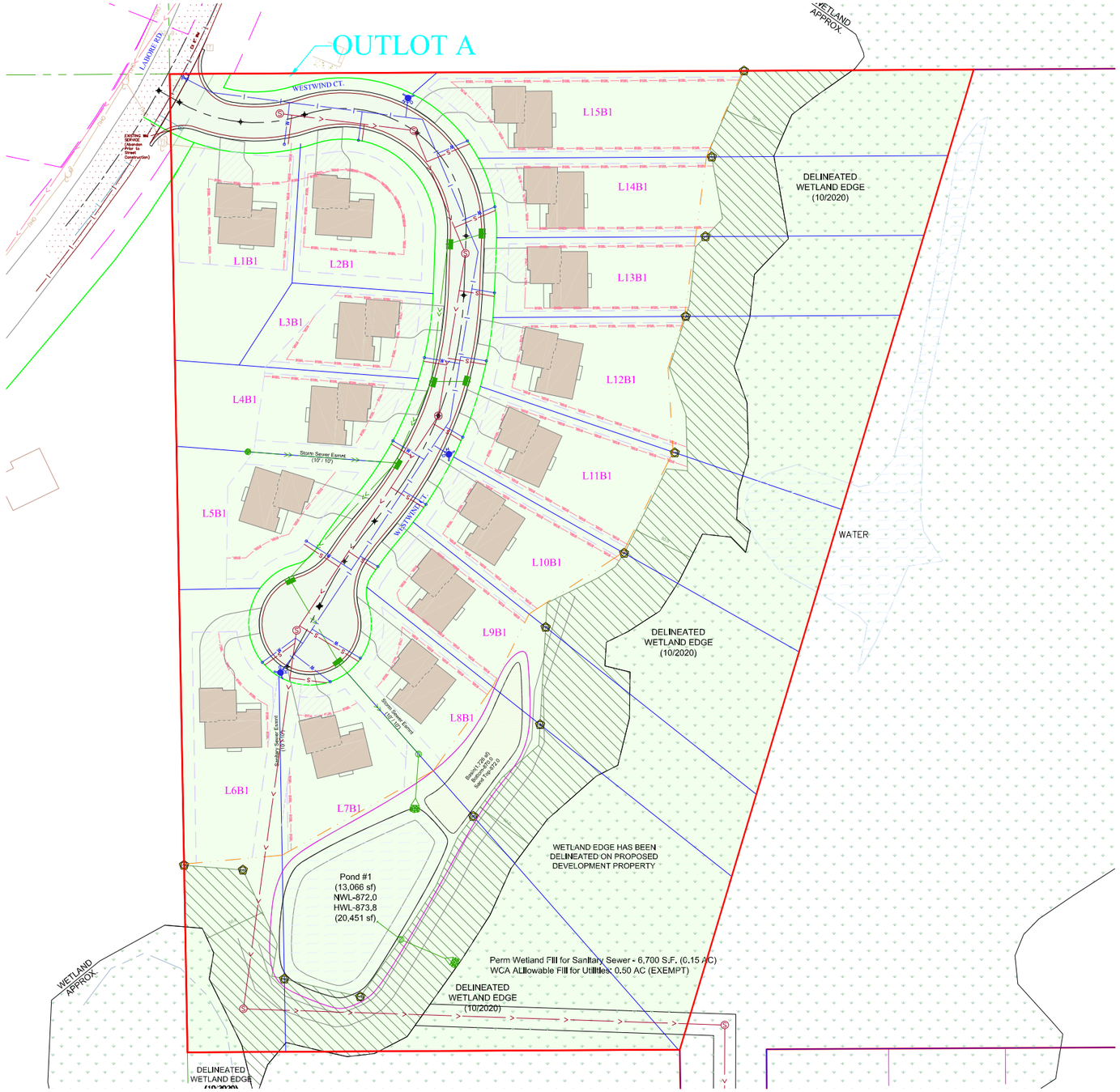
Landmark of Little Canada, LLC is proposing a 15-lot single family residential development in Little Canada off of Labore Road. The development will consist of the construction of 1 street with a cul-de-sac. The property is +/- 9.67 acres, with +/- 2.60 acres of wetland. The proposed development has been laid out and designed to have no wetland impacts. While the design meets local and state standards for stormwater treatment, there will be temporary impacts to the wetland buffer.

The developer is requesting a variance to allow installation of erosion control measures and grading within the watershed's 50' no-disturb wetland buffer area. To ensure the wetland will be protected during the grading/construction of the site, there will be 2 rows of silt fence that will be installed and monitored throughout construction. As part of the SWPPP/NPDES permit, the site will be inspected at minimum once every 7 days or within 24 hours of a ½ inch or greater rainfall to ensure the erosion control BMPs are functioning properly.

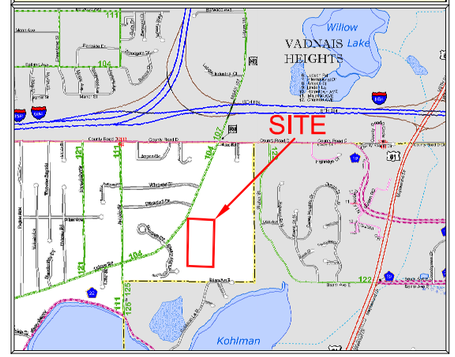
The variance is needed for the construction of the stormwater pond and filtration basin, which is designed to meet the City of Little Canada's and the RWMWD stormwater standards. A copy of the stormwater management report is available upon request. The proposed grading within the wetland buffer provides the required pond berm and provides a maximum slope of 3:1. Within 90 days of construction, the wetland buffer areas are to be seeded with State seed mix 33-261 (Stormwater South and West)to re-establish and provide a vegetated buffer to the wetland.

The project site plan & wetland buffer impact locations can be seen on the attached figures. The total temporary impacts (including grading & silt fence installation) within the 50' no disturb buffer areas is +/- 0.65 acres.

The installation of the proposed sanitary sewer will require temporary wetland impacts, which fall under the WCA utility exemption. The WCA joint application will be provided for the installation of the sanitary sewer through the wetland. The impact area is less than 0.5 acres, which is the allowable area to be allowed for the exemption. The disturbed wetland areas will be seeded with State seed mix 34-174 (Wetland Rehabilitation).



LOCATION MAP



SHEET INDEX TABLE

SHEET	Description
1	Title Sheet
2	Final Street Plan
3-5	Final Sanitary Sewer & Watermain Plan
6	Final Storm Sewer Plan
7	Final Grading Plan
8	Final Erosion Control Plan
9-12	City Construction Details

Notes:
Lots: 15 Single Family Lots
Front Yard Setback: 25'
Side Yard Setback: 7.5'/7.5', 15' Total
Side Yard Setback Corner Lot: 25'
Rear Yard Setback: 30'

PREPARED BY	PREPARED FOR
ENGINEER SATHRE-BERGQUIST, INC. 150 SOUTH BROADWAY WAYZATA, MINNESOTA 55391 PHONE: (952) 476-6000 FAX: (952) 476-0104 CONTACT : ROBERT S. MOLSTAD, P.E. EMAIL: MOLSTAD@SATHRE.COM	DEVELOPER LANDMARK OF LITTLE CANADA, LLC 13432 HANSON BLVD ANDOVER, MN 55304 CONTACT: NATHAN FAIR PHONE: (763) 438-2561 EMAIL: NATHAN.FAIR@RESULTS.NET

NORTH

50 25 0 25 50 100
SCALE IN FEET

EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

DRAWING NAME	NO.	BY	DATE	REVISIONS
TITLE	01	ERJ	01/12/22	CITY & WATERSHED REVIEW COMMENT REVISIONS
DRAWN BY				
ERJ				
CHECKED BY				
RSM				
DATE				
10/27/2021				

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Robert S. Molstad

ROBERT S. MOLSTAD, P.E.
Date: 10/27/21 Lic. No. 26428

SATHRE-BERGQUIST, INC.
150 SOUTH BROADWAY WAYZATA, MN. 55391 (952) 476-6000

CITY PROJECT NO.
--
LITTLE CANADA, MINNESOTA

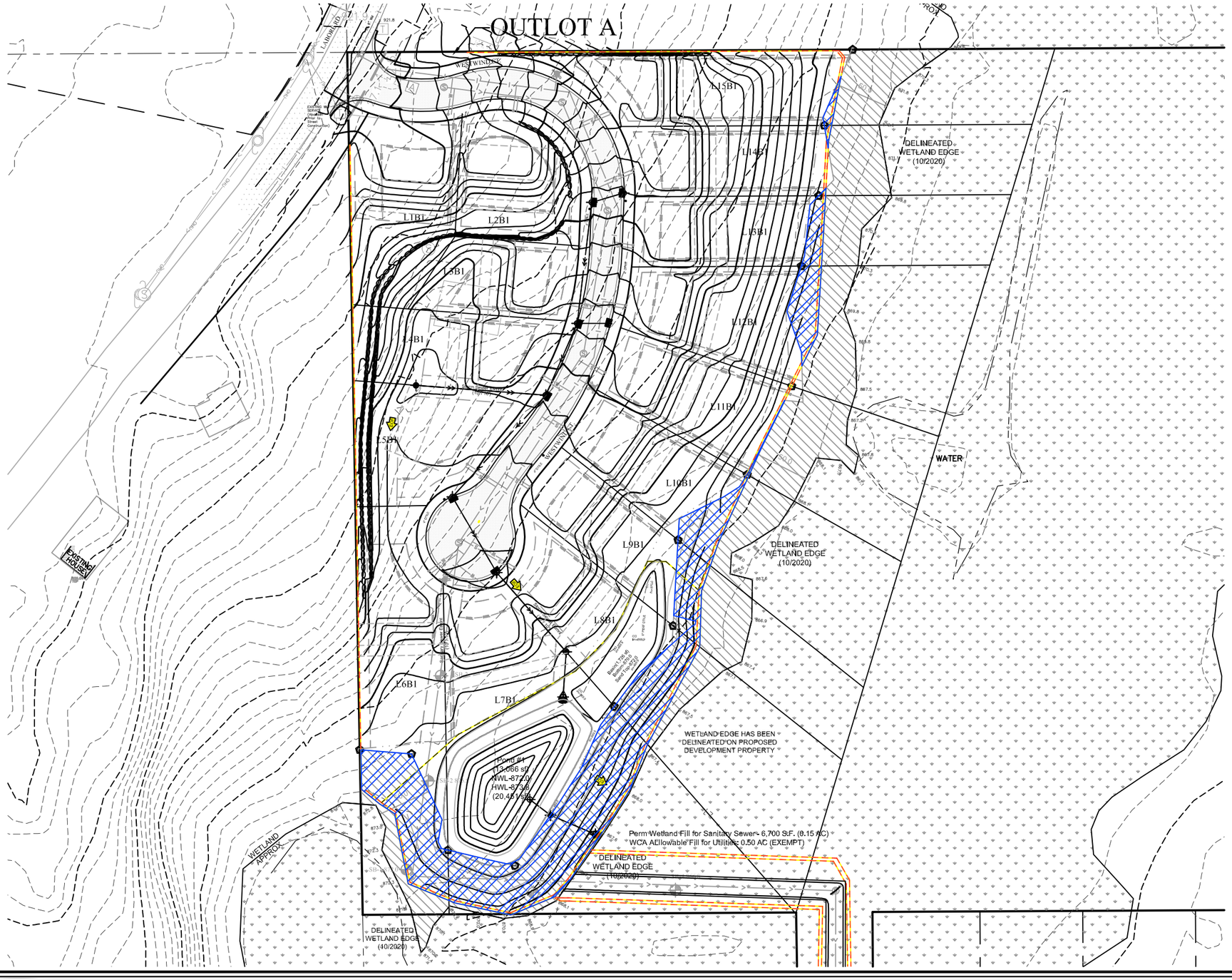
TITLE SHEET
GERVAIS WOODS 2ND ADDITION
LANDMARK OF LITTLE CANADA, LLC

FILE NO.
49368-060

1 / 12

49368-060

GERVAIS WOODS 2ND ADDITION - WETLAND BUFFER IMPACTS



DENOTES WETLAND BUFFER AREA (50')

DENOTES WETLAND BUFFER IMPACT AREA (+/- 0.65 ACRES)

DENOTES PROPOSED SILT FENCE

SATHRE-BERGQUIST, INC.
150 SOUTH BROADWAY WAYZATA, MN. 55391 (952) 476-6000

Permit Application Coversheet

Date February 02, 2022

Project Name Amira Senior Apartments Project Number 22-05

Applicant Name Naomi Ohnstad, Cherrywood Pointe Investment, LLC

Type of Development Residential

Property Description

This project is located off Century Avenue South, north of Lake Road in the City of Woodbury. The applicant is proposing to construct a 109-unit senior living apartment building with associated parking and mulched walking trail. The total site area is 4.8 acres. An iron-enhanced underground filtration system, iron-enhanced surface filtration basin, and standard filtration basin are proposed to meet stormwater treatment requirements. Filtration is being proposed due to poor soils. Pretreatment will include sumped inlets. A delineation of two wetlands onsite was approved on 9/23/21 (#21-11 WCA). A MnRAM classification request with supporting data was submitted to designate the south wetland WB-01 as Manage C (previously unclassified). The north wetland WB-02 was designated as Manage B (previously Manage A). As a condition of project approval the City of Woodbury has requested that wetland WB-02 be expanded with an associated native buffer. A variance request for temporary wetland buffer disturbance is enclosed to accommodate this work, in addition to disturbance associated with construction of the building and erosion control placement. Disturbed areas will be restored with native wetland and upland seed mixes depending on location. No permanent wetland impacts are proposed.

Watershed District Policies or Standards Involved:

- ☑ *Wetlands*
- ☑ *Erosion and Sediment Control*
- ☑ *Stormwater Management*
- ☐ *Floodplain*

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 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.

Attachments:

- ☑ Project Location Map

☑ Project Grading Plan

#22-05 Amira Senior Apartments

Wetlands
- Manage A
- Manage B
- Manage C
- Lake
- Sediment Pond
- Not Assessed

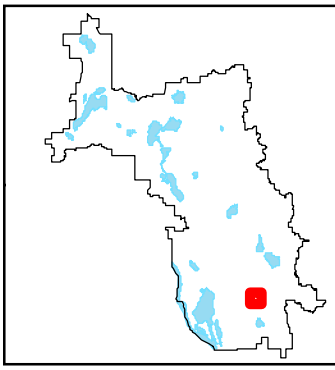
- RWMWD Boundary
- Flow Arrows
- Major Flow Arrows
- Subwatersheds
- Creeks
- Permits
- Washington Co Parcels

Highlighted Areas Represent Active Permit

0 250 500
Feet

0 0.05 0.1
Miles

N



22-05

Special Provisions

1. The applicant shall add a note to the erosion control plan referencing wetland buffers and include redundant perimeter control where disturbance is anticipated within 50’ of delineated wetland edge.

2. The applicant shall submit the final, signed stormwater management plan.

3. The applicant shall submit the escrow fee of $19,000.

4. The applicant shall submit a site-specific SWPPP for the project.

5. The applicant shall submit contact information for the trained erosion control coordinator responsible for implementing the SWPPP.

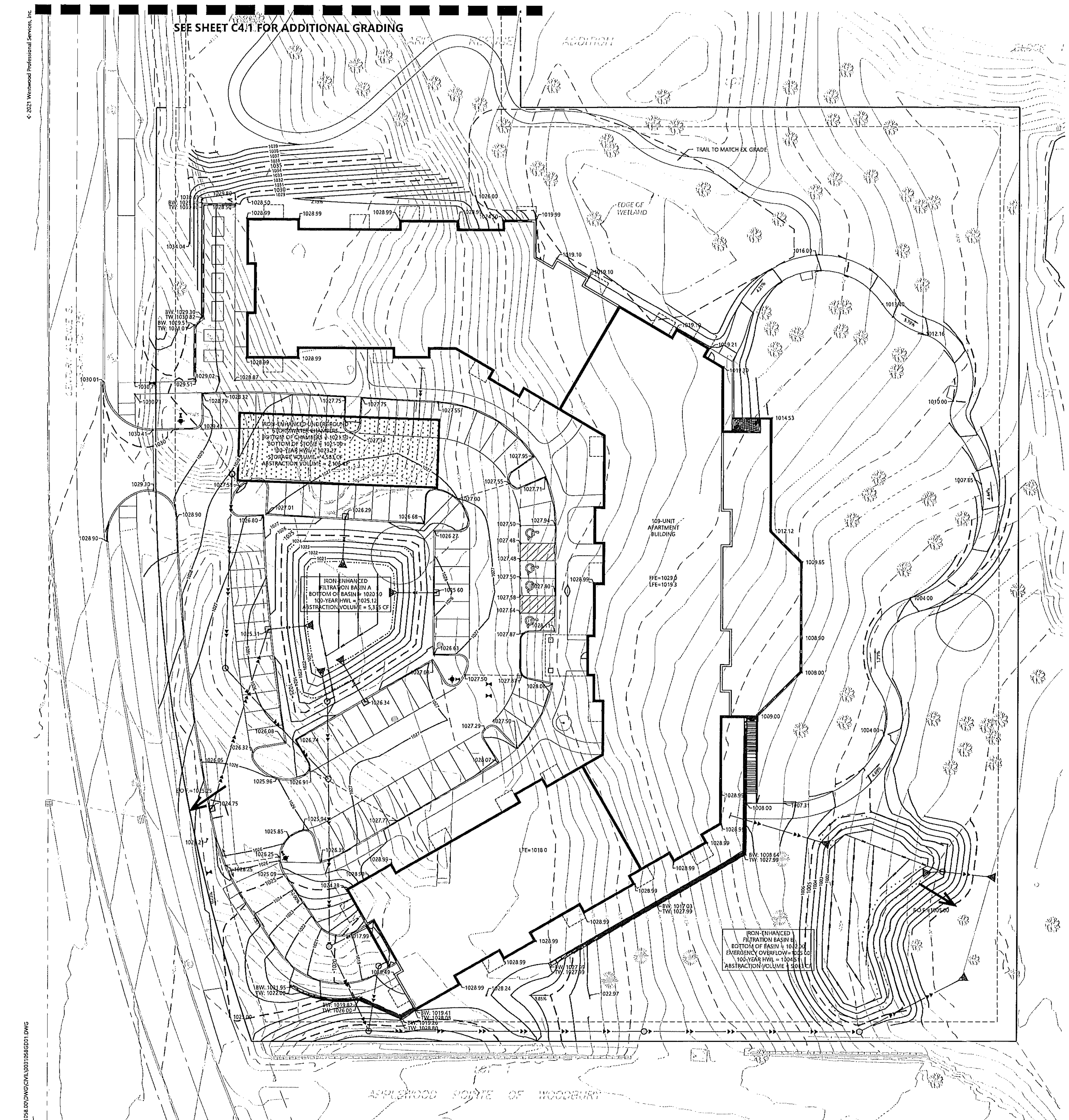
6. The applicant shall add construction details for proposed erosion control practices (perimeter control, inlet protection, construction entrances, etc).

7. The applicant shall submit the final, signed plans set.

8. The applicant shall submit the executed stormwater maintenance agreement.

9. The applicant shall submit a draft, site-specific BMP Operations & Maintenance Plan. A final, as-built O&M Plan will be required prior to permit closure.

10. The applicant shall submit a copy of the approved Minnesota Pollution Control Agency's NPDES Construction Permit coverage for the project.



GRADING LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
	980	INDEX CONTOUR
	982	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
	× 900.00	SPOT ELEVATION
	0.00%	FLOW DIRECTION
	TW=XXX.XX / BW=XXX.XX	TOP AND BOTTOM OF RETAINING WALL
	E.O.F.=XXX.XX	EMERGENCY OVERFLOW
	SB-19	SOIL BORING LOCATION

Call 48 Hours before digging:
811 or call811.com
Common Ground Alliance

GRADING NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. 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
6. ALL SLOPES SHALL BE GRADED TO 3:1 OR FLATTER, UNLESS OTHERWISE INDICATED ON THIS SHEET.
7. 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.
8. **SPOT ELEVATIONS SHOWN INDICATE FINISHED PAVEMENT ELEVATIONS & GUTTER FLOW LINE UNLESS OTHERWISE NOTED. PROPOSED CONTOURS ARE TO FINISHED SURFACE GRADE.**
9. SEE SOILS REPORT FOR PAVEMENT THICKNESSES AND HOLD DOWNS
10. 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.
11. CONTRACTOR SHALL PROVIDE A STRUCTURAL RETAINING WALL DESIGN CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER.
12. ALL CONSTRUCTION SHALL CONFORM TO LOCAL, STATE AND FEDERAL RULES INCLUDING THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS.
13. 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.
14. 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.
15. 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.
16. 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.

RWMWD NOTES

- CONTRACTOR TO KEEP STORMWATER SYSTEMS OFFLINE AND PROTECTED FROM CONSTRUCTION ACTIVITY AND CLOGGING BY SEDIMENT UNTIL ALL CONTRIBUTING AREAS ARE PERMANENTLY RESTORED.
- CONTRACTOR TO NOTIFY NICOLE SODERHOLM, RWMWD, AT 651-792-7976 PRIOR TO BEGINNING ANY AND ALL CONSTRUCTION ACTIVITY FOR AN INITIAL SWPPP INSPECTION.
- CONTRACTOR TO NOTIFY NICOLE SODERHOLM, RWMWD, AT 651-792-7976 AT LEAST 48 HOURS PRIOR TO THE CONSTRUCTION OF ANY VOLUME REDUCTION BMPS.
- EROSION/SEDIMENT CONROL PRACTICES AS SHOWN ARE THE MINIMUM. ADDITIONAL PRACTICES MAY BE REQUIRED DURING THE COURSE OF CONSTRUCTION.

1" = 20'

0' 20' 40' 60'

NOT FOR CONSTRUCTION

LSE
ARCHITECTS
LAWAL SCOTT ERICKSON ARCHITECTS, INC.
100 Portland Ave. South, Suite 100
Minneapolis, MN 55401
612.343.1010 office
612.338.2280 fax
www.lse-architects.com

United Properties - Amira Senior Living of Woodbury

Amira

Century Avenue South
Woodbury, MN

Westwood
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
westwoodps.com
952.937.5150 phone
952.937.5822 fax
952.937.5150 toll free
Westwood Professional Services, Inc.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DANIEL M. PARKS
DATE: 12/22/21 LICENSE NO. 18919

NOT FOR CONSTRUCTION

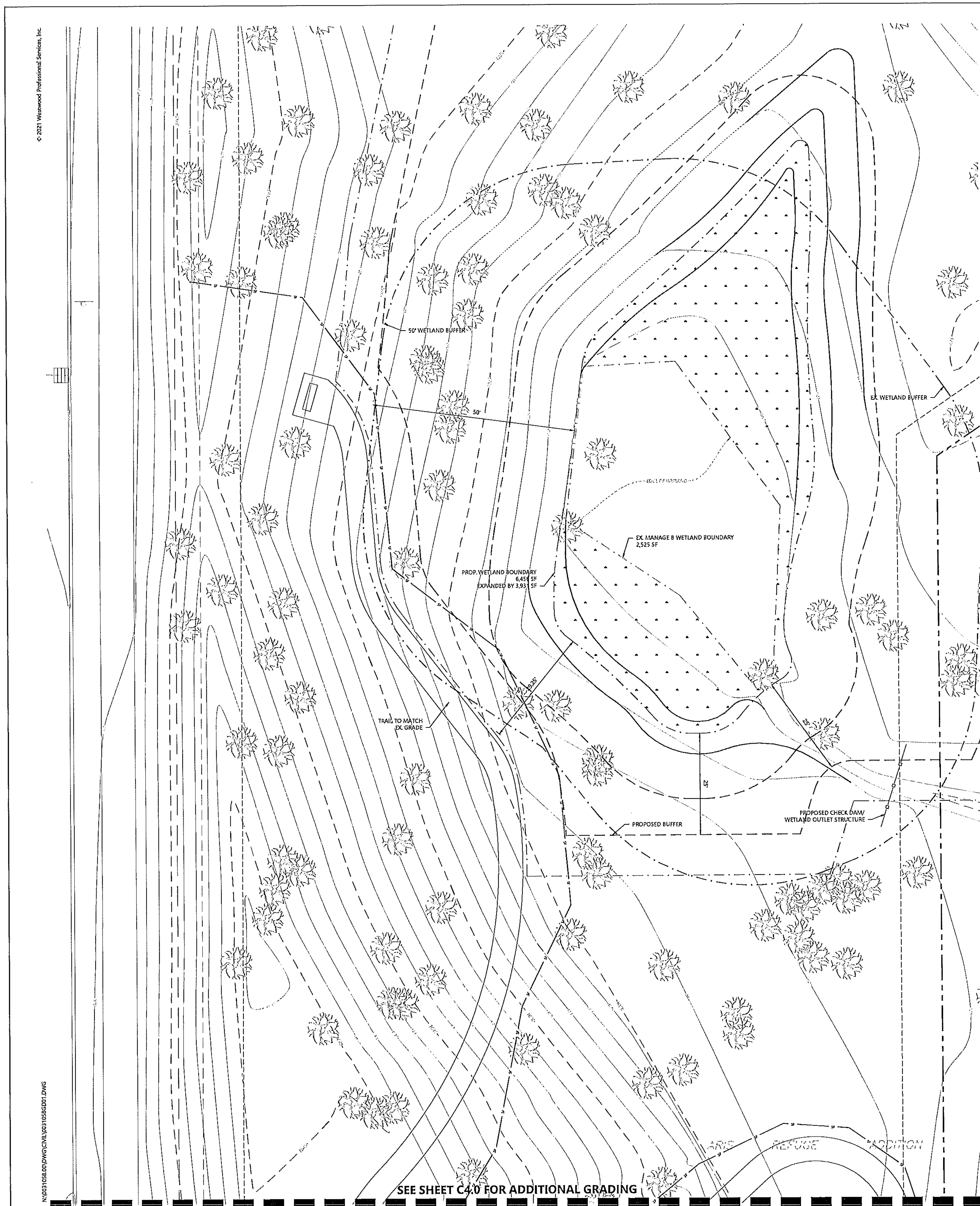
No.	Date	Revision Description
	12/22/21	CITY COMMENTS

PUD/PRELIMINARY PLAT SUBMISSION

UNITED PROPERTIES

GRADING PLAN

Project	21.1021.01	Drawing Number
Date	12/03/21	
Drawn by	TDM	C4.0
Checked by	DMP	



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		SANITARY SEWER
		RETAINING WALL
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		RIDGE LINE
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	E.O.F.	EMERGENCY OVERFLOW
	SB-19	SOIL BORING LOCATION

GRADING NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. ALL SLOPES SHALL BE GRADED TO 3:1 OR FLATTER, UNLESS OTHERWISE INDICATED ON THIS SHEET.
7. 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.
8. **SPOT ELEVATIONS SHOWN INDICATE FINISHED PAVEMENT ELEVATIONS & GUTTER FLOW LINE UNLESS OTHERWISE NOTED. PROPOSED CONTOURS ARE TO FINISHED SURFACE GRADE.**
9. SEE SOILS REPORT FOR PAVEMENT THICKNESSES AND HOLD DOWNS.
10. 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.
11. CONTRACTOR SHALL PROVIDE A STRUCTURAL RETAINING WALL DESIGN CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER.
12. ALL CONSTRUCTION SHALL CONFORM TO LOCAL, STATE AND FEDERAL RULES INCLUDING THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS.
13. 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.
14. 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.
15. 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.
16. 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.

1" = 10'

0' 10' 20' 30'

NOT FOR CONSTRUCTION

LSE ARCHITECTS
LAWAL SCOTT ERICKSON ARCHITECTS, INC.
100 Portland Ave. South, Suite 100
Minneapolis, MN 55401
612.343.1010 office
612.338.2260 fax
www.lse-architects.com

United Properties - Amira
Senior Living of Woodbury

Amira

Century Avenue South
Woodbury, MN

Westwood
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
westwoodps.com
952.937.5150 phone
952.937.5822 fax
952.937.5150 toll free
Westwood Professional Services, Inc.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DANIEL M. PARKS
DATE: 12/22/21 LICENSE NO. 18919

NOT FOR CONSTRUCTION

No.	Date	Revision Description
	12/22/21	CITY COMMENTS

PUD/PRELIMINARY PLAT SUBMISSION

UNITED PROPERTIES

TRAIL & WETLAND
EXPANSION PLAN

Project	21.1021.01	Drawing Number
Date	12/03/21	
Drawn by	TDM	C4.1
Checked by	DMP	

N:\0031058.00\DWG\CIVIL\0031058GD01.DWG

Westwood

12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343

main (952) 937-5150
fax (952) 937-5822

MEMORANDUM

Date: January 24, 2022

Re: Amira Senior Living - Rule E Variance Request
File 0033270.00

To: Nicole Soderholm, Permit Coordinator
Ramsey-Washington Metro Watershed District

From: Tyler Maxson, PE

This memo summarizes the Amira Senior Living project's requested variance from the Ramsey-Washington Metro Watershed District (RWMWD) Rules – Rule E Wetland Management.

RWMWD Rule E.3(d) outlines the no-disturb wetland buffers required by the watershed. RWMWD Rule E.3(d)(4) allows for the temporary disturbance of wetland buffer for wetland replacement through mitigation.

It is requested that a variance be allowed to this rule for temporary disturbance in the buffers of wetlands WB-01 and WB-02. See a map of the delineated wetlands in Exhibit 1. The variance would allow the construction of a Senior Living facility and the expansion of wetland WB-02.

The location of the proposed building was decided upon with the assistance of the city. The building will be constructed approximately 13' from wetland WB-01 (a Manage C wetland) and its construction will require temporary disturbance within wetland WB-01's 12.5' minimum buffer. The size and shape of the building was reduced from the developer's original plan in order to minimize wetland disturbance. Tree preservation was also a major factor in the ultimate building footprint and placement.

The proposed plan also includes the construction of new wetland that is not required by district or city rules. The construction of additional wetlands fulfills the district policy to increase the quantity of wetlands in the district (Rule E.1(b)). The aforementioned Rule E.3(d)(4) allows disturbance of wetland buffer for construction of new wetland, but only if the new wetland is constructed for the purpose of mitigation which is not the case in the proposed plan.

As the proposed construction meets the stated goals of the district and the spirit of Rule E.3(d)(4), we request a variance to RWMWD Rule E.3(d).

The wetland replacement area will be constructed immediately surrounding Wetland WB-02 as shown on the attached Wetland Construction Plan (Exhibit 2). Wetland WB-02 will be enlarged to the north and south by expanding the existing 1021 contour. Wetland has been assumed below the 1021.5 elevation. Buffer has been calculated above 1021.5. The existing wetland naturally drains to

Westwood

12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343

main (952) 937-5150
fax (952) 937-5822

MEMORANDUM

the southeast through a shallow drainage swale. A check dam/wetland outlet structure is proposed in this location to help regulate and maintain wetland hydrology at the 1021.5 elevation.

The construction of the building, site, and wetland is expected to take approximately 12 to 18 months. The project is not proposing vegetation restoration. Seeding plans for the disturbed and newly created buffers and wetlands are provided in Exhibit 3.

Data Source(s): Westwood (2021); Minnesota DNR - Minerals Division/Section of Wildlife (2017); Census Bureau (2017); USDA NAIP Renville County (2019); MnTopo Contours (Accessed 2020).

Legend

- Delineation Area
- Original Wetland Delineation
- Updated Boundary
- Off-Site Stormwater Pond
- Off-Site Wetland Boundary
- Upland Sample Point
- Wetland Sample Point
- 10ft Contour
- 2ft Contour

Westwood
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

Amira Senior Living

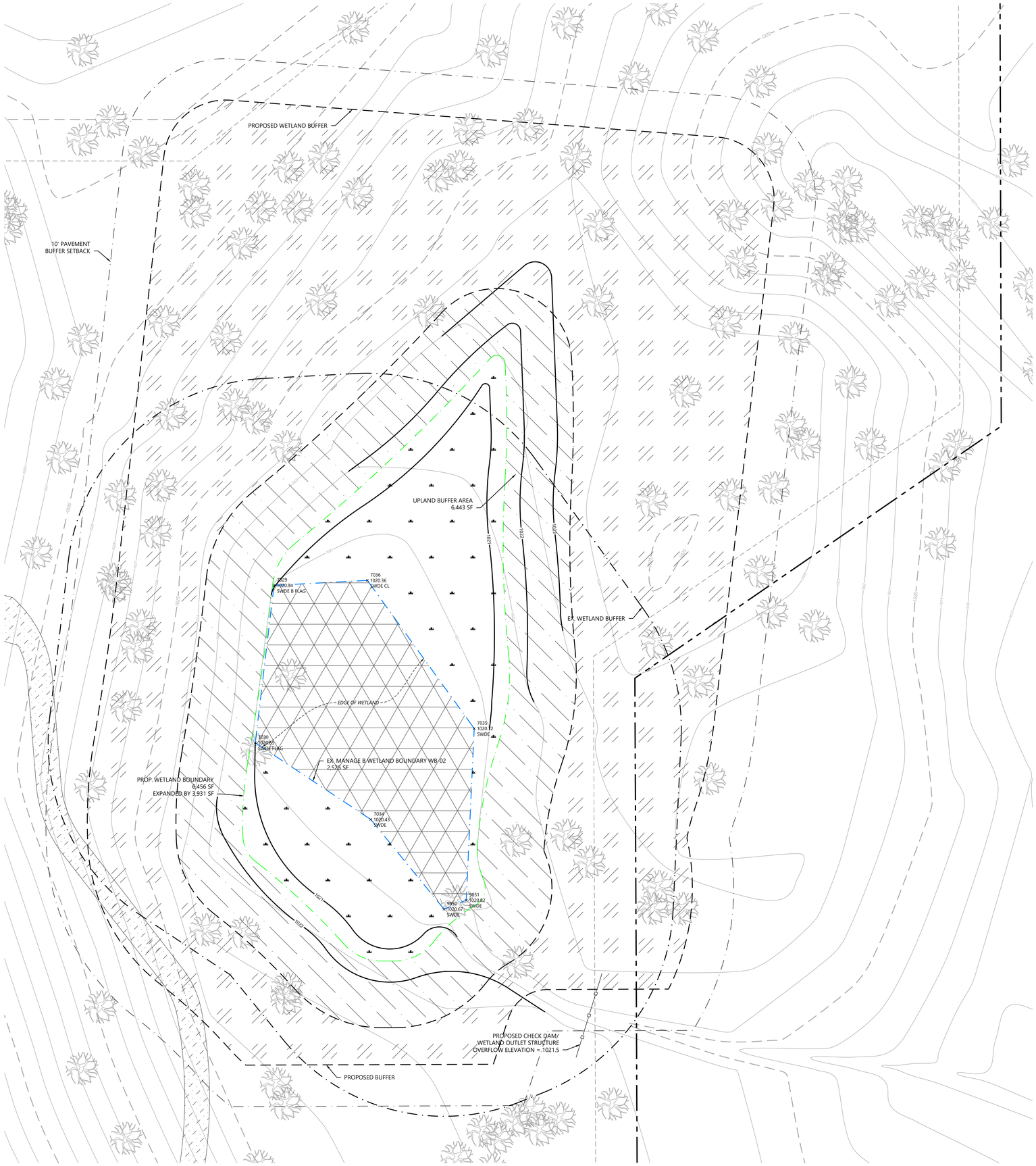
City of Woodbury
Washington County, Minnesota

Delineated Wetlands & LiDAR Contours

EXHIBIT 1

Map Document: N:\00310568.00\GIS\MXD\WetExhibits\211209_Update\ASL_Ex4_DelineatedWetlandsContours_211209.mxd 12/9/2021 10:35:22 AM embois en

Call 48 Hours before digging:
811 or call811.com
Common Ground Alliance



LEGEND

- EXISTING WETLAND BOUNDARY
- PROPOSED WETLAND BOUNDARY
- WETLAND BUFFER BOUNDARY
- WETLAND BUFFER BOUNDARY SETBACK
- EXISTING CONTOURS
- 982 PROPOSED CONTOURS
- EXISTING WETLAND AREA
- PROPOSED WETLAND AREA
- UPLAND BUFFER AREA
- BUFFER AREA
- NATURAL SURFACE TRAIL

1" = 10'
0' 10' 20' 30'

NOT FOR CONSTRUCTION

DESIGNED:
CHECKED:
DRAWN:
HORIZONTAL SCALE: 1"
VERTICAL SCALE:

INITIAL ISSUE 12/10/21
REVISIONS:
1 #### #### #### #### ####
2 #### #### #### #### ####
3 #### #### #### #### ####
4 #### #### #### #### ####

PREPARED FOR:
UNITED PROPERTIES
651 NICOLLET MALL, SUITE 450
MINNEAPOLIS, MN 55402

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: XX/XX/XX LICENSE NO. ———

AMIRA SENIOR LIVING
WOODBURY, MN

Westwood
Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150
12701 Whitewater Drive, Suite #200
Minnetonka, MN 55343
www.westwoodps.com
Westwood Professional Services, Inc.

WETLAND CONSTRUCTION PLAN

SHEET NUMBER:
EXHIBIT 2
DATE: 01/24/22

AMIRA SENIOR LIVING OF WOODBURY
PROJECT NUMBER: 0033270.00

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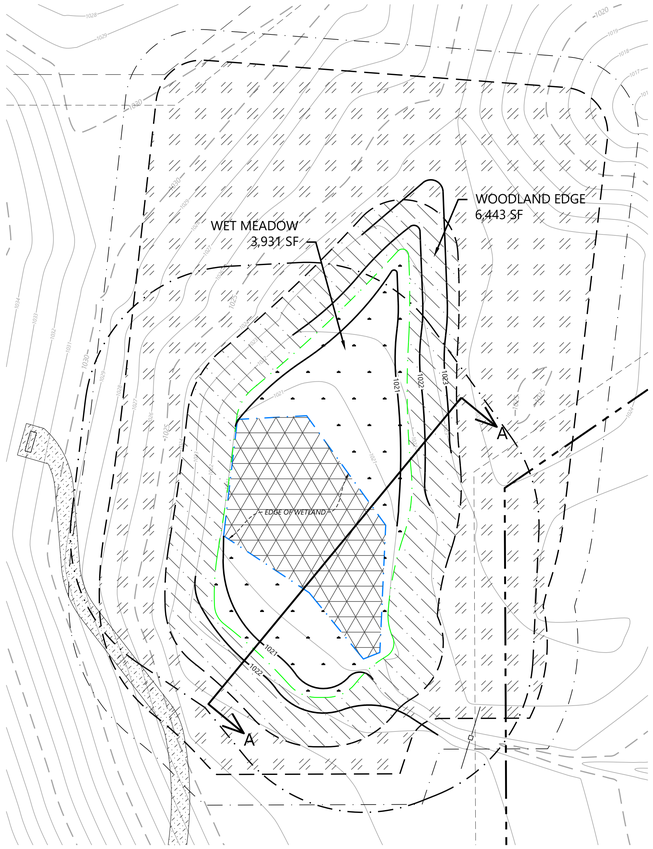
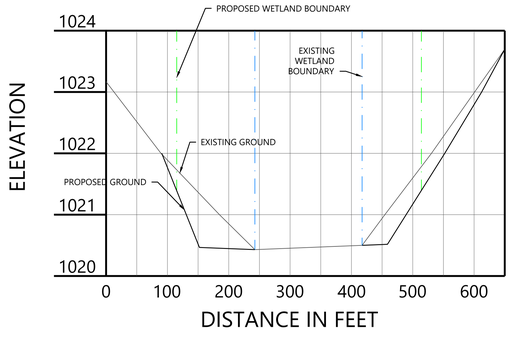


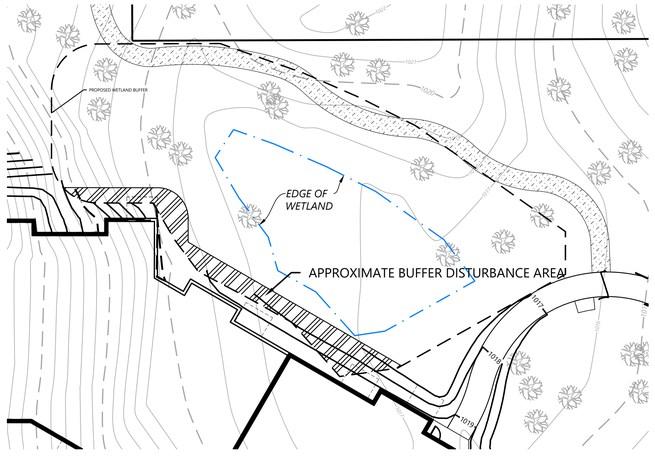
LEGEND

- EXISTING WETLAND BOUNDARY
- PROPOSED WETLAND BOUNDARY
- WETLAND BUFFER BOUNDARY
- WETLAND BUFFER BOUNDARY SETBACK
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING WETLAND AREA
- WET MEADOW SEED MIX
- WOODLAND EDGE SEED MIX
- NATURAL GROUND COVER
- NATURAL SURFACE TRAIL
- APPROXIMATE BUFFER DISTURBANCE

1" = 20'
0' 20' 40' 60'

SECTION A-A





BWSR · DEPARTMENT OF TRANSPORTATION · DEPARTMENT OF NATURAL RESOURCES

Woodland Edge

36-211

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	*Andropogon gerardii*	1.12	1.00	2.90%	3.68
side-oats grama	*Bouteloua curtipendula*	1.12	1.00	2.89%	2.20
kalm's brome	*Bromus kalmii*	1.68	1.50	4.34%	4.40
nodding wild rye	*Elymus canadensis*	1.40	1.25	3.61%	2.38
bottlebrush grass	*Elymus hystrix*	0.36	0.32	0.91%	0.88
slender wheatgrass	*Elymus trachycaulus*	1.40	1.25	3.64%	3.18
switchgrass	*Panicum virgatum*	0.07	0.06	0.17%	0.30
little bluestem	*Schizachyrium scoparium*	0.69	0.62	1.79%	3.40
Indian grass	*Sorghastrum nutans*	1.12	1.00	2.89%	4.40
	Total Grasses	**8.97**	**8.00**	**23.14%**	**24.82**
common yarrow	*Achillea millefolium*	0.03	0.03	0.09%	2.00
blue giant hyssop	*Agastache foeniculum*	0.11	0.10	0.28%	3.20
white snakeroot	*Ageratina altissima*	0.03	0.03	0.09%	1.70
white prairie clover	*Dalea candida*	0.19	0.17	0.50%	1.20
Canada tick trefoil	*Desmodium canadense*	0.16	0.14	0.42%	0.29
ox-eye	*Heliopsis helianthoides*	0.15	0.13	0.38%	0.30
wild bergamot	*Monarda fistulosa*	0.07	0.06	0.18%	1.60
stiff goldenrod	*Oligoneuron rigidum*	0.07	0.06	0.17%	0.90
Clayton's sweet cicely	*Osmorhiza claytonii*	0.07	0.06	0.17%	0.06
smooth wild rose	*Rosa blanda*	0.07	0.06	0.17%	0.06
black-eyed susan	*Rudbeckia hirta*	0.20	0.18	0.52%	6.10
Lance-leaved Figwort	*Scrophularia lanceolata*	0.06	0.05	0.14%	3.20
zigzag goldenrod	*Solidago flexicaulis*	0.02	0.02	0.05%	0.50
showy goldenrod	*Solidago speciosa*	0.07	0.06	0.18%	1.80
smooth aster	*Symphyotrichum laeve*	0.07	0.06	0.19%	1.30
American vetch	*Vicia americana*	0.20	0.18	0.52%	0.14
golden alexanders	*Zizia aurea*	0.12	0.11	0.33%	0.46
	Total Forbs	**1.68**	**1.50**	**4.38%**	**24.80**
Oats	*Avena sativa*	28.02	25.00	72.48%	11.14
	Total Cover Crop	**28.02**	**25.00**	**72.48%**	**11.14**
	Totals:	**38.67**	**34.50**	**100.00%**	**60.75**
Purpose:	Partly shaded grassland planting for native roadsides, reclamation, etc.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

BWSR · DEPARTMENT OF TRANSPORTATION · DEPARTMENT OF NATURAL RESOURCES

Wet Meadow

34-271

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
fringed brome	*Bromus ciliatus*	1.23	1.10	9.18%	4.45
bluejoint	*Calamagrostis canadensis*	0.06	0.05	0.41%	5.00
Virginia wild rye	*Elymus virginicus*	1.12	1.00	8.37%	1.55
rice cut grass	*Leersia oryzoides*	0.28	0.25	2.07%	3.10
tall manna grass	*Glyceria grandis*	0.17	0.15	1.26%	3.90
fowl manna grass	*Glyceria striata*	0.11	0.10	0.83%	3.30
fowl bluegrass	*Poa palustris*	0.39	0.35	2.88%	16.50
	Total Grasses	**3.36**	**3.00**	**25.00%**	**37.80**
bristly sedge	*Carex comosa*	0.24	0.21	1.78%	2.36
pointed broom sedge	*Carex scoparia*	0.06	0.05	0.43%	1.60
awl-fruited sedge	*Carex stipata*	0.19	0.17	1.40%	2.10
tussock sedge	*Carex stricta*	0.03	0.03	0.21%	0.50
fox sedge	*Carex vulpinoidea*	0.16	0.14	1.13%	5.00
path rush	*Juncus tenuis*	0.04	0.04	0.34%	15.00
dark green bulrush	*Scirpus atrovirens*	0.20	0.18	1.48%	30.00
woolgrass	*Scirpus cyperinus*	0.09	0.08	0.67%	50.00
	Total Sedges and Rushes	**1.01**	**0.90**	**7.44%**	**106.56**
marsh milkweed	*Asclepias incarnata*	0.27	0.24	2.03%	0.43
common boneset	*Eupatorium perfoliatum*	0.02	0.02	0.18%	1.30
grass-leaved goldenrod	*Euthamia graminifolia*	0.01	0.01	0.06%	1.00
spotted Joe pye weed	*Eutrochium maculatum*	0.02	0.02	0.18%	0.75
autumn sneezeweed	*Helenium autumnale*	0.03	0.03	0.23%	1.30
sawtooth sunflower	*Helianthus grosseserratus*	0.04	0.04	0.30%	0.20
great lobelia	*Lobelia siphilitica*	0.02	0.02	0.13%	2.90
blue monkey flower	*Mimulus ringens*	0.01	0.01	0.07%	6.80
Virginia mountain mint	*Pycnanthemum virginianum*	0.07	0.06	0.53%	5.10
giant goldenrod	*Solidago gigantea*	0.02	0.02	0.14%	1.50
eastern panicled aster	*Symphyotrichum lanceolatum*	0.03	0.03	0.22%	1.50
red-stemmed aster	*Symphyotrichum puniceum*	0.19	0.17	1.42%	5.00
tall meadow-rue	*Thalictrum dasycarpum*	0.01	0.01	0.12%	0.11
blue vervain	*Verbena hastata*	0.15	0.13	1.12%	4.61
bunched ironweed	*Vernonia fasciculata*	0.03	0.03	0.28%	0.30
Culver's root	*Veronicastrum virginicum*	0.01	0.01	0.12%	4.20
golden alexanders	*Zizia aurea*	0.28	0.25	2.06%	1.00
	Total Forbs	**1.23**	**1.10**	**9.19%**	**38.00**
Oats	*Avena sativa*	7.85	7.00	58.37%	3.12
	Total Cover Crop	**7.85**	**7.00**	**58.37%**	**3.12**
	Totals:	**13.45**	**12.00**	**100.00%**	**185.48**
Purpose:	Wet meadow / Sedge meadow reconstruction for wetland mitigation or ecological restoration projects				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

WETLAND REPLACEMENT SEEDING NOTES
BWSR SEED MIXTURES
Amira Senior Living
Woodbury, Minnesota

1. WETLAND REPLACEMENT SEED MIXES SHALL BE ACQUIRED FROM A LOCAL NATIVE SEED RETAILER AND INSTALLED IN ACCORDANCE WITH:
   - *NATIVE VEGETATION ESTABLISHMENT AND ENHANCEMENT* (BWSR 2019) [see https://bwsr.state.mn.us/sites/default/files/2019-01/Updated%20guidelines%2012-20-18.pdf].
2. THE CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION OF NATIVE WETLAND SEED MIX CONTENTS AND SUPPLIERS FOR APPROVAL BY THE ENVIRONMENTAL SCIENTIST PRIOR TO INSTALLATION.
3. THE CONTRACTOR SHALL SUPPLY THE SEED TAGS TO THE ENVIRONMENTAL SCIENTIST.
4. THE CONTRACTOR SHALL CONTACT THE ENVIRONMENTAL SCIENTIST AT (952) 937-5150 PRIOR TO SEEDING AND THE ENVIRONMENTAL SCIENTIST MUST BE PRESENT AT THE START OF SEEDING.
5. AFTER COMPLETION OF FINAL GRADING, THE SEEDBED SHALL BE PREPARED AND SMOOTHED SO THAT TO BREAK UP ROOT SYTEMS AND SOIL CLODS SO THAT THE AVERAGE CLUMP IS LESS THAN 2 INCHES IN DIAMETER.
6. PRIOR TO SEEDING, THE CONTRACTOR SHALL KILL AND PLOW OR DISC VEGETATION THAT COVERS MORE THAN 25 PERCENT OF THE GROUND IN THE AREA TO BE SEEDED.
7. THE SEEDBED SHALL BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES.
8. SEEDING SHALL NOT BE CONDUCTED BETWEEN JULY 10 AND AUGUST 20.
9. THE CONTRACTOR SHALL SEED: (1) BWSR SEED MIXTURE 34-271 (WET MEADOW SOUTH AND WEST) ON DISTURBED SOILS BELOW PREDICTED WATER LEVELS AND (2) BWSR SEED MIXTURE 36-211 (WOODLAND EDGE SOUTH & WEST) ON DESTURBED SOILS ABOVE WATER LEVELS WITHIN THE WETLAND REPLACEMENT AREAS AND ADJACENT UPLAND BUFFER AS SHOWN ON THE WETLAND SEEDING PLAN.
10. BWSR SEED MIXTURES 34-271 AND 36-211 SHALL BE SEEDED AS PURE LIVE SEED AT THE RATES PER ACRE SHOWN IN THE ATTACHED SEED MIX TABLES.
11. SUBSTITUTIONS OF SIMILAR SPECIES OR MIXES MUST BE APPROVED BY THE ENVIRONMENTAL SCIENTIST.
12. PRIOR TO SEEDING, THE CONTRACTOR SHALL KILL AND PLOW OR DISC VEGETATION THAT COVERS MORE THAN 25 PERCENT OF THE GROUND IN THE AREA TO BE SEEDED.
13. THE SEEDBED SHALL BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES.
14. SEED SHALL BE BROADCAST EVENLY OVER THE SEEDBED BY HAND OR BY USE OF A MECHANICAL "CYCLONE" SEEDER.
15. SEEDED AREAS SHALL BE MULCHED WITH MN/DOT TYPE 3 (MCIA CERTIFIED WEED FREE GRAIN STAW) MULCH AT A RATE OF 2 TONS PER ACRE AND THE MULCH SHALL BE ANCHORED WITH A DISC OR TACKIFIER.
16. THE SEEDING SHALL BE ACCEPTED BY THE ENVIRONMENTAL SCIENTIST AT THE END OF THE FIRST COMPLETE GROWING SEASON IF THE NURSE CROPS AND EARLY ESTABLISHING SPECIES ARE PRESENT IN REASONABLE DENSITY.

NOT FOR CONSTRUCTION

DESIGNED:
CHECKED:
DRAWN:
HORIZONTAL SCALE: 20'
VERTICAL SCALE: 4' or 2'

INITIAL ISSUE	12/10/21
REVISIONS:	
1	####
2	####
3	####
4	####
5	####
6	####

PREPARED FOR:
UNITED PROPERTIES
651 NICOLLET MALL, SUITE 450
MINNEAPOLIS, MN 55402

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: XX/XX/XX LICENSE NO. ———

AMIRA SENIOR LIVING
WOODBURY, MN

Westwood
Phone (952) 937-5150 12701 Whitewater Drive, Suite #200
Fax (952) 937-5822 Minnetonka, MN 55343
Toll Free (888) 937-5150 www.westwoodps.com
Westwood Professional Services, Inc.

WETLAND SEEDING DETAILS

SHEET NUMBER:
EXHIBIT 3

DATE: 01/24/22

AMIRA SENIOR LIVING OF WOODBURY

PROJECT NUMBER: 0033270.00

N:\0033\058.00\DWG\EXHIBITS\WETLAND MITIGATION PLAN2.DWG

RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

MEMORANDUM

Date: February 2, 2022

To: Board of Managers and Staff

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

Subject: January Enforcement Action Report

During January 2022:

Number of Violations: **0**

Activities:

Permitting assistance to private developers and public entities, miscellaneous resident inquiries, ongoing ESC site checks, WCA administration, new permit review with Barr Engineering, Construction Site Management recertification, 2021 BMP cost-benefit analysis, file organizing and archiving, inspection prep for 2022 field season, WCA Annual Report, Metro Gold Line/MnDOT coordination meetings, MPCA pretreatment webinar

Project Updates:

As temps hover below freezing for a large majority of the month of January, staff have found construction sites to be fairly quiet and frozen. Staff drove throughout the District on January 18th-19th to check on activity. Sites visited include 7th Street Townhomes (#20-09), Anchor View Apartments (#20-30), Maplewood Elementary (#20-22), 748 Bielenberg Medical Office Building (#21-22), American Indian Magnet School Addition (#19-42), The Parkway (#20-36), Carver Elementary School Addition (#20-01), Mondello Shores (#20-16), John Glenn Middle School Addition (#20-07), Maplewood Fire Station County Road C (#21-06), and Elim Care Assisted Living (#19-48). All sites were snow-covered with no earth-moving activity occurring. Staff will continue to monitor sites throughout the below-freezing temps to check on construction progress and resume full inspections once site conditions allow.

Single Lot Residential Permits Approved by Staff:

None

Permits Closed:

None

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
(651) 792-7950
rwmwd.org
2665 Noel Drive
Little Canada, MN 55117

Erosion and Sediment Control Inspection

Permit Number **20-26** **Project Name** Owasso Gardens

Inspector Fitzgerald, Mary

Insp. Date 9/8/2021 **Insp.Time** 10:15AM **Amount of rain in last 24 hours** 0 **inches**

Weather conditions sunny, 70 degrees

Site conditions dry

A SEDIMENT CONTROL

1 All inlet control BMPs are installed and functioning. ○Compliant ◉Non-Compliant ○N/A ○Under Review

Inlet protection needs to be reinstalled in inlet at east end of site adjacent to new sidewalk. This should be kept installed until all contributing drainage areas have permanent vegetation cover.

2 Down gradient perimeter control is installed and functioning down gradient prior to land disturbing activities. ○Compliant ◉Non-Compliant ○N/A ○Under Review

Reinstallation of perimeter control needed throughout the site. Keep installed until all down gradient exposed soil is vegetated. Back of curb perimeter control needed where exposed soil slopes towards paved surfaces.

3 Adequate up gradient BMPs are installed and functioning to control sediment runoff. ○Compliant ○Non-Compliant ◉N/A ○Under Review

4 Construction entrance(s) are installed and functioning to prevent sediment tracking onto paved surfaces. ○Compliant ○Non-Compliant ○N/A ◉Under Review

All sediment tracked onto the paved parking lot needs to be removed by the end of the day. Clean up sediment at parking lot entrance.

5 Temporary sedimentation basin(s) are present and functioning properly (disturbance>10 acres). ○Compliant ○Non-Compliant ◉N/A ○Under Review

B EROSION CONTROL

1 Exposed soils that are not actively being worked for 14 days (including pond side slopes, stockpiles, and ditch bottoms) have required temporary cover. ○Compliant ○Non-Compliant ○N/A ◉Under Review

All inactive exposed soil must be temporarily or permanently stabilized within 14 days of inactivity.

2 All areas that have achieved final grade have been permanently stabilized. ○Compliant ○Non-Compliant ○N/A ◉Under Review

See above.

3 Temporary or permanent energy dissipation present at outlets connected to a surface water with 24 hours. ○Compliant ○Non-Compliant ◉N/A ○Under Review

C STORM WATER MANAGEMENT

1	Permanent storm water management BMPs are in place and are properly protected from erosion and construction traffic.	○Compliant ○Non-Compliant ○N/A ◉Under Review
	Underground system to be inspected by RWMWD prior to permit closure.	
2	Pretreatment of permanent storm water BMPs in place.	○Compliant ○Non-Compliant ○N/A ◉Under Review
	See above	
3	Dewatering activity is resulting in the discharge of clean water.	○Compliant ○Non-Compliant ◉N/A ○Under Review
4	All construction waste (including concrete washouts, hazardous materials, and construction debris) is properly managed and disposed of.	◉Compliant ○Non-Compliant ○N/A ○Under Review
5	Construction activity is not resulting in surface water, wetland, or off site erosion impacts.	○Compliant ○Non-Compliant ○N/A ◉Under Review
	Perimeter control and inlet protection must be installed until the site reaches at least 70% uniform veg cover.	

D GENERAL INSPECTION

1	Storm Water Pollution Prevention Plan (SWPPP) is available on site.	○Compliant ○Non-Compliant ○N/A ◉Under Review
	Ensure SWPPP is available and up to date.	
2	Required inspections/maintenance has been performed (every 7 days and 24 hours after 0.5" of rain) and records are available on site.	○Compliant ○Non-Compliant ○N/A ◉Under Review
	Ensure inspection log is available and up to date.	

E. INSPECTION COMMENTS

1. **Notes:**
2. **Grade:** C (Fair) -- This site is not in compliance. Maintenance or supplemental practices are required.
3. **Follow-up inspection will be conducted**

Inlet protection needs to be reinstalled in inlet at east end of site adjacent to new sidewalk. This should be kept installed until all contributing drainage areas have permanent vegetation cover.

Reinstallation of perimeter control needed throughout the site. Removal of perimeter control should only be temporary for access, and reinstalled at the end of each day, or prior to rain. Keep installed until all down gradient exposed soil is vegetated.

Back of curb perimeter control needed where exposed soil slopes towards paved surfaces.

Clean up sediment at parking lot entrance.

All sediment tracked onto the paved parking lot needs to be removed by the end of the day.

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Stewardship Grant Program

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Stewardship Grant Application Summary

Project Name: Christ Lutheran Church **Application Number:** 22-02 CS

Board Meeting Date: 2/2/2022

Applicant Name: Tracy McKee

Residential ☐ **Commercial/Government** ☑

Project Overview:

This project is located off Helen St N and 17th Ave E in North St. Paul. The applicant is planning to reconstruct the degrading parking lot to improve traffic flows and is proposing to install a series of 5 rain gardens to help filter stormwater runoff from the rooftop and parking lot. The improvements do not trigger our permit requirements and will result in a decrease in impervious surface area. The applicant was also interested in installing porous asphalt ($44,000 cost estimate), but staff are not recommending approval of that portion of the project because the rain gardens provide sufficient stormwater treatment and also due to long term maintenance concerns. This project is eligible for 100% coverage up to $100,000. The original design had a very basic planting plan which staff requested changes to resulting in a grant request a bit higher than our typical allotment.

BMP type(s):

Rain Garden(5)

Grant Request:

$101,540.00

Recommendation:

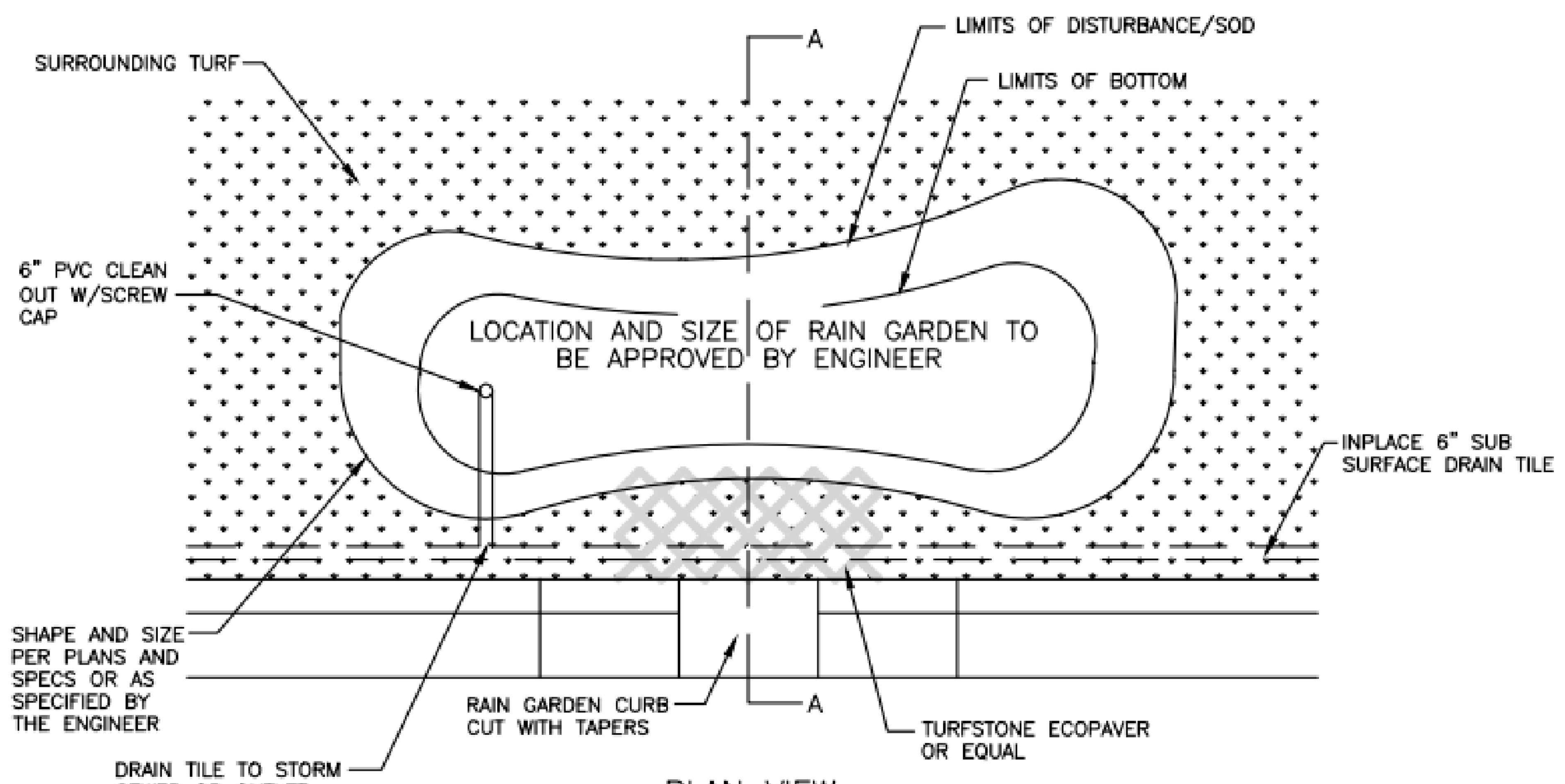
Staff recommends approval of this application.

Subwatershed:

Kohlman Creek

Location Maps:

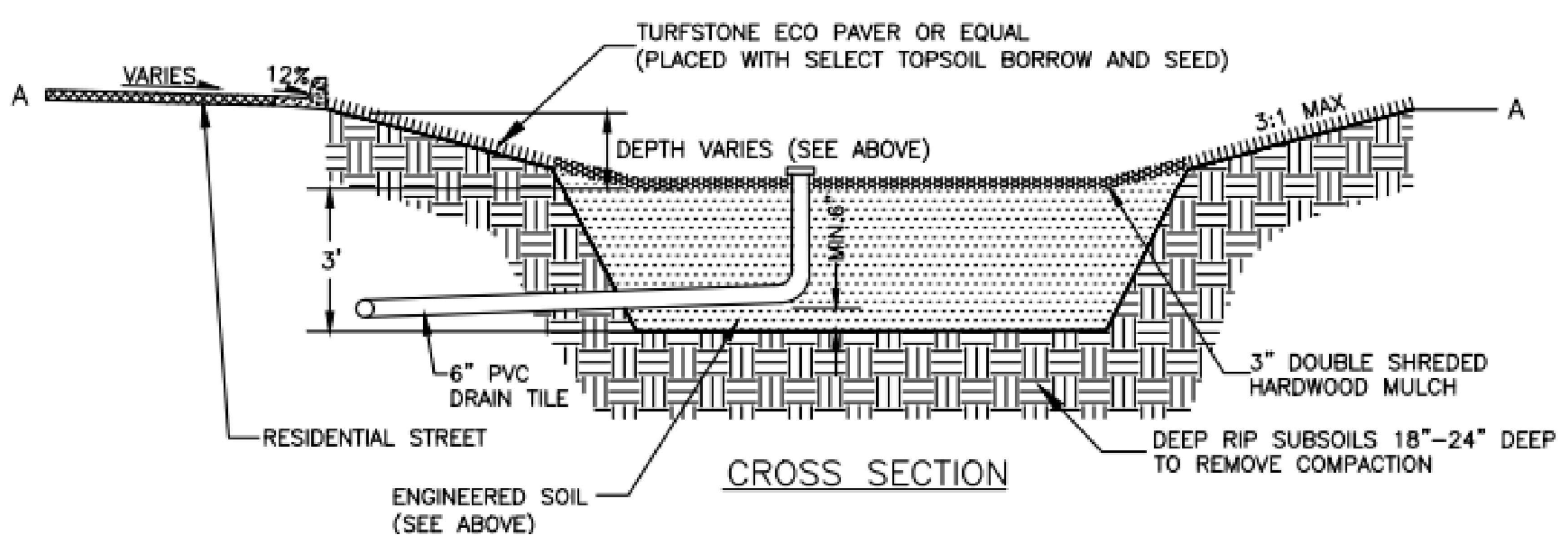

19TH AVE E
1ST ST N
Kohlman Creek Subwatershed
CENTENNIAL ROAD
13TH AVE E
6TH AVE E
Shaded areas are outside RWMWD
Parcels
Roads
Subwatersheds
Stewardship
Major Flow Arrows
Flow Arrows
RWMWD Boundary
Wetlands
Manage A
Manage B
Manage C
Not Assessed
Water Quality Pond
Lake
Feet
0 75 150
Highlighted areas (blue outline) represent proposed cost share site.



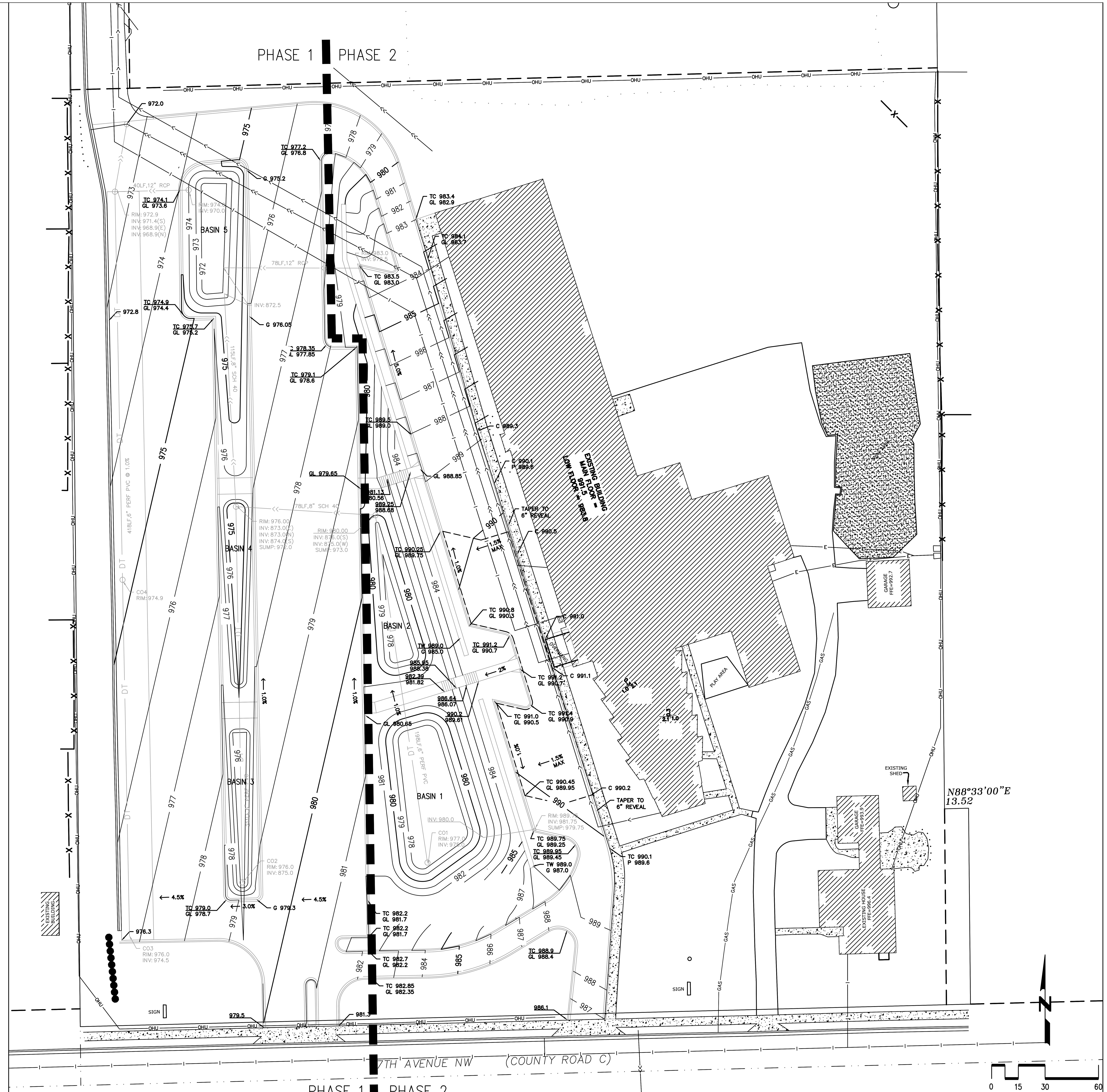
PLAN VIEW

SUBSOIL TYPE	SUBSOIL TYPE	DEPTH	ENGR. SOIL MIX
A	SAND/GRAVEL	12"	1
B	SAND WITH CLAY OR SILT	9"	1
C	CLAY OR SILT WITH SAND	6"	1 OR 2
D	CLAYS OR SILTS	6"	2

ENGINEERED SOIL
MIX 1:70% COARSE WASHED SAND (IMPORTED)
30% LEAF-LITTER COMPOST (ORGANIC, GRADE 2)
MIX: 2:70% EXISTING SOILS (WELL MIXED)
30% LEAF-LITTER COMPOST (ORGANIC GRADE 2)



CROSS SECTION



ALL EXISTING ITEMS AND CONDITIONS SHOULD BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE_________ REG. NO._________

T.A. Schifsky & SONS, INC.
2370 Highway 36 E
North Saint Paul, MN 55109
(P) 651.777.1313

NO.	REVISION	DATE	NO.	REVISION	DATE

GARADING PLAN

CHRIST LUTHERAN CHURCH
PARKING LOT REHABILITATION
2475 17TH AVE E
NORTH SAINT PAUL, MN

DRAWN:
CHECKED:
DATE:

SHEET
C2

Stewardship Grant Program Budget Status Update

February 2, 2022

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

Commercial, School, Government, Church, Associations, etc.	Coverage	Number of Projects: 2	Funds Allocated
Habitat Restoration	50% Cost Share $15,000 Max	0	$0
Shoreland Restoration (below 100-year flood elevation w/actively eroding banks)	100% Cost Share $100,000 Max	0	$0
Priority Area Projects	100% Cost Share $100,000 Max	2	$201,540*
Non-Priority Area Projects	75% Cost Share $50,000 Max	0	$0
Public Art	50% Cost Share $15,000 Max	0	$0
Aquatic Veg Harvest/LVMP Development	50% Cost Share $15,000 Max	0	$0

Maintenance	50% Cost Share $5,000 Max for 5 Years	62	$46,025
Consultant Fees			$9,000
Total Allocated			**$256,565**

2022 Stewardship Grant Program Budget	
Budget	$1,000,000
Total Funds Allocated	$256,565
Total Available Funds	**$743,435**

**Includes project pending approval at the February 2, 2022 board meeting.*

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Action Items

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BARR

Memorandum

To: Ramsey-Washington Metro Watershed District (RWMWD) Board of Managers
From: Brandon Barnes
Subject: Tanners Lake Outlet
Date: January 24, 2022
c: Tina Carstens, RWMWD District Administrator

MnDOT is in the design phase for improvements to the I-94 corridor near Tanners Lake and have identified the segment of storm sewer that serves as the Tanners Lake outlet below I-94 as needing to be replaced. A portion of this pipe is located within the construction limits of the Metro Transit Gold Line Bus Rapid Transit project on Hudson Road, which construction is anticipated to begin in 2022.

MnDOT reached out to RWMWD to ask whether the portion of Tanners Lake outlet below I-94 should be replaced with a larger pipe.

Staff have completed a preliminary review of a larger outlet from Tanners Lake, using the RWMWD stormwater model. MnDOT prepared preliminary initial cost estimates for each of the scenarios evaluated. The existing outlet configuration, scenarios evaluated, and initial cost estimates are summarized in the following sections. Staff are requesting Manager direction regarding the following:

1. Should RWMWD staff continue coordination with Metro Transit and MnDOT regarding installation of additional storm sewer capacity below Hudson Road and I-94?
2. If yes, should RWMWD staff work with MnDOT and Metro Transit to install one larger pipe (Scenario 2) or two larger pipes (Scenario 3)?

Requested Manager Action

1. Should RWMWD staff continue coordination with Metro Transit and MnDOT regarding installation of additional storm sewer capacity below Hudson Road and I-94?
2. If yes, should RWMWD staff work with MnDOT and Metro Transit to install one larger pipe (Scenario 2) or two larger pipes (Scenario 3)?

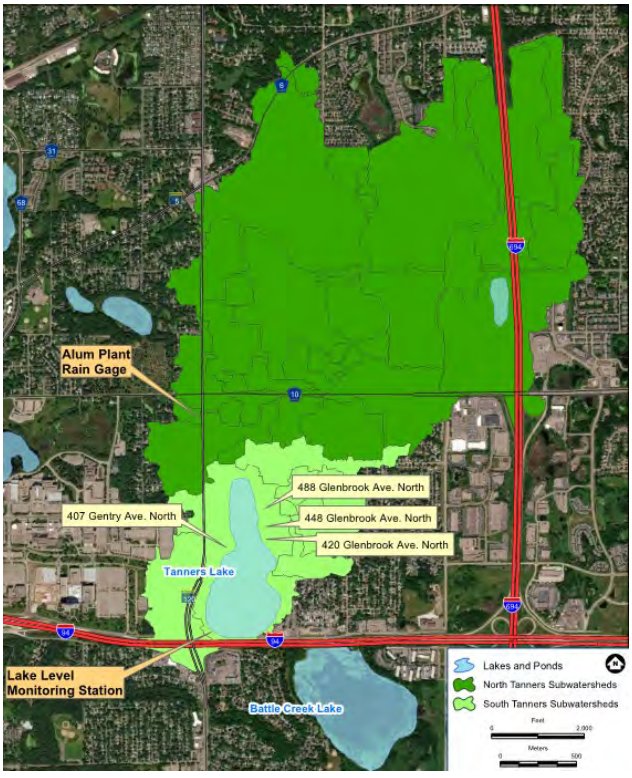

Figure 1. Tanners Lake Drainage Area

Existing Tanners Lake Flood-Risk

The drainage area to Tanners Lake is approximately 1,700 acres, primarily located in the cities of Oakdale, Landfall, Woodbury, and Maplewood (Figure 1). The current outlet was constructed by RWMWD in 1992 to replace an old deteriorating pipe that was constructed by an individual 40-years prior. The outlet from

Tanners Lake is located on the southeast side of the lake and conveys stormwater along Hudson Road though a 26-inch HDPEP. The outlet connects to a 42-inch CMP that conveys water south across I-94 and into Battle Creek Lake as shown in Figure 2.

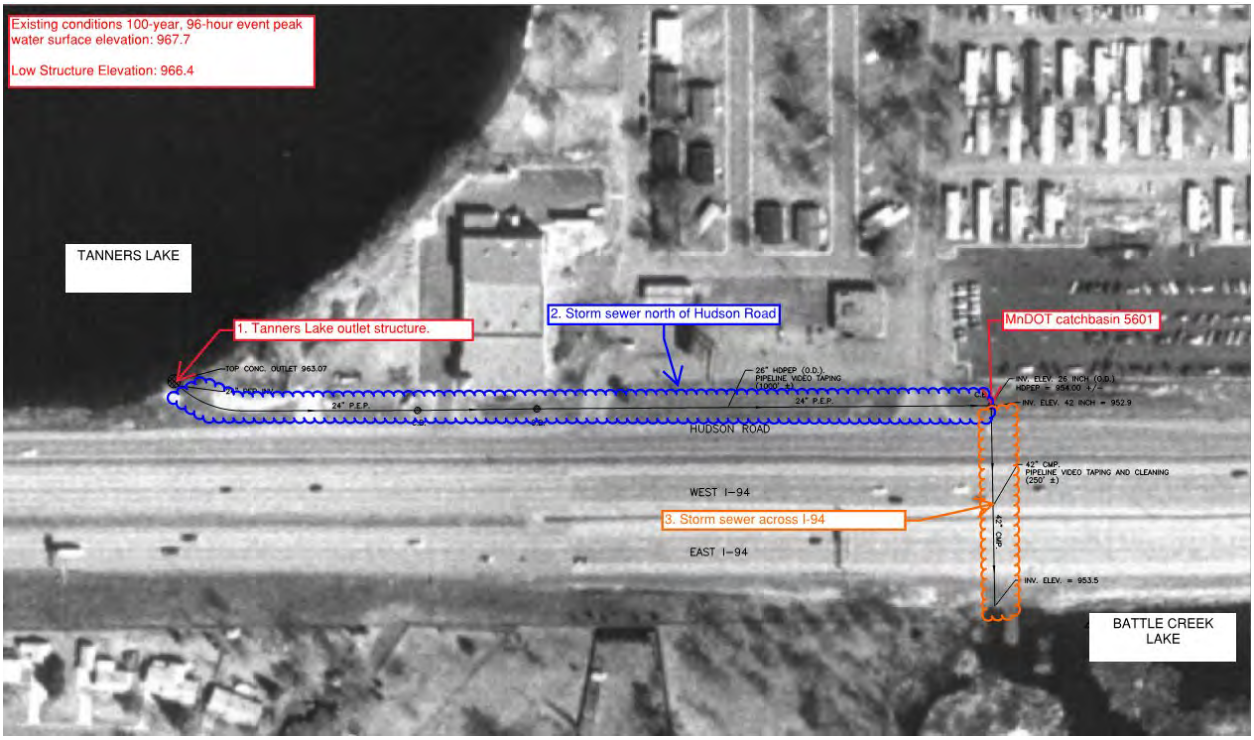

Figure 2. Tanners Lake Outlet

RWMWD has adopted rules to reduce the risk of flooding for new and redeveloping areas. However, there are four structures on Tanners Lake that are below the 100-year peak water surface elevation. During a 100-year event water also overflows from Tanners Lake into the City of Landfall, where there are several additional structures within the 100-year floodplain.

RWMWD has been working with Oakdale to prepare emergency response plans to protect homes if needed. The Emergency Response Plan (ERP) for Tanners Lake was developed by RWMWD in 2010 to define the responsibilities for operation and emergency procedures to provide flood protection for the homes on Tanners Lake. In addition to the ERP, RWMWD also installed an automatic lake level monitoring station on Tanners Lake with a call-out feature to automatically warn cities when the lake reaches a critical level. Since 2010 the city of Oakdale has utilized the call-out feature and procedures described in the ERP to inform when to mobilize flood-protection measures.

RWMWD has continued to work with the city of Oakdale to identify flood risk mitigation projects. However, currently a cost-effective, feasible, opportunity for a flood-risk reduction project (or combination of projects) within the Tanners Lake subwatershed has not been identified.

In general, there are two options for mitigating flood-risk, either storing additional stormwater upstream or increasing the amount of water conveyed downstream. Often a combination of these two approaches is required. In the Tanners Lake watershed, increasing discharge downstream has not been a viable option because of the cost to install a new pipe below I-94 and existing flood-risk on Battle Creek Lake.
On Battle Creek Lake, the 100-year peak water surface elevation floods Weir Drive cutting off access to the Ashwood Ponds Apartments, Woodland Pointe Apartments, and Anytime Fitness. In 2010 RWMWD developed an ERP for the City of Woodbury if Weir Drive overtops to define actions needed to provide emergency access to the existing apartments and business. Therefore, increasing discharge to Battle Creek Lake, and increasing the 100-year floodplain elevation, has not been considered a potential option.

Opportunity to Modify the Tanners Lake Outlet

MnDOT is in the design phase for improvements to the I-94 corridor near Tanners Lake, and identified the 42-inch pipe, which conveys flow from Tanners Lake below the interstate to Battle Creek Lake, as needing to be replaced. MnDOT is planning to replace the 42-inch pipe using open cut excavation. Because MnDOT is planning to remove the existing pipe and install a new pipe via open cut, a larger pipe could be constructed for less than installing a larger pipe using trenchless methods such as pipe jacking or micro tunneling. As part of the design phase MnDOT asked RWMWD if a larger pipe (or pipes) should be constructed below the interstate.

Storm Sewer System Evaluation

Barr used the RWMWD stormwater model to evaluate modifications to the Tanners Lake outlet required to remove the lowest home on Tanners Lake from the 100-year floodplain and prevent overflow into the City of Landfall.

The evaluation assumed that a large retention project could be constructed in the Battle Creek subwatershed to mitigate increases to the 100-year floodplain. It is possible that a smaller capacity pipe could be constructed along with a retention project in the Tanners Lake subwatershed. However, to meet the Metro Transit schedule for design of the Hudson Road segment, potential retention projects were not evaluated. (Evaluation of regional retention projects could occur at a future date, similar to the Resiliency study that was completed for the Beltline subwatershed).

As shown on Figure 2, the Tanners Lake outlet can be divided into three segments. The first is the outlet control structure, the second is the storm sewer north of Hudson Road (blue cloud), and the third is the pipe below I-94 (orange cloud). Initial model results indicate that the following modifications would be required to lower the water level on Tanners Lake.

1. Increase the capacity of the Tanners Lake outlet control structure so that it does not restrict flow when larger storm sewer is installed.
    a. **This modification is not proposed as part of the coordination with Metro Transit and MnDOT.**
2. Increase the capacity of the storm sewer north of Hudson Road (blue cloud).
    a. The Existing 26-inch HDPEP must be increased to parallel 60-inch equivalent arch pipes.

   b. The Existing 26-inch HDPEP is not anticipated to be disturbed as part of the Metro Transit GLBRT project and i**s not proposed as part of the coordination with Metro Transit and MnDOT**.
3. Increase the capacity of the 42-inch CMP below I-94 to parallel 60-inch equivalent arch pipes (orange cloud).
   a. If additional the capacity below is constructed a short segment of 42-inch pipe would be required at the downstream end (south of I-94) to prevent an increase to the Battle Creek Lake water surface elevation.
   b. Furthermore, if a second parallel pipe is constructed, it must remain plugged until downstream flood-risk reduction projects have been constructed to mitigate impacts to the peak water surface elevation on Battle Creek Lake.

However, even if a pipe remains plugged, a larger pipe could likely be constructed as part of the GLBRT and MnDOT projects for significantly less cost than if constructed via trenchless methods at a future date.

Initial Planning-Level Opinion of Probable Cost

MnDOT is working on providing cost estimates for the following scenarios:

1. Scenario 1: Replace the existing 42-inch CMP with a 42-inch RCP
2. Scenario 2: Replace the existing 42-inch CMP with a 60-inch equivalent arch pipe. The last approximately 15-feet would be a 42-inch RCP.
3. Scenario 3: Replace the existing 42-inch CMP with two 60-inch equivalent arch pipes.

Scenario 1 is what MnDOT would construct if RWMWD does not provide direction to increase the capacity of the pipe below I-94. For the purposes of cost sharing this would be the funding that MnDOT would contribute.

Scenario 2 This option includes installing the largest arch pipe that could be constructed below the interstate while avoiding existing utility conflicts. The segment of 42-inch RCP downstream of the interstate would be required to mitigate increases to the Battle Creek Lake floodplain elevation.

Scenario 3, this option is scenario 2 with a second parallel pipe that would be bulkheaded until future retention projects allow for utilization of the additional capacity without increasing the peak water surface elevation on Battle Creek Lake.

For both Scenario 2 and Scenario 3, future modifications to the storm sewer north of Hudson Road and the Tanners Lake outlet control structure would be required to fully utilize the additional capacity installed below I-94. However, because the GLBRT project is not proposing to disturb the pipe, and the pipe is not located below the interstate, these modifications could be made at a future time. Table 1 provides a comparison of opinion of costs for each scenario.

Preliminary Cost Estimates were not available at the time of this memo. Available cost estimates will be provided during the Board Meeting.

Table 1 Summary of Planning-Level Engineer's Opinion of Probable Cost

Scenario for Modifying Tanners Lake Outlet	MnDOT's Opinion of Probable Cost
Scenario 1 Replace 42-inch CMP with 42-inch RCP	*MnDOT Contribution:* *RWMWD Contribution: $0*
Scenario 2 Replace 42-inch CMP with 60-inch RCP below the interstate. Last approximately 15-feet upstream of Battle Creek Lake is 42-inch.	*MnDOT Contribution:* *RWMWD Contribution[1]:*
Scenario 3 Scenario 2 + additional 60-inch equivalent arch pipe that is plugged.	*MnDOT Contribution:* *RWMWD Contribution:*

Conclusion

MnDOT's stated construction method of open excavation provides an opportunity to cost effectively increase the pipe capacity below I-94. However, there is a risk that the additional capacity may not be utilized for several years (i.e., pipe may remain plugged or restricted to a 42-inch pipe), until a large retention project in the watershed can be constructed to mitigate increases to the peak water surface elevations on Battle Creek Lake. Staff are requesting Manager direction regarding the following:

1. Should RWMWD staff continue coordination with Metro Transit and MnDOT regarding installation of additional storm sewer capacity below Hudson Road and I-94?
2. If yes, should RWMWD staff work with MnDOT and Metro Transit to install one larger pipe (Scenario 2) or two larger pipes (Scenario 3)?

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Presentations

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RAMSEY-WASHINGTON
METRO WATERSHED DISTRICT

Memorandum

To:	Board of Managers and Staff
From:	Tina Carstens, District Administrator
Subject:	District Wetlands Discussion
Date:	January 27, 2022
c:	Karen Wold, Erin Anderson Wenz, Brad Lindaman, Barr Engineering

This memo continues the board's discussion around wetlands, our role, and activities. Last month, the board was provided information from Barr and District staff regarding searching for sites that could be pursued for wetland restoration projects. During that conversation, there were several questions about the District's classification system and the use of MnRAM. It was also mentioned that MnRAM was used by Barr staff to assess flooded wetlands in 2019.

Attached to this is the original memo regarding the assessment of flooded wetlands. For more information on how calculations are made within MnRAM, we have also attached Chapter 6: Functional Rating Formulas from the MnRAM Comprehensive Guidance Manual.

Here are some highlights of the information that is being provided. Karen Wold, Barr Engineering senior environmental scientist, will be at the meeting to answer any questions you may have.

- MnRAM was used to reassess 16 wetlands in the Grass Lake area to assess any functional changes in the wetlands between their original assessment in 2013 and 2019.
- MnRAM Site Response Records and Functional Assessment Summaries for each wetland are shown as attachments to the memo.
- Between 2013 and 2019, no classification types changed in these wetlands (all remained classified as "Manage A"- which is the highest classification rating for wetlands within the District)
- Some community types did change (for example, from "shallow marsh with wet meadow" to "open water community," sometimes leading to improvements in vegetative diversity due to the drowning out of invasive species.)
- In some cases, extra stormwater inputs into wetlands do not allow for as much attenuation for settling out nutrients and sediment to provide downstream water quality protection and may stress-sensitive vegetation.
- Other numeric value changes for various functions are described in detail in the memo for each wetland.

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BARR

Technical Memorandum

To: Ramsey-Washington Metro Watershed District (RWMWD)
From: Barr Engineering Co. (Barr)
Subject: Flooded Wetland Assessments
Date: December 20, 2019

During the September 2019 RWMWD Board of Managers meeting, the Managers expressed concern regarding potential degradation of wetlands due to long term flooding in the Grass Lake area. Wetlands in this area were previously assessed during normal hydrologic conditions in 2013 using the Board of Water and Soil Resources Minnesota Routine Assessment Method for Evaluating Wetland Functions, Version 3.4 (MNRAM). On October 18, 2019, Barr conducted a re-assessment of 16 wetlands within the Grass Lake and Snail Lake area and compared these results with the background results of the assessments completed in 2013.

1.0 Flooded Wetland Assessment

A site visit of the 16 re-assessed wetlands was conducted on October 18, 2019 to document current conditions and evaluate changes identified from the 72 questions that make up the MNRAM evaluation. Attachment A provides the results of the functional assessments completed in 2013 in comparison with those completed in 2019. Wetlands were identified by County-Township-Range-Section- and numerical ID as shown in Figure 1. Wetland photo comparisons between 2013 and 2019 are shown in Attachment B.

The assessments conducted in 2013 ended with –A in the wetland name. The 2019 re-assessments identified the wetlands using the same numbering system, except with an ending of -2019 in the wetland name instead of -A. The MNRAM provides ratings for 15 functions and values, which include:

Wetland Function/Value
Vegetative Diversity and Integrity
Maintenance of Hydrologic Regime
Flood and Stormwater Attenuation
Downstream Water Quality
Maintenance of Wetland Water Quality
Shoreline Protection
Maintenance of Characteristic Wildlife Habitat Structure
Maintenance of Characteristic Fish Habitat
Maintenance of Characteristic Amphibian Habitat
Aesthetics/Recreation/Education/Cultural
Commercial Uses

Wetland Function/Value
Groundwater Interaction
Wetland Restoration Potential
Wetland Sensitivity to Stormwater and Urban Development
Additional Stormwater Treatment Needs

Results are provided with a numerical value and a rating of low, moderate, high, exceptional, or not applicable for each function.

In addition to vegetative diversity and integrity ratings, the wetland community type is documented within the MNRAM. Some of the re-assessed wetlands were noted to have changes in wetland community types due to conditions of long term flooding.

2.0 Assessment Results

The following changes were documented in a comparison between the 2013 and 2019 wetland assessments:

- **Wetland 62-030-23-24-003 (Wetland A)**
    - Minor fluctuations in numeric values for several functions included: a **decrease** in maintenance of hydrologic regime from 0.88 to 0.77; an **increase** in flood and stormwater attenuation from 0.64 to 0.65; an **increase** in downstream water quality from 0.82 to 0.85; and a **decrease** in maintenance of characteristic fish habitat from 0.55 to 0.49. These minor numeric fluctuations were not significant enough to change any of these overall functional ratings.
    - The overall functional rating for wetland sensitivity to stormwater and urban development changed from **high** in 2013 to **moderate** in 2019, even though the numerical value stayed the same. This is likely due to a change in community type.
    - The vegetative diversity and integrity changed from **low** to **moderate** weighted average wetland rating and the community types changed from primarily shallow marsh with wet meadow to a dominance of shallow open water community. Improvements in the vegetative diversity and integrity rating are primarily due to invasive species such as reed canary grass getting drowned out. Efforts including cattail removal and native aquatic emergent species plantings are also contributing factors.
    - The overall wetland management classification remained as Manage A.

- **Wetland 62-030-23-24-006**
    - Minor decreases in numeric values: flood and stormwater attenuation **decreased** from 0.49 to 0.46 and downstream water quality **decreased** from 0.64 to 0.60. The overall functional ratings for both of these functions stayed as **moderate**.
    - The overall wetland management classification remained as Manage A.
- **Wetland 62-030-23-24-007**
    - Minor decrease in numeric values: flood and stormwater attenuation **decreased** from 0.64 to 0.60 and downstream water quality **decreased** from 0.84 to 0.81. The overall functional ratings for these functions stayed as **moderate** for flood and stormwater attenuation and **high** for downstream water quality.
    - The overall wetland management classification remained as Manage A.
- **Wetland 62-030-23-24-008**
    - Maintenance of hydrologic regime **decreased** in numeric value from 0.75 to 0.65 resulting in a decrease from a **high** to **moderate** rating.
    - The overall functional rating for wetland sensitivity to stormwater and urban development changed from **high** in 2013 to **moderate** in 2019, even though the numerical value stayed the same. This is likely due to a change in community type.
    - The vegetative diversity and integrity changed from **low** to **moderate** weighted average wetland rating and the community types changed from primarily wet meadow to deep marsh. Improvements in the vegetative diversity and integrity rating are primarily due to invasive species such as reed canary grass getting drowned out.
    - Minor fluctuations in numeric values only included: an **increase** from 0.68 to 0.69 for flood and stormwater attenuation; an **increase** from 0.74 to 0.78 for downstream water quality; an **increase** from 0.42 to 0.46 in maintenance of wetland water quality; and a **decrease** from 0.55 to 0.48 in maintenance of characteristic fish habitat. The overall functional ratings for these functions did not change.
    - The overall wetland management classification remained as Manage A.
- **Wetland 62-030-23-25-001**
    - Maintenance of hydrologic regime **decreased** in numeric value from 0.67 to 0.60 resulting in a decrease from a **high** to **moderate** rating.
    - Maintenance of characteristic fish habitat changed from “not applicable” to a moderate rating with a numeric value **increase** from 0.00 to 0.54.

- Maintenance of characteristic amphibian habitat changed from "not applicable" to a low rating with a numeric value **increase** from 0.00 to 0.29.
- The need for additional stormwater treatment decreased from a high need to a moderate need.
- The overall wetland management classification remained as Manage A.

- **Wetland 62-030-23-25-002**
  - The vegetative diversity and integrity changed from **low** to **moderate** weighted average wetland rating and the community types changed with an added deep marsh component. Recent native seeding at the fringe of this wetland may have contributed to an improvement in vegetative diversity.
  - Minor fluctuations in numeric values for several functions included: a **decrease** in maintenance of hydrologic regime from 0.63 to 0.52; an **increase** in flood and stormwater attenuation from 0.47 to 0.52; an **increase** in downstream water quality from 0.67 to 0.74; an increase in maintenance of wetland water quality from 0.42 to 0.48; a **decrease** in maintenance of characteristic fish habitat from 0.47 to 0.40; an **increase** in wetland sensitivity to stormwater and urban development from 0.10 to 0.50; and an **increase** in additional stormwater treatment needs from 0.42 to 0.48. These minor numeric fluctuations were not significant enough to change any of these overall functional ratings.
  - The overall wetland management classification remained as Manage A.

- **Wetland 62-030-23-25-003**
  - The wetland community type changed from a wet meadow to a deep marsh with a wet meadow fringe.
  - The flood and stormwater attenuation functional rating **decreased** from high to moderate with a numeric value decrease from 0.70 to 0.64.
  - The downstream water quality functional rating stayed at a high rating, though the numeric value **decreased** from 0.80 to 0.73.
  - Maintenance of characteristic fish habitat changed from "not applicable" to a moderate rating with a numeric value **increase** from 0.00 to 0.40.
  - Maintenance of characteristic amphibian habitat changed from "not applicable" to a low rating with a numeric value **increase** from 0.00 to 0.26.
  - The overall wetland management classification remained as Manage A.

- **Wetland 62-030-23-25-008**
    - The maintenance of hydrologic regime functional rating **decreased** from high to moderate with a numeric value decrease from 0.75 to 0.65.
    - Maintenance of characteristic fish habitat was added, resulting in a moderate rating with a numeric value **increase** from 0.00 to 0.50.
    - Maintenance of characteristic amphibian habitat changed from "not applicable" to a low rating with a numeric value **increase** from 0.00 to 0.26.
    - The wetland community type changed from primarily a wet meadow to primarily a deep marsh. The vegetative diversity and integrity rating of the wet meadow community **increased** from low to moderate due to recent native seeding at the fringe of this wetland.
    - Other fluctuations in numeric value for many of the other functions did not result in a change in the overall functional ratings.
    - The overall wetland management classification remained as Manage A.
- **Wetland 62-03023-25-013**
    - The maintenance of hydrologic regime functional rating **decreased** from high to moderate with a numeric value decrease from 0.75 to 0.65.
    - Maintenance of characteristic fish habitat changed from "not applicable" to a moderate rating with a numeric value **increase** from 0.00 to 0.50.
    - Maintenance of characteristic amphibian habitat changed from "not applicable" to a low rating with a numeric value **increase** from 0.00 to 0.22.
    - The wetland community type changed from primarily a wet meadow to primarily a deep marsh.
    - Other fluctuations in numeric value for many of the other functions did not result in a change in the overall functional ratings.
    - The overall wetland management classification remained as Manage A.
- **Wetland 62-030-23-25-014**
    - The maintenance of hydrologic regime functional rating **decreased** from high to moderate with a numeric value decrease from 0.75 to 0.65.
    - Maintenance of characteristic fish habitat was added, resulting in a moderate rating with a numeric value **increase** from 0.00 to 0.49.

- Maintenance of characteristic amphibian habitat changed from "not applicable" to a low rating with a numeric value **increase** from 0.00 to 0.22.
- The wetland community type changed from primarily a wet meadow to primarily a deep marsh. The weighted average vegetative diversity and integrity rating **increased** from low to moderate, primarily due to invasive species such as reed canary grass getting drowned out.
- Other fluctuations in numeric value for many of the other functions did not result in a change in the overall functional ratings.
- The overall wetland management classification remained as Manage A.

- **Wetland 62-030-23-25-019 (Grass Lake)**
  - The numeric value for the maintenance of wetland water quality **decreased** from 0.97 to 0.91, however the overall rating for this function remained high.
  - The numeric value for the maintenance of characteristic fish habitat **decreased** from 0.57 to 0.50, however the overall rating for this function remained moderate.
  - The numeric value for additional stormwater treatment needs changed from 0.97 to 0.91, however the overall rating for this function remained **high**.
  - The overall wetland management classification remained as Manage A.
- **Wetland 62-030-23-25-025**
  - Maintenance of characteristic fish habitat was added, resulting in a high rating with a numeric value **increase** from 0.00 to 0.72.
  - The overall wetland management classification remained as Manage A.
- Results of the remaining wetlands did not change between 2013 and 2019, which include:
  - Wetland 62-030-23-23-003
  - Wetland 62-030-23-24-004
  - Wetland 62-030-23-24-005
  - Wetland 62-030-23-24-011

3.0 Conclusion

The overall wetland classification ratings did not change for any of the flooded wetlands. All of the re-assessed wetlands remained classified as Manage A, which is the highest classification rating for wetlands within the District according to RWMWD rules.

Due to the naturalized upland buffer, watershed, and outlet conditions within this area, these wetlands are providing significant flood storage with the ability and opportunity to protect valuable downstream resources.

In some situations the increase in hydrology has resulted in drowning out invasive plant species within these wetlands, which improves the vegetative and diversity rating. Vegetative diversity and integrity has also improved in some wetlands due to recent RWMWD native planting and seeding efforts. Recent buckthorn removal throughout the area has improved the upland buffer conditions.

Increased hydrology and changes to wetter wetland regime wetland types has generally resulted in increased wetland sensitivity to stormwater and urban development and decreases in flood and stormwater attenuation, maintenance of hydrologic regime, and downstream water quality numeric ratings, though most overall functional ratings remained the same.

The maintenance of characteristic fish and amphibian habitat functions became applicable for several wetlands due to increased hydrology and hydrologic connections between wetlands and waterbodies. Though the increased hydrologic connections for some wetlands resulted in lowered ratings for maintenance of characteristic amphibian habitat due to the opportunity for predatory fish to be present.

4.0 Recommendations

If hydrologic conditions decrease again, the drowned out invasive vegetation conditions may provide an opportunity to further improve vegetative diversity and integrity in some wetlands by seeding or planting native plant species when surface water levels lower. Though reed canary grass may invade again if soils are high in nutrients and hydrology fluctuations persist. Native vegetation establishment may help to minimize the impact of hydrologic fluctuations in the future and provide additional habitat.

Grass Lake was the only wetland observed to have an increase in algae, though it is likely that many of these wetlands have high nutrient loading. No significant additional sediment accumulation was observed, though this may not have been evident due to flooded conditions. The MNRAM assessment is based on observational evidence. Further analysis of watershed modeling, sediment accumulation, water quality monitoring, nutrient loading, zooplankton, phytoplankton, and macroinvertebrate collection and identification could provide more detailed information of water quality in the wetlands.

If the flooded conditions are expected to remain for the long term, the installation of additional stormwater management pretreatment areas could provide improvements to stormwater attenuation, wetland water quality, and downstream water quality.

Imagery: USDA; 2017

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

RWMWD Jurisdictional Boundary

District MNRAM Wetland Assessment

N

0 250 500 1,000 Feet

1 inch = 500 feet

Figure 1

GRASS LAKE AREA FLOODED WETLANDS
Ramsey-Washington Metro
Watershed District

Attachment A

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-23-003-A 2013	Lacustrine Fringe (edge of deepwater areas)/Shoreland, Floodplain (outside waterbody banks)	0.88	0.62	0.75	1.03	0.26
2013		High	Moderate	High	Exceptional	Low

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
						Additional Information			
62-030-23-23-003-A	0.79	0.62	0.07	0.76	0.00	Combination Discharge, Recharge	0.00	0.50	1.03
	High	Moderate	Low	High	Not Applicable		Not Applicable	Moderate	Exceptional

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-23-003-A	62-030-23-23-003-A	PUBH	Type 5	Shallow, Open Water Communities	50	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PUBF	Type 4	Deep Marsh	30	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PFO1A	Type 1	Floodplain Forest	20	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
					100		2.00	2.00	2.00

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-23-003-A 2013

Location: 62-030-23-23-003-A

RWMWD Grass Lake Watershed

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBH — Circular 39: Type 5

Plant Community: Deep Marsh

Cowardin Classification: PUBF — Circular 39: Type 4

Plant Community: Floodplain Forest

Cowardin Classification: PFO1A — Circular 39: Type 1

4	*Listed, rare, special species?*	Yes
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Lacustrine, Floodplain

8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	80%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	50%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	30%
26-C	*Steep*	70%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	Yes

Shoreline Wetland

30	*Rooted veg., % cover*	10%
31	*Wetland in-water width*	30 feet
32	*Emerg. veg. erosion resistance*	C
33	*Erosion potential of site*	B
34	*Upslope veg./bank protection*	C
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	C
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	A
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C

55	*Spatial buffer*	A
56	*Recreational activity potential*	A
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Discharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-23-003-2019	Lacustrine Fringe (edge of deepwater areas)/Shoreland, Floodplain (outside waterbody banks)	0.88	0.62	0.75	1.03	0.26
		High	Moderate	High	Exceptional	Low

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-23-003-2019	0.79	0.62	0.07	0.76	0.00	Combination Discharge, Recharge	0.00	0.50	1.03
	High	Moderate	Low	High	Not Applicable		Not Applicable	Moderate	Exceptional

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-23-003-2019	62-030-23-23-003-A	PUBH	Type 5	Shallow, Open Water Communities	50	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PUBF	Type 4	Deep Marsh	30	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PFO1A	Type 1	Floodplain Forest	20	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
					100		2.00	2.00	2.00

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-23-003-2019

Location: 62-030-23-23-003-A

RWMWD Grass Lake Watershed

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBH — Circular 39: Type 5

Plant Community: Deep Marsh

Cowardin Classification: PUBF — Circular 39: Type 4

Plant Community: Floodplain Forest

Cowardin Classification: PFO1A — Circular 39: Type 1

4	*Listed, rare, special species?*	Yes
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Lacustrine, Floodplain
8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	100%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		
11-Wetland Soil		

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	50%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	30%
26-C	*Steep*	70%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	Yes

Shoreline Wetland

30	*Rooted veg., % cover*	10%
31	*Wetland in-water width*	30 feet
32	*Emerg. veg. erosion resistance*	C
33	*Erosion potential of site*	B
34	*Upslope veg./bank protection*	C
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	C
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	A
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C

55	*Spatial buffer*	A
56	*Recreational activity potential*	A
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Discharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-003-A 2013	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.88	0.64	0.82	0.52	0.00
		High	Moderate	High	Moderate	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-003-A	2.00	0.55	0.30	0.75	0.00	Combination Discharge, Recharge	0.00	0.50	0.52
	Exceptional	Moderate	Low	High	Not Applicable		Not Applicable	High	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-003-A	62-030-23-24-003-A	PEMC	Type 3	Shallow Marsh	50	0.1	0.50	0.23	0.22
							Moderate	Low	Low
		PSS1B	Type 6	Shrub Carr	30	0.5	0.50	0.23	0.22
							Moderate	Low	Low
		PEMB	Type 2	Fresh (Wet) Meadow	20	0.1	0.50	0.23	0.22
							Moderate	Low	Low
					100		0.50	0.23	0.22

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-003-A 2013

Location: 62-030-23-24-003-A

RWMWD Grass Lake Watershed

Plant Community: Shallow Marsh

Cowardin Classification: PEMC — Circular 39: Type 3

Plant Community: Shrub Carr

Cowardin Classification: PSS1B — Circular 39: Type 6

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru

8-1	*Maximum water depth*	12 inche
8-2	*% inundated*	50%
9	*Immediate drainage--local WS*	237 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	0%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	10%
26-B	*Moderate*	30%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	B
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B

55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-003-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.77	0.65	0.85	0.52	0.00
		High	Moderate	High	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-24-003-201	2.00	0.49	0.30	0.75	0.00	Combination Discharge, Recharge	0.00	0.50	0.52
	Exceptional	Moderate	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-003-2019	62-030-23-24-003-A	PUBG	Type 5	Shallow, Open Water Communities	50	0.5	0.50	0.37	0.42
							Moderate	Moderate	Moderate
		PSS1C	Type 6	Shrub Carr	30	0.5	0.50	0.37	0.42
							Moderate	Moderate	Moderate
		PEMC	Type 3	Shallow Marsh	20	0.1	0.50	0.37	0.42
							Moderate	Moderate	Moderate
					100		0.50	0.37	0.42

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-003-2019

Location: 62-030-23-24-003-A

RWMWD Grass Lake Watershed

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBG — Circular 39: Type 5

Plant Community: Shrub Carr

Cowardin Classification: PSS1C — Circular 39: Type 6

Plant Community: Shallow Marsh

Cowardin Classification: PEMC — Circular 39: Type 3

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru

8-1	*Maximum water depth*	48 inche
8-2	*% inundated*	95%
9	*Immediate drainage--local WS*	237 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	40%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	0%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	10%
26-B	*Moderate*	30%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	B
39	*Wetland detritus*	NA
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B

55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-004-A	Depressional/Isolated (no discernable inlets or outlets)	1.00	0.74	0.84	0.82	0.00
2013		High	High	High	High	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-004-A	2.00	0.00	0.83	0.71	0.00	Combination Discharge, Recharge	0.00	0.50	0.82
	Exceptional	Not Applicable	High	High	Not Applicable		Not Applicable	Exceptional	High

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-004-A	62-030-23-24-004-A	PEMA	Type 1	Seasonally Flooded Basin	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-004-A 2013

Location: 62-030-23-24-004-A

RWMWD Grass Lake Watershed

Plant Community: Seasonally Flooded Ba

Cowardin Classification: PEMA

Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	44 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	30%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	A
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	C
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	400 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	50%
26-C	*Steep*	50%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	A
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	B
53	*Human influence on wetland*	A
54	*Human influence on viewshed*	A
55	*Spatial buffer*	A
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-004-2019	Depressional/Isolated (no discernable inlets or outlets)	1.00	0.74	0.84	0.82	0.00
		High	High	High	High	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-004-201	2.00	0.00	0.83	0.71	0.00	Combination Discharge, Recharge	0.00	0.50	0.82
	Exceptional	Not Applicable	High	High	Not Applicable		Not Applicable	Exceptional	High

Wetland Community Summary

		Vegetative Diversity/Integrity								
		Community								
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-004-2019	62-030-23-24-004-A	PEMA	Type 1	Seasonally Flooded Basin	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-004-2019

Location: 62-030-23-24-004-A

RWMWD Grass Lake Watershed

Plant Community: Seasonally Flooded Ba

Cowardin Classification: PEMA

Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/Isolated

8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	44 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	20%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	A
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	C
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	400 feet

Adjacent area management

24-A	*Full*	100%
24-B	*Manicured*	0%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	50%
26-C	*Steep*	50%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	A
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	A
44	*Overwintering habitat*	
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	B
53	*Human influence on wetland*	A
54	*Human influence on viewshed*	A
55	*Spatial buffer*	A
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-005-A	Depressional/Isolated (no discernable inlets or outlets)	0.65	0.64	0.82	0.61	0.00
2013		Moderate	Moderate	High	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-24-005-A	2.00	0.00	0.00	0.64	0.00	Combination Discharge, Recharge	0.00	0.50	0.61
	Exceptional	Not Applicable	Not Applicable	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-005-A	62-030-23-24-005-A	PEMB	Type 2	Fresh (Wet) Meadow	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-005-A 2013

Location: 62-030-23-24-005-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB

Circular 39: Type 2

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	44 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	C
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	30%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	70%
26-C	*Steep*	30%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Inadequate
43	*Fish presence*	A
44	*Overwintering habitat*	
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	B
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS#

Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-005-2019	Depressional/Isolated (no discernable inlets or outlets)	0.65	0.64	0.82	0.61	0.00
		Moderate	Moderate	High	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-005-201	2.00	0.00	0.00	0.64	0.00	Combination Discharge, Recharge	0.00	0.50	0.61
	Exceptional	Not Applicable	Not Applicable	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-005-2019	62-030-23-24-005-A	PEMB	Type 2	Fresh (Wet) Meadow	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-005-2019

Location: 62-030-23-24-005-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB

Circular 39: Type 2

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	5 inches
8-2	*% inundated*	40%
9	*Immediate drainage--local WS*	44 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	C
16	*Vegetation (% cover)*	80%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	30%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	70%
26-C	*Steep*	30%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	A

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Inadequate
43	*Fish presence*	A
44	*Overwintering habitat*	
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	B
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS#

Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-006-A	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.50	0.49	0.64	0.47	0.00
2013		Moderate	Moderate	Moderate	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-24-006-A	0.47	0.49	0.25	0.75	0.00	Combination Discharge, Recharge	0.00	0.50	0.47
	Moderate	Moderate	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-006-A	62-030-23-24-006-A	PUBG	Type 4	Deep Marsh	90	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
		PFO1A	Type 1	Floodplain Forest	10	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-006-A 2013

Location: 62-030-23-24-006-A

RWMWD Grass Lake Watershed

Plant Community: Deep Marsh

Cowardin Classification: PUBG — Circular 39: Type 4

Plant Community: Floodplain Forest

Cowardin Classification: PFO1A — Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	90%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	*(see #66)*
11	*Upland Soil*	
11	*Wetland Soil*	

12	*Outlet for flood control*	B
13	*Outlet for hydro regime*	B
14	*Dominant upland land use*	B
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	80%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	10%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	90%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	40%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	C
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-006-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.50	0.46	0.60	0.47	0.00
		Moderate	Moderate	Moderate	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-24-006-201	0.47	0.49	0.25	0.75	0.00	Combination Discharge, Recharge	0.00	0.50	0.47
	Moderate	Moderate	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-006-2019	62-030-23-24-006-A	PUBG	Type 4	Deep Marsh	90	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
		PFO1C	Type 1	Floodplain Forest	10	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-006-2019

Location: 62-030-23-24-006-A

RWMWD Grass Lake Watershed

Plant Community: Deep Marsh

Cowardin Classification: PUBG — Circular 39: Type 4

Plant Community: Floodplain Forest

Cowardin Classification: PFO1C — Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	100%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	*(see #66)*
11	*Upland Soil*	
11	*Wetland Soil*	

12	*Outlet for flood control*	B
13	*Outlet for hydro regime*	B
14	*Dominant upland land use*	B
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	70%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	10%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	90%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	40%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	C
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	ducks
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-007-A	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet), Floodplain (outside waterbody banks)	0.88	0.64	0.84	0.63	0.00
2013		High	Moderate	High	Moderate	Not Applicable

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-007-A	0.58	0.57	0.26	0.54	0.00	Combination Discharge, Recharge	0.00	0.50	0.63
	Moderate	Moderate	Low	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-007-A	62-030-23-24-007-A	PFO1C	Type 1	Floodplain Forest	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-007-A 2013

Location: 62-030-23-24-007-A

RWMWD Grass Lake Watershed

Plant Community: Floodplain Forest

Cowardin Classification: PFO1C

Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru, Floodplain

8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	90%
24-B	*Manicured*	10%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	50%
26-B	*Moderate*	50%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	B
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C
55	*Spatial buffer*	A
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-007-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet), Floodplain (outside waterbody banks)	0.88	0.60	0.81	0.63	0.00
		High	Moderate	High	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-24-007-201	0.58	0.57	0.26	0.54	0.00	Combination Discharge, Recharge	0.00	0.50	0.63
	Moderate	Moderate	Low	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-007-2019	62-030-23-24-007-A	PFO1C	Type 1	Floodplain Forest	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-007-2019

Location: 62-030-23-24-007-A

RWMWD Grass Lake Watershed

Plant Community: Floodplain Forest

Cowardin Classification: PFO1C

Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru, Floodplain

8-1	*Maximum water depth*	18 inche
8-2	*% inundated*	100%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	60%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	90%
24-B	*Manicured*	10%
24-C	*Bare*	0%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	100%
25-C	*Sparse*	0%

Adjacent area slope

26-A	*Gentle*	50%
26-B	*Moderate*	50%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	No
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	C
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	B
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C
55	*Spatial buffer*	A
56	*Recreational activity potential*	C
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-008-A 2013	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.75	0.68	0.74	0.42	0.00
		High	High	High	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-24-008-A	2.00	0.55	0.22	0.75	0.00	Combination Discharge, Recharge	0.00	0.50	0.42
	Exceptional	Moderate	Low	High	Not Applicable		Not Applicable	High	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-008-A	62-030-23-24-008-A	PEMB	Type 2	Fresh (Wet) Meadow	70	0.1	0.50	0.23	0.14
							Moderate	Low	Low
		PEMC	Type 3	Shallow Marsh	20	0.1	0.50	0.23	0.14
							Moderate	Low	Low
		PSS1B	Type 6	Shrub Carr	10	0.5	0.50	0.23	0.14
							Moderate	Low	Low
					100		0.50	0.23	0.14

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-008-A 2013

Location: 62-030-23-24-008-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Shallow Marsh

Cowardin Classification: PEMC — Circular 39: Type 3

Plant Community: Shrub Carr

Cowardin Classification: PSS1B — Circular 39: Type 6

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru

8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	44 acres
10	*Esimated size/existing site:*	(see #66)

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	B
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	10%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	50%
26-C	*Steep*	50%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	B
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B

55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-008-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.65	0.69	0.78	0.46	0.00
		Moderate	High	High	Moderate	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-008-201	2.00	0.48	0.22	0.75	0.00	Combination Discharge, Recharge	0.00	0.50	0.46
	Exceptional	Moderate	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-008-2019	62-030-23-24-008-A	PUBG	Type 4	Deep Marsh	80	0.5	0.50	0.37	0.46
							Moderate	Moderate	Moderate
		PEMC	Type 3	Shallow Marsh	10	0.1	0.50	0.37	0.46
							Moderate	Moderate	Moderate
		PSS1C	Type 6	Shrub Carr	10	0.5	0.50	0.37	0.46
							Moderate	Moderate	Moderate
					100		0.50	0.37	0.46

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-008-2019

Location: 62-030-23-24-008-A

RWMWD Grass Lake Watershed

Plant Community: Deep Marsh

Cowardin Classification: PUBG — Circular 39: Type 4

Plant Community: Shallow Marsh

Cowardin Classification: PEMC — Circular 39: Type 3

Plant Community: Shrub Carr

Cowardin Classification: PSS1C — Circular 39: Type 6

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru

8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	100%
9	*Immediate drainage--local WS*	44 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		
11-Wetland Soil		

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	B
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	30%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	10%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	50%
26-C	*Steep*	50%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	A
38	*Veg. community interspersion*	B
39	*Wetland detritus*	NA
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	B
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B

55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-011-A	Lacustrine Fringe (edge of deepwater areas)/Shoreland, Floodplain (outside waterbody banks)	0.88	0.46	0.70	1.03	0.60
2013		High	Moderate	High	Exceptional	Moderate

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-011-A	2.00	0.71	0.07	0.76	0.00	Combination Discharge, Recharge	0.00	0.50	1.03
	Exceptional	High	Low	High	Not Applicable		Not Applicable	Moderate	Exceptional

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-011-A	62-030-23-24-011-A	PEMF	Type 4	Deep Marsh	40	0.1	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PAB4G	Type 5	Shallow, Open Water Communities	30	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PFO1A	Type 1	Floodplain Forest	30	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
					100		2.00	2.00	2.00

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-011-A 2013

Location: 62-030-23-24-011-A

RWMWD Grass Lake Watershed

Plant Community: Deep Marsh

Cowardin Classification: PEMF — Circular 39: Type 4

Plant Community: Shallow, Open Water C

Cowardin Classification: PAB4G — Circular 39: Type 5

Plant Community: Floodplain Forest

Cowardin Classification: PFO1A — Circular 39: Type 1

4	*Listed, rare, special species?*	Yes
5	*Rare community or habitat?*	Yes
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Lacustrine, Floodplain

8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	70%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	(see #66)

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	70%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	10%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	90%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	40%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	Yes

Shoreline Wetland

30	*Rooted veg., % cover*	50%
31	*Wetland in-water width*	50 feet
32	*Emerg. veg. erosion resistance*	B
33	*Erosion potential of site*	B
34	*Upslope veg./bank protection*	B
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	Yes
37	*Vegetative cover*	B
38	*Veg. community interspersion*	B
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	C
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	A
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C

55	*Spatial buffer*	A
56	*Recreational activity potential*	A
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-24-011-2019	Lacustrine Fringe (edge of deepwater areas)/Shoreland, Floodplain (outside waterbody banks)	0.88	0.46	0.70	1.03	0.60
		High	Moderate	High	Exceptional	Moderate

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-24-011-201	2.00	0.71	0.07	0.76	0.00	Combination Discharge, Recharge	0.00	0.50	1.03
	Exceptional	High	Low	High	Not Applicable		Not Applicable	Moderate	Exceptional

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-24-011-2019	62-030-23-24-011-A	PEMF	Type 4	Deep Marsh	40	0.1	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PAB4G	Type 5	Shallow, Open Water Communities	30	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PFO1A	Type 1	Floodplain Forest	30	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
					100		2.00	2.00	2.00

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-24-011-2019

Location: 62-030-23-24-011-A

RWMWD Grass Lake Watershed

Plant Community: Deep Marsh

Cowardin Classification: PEMF — Circular 39: Type 4

Plant Community: Shallow, Open Water C

Cowardin Classification: PAB4G — Circular 39: Type 5

Plant Community: Floodplain Forest

Cowardin Classification: PFO1A — Circular 39: Type 1

4	*Listed, rare, special species?*	Yes
5	*Rare community or habitat?*	Yes
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Lacustrine, Floodplain

8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	95%
9	*Immediate drainage--local WS*	498 acres
10	*Esimated size/existing site:*	(see #66)

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	NA
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	70%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	10%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	90%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	40%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	Yes

Shoreline Wetland

30	*Rooted veg., % cover*	50%
31	*Wetland in-water width*	50 feet
32	*Emerg. veg. erosion resistance*	B
33	*Erosion potential of site*	B
34	*Upslope veg./bank protection*	B
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	Yes
37	*Vegetative cover*	B
38	*Veg. community interspersion*	B
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	C
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	A
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	C

55	*Spatial buffer*	A
56	*Recreational activity potential*	A
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-001-A	Depressional/Isolated (no discernable inlets or outlets)	0.88	0.69	0.78	0.67	0.00
2013		High	High	High	High	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-001-A	2.00	0.00	0.00	0.81	0.00	Combination Discharge, Recharge	0.00	0.50	0.67
	Exceptional	Not Applicable	Not Applicable	High	Not Applicable		Not Applicable	Exceptional	High

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-001-A	62-030-23-25-001-A	PEMC	Type 2	Sedge Meadow	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-001-A 2013

Location: 62-030-23-25-001-A

RWMWD Grass Lake Watershed

Plant Community: Sedge Meadow

Cowardin Classification: PEMC

Circular 39: Type 2

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	95%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	0%
24-C	*Bare*	30%

Adjacent area diversity/structure

25-A	*Native*	20%
25-B	*Mixed*	50%
25-C	*Sparse*	30%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	70%
26-C	*Steep*	30%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	A
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Inadequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS#

Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-001-2019	Depressional/Isolated (no discernable inlets or outlets)	0.88	0.69	0.78	0.60	0.00
		High	High	High	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-001-201	2.00	0.54	0.29	0.81	0.00	Combination Discharge, Recharge	0.00	0.50	0.60
	Exceptional	Moderate	Low	High	Not Applicable		Not Applicable	Exceptional	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-001-2019	62-030-23-25-001-A	PEMC	Type 3	Sedge Meadow	100	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-001-2019

Location: 62-030-23-25-001-A

RWMWD Grass Lake Watershed

Plant Community: Sedge Meadow

Cowardin Classification: PEMC

Circular 39: Type 3

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	80%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	0%
24-C	*Bare*	30%

Adjacent area diversity/structure

25-A	*Native*	20%
25-B	*Mixed*	50%
25-C	*Sparse*	30%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	70%
26-C	*Steep*	30%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	B
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS#

Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-002-A	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.63	0.47	0.67	0.42	0.00
2013		Moderate	Moderate	High	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-25-002-A	2.00	0.47	0.26	0.59	0.00	Combination Discharge, Recharge	0.00	0.10	0.42
	Exceptional	Moderate	Low	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-002-A	62-030-23-25-002-A	PEMC	Type 3	Shallow Marsh	100	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-002-A 2013

Location: 62-030-23-25-002-A

RWMWD Grass Lake Watershed

Plant Community: Shallow Marsh

Cowardin Classification: PEMC

Circular 39: Type 3

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	90%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	B
13	*Outlet for hydro regime*	B
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	70%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	0%
24-C	*Bare*	30%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	70%
25-C	*Sparse*	30%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	40%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	C
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-002-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.52	0.52	0.74	0.48	0.00
		Moderate	Moderate	High	Moderate	Not Applicable

	Additional Information								
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-002-201	2.00	0.40	0.26	0.59	0.00	Combination Discharge, Recharge	0.00	0.50	0.48
	Exceptional	Moderate	Low	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-002-2019	62-030-23-25-002-A	PEMC	Type 3	Shallow Marsh	50	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
		PAB2G	Type 4	Deep Marsh	50	0.5	0.50	0.50	0.50
							Moderate	Moderate	Moderate
					100		0.50	0.50	0.50

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-002-2019

Location: 62-030-23-25-002-A

RWMWD Grass Lake Watershed

Plant Community: Shallow Marsh

Cowardin Classification: PEMC — Circular 39: Type 3

Plant Community: Deep Marsh

Cowardin Classification: PAB2G — Circular 39: Type 4

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	100%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*
11	*Upland Soil*	
11	*Wetland Soil*	

12	*Outlet for flood control*	B
13	*Outlet for hydro regime*	B
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	70%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	70%
24-B	*Manicured*	0%
24-C	*Bare*	30%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	70%
25-C	*Sparse*	30%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	40%
26-C	*Steep*	60%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	C
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-003-A	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.65	0.70	0.80	0.38	0.00
2013		Moderate	High	High	Moderate	Not Applicable

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-003-A	2.00	0.00	0.00	0.65	0.00	Combination Discharge, Recharge	0.00	0.10	0.38
	Exceptional	Not Applicable	Not Applicable	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-003-A	62-030-23-25-003-A	PEMB	Type 2	Fresh (Wet) Meadow	100	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-003-A 2013

Location: 62-030-23-25-003-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB

Circular 39: Type 2

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	100%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	C
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	60%
24-B	*Manicured*	10%
24-C	*Bare*	30%

Adjacent area diversity/structure

25-A	*Native*	10%
25-B	*Mixed*	60%
25-C	*Sparse*	30%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	100%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Inadequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS#

Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-003-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.65	0.64	0.73	0.38	0.00
		Moderate	Moderate	High	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-25-003-2019	2.00	0.40	0.26	0.65	0.00	Combination Discharge, Recharge	0.00	0.10	0.38
	Exceptional	Moderate	Low	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-003-2019	62-030-23-25-003-A	PEMB	Type 2	Fresh (Wet) Meadow	10	0.1	0.10	0.10	0.10
							Low	Low	Low
		PUBG	Type 4	Deep Marsh	90	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-003-2019

Location: 62-030-23-25-003-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Deep Marsh

Cowardin Classification: PUBG — Circular 39: Type 4

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	36 inche
8-2	*% inundated*	100%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		
11-Wetland Soil		

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	20%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	C
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	100 feet

Adjacent area management

24-A	*Full*	60%
24-B	*Manicured*	10%
24-C	*Bare*	30%

Adjacent area diversity/structure

25-A	*Native*	10%
25-B	*Mixed*	60%
25-C	*Sparse*	30%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	100%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-008-A	Depressional/Isolated (no discernable inlets or outlets)	0.75	0.69	0.81	0.51	0.00
2013		High	High	High	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-008-A	2.00	0.00	0.00	0.81	0.00	Combination Discharge, Recharge	0.00	0.10	0.51
	Exceptional	Not Applicable	Not Applicable	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-008-A	62-030-23-25-008-A	PEMB	Type 2	Fresh (Wet) Meadow	90	0.1	0.10	0.10	0.10
							Low	Low	Low
		PSS1B	Type 6	Shrub Carr	10	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-008-A 2013

Location: 62-030-23-25-008-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Shrub Carr

Cowardin Classification: PSS1B — Circular 39: Type 6

4	Listed, rare, special species?	No
5	Rare community or habitat?	No
6	Pre-European-settlement condition?	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	Maximum water depth	0 inches
8-2	% inundated	0%
9	Immediate drainage--local WS	432 acres
10	Esimated size/existing site:	(see #66)
11-Upland Soil		
11-Wetland Soil		

12	Outlet for flood control	A
13	Outlet for hydro regime	A
14	Dominant upland land use	A
15	Wetland soil condition	B
16	Vegetation (% cover)	90%
17	Emerg. veg flood resistance	B
18	Sediment delivery	B
19	Upland soils (soil group)	C
20	Stormwater runoff	B
21	Subwatershed wetland density	A
22	Channels/sheet flow	B
23	Adjacent buffer width	200 feet

Adjacent area management

24-A	Full	90%
24-B	Manicured	0%
24-C	Bare	10%

Adjacent area diversity/structure

25-A	Native	30%
25-B	Mixed	60%
25-C	Sparse	10%

Adjacent area slope

26-A	Gentle	50%
26-B	Moderate	50%
26-C	Steep	0%

27	Downstream sens./WQ protect.	A
28	Nutrient loading	B
29	Shoreline wetland?	No

Shoreline Wetland

30	Rooted veg., % cover	0%
31	Wetland in-water width	0 feet
32	Emerg. veg. erosion resistance	
33	Erosion potential of site	
34	Upslope veg./bank protection	
35	Rare wildlife?	Yes
36	Scare/Rare/S1/S2 community	No
37	Vegetative cover	C
38	Veg. community interspersion	B
39	Wetland detritus	A
40	Interspersion on landscape	B
41	Wildlife barriers	B

Amphibian-breeding potential

42	Hydroperiod adequacy	Inadequate
43	Fish presence	B
44	Overwintering habitat	C
45	Wildlife species (list)	
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
49	Wetland visibility	A
50	Proximity to population	Yes
51	Public ownership	A
52	Public access	A
53	Human influence on wetland	B
54	Human influence on viewshed	B
55	Spatial buffer	A
56	Recreational activity potential	B

57	Commercial crop--hydro impact	NA

Groundwater-specific questions

58	Wetland soils	Recharge
59	Subwatershed land use	Discharge
60	Wetland size/soil group	Recharge
61	Wetland hydroperiod	Recharge
62	Inlet/Outlet configuration	Recharge
63	Upland topo relief	Discharge

Additional information

64	Restoration potential	No
65	LO affected by restoration	
66	Existing size	########
	Restorable size	0
	Potential new wetland	0
67	Average width of pot. buffer	0 feet
68	Ease of potential restoration	
69	Hydrologic alterations	0
70	Potential wetland type	0
71	Stormwater sensitivity	
72	Additional treatment needs	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-008-2019	Depressional/Isolated (no discernable inlets or outlets)	0.65	0.74	0.88	0.46	0.00
		Moderate	High	High	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-008-201	2.00	0.50	0.26	0.81	0.00	Combination Discharge, Recharge	0.00	0.50	0.46
	Exceptional	Moderate	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-008-2019	62-030-23-25-008-A	PEMB	Type 2	Fresh (Wet) Meadow	10	0.5	0.50	0.30	0.13
							Moderate	Low	Low
		PUBG	Type 4	Deep Marsh	80	0.1	0.50	0.30	0.13
							Moderate	Low	Low
					90		0.50	0.30	0.13

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-008-2019

Location: 62-030-23-25-008-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Deep Marsh

Cowardin Classification: PUBG — Circular 39: Type 4

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/Isolated
8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	100%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*
11	*Upland Soil*	
11	*Wetland Soil*	

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	20%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	200 feet

Adjacent area management

24-A	*Full*	90%
24-B	*Manicured*	0%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	30%
25-B	*Mixed*	60%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	50%
26-B	*Moderate*	50%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	B
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-013-A 2013	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.75	0.68	0.79	0.50	0.00
		High	High	High	Moderate	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-25-013-A	2.00	0.00	0.00	0.65	0.00	Combination Discharge, Recharge	0.00	0.10	0.50
	Exceptional	Not Applicable	Not Applicable	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-013-A	62-030-23-25-013-A	PEMB	Type 2	Fresh (Wet) Meadow	100	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-013-A 2013

Location: 62-030-23-25-013-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB

Circular 39: Type 2

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	237 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	100%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	90%
24-B	*Manicured*	0%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	90%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	90%
26-C	*Steep*	10%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Inadequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS#

Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-013-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.65	0.67	0.80	0.44	0.00
		Moderate	High	High	Moderate	Not Applicable

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-013-201	2.00	0.50	0.22	0.65	0.00	Combination Discharge, Recharge	0.00	0.10	0.44
	Exceptional	Moderate	Low	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-013-2019	62-030-23-25-013-A	PEMB	Type 2	Fresh (Wet) Meadow	20	0.1	0.10	0.10	0.10
							Low	Low	Low
		PUBG	Type 4	Deep Marsh	80	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-013-2019

Location: 62-030-23-25-013-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Deep Marsh

Cowardin Classification: PUBG — Circular 39: Type 4

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	24 inche
8-2	*% inundated*	95%
9	*Immediate drainage--local WS*	237 acres
10	*Esimated size/existing site:*	*(see #66)*
11	*Upland Soil*	
11	*Wetland Soil*	

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	20%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	A
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	A
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	90%
24-B	*Manicured*	0%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	90%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	90%
26-C	*Steep*	10%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	C
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-014-A	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.75	0.64	0.79	0.50	0.00
2013		High	Moderate	High	Moderate	Not Applicable

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-014-A	2.00	0.00	0.00	0.65	0.00	Combination Discharge, Recharge	0.00	0.10	0.50
	Exceptional	Not Applicable	Not Applicable	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating	
62-030-23-25-014-A	62-030-23-25-014-A	PEMB	Type 2	Fresh (Wet) Meadow	100	0.1	0.10	0.10	0.10	
							Low	Low	Low	
					100		0.10	0.10	0.10	☐

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-014-A 2013

Location: 62-030-23-25-014-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB

Circular 39: Type 2

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7 Depressional/FlowThru

8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	237 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	95%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	300 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	0%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	100%
26-C	*Steep*	0%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	NA
38	*Veg. community interspersion*	NA
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Inadequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	A
52	*Public access*	A
53	*Human influence on wetland*	C
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-014-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.65	0.66	0.82	0.52	0.00
		Moderate	Moderate	High	Moderate	Not Applicable

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-014-201	2.00	0.49	0.22	0.65	0.00	Combination Discharge, Recharge	0.00	0.50	0.52
	Exceptional	Moderate	Low	Moderate	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-014-2019	62-030-23-25-014-A	PEMB	Type 2	Fresh (Wet) Meadow	20	0.1	0.50	0.30	0.38
							Moderate	Low	Moderate
		PUBG	Type 4	Deep Marsh	60	0.5	0.50	0.30	0.38
							Moderate	Low	Moderate
		PEM1C	Type 3	Shallow Marsh	10	0.1	0.50	0.30	0.38
							Moderate	Low	Moderate
		PSS1C	Type 6	Shrub Carr	10	0.5	0.50	0.30	0.38
							Moderate	Low	Moderate
					100		0.50	0.30	0.38

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-014-2019

Location: 62-030-23-25-014-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow
Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Deep Marsh
Cowardin Classification: PUBG — Circular 39: Type 4

Plant Community: Shallow Marsh
Cowardin Classification: PEM1C — Circular 39: Type 3

Plant Community: Shrub Carr
Cowardin Classification: PSS1C — Circular 39: Type 6

4	Listed, rare, special species?	No
5	Rare community or habitat?	No
6	Pre-European-settlement condition?	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	Maximum water depth	36 inche
8-2	% inundated	100%
9	Immediate drainage--local WS	237 acres
10	Esimated size/existing site:	(see #66)
11-Upland Soil		
11-Wetland Soil		

12	Outlet for flood control	A
13	Outlet for hydro regime	A
14	Dominant upland land use	A
15	Wetland soil condition	B
16	Vegetation (% cover)	50%
17	Emerg. veg flood resistance	B
18	Sediment delivery	B
19	Upland soils (soil group)	C
20	Stormwater runoff	A
21	Subwatershed wetland density	B
22	Channels/sheet flow	B
23	Adjacent buffer width	300 feet

Adjacent area management

24-A	Full	80%
24-B	Manicured	0%
24-C	Bare	20%

Adjacent area diversity/structure

25-A	Native	0%
25-B	Mixed	80%
25-C	Sparse	20%

Adjacent area slope

26-A	Gentle	0%
26-B	Moderate	100%
26-C	Steep	0%

27	Downstream sens./WQ protect.	A
28	Nutrient loading	B
29	Shoreline wetland?	No

Shoreline Wetland

30	Rooted veg., % cover	0%
31	Wetland in-water width	0 feet
32	Emerg. veg. erosion resistance	
33	Erosion potential of site	
34	Upslope veg./bank protection	
35	Rare wildlife?	Yes
36	Scare/Rare/S1/S2 community	No
37	Vegetative cover	A
38	Veg. community interspersion	B
39	Wetland detritus	B
40	Interspersion on landscape	B
41	Wildlife barriers	B

Amphibian-breeding potential

42	Hydroperiod adequacy	Adequate
43	Fish presence	B
44	Overwintering habitat	C
45	Wildlife species (list)	geese on nest
46	Fish habitat quality	B
47	Fish species (list)	
48	Unique/rare opportunity	No
49	Wetland visibility	A
50	Proximity to population	Yes
51	Public ownership	A
52	Public access	A

53	Human influence on wetland	C
54	Human influence on viewshed	B
55	Spatial buffer	A
56	Recreational activity potential	B
57	Commercial crop--hydro impact	NA

Groundwater-specific questions

58	Wetland soils	Recharge
59	Subwatershed land use	Discharge
60	Wetland size/soil group	Recharge
61	Wetland hydroperiod	Discharge
62	Inlet/Outlet configuration	Recharge
63	Upland topo relief	Discharge

Additional information

64	Restoration potential	No
65	LO affected by restoration	
66	Existing size	########
	Restorable size	0
	Potential new wetland	0
67	Average width of pot. buffer	0 feet
68	Ease of potential restoration	
69	Hydrologic alterations	0
70	Potential wetland type	0
71	Stormwater sensitivity	
72	Additional treatment needs	

Watershed
WS# Service Area:

For functional ratings, please run the Summary tab report.
This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-019-A	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet), Depressional inlets with no apparent outlet	0.75	0.78	0.72	0.97	0.00
2013		High	High	High	High	Not Applicable

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-019-A	2.00	0.57	0.38	0.75	0.00	Combination Discharge, Recharge	0.00	1.00	0.97
	Exceptional	Moderate	Moderate	High	Not Applicable		Not Applicable	Moderate	High

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-019-A	62-030-23-25-019-A	PUBH	Type 5	Shallow, Open Water Communities	50	1	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PEMF	Type 4	Deep Marsh	30	0.1	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PSS1B	Type 6	Shrub Carr	10	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PFO1A	Type 1	Floodplain Forest	10	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
					100		2.00	2.00	2.00

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-019-A 2013

Location: 62-030-23-25-019-A

RWMWD Grass Lake Watershed

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBH — Circular 39: Type 5

Plant Community: Deep Marsh

Cowardin Classification: PEMF — Circular 39: Type 4

Plant Community: Shrub Carr

Cowardin Classification: PSS1B — Circular 39: Type 6

Plant Community: Floodplain Forest

Cowardin Classification: PFO1A — Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	Yes

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	48 inche
8-2	*% inundated*	70%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*

11-Upland Soil

11-Wetland Soil

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	B
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	60%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	400 feet

Adjacent area management

24-A	*Full*	90%
24-B	*Manicured*	0%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	10%
25-B	*Mixed*	80%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	20%
26-B	*Moderate*	50%
26-C	*Steep*	30%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	B
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A

53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	#########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

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Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-019-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet), Depressional inlets with no apparent outlet	0.75	0.78	0.72	0.91	0.00
		High	High	High	High	Not Applicable

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Additional Information: Wetland Restoration Potential	Additional Information: Wetland Sensitivity to Stormwater and Urban Development	Additional Information: Additional Stormwater Treatment Needs
62-030-23-25-019-201	2.00	0.50	0.38	0.75	0.00	Combination Discharge, Recharge	0.00	1.00	0.91
	Exceptional	Moderate	Moderate	High	Not Applicable		Not Applicable	Moderate	High

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Community: Circular 39	Community: Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-019-2019	62-030-23-25-019-A	PUBH	Type 5	Shallow, Open Water Communities	50	1	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PEMF	Type 4	Deep Marsh	30	0.1	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PSS1B	Type 6	Shrub Carr	10	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
		PFO1A	Type 1	Floodplain Forest	10	0.5	2.00	2.00	2.00
							Exceptional	Exceptional	Exceptional
					100		2.00	2.00	2.00

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-019-2019

Location: 62-030-23-25-019-A

RWMWD Grass Lake Watershed

Plant Community: Shallow, Open Water C

Cowardin Classification: PUBH — Circular 39: Type 5

Plant Community: Deep Marsh

Cowardin Classification: PEMF — Circular 39: Type 4

Plant Community: Shrub Carr

Cowardin Classification: PSS1B — Circular 39: Type 6

Plant Community: Floodplain Forest

Cowardin Classification: PFO1A — Circular 39: Type 1

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	Yes

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	48 inche
8-2	*% inundated*	70%
9	*Immediate drainage--local WS*	432 acres
10	*Esimated size/existing site:*	*(see #66)*
11	*Upland Soil*	
11	*Wetland Soil*	

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	B
15	*Wetland soil condition*	A
16	*Vegetation (% cover)*	60%
17	*Emerg. veg flood resistance*	A
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	C
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	A
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	400 feet

Adjacent area management

24-A	*Full*	90%
24-B	*Manicured*	0%
24-C	*Bare*	10%

Adjacent area diversity/structure

25-A	*Native*	10%
25-B	*Mixed*	80%
25-C	*Sparse*	10%

Adjacent area slope

26-A	*Gentle*	20%
26-B	*Moderate*	50%
26-C	*Steep*	30%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	C
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	B
38	*Veg. community interspersion*	B
39	*Wetland detritus*	B
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	A
45	*Wildlife species (list)*	
46	*Fish habitat quality*	B
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B
57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Recharge
61	*Wetland hydroperiod*	Discharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-025-A	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.75	0.55	0.79	0.49	0.00
2013		High	Moderate	High	Moderate	Not Applicable

Additional Information

Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-025-A	2.00	0.00	0.26	0.75	0.00	Combination Discharge, Recharge	0.00	0.10	0.49
	Exceptional	Not Applicable	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

Wetland Name	Location	Vegetative Diversity/Integrity: Community: Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-025-A	62-030-23-25-025-A	PEMB	Type 2	Fresh (Wet) Meadow	80	0.1	0.10	0.10	0.10
							Low	Low	Low
		PSS1B	Type 6	Shrub Carr	20	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-025-A 2013

Location: 62-030-23-25-025-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Shrub Carr

Cowardin Classification: PSS1B — Circular 39: Type 6

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	0 inches
8-2	*% inundated*	0%
9	*Immediate drainage--local WS*	237 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		
11-Wetland Soil		

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	200 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	0%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	80%
26-C	*Steep*	20%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	B
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	turkeys
46	*Fish habitat quality*	NA
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/10/2019

Wetland Functional Assessment Summary

Wetland Name	Hydrogeomorphology	Maintenance of Hydrologic Regime	Flood/ Stormwater/ Attenuation	Downstream Water Quality	Maintenance of Wetland Water Quality	Shoreline Protection
62-030-23-25-025-2019	Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet)	0.75	0.55	0.79	0.49	0.00
		High	Moderate	High	Moderate	Not Applicable

							Additional Information		
Wetland Name	Maintenance of Characteristic Wildlife Habitat Structure	Maintenance of Characteristic Fish Habitat	Maintenance of Characteristic Amphibian Habitat	Aesthetics/ Recreation/ Education/ Cultural	Commercial Uses	Ground-Water Interaction	Wetland Restoration Potential	Wetland Sensitivity to Stormwater and Urban Development	Additional Stormwater Treatment Needs
62-030-23-25-025-201	2.00	0.72	0.26	0.75	0.00	Combination Discharge, Recharge	0.00	0.10	0.49
	Exceptional	High	Low	High	Not Applicable		Not Applicable	Moderate	Moderate

Wetland Community Summary

		Vegetative Diversity/Integrity							
		Community							
Wetland Name	Location	Cowardin Classification	Circular 39	Plant Community	Wetland Proportion	Individual Community Rating	Highest Wetland Rating	Average Wetland Rating	Weighted Average Wetland Rating
62-030-23-25-025-2019	62-030-23-25-025-A	PEMB	Type 2	Fresh (Wet) Meadow	80	0.1	0.10	0.10	0.10
							Low	Low	Low
		PSS1B	Type 6	Shrub Carr	20	0.1	0.10	0.10	0.10
							Low	Low	Low
					100		0.10	0.10	0.10

☑ *Denotes incomplete calculation data.*

MnRAM: Site Response Record

For Wetland: 62-030-23-25-025-2019

Location: 62-030-23-25-025-A

RWMWD Grass Lake Watershed

Plant Community: Fresh (Wet) Meadow

Cowardin Classification: PEMB — Circular 39: Type 2

Plant Community: Shrub Carr

Cowardin Classification: PSS1B — Circular 39: Type 6

4	*Listed, rare, special species?*	No
5	*Rare community or habitat?*	No
6	*Pre-European-settlement condition?*	No

Hydrogeomorphology / topography:

7		Depressional/FlowThru
8-1	*Maximum water depth*	12 inche
8-2	*% inundated*	80%
9	*Immediate drainage--local WS*	237 acres
10	*Esimated size/existing site:*	*(see #66)*
11-Upland Soil		
11-Wetland Soil		

12	*Outlet for flood control*	A
13	*Outlet for hydro regime*	A
14	*Dominant upland land use*	A
15	*Wetland soil condition*	B
16	*Vegetation (% cover)*	90%
17	*Emerg. veg flood resistance*	B
18	*Sediment delivery*	B
19	*Upland soils (soil group)*	A
20	*Stormwater runoff*	B
21	*Subwatershed wetland density*	B
22	*Channels/sheet flow*	B
23	*Adjacent buffer width*	200 feet

Adjacent area management

24-A	*Full*	80%
24-B	*Manicured*	0%
24-C	*Bare*	20%

Adjacent area diversity/structure

25-A	*Native*	0%
25-B	*Mixed*	80%
25-C	*Sparse*	20%

Adjacent area slope

26-A	*Gentle*	0%
26-B	*Moderate*	80%
26-C	*Steep*	20%

27	*Downstream sens./WQ protect.*	A
28	*Nutrient loading*	B
29	*Shoreline wetland?*	No

Shoreline Wetland

30	*Rooted veg., % cover*	0%
31	*Wetland in-water width*	0 feet
32	*Emerg. veg. erosion resistance*	
33	*Erosion potential of site*	
34	*Upslope veg./bank protection*	
35	*Rare wildlife?*	Yes
36	*Scare/Rare/S1/S2 community*	No
37	*Vegetative cover*	C
38	*Veg. community interspersion*	B
39	*Wetland detritus*	A
40	*Interspersion on landscape*	B
41	*Wildlife barriers*	B

Amphibian-breeding potential

42	*Hydroperiod adequacy*	Adequate
43	*Fish presence*	B
44	*Overwintering habitat*	C
45	*Wildlife species (list)*	turkeys
46	*Fish habitat quality*	A
47	*Fish species (list)*	
48	*Unique/rare opportunity*	No
49	*Wetland visibility*	A
50	*Proximity to population*	Yes
51	*Public ownership*	B
52	*Public access*	A
53	*Human influence on wetland*	B
54	*Human influence on viewshed*	B
55	*Spatial buffer*	A
56	*Recreational activity potential*	B

57	*Commercial crop--hydro impact*	NA

Groundwater-specific questions

58	*Wetland soils*	Recharge
59	*Subwatershed land use*	Discharge
60	*Wetland size/soil group*	Discharge
61	*Wetland hydroperiod*	Recharge
62	*Inlet/Outlet configuration*	Recharge
63	*Upland topo relief*	Discharge

Additional information

64	*Restoration potential*	No
65	*LO affected by restoration*	
66	*Existing size*	########
	Restorable size	0
	Potential new wetland	0
67	*Average width of pot. buffer*	0 feet
68	*Ease of potential restoration*	
69	*Hydrologic alterations*	0
70	*Potential wetland type*	0
71	*Stormwater sensitivity*	
72	*Additional treatment needs*	

Watershed

WS# Service Area:

For functional ratings, please run the Summary tab report.

This report printed on: 10/28/2019

Attachment B

Wetland photo comparisons between 2013 and 2019

2013 – Wetland 62-030-23-24-003 (Wetland A)

2019 – Wetland 62-030-23-24-003 (Wetland A)

2013 – Wetland 62-030-23-24-008

2019 – Wetland 62-030-23-24-008

2013 – Wetland 62-030-23-25-003

2019 – Wetland 62-030-23-25-003

2013 – Wetland 62-030-23-25-013

2019 – Wetland 62-030-23-25-013

2013 – Wetland 62-030-23-25-014

2019 – Wetland 62-030-23-25-014






2013 – Wetland 62-030-23-25-019 (Grass Lake)

2019 – Wetland 62-030-23-25-019 (Grass Lake)

6.0 Functional Rating Formulas

GENERAL NOTE: Some questions are not applicable to particular wetlands and will be scored N/A. In these cases, rather than count N/A as zero, an alternate equation is provided that eliminates the question from the formula altogether. Because not every question has N/A as an option, formulas that do not include N/A-option questions have only one configuration.

Formulas with a "reverse rating" (marked as "R") take the actual response and "flip" its value for the calculation, so that a question response of "A" high (value of 1.0) will be calculated as low (value of 0.1). In such a formula, medium ratings stay medium.

6.1 VEGETATIVE DIVERSITY/INTEGRITY

Table 3: Vegetative Diversity/Integrity Summary

The functional rating is based primarily on the diversity of vegetation within the wetland in comparison to an undisturbed condition for that wetland type. An exceptional rating results from one of the following conditions: 1) highly diverse wetlands with virtually no non-native species, 2) rare or critically impaired wetland communities in the watershed, or 3) the presence or previous siting of rare, threatened, or endangered plant species. A high rating indicates the presence of diverse, native wetland species and a lack of non-native or invasive species. Wetlands that rate low are primarily dominated by non-native and/or invasive species.

This table may be used when calculating Vegetative Diversity/Integrity Functional Index manually. It shows four options for calculating and presenting floristic data. If you are entering data directly into the MnRAM 3.0 database, this table does not apply.

	3A Proportion of Wetland	3B Individual Community Scores	3C Highest Quality	3D Non-Weighted Average	3E Weighted Average
Community #1	**T**	**A**		**A**	**A**
Community #2	**U**	**B**		**B**	**B**
Community #3	**V**	**C**		**C**	**C**
Community #4	**W**	**D**		**D**	**D**
Community #5	**X**	**E**		**E**	**E**
Community #6	**Y**	**F**		**F**	**F**
Community #7	**Z**	**G**		**G**	**G**
Wetland Rating Value	**1.0**		**Highest Value**	**(A+B+C+D+E+F+G)/7 = Ave.**	**(A*T)+(B*U)+(C*V)+(D*W)+(E*X)+(F*Y)+(G*Z) = Wt. Ave.**

If any questions #4-6 are answered yes and/or if any of the Special Features b, d, or i have been selected, enter Exceptional for the functional index. If not, compute the contribution to vegetative diversity and integrity by each plant community by doing the following: multiply the ranking for each community (Question #3b) by its total proportion in Question 3a (percent of total). Then, the functional index for the entire wetland can be calculated four ways (as follows) and should be utilized according to the scope of the project:

3b) Individual Community Scores: maintain raw data as recorded.

3c) Highest Quality Community: report the highest-functioning community.

3d) Non-Weighted Average Quality of all Communities: straight average

3e) Weighted Average Quality Based on Percentage of Each Community: multiply each community rating by its percentage, then add all together.

Vegetative Diversity/ Integrity					
	3a. Proportion of Wetland	**3b. Individual Community Scores**	**3c. Highest Rated Community Quality**	**3d. Non-Weighted Average**	**3e. Weighted Average**
Community #1	**T**	**A**	**If Spec. Features b, d or i are checked then rate Exceptional (2); if either question 4, 5, or 6 are Yes, then rate Exceptional (2); else:**		
Community #2	**U**	**B**			
Community #3	**V**	**C**			
Community #4	**W**	**D**			
Community #5	**X**	**E**			
Community #6	**Y**	**F**			
Community #7	**Z**	**G**			
Overall Wetland Value Rating	**1.0**		**: Highest Value of A-G**	**: (A+B+C+ D+E+F+G)/7 = Ave.**	**:(A*T)+(B* U)+(C*V)+ (D*W)+(E* X)+(F*Y)+(G*Z) = Wt. Ave.**

6.2 MAINTENANCE OF CHARACTERISTIC HYDROLOGIC REGIME

A wetland's hydrologic regime or hydroperiod is the seasonal pattern of the wetland water level that is like a hydrologic signature of each wetland type. It defines the rise and fall of a wetland's surface and subsurface water. The constancy of the seasonal patterns from year to year ensures a reasonable stability for the wetland[23]. The ability of the wetland to maintain a hydrologic regime characteristic of the wetland type is evaluated based upon wetland soil and vegetation characteristics, land use within the wetland, land use within the upland watershed contributing to the wetland, and wetland outlet configuration. Maintenance of the hydrologic regime is important for maintaining a characteristic vegetative community, and is closely associated with other functions including flood attenuation, water quality and groundwater interaction.

Measures the degree of human alteration of the wetland hydrology, either by outlet control or by altering immediate watershed conditions. Each parameter is weighted equally.

MnRAM #	Excel #	Variable Description	Type of Interaction
13	E17	Outlet—natural hydrologic regime	Controlling
14	E18	Dominant upland land use	Compensatory
15	E19	Soil condition/wetland	Compensatory
20	F24	Stormwater runoff/pretreatment-Reverse	Compensatory

Hydrologic Regime Index = (13+14+15+20)/4

6.3 FLOOD AND STORMWATER STORAGE/ATTENUATION

A wetland's ability to provide flood storage and/or flood wave attenuation is dependent on many characteristics of the wetland and contributing watershed. Characteristics of the subwatershed that affect the wetlands ability to provide flood storage and attenuation include: soil types, land use and resulting stormwater runoff volume, sediment delivery from the subwatershed, and the abundance of wetlands and waterbodies in the subwatershed. Wetland characteristics which affect the wetland's ability to store and or attenuate stormwater include: condition of wetland soils; presence, extent, and type of wetland vegetation; presence and connectivity of channels; and most importantly outlet configuration. Higher rated wetlands will have an unaltered or restricted outlet, undisturbed wetland soils, dense emergent vegetation without channels, a high proportion of impervious surfaces in the subwatershed, large runoff volumes, clayey upland soils, and few wetlands present within the subwatershed.

This formula is based on the Surface Water Storage Functional Capacity Index scoring concept and equation[24]. The formula was altered with the addition of three surface flow characteristics and two stormwater runoff parameters (Stormwater Runoff Quality/Quantity and Subwatershed Wetland Density) along with the removal of two parameters (Soil Porosity and Subsurface Outlet,

[23] Mitsch and Gosselink, 2000
[24] Lee et al., 1997

which is already characterized in another parameter). This index is comprised of 5 primary processes, which are weighted equally; included in each major process are one to three characteristics that equally contribute to that process.

1. **Outlet Characteristics**: Outlet characteristics
2. **Upland Watershed**: Upland land use, Upland soils,
3. **Wetland Condition/Land Use**: Wetland land use, sediment delivery
4. **Runoff Characteristics:** Stormwater runoff quality/quantity, subwatershed wetland density
5. **Surface Flow Characteristics**: Flow-through emergent vegetation density, surface flow characteristics

Flood and Stormwater Storage Index Computation:

Entire Formula: Outlet for flood retention{12} + (Dominant upland use-RR{14}+ Upland soils{19})/2 + (Soil condition{15} + Sediment delivery{18})/2 + Stormwater runoff pretreat&det{20} + Subwatershed wetland density{21})/2 + (Percent emergent vegetative cover{16} + Flow-through emergent vegetative roughness{17} + Channels/sheet flow{22})/3)/5.

1. If 12=0, then: ((14+19)/2+(15+18)/2+(20+21)/2+(16+17+22)/3)/4

2. If 12>0, then: (12+(14+19)/2+(15+18)/2+(20+21)/2+(16+17+22)/3)/5

No changes to the formula are necessary if 16=0.

Flood and Stormwater Storage/Attenuation Variables

MnRAM #	Excel #	Variable Description	Type of Interaction
12	E16	Outlet—flood attenuation	Controlling—optional
14	F18	Dominant upland land use-RR	Compensatory
19	E23	Upland soils	Compensatory
15	E19	Soil condition	Compensatory
18	E22	Sediment delivery	Compensatory
20	E24	Stormwater pretreatment &detention	Compensatory
21	E25	Subwatershed wetland density	Compensatory
16	F20	Emergent vegetation % cover	Comp.—optional
17	E21	Emergent vegetation flood resistance	Comp.—optional
22	E26	Channels/sheet flow	Compensatory

6.4 DOWNSTREAM WATER QUALITY PROTECTION

This rates the wetland's ability and opportunity to protect valuable downstream resources. Valuable downstream resources include recreational waters (i.e. lakes, streams, rivers, creeks, etc) and potable water supplies. The level of functioning is determined based on runoff characteristics, sedimentation processes, nutrient cycling, and the presence and location of significant downstream water resources. Runoff characteristics that are evaluated include: land use and soils in the upstream watershed, the stormwater delivery system to the wetland, and sediment delivery characteristics. The ability of the wetland to remove sediment from stormwater is determined by emergent vegetation and overland flow characteristics. A high nutrient removal rating indicates dense vegetation and sheet flow to maximize nutrient uptake and residence time within the wetland. The opportunity for a wetland to protect a valuable water resource diminishes with distance from the wetland so wetlands with valuable waters within 0.5 miles downstream have the greatest opportunity to provide protection.

Compute Functional Index for Downstream Water Quality Protection
This functional index computation was derived from a combination of Nutrient Cycling and Retention of Particulates functions in the HGM Prairie Pothole draft guidebook[54] with the downstream sensitivity concept from *The Minnesota Wetland Evaluation Methodology.* Three major processes make up equal portions of the Downstream Water Quality Protection function[25] with a measure of opportunity to protect downstream resources; each process is comprised of two to four observable parameters.

1. **Rate, Quantity, and Quality of Runoff to the Wetland**: this is characterized by the conditions in the upstream watershed; both land use and soils, that affect the sediment and nutrient loads to the wetland, and by the existing storm water delivery system to the wetland (Upland watershed conditions, storm water runoff, evidence of sediment delivery, and upland buffer each comprise 1/16 of the entire downstream water quality functional index based on their contribution to sediment removal).
2. **Sedimentation**: this is characterized by the presence of flow-through emergent vegetation density and by the overland flow characteristics within the wetland. A wetland with primarily sheet flow through the wetland and dense emergent vegetation density will allow sediment to drop out more effectively than a wetland with channel flow and no vegetation (When all parameters are applicable; emergent vegetative density and overland flow characteristics each make up 1/8 of the total downstream water quality functional index based on their contribution to sediment removal).
3. **Nutrient Uptake**: this is characterized by the outlet configuration and vegetative characteristics. A wetland with long water retention times has more capacity to remove nutrients from the water column via physical and biological processes. Vegetation slows floodwaters by creating frictional drag in proportion to stem density which allows sediment particles to settle out, thereby improving the water quality for downstream uses (Outlet characteristics and vegetative density each make up 1/8 of the total downstream water quality functional index based on their contribution to nutrient uptake).

[25] Derived from a combination of Nutrient Cycling and Retention of Particulates functions in the HGM Prairie Pothole draft guidebook (Lee et al., 1997) with the downstream sensitivity concept from *The Minnesota Wetland Evaluation Methodology.*

4. **Downstream Sensitivity**: if the wetland contributes to the maintenance of water quality within one-half mile of a recreational water body or potable water supply source downstream, it operates at a higher functioning level than a similar wetland farther from or without significant downstream water resources (This factor accounts for ¼ of the total downstream water quality functional index).

Downstream Water Quality Functional Index Computations:

1. If 12=0, then: (14+$20_{reversed}$ +18+(**23+24+26**)/3+(**16**+17)/2+27)/6

2. If 12>0, then: (14+$20_{reversed}$ +18+(**23+24+26**)/3+(**16**+17)/2+27+12)/7

No changes to the formula are necessary if 16=0.

Entire Formula:
(Dominant upland land use{14} + Stormwater runoff pretreatment & detention{$20_{reversed}$ } + Sediment delivery {18} + (Upland buffer width{23}WQ + Upland buffer vegetative cover{24} + Upland buffer slope {26})/3 + (Flow-through %emergent vegetative cover{16} + Flow-through emergent vegetative roughness{17})/2 + Downstream sensitivity{27}+ Outlet for flood{12})/7

Downstream Water Quality Variables

MnRAM #	Excel #	Variable Description	Type of Interaction
14	E18	Dominant upland land use	Controlling
20	E24	Stormwater runoff pretreatment &detention	Controlling
18	E22	Sediment delivery	Controlling
23	G27	Upland buffer width	Comp.
24	G28	Upland area management	Comp.
26	G34	Upland area slope	Comp.
16	F20	Emergent vegetation (% cover)	Comp.—optional
17	E21	Emergent vegetation (roughness coefficient)	Comp.—optional
27	E39	Downstream sensitivity	Comp.
12	E16	Outlet for flood	Controlling--optional

6.5 MAINTENANCE OF WETLAND WATER QUALITY

The sustainability of a wetland is partially driven by the quality and quantity of stormwater runoff entering the wetland. The ability of the wetland to sustain its characteristics is evaluated based on characteristics of the contributing subwatershed and indicators within the wetland. Subwatershed conditions which affect the wetland's sustainability in relation to water quality impacts include: upland land use; sediment delivery characteristics to the wetland; stormwater runoff volumes and rates; and the extent, condition, and width of upland buffer. Indicators of nutrient loading to the wetland indicate that a diverse wetland may not be sustainable. Indicators that a wetland has been affected by nutrient loading include the presence of monotypic vegetation and/or algal blooms.

This functional index was derived from a combination of sources including MNRAM, HGM, WEM, WET, and experiences of the project team. The sustainability of a wetland

is partially driven by the quality and quantity of stormwater runoff entering the wetland. The ability of the wetland to sustain its characteristics is evaluated based on characteristics of the contributing subwatershed and indicators within the wetland. Subwatershed conditions which affect the wetland's sustainability in relation to water quality impacts include: upland land use; sediment delivery characteristics to the wetland; stormwater runoff volumes and rates; and the extent, condition, and width of upland buffer. Indicators of nutrient loading to the wetland indicate that a diverse wetland may not be sustainable. Indicators that a wetland has been affected by nutrient loading include the presence of monotypic vegetation and/or algal blooms.

Wetland Water Quality Functional Index Computation:

(3e*2+14+$20_{reversed}$ +**(23**+**24**+**26)**/3+18+28)/7

Entire Formula:
(Vegetative Diversity/Integrity{3e*2} + Dominant upland land use{14} + Stormwater runoff pretreatment & detention{$20_{reversed}$ } + (Upland buffer width{23}WQ + Upland buffer vegetative cover {24} + Upland buffer slope {26})/3 + Sediment delivery {18})/2 + Nutrient loading {28})/7

Wetland Water Quality Variables

MnRAM #	Excel #	Variable Description	Type of Interaction
3e	D6*2	Vegetative Diversity/Integrity	Contributing
14	E18	Dominant upland land use	Contributing
20	F24	Stormwater runoff pretreatment and detention—RR	Contributing
23	G27	Upland buffer width	Contributing
24	G28	Upland area management	Contributing
26	G34	Upland area slope	Contributing
18	E22	Sediment delivery	Contributing
28	E40	Nutrient loading	Contributing

This functional index was derived from a combination of sources including MNRAM, HGM, WEM, WET, and experiences of the project team. The sustainability of a wetland is partially driven by the quality and quantity of stormwater runoff entering the wetland. The ability of the wetland to sustain its characteristics is evaluated based on characteristics of the contributing subwatershed and indicators within the wetland. Subwatershed conditions which affect the wetland's sustainability in relation to water quality impacts include: upland land use; sediment delivery characteristics to the wetland; stormwater runoff volumes and rates; and the extent, condition, and width of upland buffer. Indicators of nutrient loading to the wetland indicate that a diverse wetland may not be sustainable. Indicators that a wetland has been affected by nutrient loading include the presence of monotypic vegetation and/or algal blooms.

6.6 SHORELINE PROTECTION

Shoreline protection is evaluated only for those wetlands adjacent to lakes, streams, or deepwater habitats. The function is rated based on the wetlands opportunity to protect the shoreline; i.e. wetlands located in areas frequently experiencing large waves and high

currents have the best opportunity to protect the shore. In addition, shore areas composed of sands and loams with little vegetation or shallow-rooted vegetation will benefit the most from shoreline wetlands. The wetland width, vegetative cover, and resistance of the vegetation to erosive forces determine the wetland's ability to protect the shoreline.

Each of the five parameters contributes equally[26]: based primarily on the characteristics presented in WEM with a simple, straightforward computation of the index assuming all characteristics contribute equally.

MnRAM #	Excel #	Variable Description	Type of Interaction
29	E41	Shoreline?	Controlling
30	E42	Rooted shoreline vegetation (% cover)	Contributing
31	E43	Wetland width (average)	Contributing
32	E44	Emergent vegetation erosion resistance	Contributing
33	E45	Shoreline erosion potential	Contributing
34	E46	Bank protection ability	Contributing

Shoreline Protection Functional Index Computation:

If 29=1, then:
Shoreline Protection Index = (30+31+32+33+34)/5

Entire Formula:
(Rooted shoreline vegetation {30} + Average shoreline wetland width {31} + Emergent vegetation erosion resistance {32} + (Shoreline erosion potential {33} + Bank protection ability {34})/5

6.7 MAINTENANCE OF CHARACTERISTIC WILDLIFE HABITAT STRUCTURE

The ability of a wetland to support various wildlife species is difficult to determine due to the specific requirements of the many wildlife species that utilize wetlands. This function determines the value of a wetland for wildlife in a more general sense, and not based on any specific species. The characteristics evaluated to determine the wildlife habitat function include: vegetative quality, outlet characteristics (which control hydrologic regime), upland land use, wetland soil type and conditions, water quality of storm water runoff entering the wetland, upland buffer extent, condition, and diversity; the interspersion of wetlands in the area; barriers to wildlife movement; wetland size; vegetative and community interspersion within the wetland; and amphibian breeding potential and overwintering habitat.

Thirteen parameters are weighed equally as described below; vegetative quality weighted double the other factors. The questions are borrowed or modified from MNRAM, WET, WEM, and HGM methodologies, combined to provide a measure of wildlife habitat in general, not focusing on any particular species.

If Rare Wildlife (35) or Rare Natural Community (36) are true, then this Index is Exceptional.

[26] Based primarily on the characteristics presented in WEM.

If Special Features d, g, or j are checked, then this Index is Exceptional, otherwise, follow conditions below:

If 37=0 and 38=0 and 39=0, then:
(3e*2+40+41+(**23**+**24**+**25)**/3+13+ 20)/7

If 38=0 and 39=0, then:
(3e*2+37+40+41+(**23**+**24**+**25)**/3+ 13+20)/8

If 37=0 and 39=0, then:
(3e*2+38+40+41+(**23**+**24**+**25)**/3+ 13+20)/8

If 37=0 and 38=0, then:
(3e*2+39+40+41+(**23**+**24**+**25)**/3+ 13+20)/8

If 39=0, then:
(3e*2+37+38+40+41+(**23**+**24**+**25)**/3+13+20)/9

If 38=0, then:
(3e*2+39+37+40+41+(**23**+**24**+**25)**/3+13+20)/9

If 37=0, then:
(3e*2+39+38+40+41+(**23**+**24**+**25)**/3+13+20)/9

If 37>0 and 38>0 and 39>0, then:
(3e*2+39+37+38+40+41+(**23+24+25**)/3+13+20)/10

Entire Equation:
(Vegetative Diversity/Integrity{3e*2} + Wetland Detritus {39} + Vegetation Interspersion {37} + Community Interspersion {38} + Wetland Interspersion {40} + Wildlife Barriers {41} + (Upland buffer width {23}WQ + Upland Area Management{24} + Upland area diversity {25})/3 + Outlet natural hydrologic regime {13}+ Stormwater runoff pretreatment and detention 20)/11

MnRAM #	Excel #	Variable Description	Type of Interaction
41	E53	Wildlife barriers	Controlling
3e	D6	Vegetative Ranking (communities' weighted average)	Compensatory
39	E51	Wetland detritus (n/a)	
23	I27	Upland buffer average width	
24	G28	Upland area management	
25	G31	Upland area diversity	
13	E17	Outlet natural hydrologic regime	
20	F24	Stormwater runoff pretreatment & detention—RR	
37	F49	Vegetation interspersion (n/a)	
38	F50	Community interspersion (n/a)	
40	E52	Wetland interspersion	

6.8 MAINTENANCE OF CHARACTERISTIC FISH HABITAT

The ability of the wetland to support native fish populations is determined by structural factors within the wetland as well as water quality contributions from upland factors. Wetlands rated High are lacustrine or riverine and provide spawning/nursery habitat, or

refuge for native species (included but not limited to game fish). Wetlands rated Low for fish habitat do not have a direct hydrologic connection to a waterbody with a native fishery or have poor water quality.

MnRAM #	Excel #	Variable Description	Type of Interaction
46	E58*2	Fish habitat quality	Controlling
29	D41	Fringe wetland?	Contributing
24	G28	Adjacent area management	Compensatory
18	E22	Sediment delivery	Compensatory
20 (R)	F24	Storm water runoff	Compensatory
28	E40	Nutrient load	Compensatory
30	E42	Percent cover	Compensatory
31	E43	Wetland shoreline width	Compensatory
33 (R)	F45	Shoreline erosion potential	Compensatory

Fish Habitat Functional Index Computation:

If Special Features a or g are checked, then Fishery Habitat Index = Exceptional.

If 46=0, then Fishery Habitat = N/A

If 29=0, Fishery Habitat Index = [(46*2)+24+18+20(R) +28]/6

If 29>0, Fishery Habitat Index = [(46*2)+24+18+20(R) +28+**30**+**31**+**33(R)**]/9

6.9 MAINTENANCE OF CHARACT. AMPHIBIAN HABITAT FOR BREEDING/OVERWINTERING

The ability of a wetland to support various amphibian species is difficult to determine due to the specific requirements of the many amphibian species that depend on wetlands. This function determines the value of a wetland for amphibians in general, not based on specific species. An adequate wetland hydroperiod and the presence or absence of predatory fish are considered to be limiting variables for this function. In general, wetlands must remain inundated until early to mid-June to allow the larval stages to metamorphose into adults. Because many amphibians are partly terrestrial, the characteristics evaluated to determine the amphibian habitat function include numerous hydrology and terrestrial measures. The characteristics evaluated include: upland land use, upland buffer width, water quality of storm water runoff entering the wetland, barriers to wildlife movement, and amphibian breeding potential and overwintering habitat.

An adequate wetland hydroperiod (Question 42) is considered to be the primary limiting variable for this functional index. If the hydroperiod is insufficient for breeding, the wetland rating for amphibian use will be Not Sufficient. The status of predatory fish in the wetland (Q.43) is a secondary limiting factor to the final rating; the lowest rating for this variable, however, is 0.1 (Low), rather than zero (Not Sufficient).

Amphibians' ability to use a particular wetland for over wintering is a contributing factor in rating the wetland's functional index (Q.44). Because most amphibians are partly terrestrial, the extent of upland buffer habitat surrounding the wetland (Q.23) is an

important habitat component[27] and is weighted by a factor of two. Question 14 (Upland Land Use) is also included as an indicator of the quality of the surrounding upland habitat[56]. Unnatural fluctuations in water depth in wetlands from conducted storm water runoff can impair reproductive success in amphibians, which often attach their eggs to stems of wetland vegetation, e.g., salamanders, tree frogs, green frogs, and wood frogs[28]. Extreme water level fluctuations during winter may also cause mortality in overwintering reptiles and amphibians[29]. Thus, Question 20 is included in the formula, with a reverse rating. Question 41 (Barriers) is included because access to and from the wetland by amphibians is an important factor in habitat quality[30].

Amphibian Habitat Functional Index Computation:

If 42=0, then N/A

Otherwise: Amphibian Habitat Index = (43) * [(44 + 2*$23_{wildlife}$ + 14 + 41 + $20_{reversed}$)/6]

Entire Formula:

If Amphibian Breeding Potential-Hydroperiod {42} is applicable, then: (Amphibian Breeding Potential-Predator Fish {43}) * {[(Amphibian Overwintering Habitat {44}+ 2*Upland Buffer Width $(23)_{Wildlife}$ + Dominant Upland Land Use {14} + Barriers {41} + Stormwater Input $\{20_{reverse}\}$]/6}

Amphibian Habitat Variables

MnRAM #	Excel #	Variable Description	Type of Interaction
42	D54	Amphibian breeding potential—hydroperiod	Controlling
43	D55	Amphibian breeding potential—fish presence	Controlling
44	E56	Amphibian overwintering habitat	Compensatory
23	I27	Upland buffer width	Compensatory
41	E53	Wildlife barriers	Compensatory
14	E18	Dominant upland land use	Compensatory
20	F24	Stormwater runoff pretreatment & detention—RR	Compensatory

6.10 AESTHETICS/RECREATION/EDUCATION/CULTURAL/SCIENCE

The aesthetics/recreation/education/cultural and science function and value of each wetland is evaluated based on the wetland's visibility, accessibility, evidence of recreational uses, evidence of human influences (e.g. noise and air pollution) and any known educational or cultural purposes. Accessibility of the wetland is key to its aesthetic or educational appreciation. While dependent on accessibility, a wetland's functional level could be evaluated by the view it provides observers. Distinct contrast

[27] Knutson et al., 2000
[28] Richter and Azous, 1995
[29] Hall and Cuthbert, 2000
[30] Knutson, et al., 1999; Findlay and Bourdages, 2000; Semlitsch, 2000.

between the wetland and surrounding upland may increase its perceived importance. Also, diversity of wetland types or vegetation communities may increase its functional level as compared to monotypic open water or vegetation. Excess negative human influence on the wetland is counted double in the formula.

All questions contribute equally to the overall index.

MnRAM #	Excel #	Variable Description	Type of Interaction
48	E60	Rare educational opportunity	Controlling
49	E61	Wetland visibility	Compensatory
50	E62	Proximity to population	Compensatory
51	E63	Public ownership	Compensatory
52	E64	Public access	Compensatory
53	E65	Human influence—wetland	Compensatory
54	E66	Human influence—viewshed	Compensatory
55	E67	Spatial buffer	Compensatory
56	E68	Recreational activities in wetland	Compensatory

Aesthetics/Recreation/Education/Cultural/Science Functional Index Computations:

If Special Features c, h, or u is checked[31], or

If 48=1, then Index = Exceptional;

If 53=0.1 (Low), then = (50+51+52+2*53+54+55+56)/8

If 53>0.1, then = (49+50+51+52+53+54+55+56)/8

Entire Formula

(Wetland Visibility {49} + Proximity to Population {50} + Public Ownership {51} + Public Access {52} + Human Influence - Wetland {53} + Human Influence - Viewshed {54} + Spatial Buffer {55} + Recreational Activities in Wetland {56})/8

6.11 COMMERCIAL USES

This question considers the nature of any commercially-valuable use of the wetland and requires the assessor to consider how such use may be a detriment to the sustainability of the wetland. Some row crops can be planted in Type 1 wetlands after spring flooding has ceased and still have adequate time to grow to maturity. This non-wetland-dependent agricultural use of wetlands may include hay, pasture/grazing, or row crops such as soybeans or corn. Wetland-dependent crops include wild rice and cranberries, which rely on the wetland hydrology for part of their life cycle.

[31] c = Designated scientific and natural area; h = Archeologic or historic site designated by the State Historic Preservation Office; u = State or Federal designated wilderness area.

Sustainable uses of the wetland would not require modifying a natural wetland. Products in this category would include collection of botanical products, wet native grass seed, floral decorations, wild rice, black spruce, white cedar, and tamarack. Sustainable uses may require modification of the natural hydrology, such as for wetland-dependent crops (rice, cranberries). Haying and grazing can be less intrusive agricultural activities utilized more or less casually when hydrologic conditions permit; light pasture and occasional haying would be considered more or less sustainable. Like peat-mining, cropping is an unsustainable use of the wetland as it is results in severe alterations of wetland characteristics (soil, vegetation, hydrology).

MnRAM #	Excel #	Variable Description	Type of Interaction
57	E69	Commercial crop—hydrologic impact	Controlling

Commercial Uses Functional Index = 57

6.12 GROUND-WATER INTERACTION

The ground water interaction function is the most difficult to assess. Here the most likely type of ground water interaction is determined, i.e. recharge or discharge, or a combination. In many cases, a wetland will exhibit both recharge and discharge characteristics, however one is usually more dominant. Several wetland and watershed characteristics are evaluated to determine the likely interaction including: wetland soil type, upland land use, upland soil types and wetland size, wetland hydroperiod, wetland outlet characteristics, and topographic relief.

The purpose of this function is strictly to determine the likelihood of the appropriate ground-water interaction based on observable characteristics of the wetland and watershed. The significance of ground water as a component of the wetland water budget is the most difficult functional characteristic to determine without large quantities of detailed hydrologic and geologic information. The following methodology takes the most easily observable and distinct measures of recharge/discharge relationships from the *Wetland Evaluation Technique*[32] and the *Hydrogeomorphic Assessment Methodology*[33]. In many wetlands, surface water and ground water both make significant contributions to the water budget, but occasionally recharge or discharge is dominant. The goal here is to identify the dominant ground-water interaction (if there is one) to help guide future management and provide an indication when additional information may be warranted.

[32] Adamus, et al., 1987
[33] Magee and Hollands, 1998

- If 5 or 6 of questions 58-63 are answered the same, this indicates a strong likelihood that the most frequently stated interaction exerts the primary influence on the wetland.
- If 3-4 questions are answered the same, then the wetland is likely influenced by a combination of both recharge and discharge interactions (i.e. both types of ground water interaction are likely to be present at some point during most years).

58. Wetland Soils – from HGM system functional assessments and Novitzki
59. Subwatershed Land Use/Imperviousness – taken from WET Volume I
60. Wetland Size and Upland Soils – taken from WET Volume I and HGM
61. Wetland Hydrologic Regime– taken from WET Volume I and HGM
62. Inlet/Outlet Configuration – taken from WET Volume I and HGM
63. Upland Topographic Relief – taken from WET Volume I

Special Concerns for Recharge Wetlands

Wherever ground water recharge is indicated as the **primary** interaction and the wetland lies within a sensitive ground water area (**Special Feature Question q**), a contribution area to a public water supply, or a wellhead protection area (**Special Feature Question r**), it should be recorded as Exceptional for the ground water/wetland function.

6.13 WETLAND RESTORATION POTENTIAL

The potential for wetland restoration is determined based on the ease with which the wetland could be restored, the number of landowners within the historic wetland basin, the size of the potential restoration area, the potential for establishing buffer areas or water quality ponding, and the extent and type of hydrologic alteration. Each variable uses the High, Medium, Low rating rather than raw numbers—see MnRAM for individual ranges.

MnRAM #	Excel #	Variable Description	Type of Interaction
64	D79	Wetland Restoration Potential	Controlling
65	F80	Number of Landowners Affected	Contributing
21	E25	Subwatershed Wetland Density	Contributing
66b	F82	Total Wetland Restored Size (Potential)	Contributing
66c	F83	Calculated potential new wetland area	Contributing
67	F84	Potential Buffer Width	Contributing
68	F85	Likelihood of Restoration Success	Contributing

If 64="Yes", then Wetland Restoration Potential = (65+21+66b+66c+67+68)/6,

Otherwise, if 64="No" then "N/A"

Entire Formula

(Landowners Affected by Restoration (65)+Subwatershed Wetland Density (21)+ Wetland Restoration Size (66b)+Proportion of Wetland Drained (66c)+Potential Buffer Width (67)+Likelihood of Restoration Success (68))/6

6.14 WETLAND SENSITIVITY TO STORMWATER INPUT AND URBAN DEVELOPMENT

The sensitivity of the wetland to stormwater and urban development is determined based on guidance within the *Storm-Water and Wetlands: Planning and Evaluation Guidelines for Addressing Potential Impacts of Urban Storm-Water and Snow-Melt Runoff on Wetlands,* State of Minnesota Storm-Water Advisory Group, June, 1997.

Use habitat proportions from Vegetative Integrity section and enter into a formula to compute answer according to the following criteria[34].

Exceptional = Sedge meadows, open and coniferous bogs, calcareous fens, low prairies, wet to wet-mesic prairies, coniferous swamps, lowland hardwood swamps, or seasonally flooded basins.

A = Shrub-carrs, alder thickets, diverse fresh wet meadows dominated by native species, diverse shallow and deep marshes, and diverse shallow, open water communities.

B = Floodplain forests, fresh wet meadows dominated by reed canary grass, shallow and deep marshes dominated by cattail, reed canary grass, giant reed or purple loosestrife, and shallow, open water communities with low to moderate vegetative diversity.

C = Gravel pits, cultivated hydric soils, or dredge/fill disposal sites.

6.15 ADDITIONAL STORMWATER TREATMENT NEEDS

This rates the sustainability of the wetland with regard to stormwater discharges to the wetland. The need for additional stormwater treatment prior to discharge to the wetland is rated based on the overall rating for Maintenance of Wetland Water Quality. If a wetland is severely degraded by stormwater inputs, the rating will be low, since a diverse, high quality wetland will not be sustainable.

Use functional rating for Maintenance of Wetland Water Quality (MWWQ) as follows (this index is rated strictly from the measure of the water quality in the wetland and the sustainability, i.e. if the water quality in the wetland is low, additional stormwater treatment is needed to protect the wetland and the rating is low):

Use Value for Maintenance of Wetland Water Quality Index (D76, Excel spreadsheet) and apply to criteria below.

A = Maintenance of Wetland Water Quality Index >0.66 (no additional treatment needed)

B = 0.33 < Maintenance of Wetland Water Quality Index $\leq$ < 0.66 (sediment removal needed)

[34] Taken directly from State of Minnesota Storm-Water Advisory Group, 1997.

C = Maintenance of Wetland Water Quality Index < 0.33 (sediment and nutrient removal needed)

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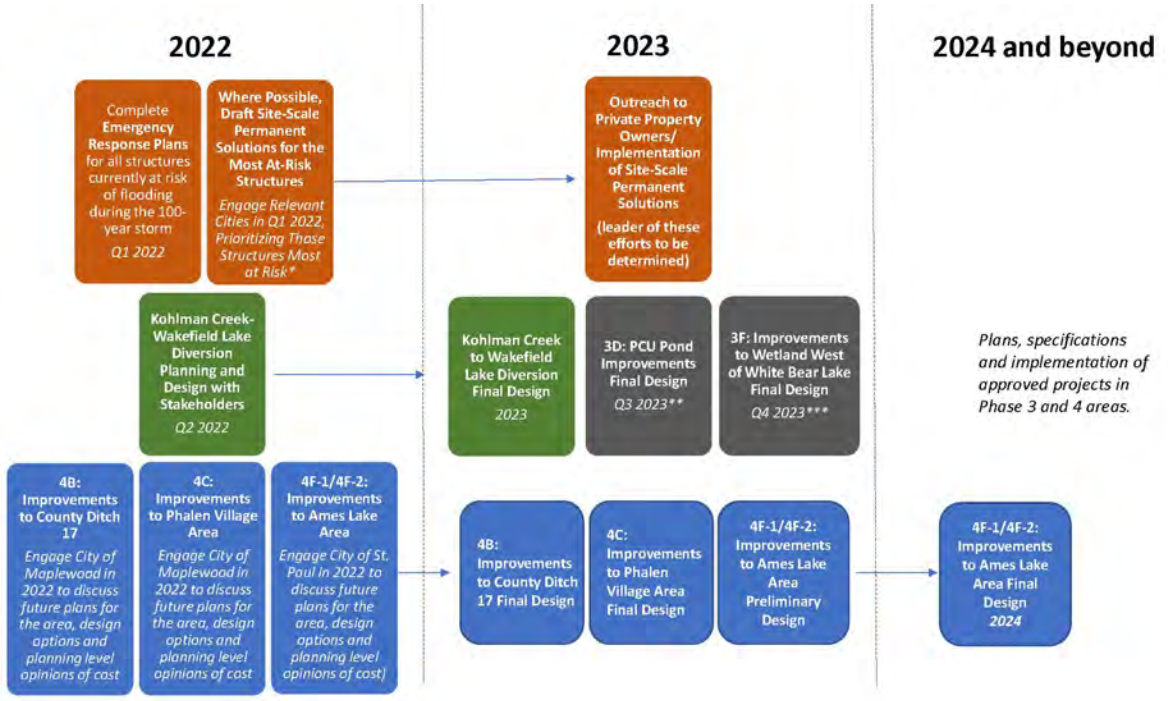
Memorandum

To: RWMWD Board of Managers
From: Erin Anderson Wenz and Brandon Barnes, Barr Engineering Company
Subject: Proposed 2022 MPCA Climate Resiliency Grant Workplan and 2022 Updated Emergency Response Plan Scope Summary
Date: January 27, 2022
c: Tina Carstens and Paige Ahlborg, RWMWD

Last month, Barr staff described the next steps in the Kohlman Creek Subwatershed Flood Risk Reduction Study and Ames Lake Area Flood Risk Reduction Studies using the graphic shown below.



In December, District staff applied for a grant through the Minnesota Pollution Control Agency's (MPCA's) Planning Grants for Stormwater, Wastewater and Community Resilience program that would cover the Kohlman Creek-Wakefield Lake Diversion Planning and Design with Stakeholders project shown in green in the graphic above.

According to the MPCA's request for grant proposals, this funding provides an opportunity for communities to assess vulnerabilities and begin planning for the effects of Minnesota's changing climate

in three areas: how to increase resilience to stormwater and reduce localized flood risk, how to improve the resilience of wastewater systems, and how to reduce human health effects and adapt community services, ordinances and public spaces to the changing climate.

In the District's grant application, the Kohlman Creek-Wakefield Lake Diversion Planning and Design project was described as follows:

The purpose of this project is to complete the final design of a regional stormwater project that would divert high flows (that currently flow to the North St. Paul Urban Ecology Center) westward toward (and through) the Goodrich Golf Course, and ultimately Wakefield Lake. The project has the potential to protect up to 17 homes and 5 City of Maplewood buildings from flooding during the 100-year storm event. In fact, most of these areas are currently at risk of flooding under even lesser events, such as the 10-year, the 25-year or the 50-year event.

The potential for water reuse or water quality treatment of diverted water will also be evaluated as a part of this design effort. Wakefield Lake, the proposed downstream recipient of the diverted water, is currently on the MPCA's Impaired Waters List for excess nutrients, so it is important to consider flood risk reduction options that would also provide a water quality benefit to Wakefield Lake.

These requested grant funds would be leveraged to gather the various stakeholders affected by the project- RWMWD, City of Maplewood, Ramsey County (Goodrich Golf Course) and the MN Department of Natural Resources (Gateway State Trail) to be involved in the design of the project to achieve multiple benefits over and above flood risk reduction (some examples could include improvement of stormwater quality, stormwater reuse and public education). The ultimate goal of this effort is to bring the regional stormwater project to final design with stakeholder agreement to the degree that the next step would be the development of plans and specifications for the project's implementation.

Grant requested: $ 61,400 + Matching funds: $ 30,810 = Total project cost: $ 92,210

The full workplan developed for the grant application is included as an attachment to this memorandum.

This month, Barr updated the Emergency Response Plan Scope Summary (originally created in February, 2021) to include the 2022 activities and timeline shown in orange in the graphic above. The updated scope summary is included as an attachment to this memorandum. These two items are for your information and we'll be happy to answer any questions you have about our next steps.

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Planning Grants for Stormwater, Wastewater, and Community Resilience

Project workplan

Doc Type: Grant Application

Project title:

Kohlman Creek – Wakefield Lake Diversion Planning and Design

Statement of project details

The purpose of this project is to complete the final design of a regional stormwater project that would divert high flows (that currently flow to the North St. Paul Urban Ecology Center) westward toward (and through) the Goodrich Golf Course, and ultimately Wakefield Lake. The project has the potential to protect up to 17 homes and 5 City of Maplewood buildings from flooding during the 100-year storm event. In fact, most of these areas are currently at risk of flooding under even lesser events, such as the 10-year, the 25-year or the 50-year event.

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These requested grant funds would be leveraged to gather the various stakeholders affected by the project- RWMWD, City of Maplewood, Ramsey County (Goodrich Golf Course) and the MN Department of Natural Resources (Gateway State Trail) to be involved in the design of the project to achieve multiple benefits over and above flood risk reduction (some examples could include improvement of stormwater quality, stormwater reuse and public education).

Goal statement, project deliverable(s), tasks, and subtasks

Goal statement: The ultimate goal of this effort is to bring a regional stormwater project to final design that would bring 22 habitable or City of Maplewood buildings out of the 100-year floodplain with design agreements across the project's various stakeholders. A secondary goal is to incorporate not only flood risk reduction features into the project, but other benefits as well (stormwater quality improvement and public education, for example).

Project deliverables: The project deliverable is a final project design that has been deemed acceptable across all stakeholders, for which plans, specifications and operations and maintenance agreements can be pursued as a next step toward project implementation.

Task 1 of 6: Kickoff Meeting with Stakeholders

Subtask 1a: Preparation of materials
Brief description of activities involved: Creation of project Sharepoint site, meeting agenda, maps, photos and meeting invitation.
Timeframe: March, 2022
Name and Title of person(s) responsible: Paige Ahlborg, Watershed Project Manager and Matt Metzger, Barr Engineering Company

Subtask 1b: Virtual Kickoff Meeting
Brief description of activities involved: Virtual kickoff meeting with project stakeholders (RWMWD, Barr. City of Maplewood, Ramsey County, MnDNR)
Timeframe: April, 2022
Name and Title of person(s) responsible: Paige Ahlborg, Watershed Project Manager and Matt Metzger, Barr Project Manager

Subtask 1c: Site Visit with Stakeholders
Brief description of activities involved: Site visit project stakeholders (RWMWD, Barr, City of Maplewood, Ramsey County, MnDNR)
Timeframe: April or May, 2022
Name and Title of person(s) responsible: Paige Ahlborg, Watershed Project Manager and Matt Metzger, Barr Project Manager

Task 2 of 6: Information Collection

Subtask 2a: Survey
Brief description of activities involved: Survey remaining low structures, critical infrastructure and topography in select areas.

Timeframe: June to October, 2022
Name and Title of person(s) responsible: Gareth Becker, Barr Engineering Company

Subtask 2b: Water quality monitoring
Brief description of activities involved: Water quality monitoring (including flow rate) of inflows to North St. Paul Urban Ecology Center and the Frost Kennard Spent Lime Filter in upstream of County Ditch 17
Timeframe: April to October, 2022
Name and Title of person(s) responsible: Eric Korte, RWMWD

Subtask 2c: Review of potential permitting requirements
Brief description of activities involved: Preliminary conversations with the MnDNR and other relevant entities about potential permitting requirements for the project.
Timeframe: May to October, 2022
Name and Title of person(s) responsible: Tyler Olsen, Barr Engineering Company

Task 3 of 6: H&H and Water Quality Modeling

Subtask 3a: Hydrologic and Hydraulic Modeling
Brief description of activities involved: Optimization of bypass flow rate (including estimation of impacts to Wakefield Lake)
Timeframe: May to June, 2022
Name and Title of person(s) responsible: Matt Metzger and Lulu Fang, Barr Engineering Company

Subtask 3b: Water Quality Modeling
Brief description of activities involved: Using P8 and perhaps an in-lake mass balance model or FLUX to estimated impacts to Wakefield Lake.
Timeframe: May to June, 2022
Name and Title of person(s) responsible: Matt Metzger and Tyler Olsen Barr Engineering Company

Task 4 of 6 Design Charette with Stakeholders

Subtask 4a: Design Charette with Stakeholders
Brief description of activities involved: Preparation of charette materials (maps and technical information), design charrette event with project stakeholders and preparation and distribution of design charette outcomes.
Timeframe: September/October, 2022
Name and Title of person(s) responsible: Paige Ahlborg, Watershed Project Manager and Matt Metzger, Barr Engineering Company

Task 5 of 6 Creation of 2 Design Concepts

Subtask 5a: Draft Preliminary Design Concepts (assume two designs)
Brief description of activities involved: Draft Preliminary Design Concepts (assume 2 designs) in plan view, potentially with a few design details to share with stakeholders. A description of the benefits of each design would be included in this subtask.
Timeframe: October to January, 2023
Name and Title of person(s) responsible: Matt Metzger, Barr Engineering Company

Subtask 5b: Planning level cost estimates (assume two designs)
Brief description of activities involved: Determine planning level cost estimates (assume two designs) that pertain to each design concept developed in Task 5a to share with stakeholders.
Timeframe: January, 2023
Name and Title of person(s) responsible: Matt Metzger and Gareth Becker, Barr Engineering Company

Subtask 5c: Solicitation of feedback from Stakeholders
Brief description of activities involved: Solicitation and collection of feedback on draft preliminary designs and planning level cost estimates from stakeholders
Timeframe: February, 2023
Name and Title of person(s) responsible: Paige Ahlborg, Watershed Project Manager and Matt Metzger, Barr Engineering Company

Task 6 of 6 Final Documentation and Project Deliverables

Subtask 6a: Creation of Final Design

Brief description of activities involved: After feedback from stakeholders is received in subtask 5c, a single design option will be

finalized and redistributed to project stakeholders, including a description of planning level costs and benefits that the design will provide.
Timeframe: March, 2023
Name and Title of person(s) responsible: Matt Metzger, Barr Engineering Company

Subtask 6b: Preparation of public outreach materials
Brief description of activities involved: These materials would be targeted at North St. Paul Urban Ecology Center, County Ditch 17 and Wakefield Lake neighborhoods and would describe the project design and next steps.
Timeframe: March to June, 2023
Name and Title of person(s) responsible: Paige Ahlborg and Lauren Hazenson, RWMWD

Subtask 6c: Preparation of website graphics and narrative about the project
Brief description of activities involved: Website graphics (potentially in the layout of a story map) would describe the project design and next steps to a broader audience. This material could be kept up to date as the project progresses toward implementation.
Timeframe: March to June, 2023
Name and Title of person(s) responsible: Lauren Hazenson, RWMWD and Maureen McFarlane, Barr Engineering Company

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Project Work Plan

Original Date: February 24, 2021
Updated: January 27, 2022 (update scope is shown in red font)

Project: **Emergency Response Plans**
Project # 23621200.00 001

Project Team

District Staff: Tina Carstens
Barr Staff: Gareth Becker (Project Manager and Surveyor)
Erin Anderson Wenz (Principal)
Lulu Fang (modeling)
Greg Nelson (QA/QC)

Scope of Work

In 2014, the District began updating their hydrologic and hydraulic models to reflect more recent precipitation data that had been published for the Midwest by the National Oceanic and Atmospheric Administration (called "Atlas 14") as well as changes to storm sewer systems and drainage areas throughout the District. At the same time, the District began a process of identifying habitable structures that were at risk of flooding during the 100-year event. Only habitable buildings (homes, businesses, churches, schools, etc.) were identified during this process. Potential impacts to property, garages, canopies, and auxiliary structures were not included in the assessment. A distinction was made between structures at risk of flooding due to impacts from District waterbodies and projects versus those at risk of flooding from more local issues, such as undersized catchbasin and local storm sewer systems.

Since then, the District has been working on a number of feasibility studies whose goal is to find feasible solutions to these flooding concerns and has begun implementation activities in several parts of the District. In the meantime, for areas where a feasible solution has not been found or for which a project will not be implemented within approximately 2 years, the District provides an emergency response plan to the city in which the structure of concern is located. These emergency response plans are updated and reissued as needed by the District as conditions change due to implementation projects or system operations. This is a commitment that the District has made to its member cities—to provide information that the cities can use to protect properties in the event of an extreme storm event (100-year storm).

Figure 1 Starting in 2014, the District started a process to identify habitable structures at risk of flooding during the 100-year event.

The purpose of an emergency response plan (ERP) is to describe the responsibilities for operation and emergency procedures necessary to provide flood protection for habitable structures near District waterbodies (lakes, wetlands, and stormwater ponds) during extreme flooding events (100-year event). In some cases, although larger District projects have already been identified in areas deemed at risk of flooding, the projects won't be implemented for several years. In other cases, District projects that would remove homes from the 100-year floodplain have been deemed infeasible. In both cases, emergency response plans provide RWMWD's cities with guidance for the protection of homes and businesses during the 100-year flood event in the absence of District projects that would otherwise remove them from the floodplain.

It is important to note that ERPs provided by RWMWD do not address flood protection of homes when water levels exceed the 100-year flood elevation or rise due to wind action. ERPs also do not address homes that may have less than 2 feet of freeboard during the 100-year flood level or lesser events; only homes with low-entry elevations at or below the 100-year flood level of nearby water bodies are addressed in the ERPs.

In the past, these plans have been focused around District lakes (Table 1). This scope is a little different as it will also address the protection of habitable structure near smaller District waterbodies, such as wetlands, stormwater ponds, and other projects (such as Willow Lake, Ames Lake, Owasso Basin, and PCU pond).

Table 1 below lists the District waterbodies for which adjacent habitable structures have been deemed at risk of flooding during the 100-year event and the current status of an emergency response plan for habitable structures in each area.

Table 1 Locations and status of emergency response plans throughout RWMWD

Emergency Response Plan Area*	Number of structures	Emergency Response Plan Status
Tanners Lake, Oakdale	4	Completed and given to the City of Oakdale
Gervais Lake, Little Canada	2	Completed and given to the City of Little Canada
Battle Creek Lake, Woodbury	Weir Drive (the only emergency access several businesses in the area)	Completed and given to the City of Woodbury
Lake Owasso, Roseville	5	Completed and given to the City of Roseville
Snail Lake, Shoreview	1	Completed and given to the City of Shoreview
Owasso Basin, Little Canada	Northstar Estates and up to 7 other structures in the area (elevations are still being confirmed by survey)*	To be completed ~~under this scope~~ under separate scope in 2022.
Willow Lake, White Bear Lake, and Vadnais Heights	2-4	To be completed under this scope
Kohlman Creek (PCU Pond, Markham Pond, Kohlman Creek), North St. Paul, Maplewood, and Oakdale	Up to 31 (elevations are still being confirmed by survey)	To be completed under this scope
Ames Lake, St. Paul Wakefield Lake, Maplewood Phalen Village, St. Paul Duluth Street Recreational Center, St. Paul Hoyt Pond, St. Paul	Up to 53 (elevations are still being confirmed by survey)	To be completed under this scope

* Detailed maps showing the structures considered to be at risk of flooding in each of these areas can be seen on the Beltline Resiliency Study story map, on the tabs marked "Phase 1 Inundation," "Phase 2 Inundation," "Phase 3 Inundation," and "Phase 4 Inundation." Note that in some cases, the structures highlighted in red have already been removed from the floodplain due to projects that have been implemented since 2014. The Beltline Resiliency Study story map (best viewed on Google Chrome) is located here: https://maps.barr.com/RWMWD/BeltlineResiliency/StoryMapSeries/index.html

The deliverable is an emergency response plan that addresses each habitable structure that could be flooded during a 100-year event, bundled for each city. Once handed over to the cities, the expectation is that the ERPs are reviewed annually to verify contacts and information included in the plan is current and leverage new lake level stations placed throughout the District, where appropriate.

Figures 2 through 4 below show some examples of the types of information that have been included in emergency response plans in the past. Charts like Figure 3 help cities understand when flooding might occur during an extreme storm event and how much time they might have to mobilize sandbagging or similar temporary flood risk reduction activities.

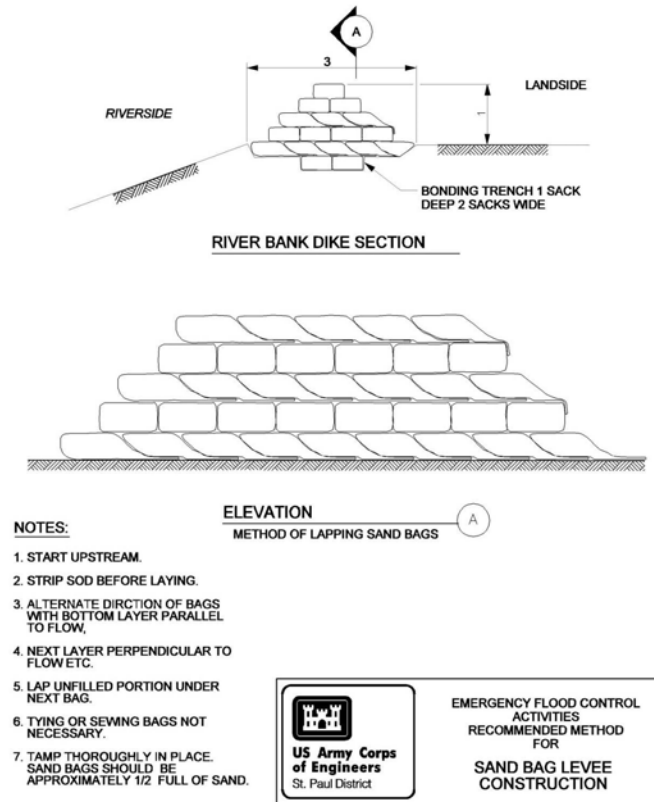


Figure 2 Example of US Army Corps of Engineers sand bag placement guidance

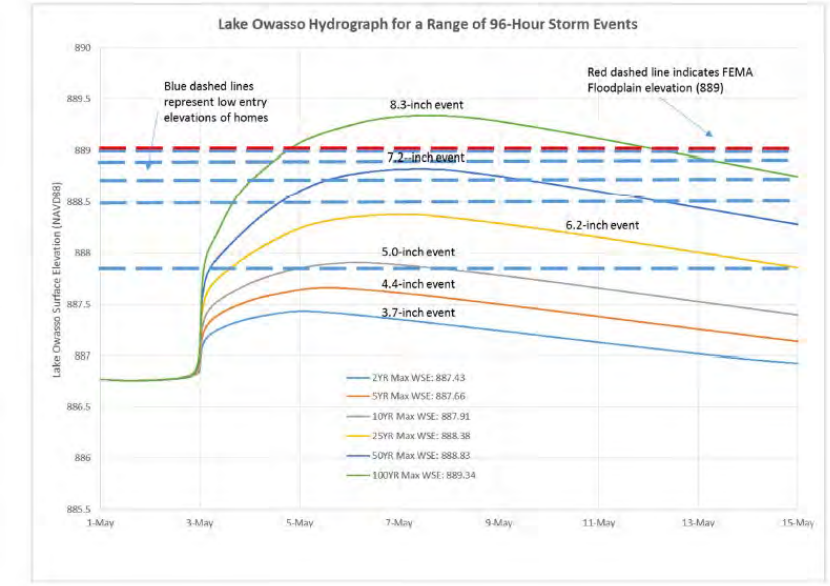


Figure 3 Lake Owasso elevations (determined from XP-SWMM modeling) during a range of 96-hour events. Blue dashed lines indicate the lowest low-entry elevation of the five houses deemed to be at risk of flooding during the 100-year (8.3-inch) event.

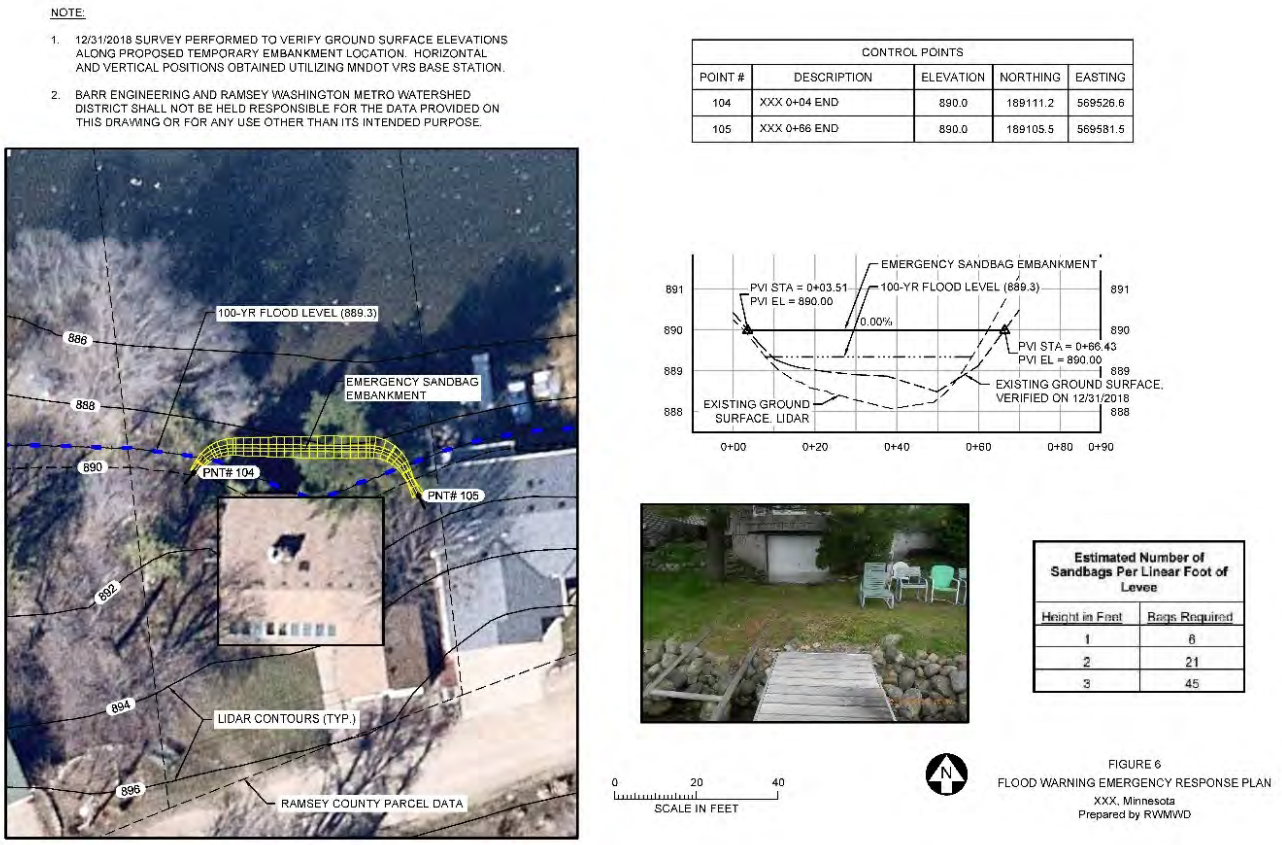
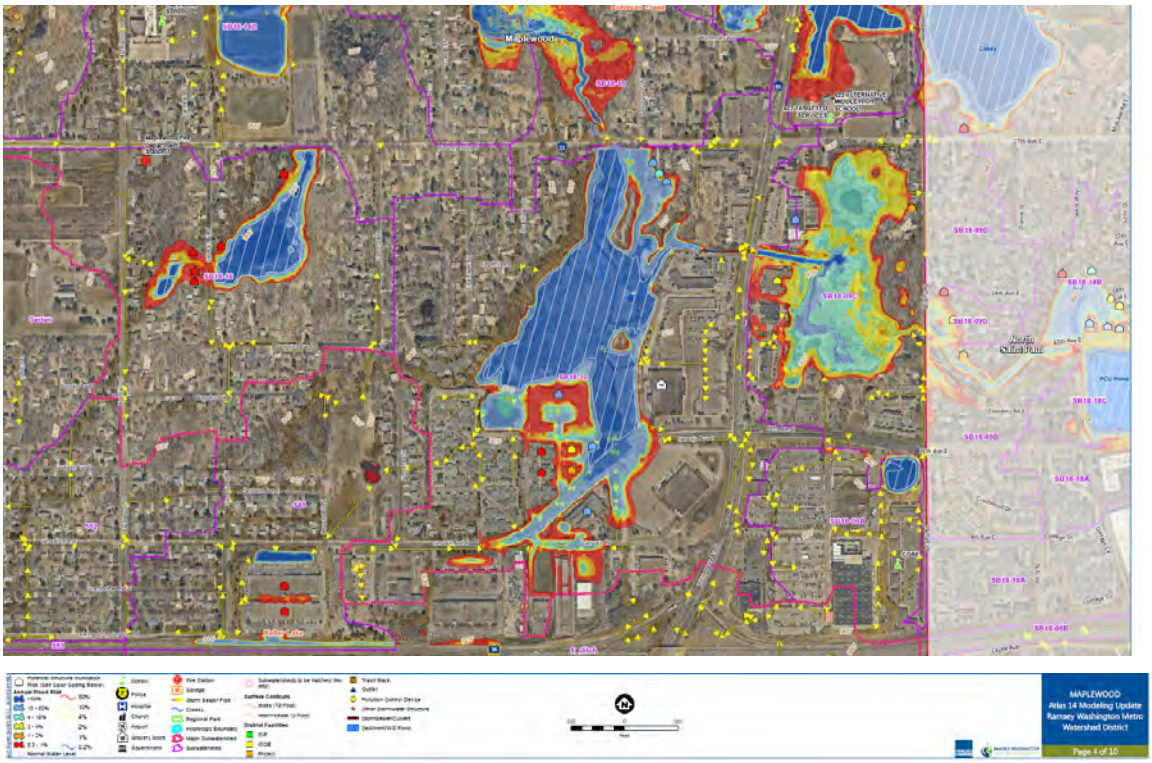


Figure 4 An excerpt from an Emergency Response Plan for a low-lying home on a District lake, showing the alignment, height, and number of sand bags needed to protect the home from flooding during a 100-year storm event.

Since the beginning of this effort in 2021, the scope for this work has expanded. For example, we have begun to take note of the structures that are affected by the 100-year event, but also by lesser events (2-year, 10-year, etc). This information was tabulated as a part of the Kohlman Creek Subwatershed and Phalen Chain of Lakes (including the Ames Lake Area) Flood Risk Reduction studies.

In early 2022, staff will create maps of this information to better convey the varying levels of risk across the structures under consideration. This work will build on maps that were created as a part of the Atlas 14 modeling work for use in communicating flood risk to cities starting in 2017.

One such map, created for the City of Maplewood and excerpted below, demonstrates how this information has been presented before. Note that some of the information shown in the map is out of date; since it was created, survey work and modeling updates have been completed. The map expresses flood risk in terms of annual flood risk, which is the inverse of the storm recurrence interval. That is, a 50-percent annual flood risk corresponds to a two-year storm event (1 divided by 0.5 equals 2), and a 0.2-percent annual flood risk corresponds to a 500-year storm event (1 divided by 0.002 equals 500). Inundation footprints for each level of annual flood risk are colored accordingly, with the most frequent flood risk in blue (two-year event) and the least frequent flood risk in red (500-year event). At-risk structures are similarly colored according to their most frequent level of flood risk; they are still at risk during less frequent, larger storm events.



Another addition to this scope is that we have created conceptual designs (where possible) for permanent site-scale solutions that have been deemed necessary as a part of the Flood Risk Reduction Studies.

Budget

Barr will complete the work outlined above on a time-and-expense basis for an estimated **$60,000.**

(Barr completed the 2021 portion of this work for $63,100.)

Barr will complete the work outlined for 2022 on a time-and-expense basis for an estimated $30,000. This increase in budget is due to the expanded scope described in the sections above.

Schedule

We propose the following milestone schedule:

The schedule has been extended into 2022 to allow for more time for creation of both emergency response plans for each site, and (where possible), permanent site-scale solutions that have been deemed necessary as a part of the Flood Risk Reduction Studies as well as updated flood risk maps for each city.

Milestone	Estimated Date	Actual Date
Gather remaining survey information to confirm habitable structures at risk of flooding during the 100-year event	May 2021	October, 2021
Revisit properties confirmed to be at risk for more detailed survey	July 2021	December, 2021
Creation of draft emergency response plans for each property	February, 2022	TBD
Creation of site-scale permanent solutions for the most at-risk structures*	February, 2022	TBD
Updated flood maps for each City	February, 2022	TBD
Presentation to Cities	February/March 2022	TBD
Updates to the RWMWD Board	March/April 2022	TBD

*The most at-risk structures could be considered those that are unprotected from flooding during storm events that are more frequent than the 100-year storm event (the smaller the level of protection, the greater (more frequent) the flood risk.

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Administrator's Report

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MEMO

TO: Board of Managers and Staff

FROM: Tina Carstens, Administrator

SUBJECT: January Administrator's Report

DATE: January 27, 2022

A. Meetings Attended

Monday, January 10	8:00 AM	MAWD Board Meeting
	3:00 PM	TMDL Reporting Call with MPCA
Thursday, January 13	9:00 AM	MAWA Virtual Winter Meeting
Friday, January 14	8:30 AM	Project Check in with Barr
Wednesday, January 19	10:00 AM	Tanners Outlet Discussion
Tuesday, January 25	2:00 PM	Metro INET Board Meeting

B. Upcoming Meetings and Dates

CAC Meeting	February 8, 2022
March Board Meeting	March 2, 2022
MAWD Virtual Legislative Event	March 16-17, 2022
April Board Meeting	April 6, 2022
Metro MAWD Meeting	April 19, 2022
CAC Meeting	April 26, 2022
May Board Meeting	May 4, 2022
June Board Meeting	June 1, 2022
WaterFest	June 4, 2022

C. Ongoing Administrator Updates

Victoria Shores/Reiling Development – As we discussed last month, the City of Roseville did accept the EAW and responded to comments received. I have attached here the response to comments as provided by the city and accepted by their city council. The council packet from their December 1, 2021 meeting includes the revised EAW and other documents.

As for the watershed permit application, it is our understanding that the applicant is still working on revising the plans to address the comments of the permit review comments and the city comments as well. They have not come forward with a revised plan to review at this time.

Memorandum

DATE: December 1, 2021

SUBJECT: Response to Agency and Public Comments – EAW

The Environmental Assessment Worksheet (EAW) for the Victoria Shores Residential Development was distributed for public comments on Tuesday, October 5, 2021. Seven agency and 29 resident comments, including the Lake Owasso Association, Inc., were received by the 30-Day Public Comment Period deadline of Thursday, November 4, 2021. This memorandum documents all comments received along with the various ways the comments have been addressed.

AGENCY COMMENTS

ARMY CORPS OF ENGINEERS

1) This letter is in response to correspondence we received from Builders Lot Group, LLC regarding the Victoria Shores Residential Development. This letter contains our initial comments on this project for your consideration. The Corps of Engineers issued a No Permit Required (NPR) letter for this project on May 13, 2021. The purpose of this letter is to inform you that based on the Environmental Assessment Worksheet (EAW) and NPR for the project referenced above a Department of the Army (DA) permit would not be required for the proposed residential development. Please consider the following general information concerning our regulatory program that may apply to future projects in this area.

Response: *Comment noted. No changes were made to the EAW.*

2) If the proposal involves activity in navigable waters of the United States, it may be subject to the Corps of Engineers' jurisdiction under Section 10 of the Rivers and Harbors Act of 1899 (Section 10). Section 10 prohibits the construction, excavation, or deposition of materials in, over, or under navigable waters of the United States, or any work that would affect the course, location, condition, or capacity of those waters, unless the work has been authorized by a Department of the Army permit.

Response: *No construction, excavation, or deposition of materials is expected in or over the navigable water. Docks are not under USACE jurisdiction. No changes were made in the EAW.*

3) If the proposal involves discharge of dredged or fill material into waters of the United States, it may be subject to the Corps of Engineers' jurisdiction under Section 404 of the Clean Water Act (CWA Section 404). Waters of the United States include navigable waters, their tributaries, and adjacent wetlands (33 CFR § 328.3). CWA Section 301(a) prohibits discharges of dredged or fill material into waters of the United States, unless the work has been authorized by a Department of the Army permit under Section 404. Information about the Corps permitting process can be obtained online at http://www.mvp.usace.army.mil/regulatory.

Response: *No discharge of dredged or fill material into waters of the United States is proposed as part of the development. No changes were made to the EAW.*

4) The Corps evaluation of a Section 10 and/or a Section 404 permit application involves multiple analyses, including (1) evaluating the proposal's impacts in accordance with the National Environmental Policy Act (NEPA) (33 CFR part 325), (2) determining whether the proposal is contrary to the public interest (33 CFR § 320.4), and (3) in the case of a Section 404 permit, determining whether the proposal complies with the Section 404(b)(1) Guidelines (Guidelines) (40 CFR part 230).

Response: *No discharge of dredged or fill material into waters of the United States is proposed at this time. A Section 10 and/or Section 404 permit are not required. No changes made to the EAW.*

5) If the proposal requires a Section 404 permit application, the Guidelines specifically require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" (40 CFR § 230.10(a)). Time and money spent on the proposal prior to applying for a Section 404 permit cannot be factored into the Corps' decision whether there is a less damaging practicable alternative to the proposal.

Response: *A Section 404 permit is not required for the project at this time. No changes made to the EAW.*

6) If an application for a Corps permit has not yet been submitted, the project proposer may request a pre-application consultation meeting with the Corps to obtain information regarding the data, studies or other information that will be necessary for the permit evaluation process. A pre-application consultation meeting is strongly recommended if the proposal has substantial impacts to waters of the United States, or if it is a large or controversial project.

Response: *No permit is required from the Corps at this time, therefore there is no need for a pre-application meeting. No changes made to the EAW.*

DNR

1) Page 8, Section 8 - Permits and approvals required:

a. This section of the EAW conflates DNR Public Waters Work Permits with DNR Water Appropriation Permits. A DNR Water Appropriation Permit may be needed for temporary dewatering during construction. Structures located in Public Waters, such as docks, may require a DNR Public Waters Work Permit. On March 25, 2021, Builders Lot Group submitted an application for docks at the proposed residential development. The proposed design of the docks was found to be consistent with DNR's specifications for docks that may be installed without a DNR Public Waters Work Permit, in accordance with Minnesota Rules, Chapter 6115.0210. The attached brochure provides more information about DNR's requirements for docks in Public Waters.

Response: *These permits have been separated in the Permits and Approvals Table in the EAW.*

b. Any control of emergent vegetation, such as cattails or bulrush, in public waters requires a DNR Aquatic Plant Management permit. These permits are issued through the DNR Regional Fisheries Offices and the specifics on what is allowed and the application process can be found at: http://www.dnr.state.mn.us/apm/index.html.

Response: *No emergent vegetation removal is currently proposed as part of the development. If future residents wish to remove emergent vegetation from their shoreline, they shall apply for a DNR Aquatic Plant Management permit at that time.*

2) Page 9, Section 9 - Land Use:

The EAW should provide additional information to discuss whether the project fully complies with the requirements of the shoreland management district. The EAW indicates the proposed project will meet the shoreland requirements for maximum impervious surface area and minimum lot width. Other applicable requirements of the shoreland management district that are not discussed in the EAW include land suitability, minimum lot area, minimum structure setback from the ordinary high-water level of the Public Water, maximum structure height, and controlled access standards.

Response: *The project will comply with all applicable requirements of the City's Shoreland Ordinance including minimum lot area, minimum structure setback from the OHWL, and maximum structure height. The project will also be required to obtain a conditional use for the controlled access in accordance with City Zoning Code Section 1017.15.B.*

Regarding land suitability, a Geotechnical Report, dated 3/12/2021 has been completed and the findings of that report indicates that two borings were conducted for each building pad and no groundwater issues or major structural support issues were encountered. Major soil corrections are not required to construction the proposed development. Per the geotechnical report, groundwater was not encountered until 7+ feet below the proposed building basement elevations for the lake lots. It is anticipated that dewatering will not be required for building construction. The underlying native glacial till deposits are suitable for fill and foundation support.

The Land Suitability provisions in the City's Zoning Code, Section 1017.23, specifically the reference to a land suitability analysis consists of City, County, watershed, and State regulations, whereby the land is considered suitable when the plans submitted in support of the subdivision meet City, County, watershed, and State regulations.

3) Page 10, Geology:

There should be a description of the materials that make up to 200 feet or so of surficial deposits. Nearby well records indicate that the surficial materials beneath the proposed development are most likely to contain thick deposits of glacial till.

Response: *A summary of the surficial deposits on the project area was added to the geology section of the EAW.*

4) Page 11, Groundwater:

The depth to the water table is normally given in this section as a means of indicating the possible need for construction dewatering on the site.

Response: *Static groundwater elevations based on active well log data have been incorporated into Section 12.a.ii. of the EAW.*

5) Page 11, Groundwater:

It is possible that unknown wells will be found on the site. Any wells that are discovered on the site should be sealed in accordance with the regulations of the Minnesota Department of Health.

Response: *Added sentence to the EAW stating that discovered wells will be sealed in accordance with regulations of MDH.*

6) Page 12, Wastewater:

This section should identify the treatment facility that will receive the municipal wastewater and describe the capacity of the treatment facility to handle additional loads.

Response: *Added language to the EAW identifying the treatment facility, treatment facility capacity, and wastewater loading from the development.*

7) Page 12, Stormwater:

The planned increase in impervious surfaces will also increase the amount of road salt used in the project area. Chloride released into local lakes and streams does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. Consider promoting local business and city participation in the Smart Salting Training offered through the Minnesota Pollution Control Agency. There are a variety of classes available for road applicators, sidewalk applicators, and property managers. More information and resources can be found at this website. Many winter maintenance staff who have attended the Smart Salting training — both from cities and counties and from private companies — have used their knowledge to reduce salt use and save money for their organizations.

We also encourage cities and counties to provide public outreach to reduce the overuse of chloride. Here are some educational resources for residents as well as a sample ordinance regarding chloride use.

Response: *Language has been added to the EAW regarding the increase of chlorides and potential BMPs to encourage responsible use of road salt.*

8) Page 12, Water Appropriation:

This section contradicts the section on Page 8 “Permit Approvals,” which states that there may be a need for a DNR Water Appropriation Permit for constructing dewatering, while the “Water Appropriation” section states that there will be no water appropriation. Given that this is lakeshore, it is likely that construction dewatering will be needed for this project.

Response: *Added language to the EAW regarding groundwater elevations and if construction dewatering is required, water appropriations permit may be required.*

9) Page 13-14, Section 11 - Water Resources:

a. DNR reviewed the filed application and found the proposed docks are consistent with DNR's specifications for docks that may be installed without a DNR Public Waters Work Permit, in accordance with Minnesota Rules, Chapter 6115.0210.

Response: *Language has been to the EAW regarding how the docks follow DNR guidelines per the proper MN Rules, Chapter 6115.0210.*

b. More information is needed on anticipated physical effects such as aquatic plant removal and riparian alteration as well as measures to avoid, minimize, or mitigate these anticipated effects. Dock installation and associated structures and activities (e.g., vegetation clearing, shallow water boating) often result in the destruction of aquatic vegetation and suspension of sediment and nutrients. These impacts can be minimized through better project design. For example, the number of docks at the development currently proposed to extend through the large fringe wetland could be reduced by (1) providing all proposed residential lots a centralized point of lake access at the commonly-owned controlled access lot and (2) by permanently protecting the fringe wetland through a conservation easement or Covenant, Code and Restrictions (CC&R) document developed for the homeowners association and approved by the City.

Response: *Language has been added to the EAW regarding minimizing aquatic vegetation destruction through the use of a shared dock and conservation easement. The project does intend to create riparian lots, each with its own dock, which is a development pattern consistent throughout Lake Owasso's shoreline. The project also intends to create a single joint use private dock for non-riparian lots, which is also something that has already been utilized on Lake Owasso in other locations. The proposed docks are intended to have minimal impact by meeting DNR's requirements for not needing a permit and to utilize a dock design that lies above wetland vegetation.*

c. The EAW does not assess the effect of the project on water surface use on Lake Owasso, i.e., number and type of watercraft, including current and projected watercraft usage.

Response: *Language has been added to the EAW regarding the increase in boats, their impact on surface water, and efforts that can be taken to mitigate this. Making conservative estimates, the proposed project is projected to increase watercraft traffic on the lake 1% - 1.5% annually. This conservative estimate has been outlined in the EAW.*

d. It is unclear what type and width of wetland buffers will be used throughout the development. The DNR recommends that native upland vegetation be used for wetland buffers as opposed to lawn or turf that might be managed with fertilizer and pesticides that could pollute the wetland and lake. It is unclear from design plans where the wetland buffers will be located and what the distance is from the structures to the wetland boundary, and if these buffers and setbacks meet the requirements of the shoreland management district.

Response: *A 75' average, upland buffer will be established along the wetland boundary per the RWMWD's rules. This buffer area will be maintained as a no-disturb area per the RWMWD's rules. If any disturbance does occur within the buffer during construction, it will be re-vegetated with native species suitable for the area. Once construction is completed a joint buffer agreement between the RWMWD, the City of Roseville, and the developer will be executed. This agreement will serve as an enforcement mechanism should any prohibited activities within the buffer occur post-construction. Signage will be installed per RCWD rules along the edge of the wetland buffer.*

10) Page 15, Project related Storage of Hazardous Waste:

The project site is located within the Drinking Water Supply Management Area of Saint Paul Regional Water Services. Pollution that occurs may be in the drinking water supplied by Saint Paul Regional Water Services within 10 years of the pollution event. All potential pollutants must be handled with care.

Response: *Comment noted. No changes were made to the EAW.*

11) Page 15, Rare Features:

The Lake Josephine Wetlands located a quarter of a mile to the northwest of the project area are mapped as a Minnesota Biological Survey Site of Moderate Biodiversity Significance.

Response: *Language indicating this was added to the Fish and Wildlife Section of the EAW.*

12) Page 17, Minimizing effects to fish, wildlife, and plant communities:

Lake Owasso is infested with Eurasian Water Millfoil, an invasive aquatic species. During work on this site, great care must be taken to prevent the spread of Eurasian Water Milfoil to other watersheds. Equipment and materials that come into contact with Lake Owasso water must be decontaminated following the instructions in the DNR brochure "Equipment Cleaning to Minimize Invasive Species".

Response: *A mitigation measure indicating this has been added to the fish and wildlife section of the EAW.*

13) Page 17, Minimizing effects to fish, wildlife, and plant communities:

We strongly encourage the use of native plants and seed mixes instead of turf near the wetland boundary in order to improve wildlife habitat and minimize pollution to the lake.

Response: *A 75' upland buffer will be established along the wetland boundary. If any disturbance occurs within the buffer area during construction, it will be re-vegetated with native species suitable to the area.*

14) Page 19, Dust Control:

If water for dust control is taken from streams, wetlands, or lakes in volumes that exceed 10,000 gallons per day, or one million gallons per year, then a DNR Water Appropriation Permit will be

required to take the water. Please note that if water is taken from Lake Owasso for dust control, then all materials and equipment that comes into contact with Lake Owasso water must be decontaminated.

Response: *Language describing the above comment was added to the dust control portion of the EAW.*

15) Page 19, Dust Control:

Please do not use products that contain chloride for dust control in areas that drain to Public Waters.

Response: *Language indicating this was added to the dust control portion of the EAW.*

METROPOLITAN COUNCIL

1) The staff review finds that the EAW is complete and accurate with respect to regional concerns and does not raise major issues of consistency with Council policies. An EIS is not necessary for regional purposes. We offer the following comments for your consideration.

Response: *Comment Noted, thank you. No changes were made to the EAW.*

2) Item 11 – Water Resources:

It appears that the lots may encroach on the lake's 100- year floodplain; the proposer should take all possible measures to comply or exceed requirements for stormwater management due to the proximity to the lake.

Item 11.ii in the EAW states that groundwater is approximately 900 feet below the surface in this area; however, the water table is likely much closer and probably within 10 feet of the surface. According to the Geologic Atlas of Ramsey County MN, Plate 6, Surficial Hydrogeology, the water table is between 875-900 feet above sea level.

Response: *Floodplain language was added to the EAW, Section 12.a.i. Groundwater elevations were noted in accordance with the geotechnical soil borings taken in February 2021.*

3) Item 11.b.i –Wastewater:

Metropolitan Council Interceptor (1-RV-433) is within Victoria Street North right-of way. The interceptor was built in 1960 and is a 36-inch Reinforced Concrete Pipe with a Cured-In-Place Liner installed in 2003. There are specific processes that must be followed before any encroachment can occur on our property, including a required Encroachment Agreement. To assess the potential impacts to our interceptor system, and to obtain an Encroachment Agreement Application, please contact and share preliminary plans prior to initiating this project with Tim Wedin, Interceptor Engineering Assistant Manager (651-602-4571) at the Metropolitan Council Environmental Services.

Response: *Language was added to the EAW, Section 12.b.i.1. describing the interceptor and the process needed to encroach into the interceptor.*

4) Item 11.b.i –Wastewater:

Metropolitan Council Interceptor (1-RV-433) is within Victoria Street North right-of way. The interceptor was built in 1960 and is a 36-inch Reinforced Concrete Pipe with a Cured-In-Place Liner installed in 2003. There are specific processes that must be followed before any encroachment can occur on our property, including a required Encroachment Agreement. To assess the potential impacts to our interceptor system, and to obtain an Encroachment Agreement Application, please contact and share preliminary plans prior to initiating this project with Tim Wedin, Interceptor Engineering Assistant Manager (651-602-4571) at the Metropolitan Council Environmental Services.

Response: *Language was added to the EAW, Section 12.b.i.1. describing the interceptor and the process needed to encroach into the interceptor.*

5) Item 18 – Transportation:

Route 227 offers the nearest transit service along Victoria Street; immediately in front of these vacant lots and with bus stops at Orchard Lane. Route 227 provides 60-minute, all-day local service during the weekdays and Saturday between the Rosedale Transit Center in Roseville and Target in Shoreview.

No pedestrian facilities exist along this section of Victoria Street. An 8’ wide multi-use trail will be constructed along the east side of Victoria Street adjacent to the developments. Council staff are pleased that the EAW prioritizes some pedestrian facilities. Additional sidewalks along the west side of Victoria Street should be considered to improve the overall pedestrian environment, support the continued growth of the sidewalk network, and provide safe pedestrian access throughout the city. Right-of-way should be set aside along the west side of Victoria Street for the eventual construction of sidewalks if they are not planned to be constructed with the proposed development.

Response: *Comment Noted. No changes were made to the EAW. The developer will work with the City to ensure there is adequate right-of-way to allow for pedestrian facilities on both sides of Victoria St E. Ramsey County is currently conducting the Victoria Street Roadway and Trail Design Study. Recommended design for the planned trail is expected to be developed in early summer 2022. Funding for final design and construction of the trail has not been identified and the timeline is currently unknown.*

6) This concludes the Council’s review of the EAW. The Council will not take formal action on the EAW. If you have any questions or need further information, please contact Eric Wojchik, Principal Reviewer, at 651-602-1330 or via email at Eric.Wojchik@metc.state.mn.us.

Response: *Comment noted, thank you. No changes were made to the EAW.*

MPCA

1) Regarding matters for which the Minnesota Pollution Control Agency (MPCA) has regulatory responsibility or other interests, the MPCA staff has the following comments for your consideration.

Response: *Comment noted, thank you. No changes were made to the EAW.*

2) Water Resources (Item 11):

Surface Water

Please note there are some surface waters with impairments missing from this section of the EAW:

- Bennett Lake (62004800) is 0.6 miles south of the Project area and currently included on the 303d list as impaired for aquatic recreation use based on nutrients (TMDL approved 2017, https://www.pca.state.mn.us/sites/default/files/wq-iw8-54e.pdf, pg. 68) and aquatic consumption based on mercury in fish tissue (TMDL approved 2013).

- Lake Josephine (62005700) is 0.7 miles northwest of the Project area and currently included on the 303d list as impaired for aquatic consumption based on mercury in fish tissue (TMDL approved 2008). For questions regarding this watershed, please contact Jordan Donatell at 651-757-2254 or jordan.donatell@state.mn.us.

  Response: *The impaired waters were added to the EAW, Section 12.a.i.*

Storm water

- The stormwater section of the EAW does not adequately describe protective measures to be utilized for the large wetland areas on the site during construction. Any inactively worked soils on the site will require stabilization within 14 days even if construction activity will resume in the area. Due to the presence of Lake Owasso and its adjacent wetlands, the National Pollutant Discharge Elimination System/State Disposal System General Construction Stormwater Permit (CSW Permit) requires maintenance of a minimum 50 feet of undisturbed existing buffer to the water bodies during construction. If the buffer must be encroached to complete the construction, then redundant (double) down gradient sediment controls must be installed to protect these water bodies during construction. These requirements must be included in the Stormwater Pollution Prevention Plan (SWPPP) for the Project.

  Response: *The description of CSW requirements was added to the EAW, Section 12.b.ii.*

- The EAW states that stormwater runoff will be managed via underground and above ground filtration systems post construction. The soil classifications in the EAW do not indicate whether infiltration would be prohibited. If soils allow, then infiltration should be utilized to retain stormwater on the site. The Project proposer is also encouraged to limit tree removal at the site to aid in the retention of stormwater.

Response: *Language was added to the EAW on the description of soils from the geotechnical report, and whether infiltration can be utilized.*

- If lots are sold to other parties to complete construction on individual lots, the owner must supply a SWPPP to the new owner specifying required stormwater Best Management Practices and CSW Permit coverage must be obtained by the new owner for their portion of the site via the Subdivision Registration process. Please direct questions regarding CSW Permit requirements to Roberta Getman at 507-206-2629 or roberta.getman@state.mn.us.

  Response: *Language was added to the EAW on the description of the process if lots are sold individually.*

3) We appreciate the opportunity to review this Project. Please provide your specific responses to our comments and notice of decision on the need for an Environmental Impact Statement. Please be aware that this letter does not constitute approval by the MPCA of any or all elements of the Project for the purpose of pending or future permit action(s) by the MPCA. Ultimately, it is the responsibility of the Project proposer to secure any required permits and to comply with any requisite permit conditions. If you have any questions concerning our review of this EAW, please contact me by email at karen.kromar@state.mn.us or by telephone at 651-757-2508.

Response: *Comment noted. No changes were made to the EAW. The developer will secure any required permits prior to any development on the site and will comply with any requisite permit conditions.*

RWMWD

1) As is noted in the EAW, RWMWD will require a permit for the construction of this project. The applicant has applied for a RWMWD grading permit. The status of that permit is on hold pending this EAW process. The RWMWD grading permit regulates stormwater and floodplain management, erosion and sediment control, and wetland requirements. The RWMWD permit review process will ensure that the wetlands are not being impacted per the Minnesota Wetland Conservation Act and stormwater quantity and quality are addressed. Information on RWMWD's permit program and the rules that are required to be met for this project can be found at https://rwmwd.org/permits/.

Response: *Comment noted. A note was added to the EAW in the permits table stating the RWMWD Grading Permit is on hold pending the EAW process.*

2) The EAW fails to mention wetland buffer preservation as required by the RWMWD permit. We require a no-disturb upland buffer adjacent to the wetland boundary. The wetland within this project boundary is classified as a Manage A, which requires a 37.5' minimum and 75' average no-disturb buffer. The RWMWD, in conjunction with the city of Roseville, will require a joint buffer agreement that regulates access through the buffer to the lake with the goals of natural vegetation preservation, erosion prevention, and the prohibition of imported fill materials. This agreement will be signed by the property developer and will apply to future homeowners along the lake and wetland. The agreement will serve as an enforcement mechanism should any

prohibited impacts to the buffer be observed post-construction. Wetland buffer signage is also required at each lake lot to indicate the boundary of that buffer.

Response: *Language describing the 75' average buffer has been added to the Wetlands portion of the EAW.*

3) In addition to the requirements under our regulatory program, RWMWD also has goals and policies related to this project and the impact on our natural resources. As a watershed, our goals include the preservation and protection of our wetlands and lakes. Our regulatory program tries to mitigate changes on the landscape, however the city's zoning and shoreland ordinances regarding this development also plays a critical role. While the EAW does address direct and indirect impacts to the wetland and lake system, we would continue to encourage the city to work with the developer to minimize those impacts from the number of lake accesses and dock placements that are currently proposed.

Response: *Language was added to the EAW describing how RWMWD and the City play a role in preserving and protection of natural resources on this project to section 12.b.ii.*

4) We also would like to emphasize the importance of following all recommended DNR mitigation measures for the Blanding's turtle and least darter. The developer should also implement rigorous erosion and sediment control practices during construction and post-construction to maintain water clarity for common loon protection.

Response: *The EAW indicates that erosion and sediment control measures must implemented during construction and incorporated into any stormwater management plans. No changes made to the EAW.*

5) Practices that go above and beyond the minimum requirements could address the sensitive conditions on this development. The developer may work with us to look at opportunities to go above and beyond in their project design and implementation. Grants may be available to improve native vegetation on the site and the shoreline of the lake. Stewardship grant awards can be given to applicants if the practices go above and beyond the requirements under regulatory programs of the watershed and other permitting authorities.

6) ***Response:*** *Comment noted. No changes were made to the EAW.*

SHPO

1) Due to the nature and location of the proposed project, we recommend that a Phase I archaeological survey be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation and should include an evaluation of National Register eligibility for any properties that are identified. For a list of consultants who have expressed an interest in undertaking such surveys, please visit the website **preservationdirectory.mnhs.org,** and select "Archaeologists" in the "Search by Specialist" box.

Response: *An intensive Phase I cultural resource investigation was conducted on November 16, 2021, for the proposed Project. The investigation consisted of a survey of 6.5 acres. The project*

area consists of four parcels (1-4) located along the east and west sides of Victoria Street North. This cultural resource assessment is being completed as part of an Environmental Assessment Worksheet for the project. Therefore, the cultural resource investigation was completed as an act of due diligence and the proposed Project is subject to review by SHPO.

The project area is located in the NE¼, SW¼ of Section 2 in T29N, R23W in Ramsey County, Minnesota. The parcels consist of hilly wooded areas overlooking Lake Owasso. Vegetation consisted of non-native grasses, trees, and bushes. The literature search revealed no previously recorded archaeological sites and five previously recorded architectural resources within a 1-mile study area surrounding the project. None of the previously recorded architectural resources are located within the 1-mile study area.

During the field survey, a total of 6.53 acres were inventoried for the proposed project. No cultural resources were observed during this inventory of the proposed project. Therefore, In Situ recommends a finding of 'no historic properties in the APE' for the proposed project. If the applicable regulatory agencies are in agreement with these findings, then a recommendation of 'no further work' is considered appropriate. This language has been added to the EAW, Question 14 Historic Properties.

2) We will reconsider the need for survey if the project area can be documented as previously surveyed or disturbed. Any previous survey work must meet contemporary standards. **Note:** plowed areas and right-of-way are not automatically considered disturbed. Archaeological sites can remain intact beneath the plow zone and in undisturbed portions of the right-of-way.

Response: *Comment noted. No changes were made to the EAW. A Phase I Archaeological Survey has been completed and no cultural resources were observed during this inventory of the proposed project.*

3) Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

Response: *Comment noted. No changes were made to the EAW.*

STATE ARCHAEOLOGIST

1) Thank you for the opportunity to comment on the above listed Environmental Assessment Worksheet. Although no recorded archaeological site exists within the footprint of the proposed project area, the project area has a high potential for containing unrecorded archaeological sites or cemeteries. Thus, I recommend a qualified archaeologist conduct a phase I reconnaissance survey to determine if the project could impact unrecorded archaeological or cemetery sites. The Minnesota Historical Society maintains a list of archaeologists at: http://www.mnhs.org/preservation/directory.

- Recommendation: Phase I – Reconnaissance survey

  Response: *An intensive Phase I cultural resource investigation was conducted on November 16, 2021, for the proposed Project. The investigation consisted of a survey of 6.5 acres. The project area consists of four parcels (1-4) located along the east and west sides of Victoria Street North. This cultural resource assessment is being completed as part of an Environmental Assessment Worksheet for the project. Therefore, the cultural resource investigation was completed as an act of due diligence and the proposed Project is subject to review by SHPO.*

  The project area is located in the NE¼, SW¼ of Section 2 in T29N, R23W in Ramsey County, Minnesota. The parcels consist of hilly wooded areas overlooking Lake Owasso. Vegetation consisted of non-native grasses, trees, and bushes. The literature search revealed no previously recorded archaeological sites and five previously recorded architectural resources within a 1-mile study area surrounding the project. None of the previously recorded architectural resources are located within the 1-mile study area.

  During the field survey, a total of 6.53 acres were inventoried for the proposed project. No cultural resources were observed during this inventory of the proposed project. Therefore, In Situ recommends a finding of 'no historic properties in the APE' for the proposed project. If the applicable regulatory agencies are in agreement with these findings, then a recommendation of 'no further work' is considered appropriate. This language has been added to the EAW, Question 14 Historic Properties.

RAMSEY COUNTY

1) Comment from Scott Mareck, Ramsey County Senior Transportation Planner:

Ramsey County has reviewed the EAW for this development. Our maintenance and operations department would like to know if the existing ditches will remain along Victoria when this development occurs. If the ditches will remain, could the city please provide information regarding how they will be shaped and how the drive culverts will be installed? Also, with regard to future trail planning along Victoria and the current county led trail study, if the city anticipates any restrictions for a possible future trail through the area of this development on the east side of Victoria, please let the county know.

Response: *The current stormwater and grading plans show maintaining the ditch and installing some pipe and inlets to get the water across the street for treatment. Any storm sewer in the ROW would need Ramsey County Permits. Discussion of ownership of the pipe will need to be included in the public improvement contract.*

Since a trail may be built on the west side of Victoria in the future, the City will require some additional trail easements on the west side to provide additional design flexibility. It would likely be over the proposed drainage easement on the plat. If the County determines the grading or

storm sewer plans need modification, the City will work with the developer on incorporation of those changes.

RESIDENT COMMENTS

COMMON THEMES

Wetlands

Many residents provided comments on the potential direct and indirect impacts to wetlands that will be caused by the proposed project. More specifically, the comments indicated concerns with aquatic vegetation removal, water quality impacts due to the loss of the wetland, increased stormwater runoff, pesticides, and increased sedimentation.

Response: *No fill or conversion of wetlands to upland is proposed as part of the project. Although docks are proposed through the wetland area, pilings used for the construction of docks are not considered fill per the Minnesota Wetland Conservation Act, Chapter 8420.0111 (Definitions), Subpart 26 (Fill). On March 25, 2021, the developer submitted an application for docks at the proposed development. The DNR found that the proposed design of the docks to be consistent with the DNR's specifications for docks that may be installed without a DNR Public Water Work Permit per Minnesota Rules, Chapter 6115.0210. No changes have been made to the EAW.*

In order to reduce indirect impacts to the wetland, a 75' average upland buffer will be established along the wetland boundary per Ramsey-Washington Metro Watershed District (RWMWD) Rules. Upland buffers along wetlands and other waterbodies have been shown to reduce sedimentation, stormwater runoff, and the number of pesticides that reach wetlands. This buffer area is required to be a no-disturb area and a joint buffer agreement with the RWMWD and the city of Roseville that regulates access through the buffer to the lake will be signed by the developer. This agreement will regulate access through the buffer to the lake with the goals of natural vegetation preservation, erosion prevention, and the prohibition of imported fill materials. The agreement will serve as an enforcement mechanism should any prohibited impacts to the buffer be observed post-construction. Signage will be required at the edge of the buffer indicating that it is a no-disturb area. Language discussing the wetland buffer has been added to the response to Question 12 iv. Surface Waters 1) Wetlands portion of the EAW.

Furthermore, the project will comply with the erosion and sediment control requirements of the RWMWD to avoid erosion and sediment buildup in the wetland and upland buffer areas.

The project does not propose any destruction of emergent vegetation, including cattails, bulrushes, and wild rice. Removal of said vegetation requires a permit from the Minnesota DNR. If homeowners wish to remove emergent vegetation from along the lake bank after construction is complete, they must apply for a DNR permit and meet DNR requirements. The DNR does allow the removal submerged vegetation as long as the area is smaller 2,500 square feet and less than 50 feet along the shoreline. If homeowners wish to remove submerged vegetation greater than the established limits, they will have to apply for a DNR permit.

Habitat

Residents stated their concerns with a loss of habitat in this area due to the development. More specifically, the comments indicated that the development will negatively affect habitat for common loons, Rusty Patched Bumblebee's, Blanding's Turtles, the Northern long eared bat, least darter, and other wildlife species that may currently utilize the area.

Response: *A 75' upland buffer along the wetland boundary will be established as part of the proposed development. This buffer will be designated as a no-disturb zone where the existing trees and other natural vegetation will be maintained. If the buffer area is disturbed during construction, it will be reestablished with native vegetation per the RWMWD's rules. Due to this upland buffer, much of the naturally occurring vegetation will remain within the Project Area and will still provide habitat to wildlife in the area.*

In order to avoid impacts to the Rusty Patched Bumblebee and the Blanding's Turtle, land and wetland disturbance will be avoided between October 15th and April 15th to avoid impacts to hibernating Rusty Patched Bumblebee and Blanding's Turtles. Further mitigation measures are identified in the EAW.

No nesting or maternity roost trees for the Northern long-eared bat are identified within the vicinity of the project area by the Minnesota DNR list of townships containing documented northern long-eared bat (NLEB) maternity roost trees and/or hibernacula entrances in Minnesota. Therefore, no negative impacts are expected to the Northern long-eared bat and no changes have been made to the EAW.

Erosion control and sediment control practices will be implemented as part of the project per the RWMWD's rules. These practices will help avoid impacts to the least darter and common loon. No changes made to the EAW.

Vegetation removal is not proposed by the proposed development and no impacts to common loon nesting habitat is proposed. If homeowners wish to remove wetland vegetation, which includes cattails, bulrushes, and wild rice from the lake after construction is complete, they will need to apply for a permit from the DNR if they remove a greater amount of vegetation than allowed.

Construction Impacts

Commenters raised concerns about the potential construction impacts associated with the project development. More specifically, the comments indicated concerns with tree removal, dredging, construction pollution, and solid waste.

Response: *A tree inventory was completed for the project area in January 2021. The tree inventory identified a total of 300 trees within the project area. Of these 300 trees, 99 are proposed for removal. The majority of the trees to be removed (75%) are considered common trees or exempt trees per the City of Roseville's City Code. No trees are proposed for removal within the 75' average, no-disturb buffer that will be established along the wetland boundary. This no-disturb buffer area will maintain natural vegetation, which will provide habitat to wildlife that live in the area. No northern long-eared bat maternity roost trees or hibernacula are identified within the*

vicinity of the project area by the Minnesota DNR list of townships containing documented northern long-eared bat (NLEB) maternity roost trees and/or hibernacula entrances in Minnesota. Therefore, the tree removals are not expected to have a negative effect on the northern long-eared bat. Wildlife impacts due to the proposed tree removals are expected to be minimal. No changes have been made to the EAW.

No dredging is proposed as part of this development. No changes have been made to the EAW.

Erosion and sediment control methods such as silt fence along the wetland boundary and wetland buffer will be installed prior to the start of construction. These measures will help avoid potential construction pollution and solid waste pollution to the wetlands. If a spill of hazardous waste/toxic substances does occur during construction of the proposed project, it is the responsibility of the contractor to notify the Minnesota State Duty officer to arrange for corrective measures to be taken in accordance with the Minnesota Pollution Control Agency containment and remedial action procedures.

Traffic

Commenters raised concerns about the potential traffic impacts associated with the project development. More specifically, the comments indicated concerns with traffic safety, visibility on Victoria Street, and pedestrian safety.

Response: *Victoria St N (Ramsey County Highway 52) is a two-lane, two-way road with paved shoulders and a posted speed limit of 40 mph. The cross section is rural along the project area and parking is not allowed on the roadway. 2019 traffic count data from MnDOT show an average annual daily traffic (AADT) volume of 5,800 vehicles along the project area. Victoria St N is classified as an Other Arterial (formerly B, Minor Arterial) according to current Metropolitan Council data.*

A curvature in the road exists north of the project area, and warning signs with advisory speed plaques showing 25 mph are installed for northbound and southbound traffic. Another curve exists south of the project area, and warning signs are installed for northbound and southbound traffic there as well. The need for additional warning signs and traffic calming measures along Victoria St N is determined by Ramsey County Public Works and new traffic control devices must comply with State regulations.

The City and County are aware residents have concerns about speed along this corridor. The final plat and proposal for this development are expected to be presented to the City Council this winter, and staff will work with the developer to ensure there is sufficient space and right-of-way to provide a side path or other bicycle/pedestrian facility, whatever that is determined to be. No changes were made to the EAW.

Human Activity

Commenters raised concerns about how increased human activity could affect the natural features on this portion of the lake. More specifically, they had concerns about increased boat traffic, the installation of docks, impacts to aquatic vegetation, shoreline alteration, impacts of irrigation

systems, no disturb buffer zone signage and enforcement, potential spread of invasive species, and the benefit of having only one common dock on the south end.

Response: *A slight increase in boat traffic is likely to occur once the project is completed. However, the effects of this increase in boat traffic are expected to be minimal. Conservative estimates have been included in the EAW, which suggests a 1% - 1.5% increase is boat traffic will occur as a part of this development.*

Docks are expected to be installed as part of the proposed development. The developer applied for the docks on March 25, 2021. The DNR reviewed the application and determined that it was consistent with DNR's specification for docks that may be installed without a DNR Public Waters Work Permit in accordance with Minnesota Rules, Chapter 6115.0210.

While no vegetation removal is proposed as a part of the development, any destruction of emergent vegetation, including cattails, bulrushes, and wild rice requires a permit from the Minnesota DNR. If homeowners wish to remove emergent vegetation from along the lake bank after construction is complete, they must apply for a DNR permit. The DNR does allow the removal submerged vegetation as long as the area is smaller 2,500 square feet and less than 50 feet along the shoreline. If homeowners wish to remove submerged greater than the established limits, they will have to apply for a DNR permit. No changes to the EAW.

No water is currently proposed to be pumped from Lake Owasso. Since Lake Owasso is currently listed on the DNR's list of infested waters for Eurasian watermilfoil and zebra mussels, homeowners will have to apply for a DNR permit to pump water from the lake. No changes made to the EAW.

A 75' no-disturb upland buffer will be established along the wetland boundary. A joint buffer agreement with the RWMWD and the City of Roseville that regulates access through the buffer to the lake will be signed by the developer. This agreement will serve as an enforcement mechanism should any prohibited impacts to the buffer are observed post-construction. Signage indicating the edge of the buffer will be installed. Language discussing the wetland buffer has been added to the response to Question 12 iv. Surface Waters 1) Wetlands portion of the EAW.

If any construction equipment or materials come in contact with Lake Owasso water, they must be decontaminated following the Equipment Cleaning to Minimize Invasive Species brochure. This has been added as an additional mitigation measure to the fish and wildlife section of the EAW.

One comment mentioned that it would be better to only install one common dock on the south end of the project area. This comment was noted. No changes made to the EAW.

Regulatory Concerns

Commenters raised concerns about potential regulatory compliance concerns. These include compliance with RWMWD's rules, DNR approval of docks, City of Roseville as the RGU, riparian rights, and the legality of the easement.

Response: *The developer is currently working with RWMWD to make sure the project complies with their rules. No changes made to the EAW.*

The developer submitted an application to the Minnesota DNR for the docks on March 25, 2021. The DNR review the application and determined that it was consistent with DNR's specifications for docks that may be installed without a DNR Public Waters Work Permit in accordance with Minnesota Rules, Chapter 6115.0210. No changes made to the EAW.

One comment indicated that Ramsey County may be better suited to be the RGU for this project. The State Statute, Part 4410.0500 RGU Selection Procedures, designates the Responsible Governmental Unit (RGU) to be the governmental unit that orders the EAW, which in this case is the City of Roseville, below is the language from the Minnesota Administrative Rules, Chapter 4410 Part 4410.0500. No changes were made to the EAW.

- *"Subp. 2. RGU for discretionary EAW's. If a governmental unit orders an EAW pursuant to part 4410.1000, subpart 3, item A, that governmental unit shall be designated as the RGU."*

One comment expressed opposition to the dock easement on the south end of the project as it will set a precedent for future projects. This comment is noted, although it is worth mentioning both the City's Shoreland Ordinance and the DNR's current model ordinance both permit joint use docks per a conditional use as currently proposed. Also, the City recently approved a joint use dock on McCarrons Lake, so there are no precedent concerns. Lastly, at least two other joint use docks exist on Lake Owasso in the City of Roseville - one between 635 & 639 Heinel Drive (serving 8 lots) and one between 3065 & 3079 Sandy Hook (serving 24 lots). No changes made to the EAW.

There was also a question on who is responsible for allowing or removing riparian rights on a property. This comment was noted. No changes were made to the EAW. City staff and the City Attorney discussed this issue and have determined the City, or any agency for that matter, can't "remove" someone's riparian rights. Those rights are inherent to owning land on a lake. In regard to how the lake can be used, the City relies on the DNR's requirements as the City has no regulatory authority lake-ward of the Ordinary High-Water Level.

Missing EAW Components

Commenters raised concerns about missing components of the EAW. More specifically these comments indicated that the Victoria Street Trail Design Study should be included in the discussion of water resources, Central Park North should be addressed in the land use section, photos of the project area in the summer should be included, outline what construction practices are allowed during nesting times, an analysis of the negative visual impacts was not included, and the EAW did not assure no damage to habitat in the area.

Response: *A few comments noted that the Victoria Street Roadway and Trail Design Study, which is being carried out by Ramsey County, includes the section of Victoria Street along the proposed development. Study recommendations are expected to be developed in summer 2022. Some design concepts under consideration involve reconstruction of Victoria St N and conversion of the roadway to an urban cross section. Such a conversion would allow for stormwater drainage improvements that are not possible with the existing rural cross-section. Funding has not been identified for reconstructing Victoria St N or for the proposed trail, and timelines for final design and construction are unknown at this time.*

The EAW mentions trails along the east side of Victoria Street, in section 19. The trail design will be required to also meet applicable stormwater standards.

Central Park North is located approximately 1,000 feet south of the proposed development along the shore of Lake Owasso. Language indicating this has been added to the EAW.

One comment indicated that photos of the site that were taken during the summertime should be included. This comment was noted, no changes were made to the EAW. Trail and roadway design within the project site will be similar in design and will look visually similar to other rural roadway sections within the City limits.

Some additional mitigation measures have been added to the fish and wildlife section to address when construction should be avoided in order to avoid impacts to sensitive wildlife in the area. Please see the habitat section above.

A 75' upland buffer will be established along the wetland boundary between the newly constructed houses and the wetland boundary. This upland buffer will be a no-disturb area and trees and vegetation within the buffer will be maintained during and after construction is completed. If the buffer is disturbed, it will be re-planted with native plant species. The buffer will act as a natural screen between the newly constructed houses and the lakeshore and will help avoid any negative effects on the viewshed from Lake Owasso. Language discussing the wetland buffer has been added to the response to Question 12 iv. Surface Waters 1) Wetlands portion of the EAW.

The proposed development is being designed to follow all the regulations specified by the Minnesota DNR, the RWMWD, the city of Roseville, the Minnesota Board of Soil and Water Resources, and the U.S. Army Corps of Engineers. Any environmental impacts will be permitted for or are considered allowable per the above organizations' rules. The impacts to habitat in the area are expected to be minimal.

Based on the RWMWD's map, the project area and all of Lake Owasso is within the watershed's boundaries.

General Comments

Commenters raised some general concerns about climate change.

Response: *One comment noted that the construction sector contributes to 50% of climatic change. This comment was noted, and no changes were made to the EAW. A review of potential climate change impacts is not required by the EAW process.*

Commenters raised a concern regarding flooding.

Response: *As part of the project design process, the project will be designed to meet the storm water quantity and quality standards and requirements that are set by the RWMWD. These requirements are meant to prevent increased amounts of runoff due to increased amounts of impervious surfaces. No increased flooding is expected due to the proposed development because the project has been designed to the RWMWD's standards. No changes have been made to the EAW.*

Commenters raised a concern regarding losing the wooded nature/peaceful natural feel of the area.

Response: *During the design process the developer has been working to preserve the wooded nature of the parcel. Only eight residential lots were proposed in order to maintain much of the wooded and natural feel of the area. In addition, a 75' no-disturb upland buffer will be maintained between the newly constructed houses and the wetland boundary. The trees and natural vegetation will be maintained within this no-disturb buffer. This buffer will help maintain the wooded feel of the project area. Sustainable design standards and methods will also be incorporated into the design and construction of the proposed homes.*

Commenters raised a concern regarding the EAW's completeness.

Response: *The EAW was determined to be complete by the City of Roseville who is the RGU.*

Commenters raised concerns about affordable/low-income housing and housing need.

Response: *Housing affordability and need is not a component of the EAW. City staff would note that the City of Roseville has approved over 680 units of affordable housing over the last three years but only 92 for-sale units of housing in that same time period, with those 92 units including in-process but not-yet-approved units (including the eight lots proposed by the Victoria Shores development). For perspective, the City's Housing Needs Assessment dated October of 2018, conducted by Maxfield Research & Consulting, states the City housing need through 2030 consists of 474 units of affordable and subsidized housing units (general occupancy and senior) and 110 units of for-sale single family. The Needs Assessment compared against actual realized units suggests the City has more than met its affordable housing need but still falls short of its for-sale need, even if the Victoria Shores project is approved. No changes to the EAW were made.*

Themes by Resident Comments

	Habitat	*Wetlands*	*EAW Details*	*Human Activity*	*Construction Activity*	*Regulatory Concerns*	*Traffic*	*Other*
A Bentley	x						x	x
D Boerighter	x	x	x	x				
W Davies	x	x	x	x		x		
L Eder	x	x	x	x	x	x	x	x
J Eide	x	x		x		x		
S Eide	x	x						
E Evans	x		x					
M Garbisch	x	x				x		
T Grove	x	x		x		x		
D Hilden								x
J Kath	x	x	x	x	x	x		
V Kath	x	x	x	x				
C Koger		x	x	x	x			
L Koger	x	x	x			x		
P Koger	x							
M Kruse								x
Lake Owasso Association	x	x			x		x	x
A MacGregor	x	x	x	x		x	x	
D Mack	x	x			x			x
D Ning		x	x	x				
E Roberts	x	x	x	x		x		
C Schwagerl		x	x		x			x
M Tjosaas	x		x					
J&S Von De Linde	x	x	x	x	x		x	x
M Von De Linde	x	x		x	x			
A Walz	x	x	x	x	x	x		x
C&M Walz	x	x	x	x	x			
H Walz		x	x	x	x	x		
M Zaun	x						x	x
Total	**23**	**22**	**17**	**16**	**11**	**11**	**6**	**10**

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Project and Program Status Reports

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RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

resourceful. naturally. engineering and environmental consultants BARR

Memorandum

To: Board of Managers and Staff

From: Tina Carstens and Brad Lindaman

Subject: Project and Program Status Report – February 2022

Date: January 27, 2022

Project feasibility studies

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.

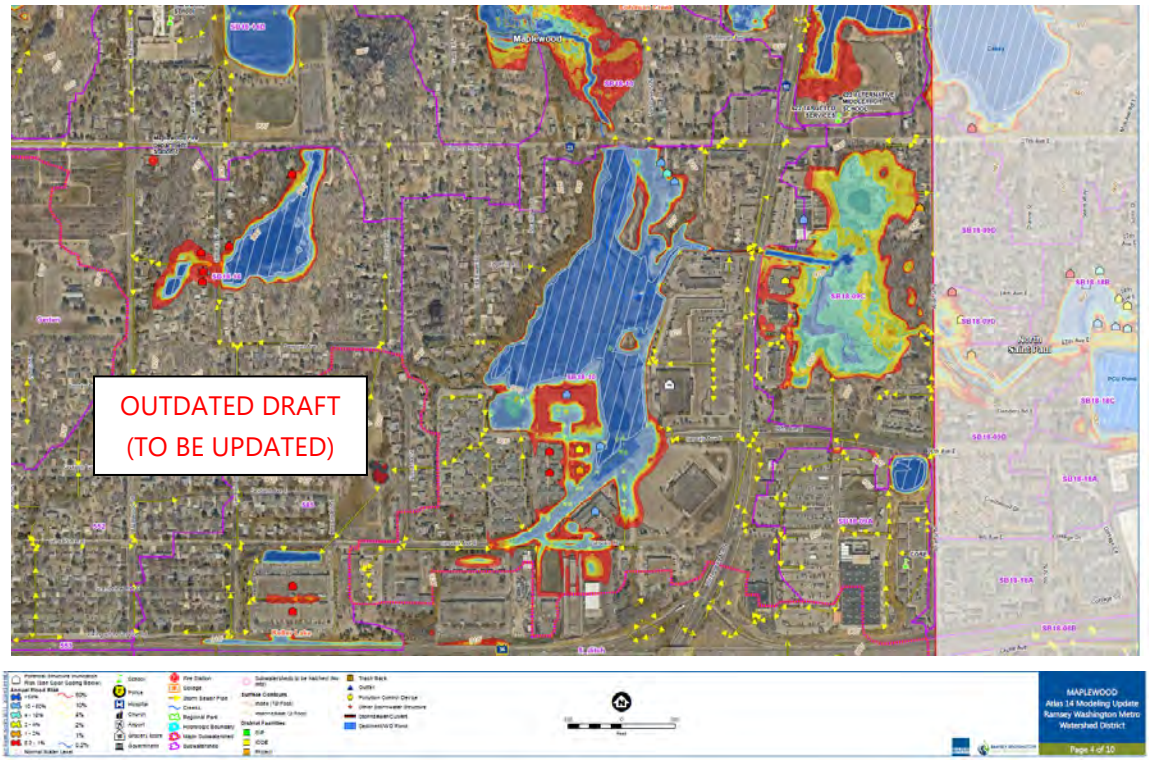
This period, Barr continued to create topographic maps of the roughly 50 individual sites shown to have low entry elevations below the 100-year flood elevation. Starting with the properties reliant on site-scale solutions, we are creating maps that show how sandbags could be placed to protect each structure, as well as (in some cases) where a permanent berm could be constructed at the site to protect the home from flooding during the 100-year storm event.

At the January board meeting, the managers expressed an interest in seeing how each structure is affected by different storm recurrence intervals (two-year, 10-year, 25-year, etc.) in a more graphic, visual way (as opposed to the tabular form presented in last month's memo). Barr and the district have completed similar efforts in the past, shortly after the Atlas 14 modeling work was finished and flood risk discussions with the cities began in 2017.

One such map, created for the City of Maplewood and excerpted below, demonstrates how this information has been presented before. Note that some of the information shown in the map is out of date; since it was created, survey work and modeling updates have been completed. The map expresses flood risk in terms of annual flood risk, which is the inverse of the storm recurrence interval. That is, a 50-percent annual flood risk corresponds to a two-year storm event (1 divided by 0.5 equals 2), and a 0.2-percent annual flood risk corresponds to a 500-year storm event (1 divided by 0.002 equals 500). Inundation footprints for each level of annual flood risk are colored accordingly, with the most frequent flood risk in blue (two-year event) and the least frequent flood risk in red (500-year event). At-risk structures are similarly colored according to their most frequent level of flood risk; they are still at risk during less frequent, larger storm events.

If this format is acceptable to the managers, Barr will update the maps to reflect current survey and modeling conditions before reissuing to the cities, along with the emergency response plan maps currently in development as a part of this project.

A scope summary describing Barr's work is included in this month's board packet for the managers' review. As indicated in the scope summary, maps and other information will be shared with city staff starting in February and March. We will share the cities' feedback with the Board at the March and April board meetings.



Kohlman Creek and Phalen Chain of Lakes subwatershed (including Ames Lake area) flood risk reduction feasibility studies (Barr project manager: Erin Anderson Wenz; RWMWD project manager: Tina Carstens)

The purpose of these studies is to evaluate the benefit-cost relationships of infrastructure changes throughout the Kohlman Creek and Phalen Chain of Lakes subwatersheds by reviewing potential pipe 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 100-year floodplain in these areas. These studies are follow-up steps to the Beltline resiliency study. In 2022, these efforts will include stakeholder involvement and collaborative design.

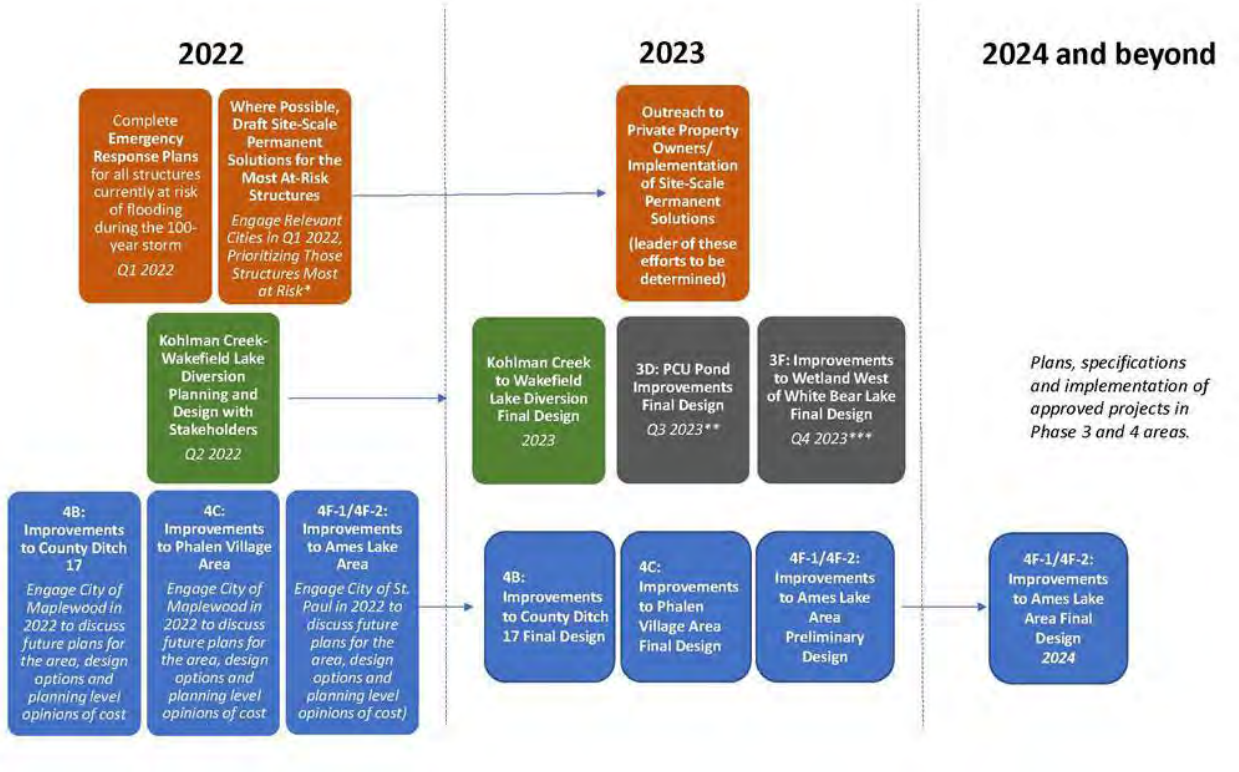
As discussed last month, this effort will now be broken into several subprojects over the next few years, as indicated in the graphic on the following page.

The combined 2022 scope summary for the projects indicated in orange (*complete emergency response plans for structures at risk of flooding during the 100-year storm event* and *draft site-scale permanent solutions for the most at-risk structures*) is included in this month's board packet for the managers' review and approval (as mentioned above).

In December, the work plan for the Kohlman Creek/Wakefield Lake diversion planning and design project (shown in green) was submitted for consideration in the MPCA's Climate Resiliency Grant Program. The work plan is included in this month's board packet for the managers' review and approval.

Barr hopes to learn in February whether the grant request was awarded, in time to update the managers at the March meeting.

Scope summaries for the projects in blue (*improvements to County Ditch 17*, *improvements to Phalen Village area*, *improvements to Ames Lake area*) will be included in the March board packet following initial conversations with relevant city staff (Maplewood and Saint Paul) to gauge the cities' interest and level of urgency.



Grass Lake berm wetland mitigation (Barr project manager: Brad Lindaman; RWMWD project manager: Tina Carstens)

The purpose of this study is to monitor the project-specific wetland replacement/mitigation area as required by the Wetland Conservation Act to replace wetland impacts associated with the Grass Lake berm project.

Barr is preparing the annual monitoring report using data collected during the 2021 growing season. Low water levels in 2021 extended into the fall, making establishment of the replacement areas more challenging than in typical rainfall years. Hydrology monitoring will continue to verify that adequate hydrology is present within wetland replacement areas. In general, the vegetation is dominated by native species, but is sparse due to drier-than-normal conditions. As a result, some areas will need invasive plant management/removal and minor reseeding. This corrective action is not uncommon and can be addressed early in the 2022 growing season to meet wetland replacement size requirements, particularly in the overflow swale area. Monitoring and vegetation maintenance will continue for the next three to five years, depending on the success of wetland replacement. Barr will provide a monitoring report draft, including detailed 2022 recommendations, later this winter. We will update the

board on this year's recommendations in the May project status report, after the annual report has been reviewed and finalized.

Research projects

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

The objective of this current investigation is to develop one or more conceptual designs that will fit within the footprint of the existing Kohlman Basin permeable weir and will allow for ongoing testing of the system's effectiveness at removing total suspended solids and phosphorus.

Level sensors were removed prior to ice formation and will be reinstalled after ice-out this spring. Due to drier-than-normal conditions last summer, few data points were collected; Barr is planning additional monitoring this spring. We anticipate that three or four rainfall events will be necessary to complete the assessment.

Recently, we worked with the RWMWD to develop the monitoring plan and prepare for larger-scale implementation of the pilot later in 2022. We provide updates again in late spring after the three or four events occur, and after we collect and analyze the data to inform the full-scale implementation plan.

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 two smaller shallow systems (Markham Pond and Frog Pond) in detail during 2021 and 2022. This approach is being pursued as an alternative to whole-lake alum treatments.

Barr compiled the data collected in 2021 into a PowerPoint presentation, shared it with the RWMWD, and discussed it in detail with Bill Bartodziej. The data provide a good baseline from which to evaluate the capacity of aeration to reduce internal loading in Frog Pond and Markham Pond, and in shallow lakes in general.

Last month, Barr was notified that the City of Roseville is now potentially amenable to the district's use of Frog Pond as a test site, as originally intended. Frog Pond will be considered a useful site if the city agrees to use a bubbler-type forced air aeration method rather than the fountain that is currently installed. We are still waiting for the city to confirm that the bubbler-type system has been approved and will update the board in March.

As described last month, an aerator has already been installed in Markham Pond for winter operation, with the goal of minimizing fish kills from low oxygen levels and promoting a sunfish population that will eat carp eggs, thereby reducing the carp population in Markham Pond. Barr will monitor the effects of aeration in 2022 and will report the results in the fall.

Project operations

Phalen outlet and Keller channel operations plans (Barr project manager: Brandon Barnes; RWMWD project manager: Dave Vlasin)

The purpose of this project is to develop an operation plan for the Keller Lake and Lake Phalen outlet structures. Operating the structures under certain conditions will help reduce upstream flood levels

where homes exist in the floodplain. This is an implementation item from the Beltline resiliency study.

Barr provided the final operation plan and record drawings to the RWMWD in December. These items are the final project deliverables. The operating plan describes conditions in which the outlet gates should be operated, routine maintenance and frequency of maintenance activities, and logs for documenting operation and maintenance. We anticipate that the operation plan will need to be reviewed annually and updated based on information obtained following operation of the gates. This is the final update for this effort; future updates will be provided as a part of the inspection and maintenance program.

Capital improvements

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.

Annually, the board approves general scope and budget estimates for the retrofit sites. Sites being considered for 2022 construction via the Equity Initiative and/or in prior subwatershed feasibility studies include Conway Recreation Center (Saint Paul), St. Pascal Regional Catholic School (Saint Paul), Mounds Park Academy (Saint Paul), and Pleasantview Park (Maplewood). Barr has developed 50-percent concept plans for property owners to review. Of the four sites, at this point, one has property owner approval to move forward with construction in 2022:

- Mounds Park Academy: This opportunity is the result of years of outreach collaboration between school and watershed staff and work with students. A portion of unused parking lot will be removed to construct a rain garden to treat runoff before it enters the school's pond, where students participate in hands-on learning. The school is interested in funding the creation of an outdoor learning space alongside the rain garden. Diverse native plantings will be incorporated, and students may complete some of the planting.
- Property owner feedback on the 50-percent concept designs is pending for Pleasantview Park, St. Pascal Regional Catholic School and Conway Recreation Center.

The next step is to further develop the design to better estimate the project costs and the removal efficiency (cost per pound of phosphorus removal) for the proposed BMPs and continue discussions with the property owners. This information will be provided to the board at the March meeting.

The board's next action is approval of the preliminary (90%) design, estimate of probable construction costs, and project schedule at the April 6 board meeting. Then, the subsequent award of bid(s) at the May board meeting with construction expected to begin in June 2022.

Ryan Drive and Keller Parkway conveyance (Barr project manager: Sam Redinger; RWMWD project manager: Dave Vlasin)

The purpose of this project is to implement improved conveyance through Gervais Creek, as recommended by the Owasso Basin bypass feasibility study. This CIP is an implementation item from the study recommended in the Beltline resiliency study.

Completion of this project has carried over into 2022 due to supply chain issues last summer. The work is substantially complete, and the project is functioning as intended. Only a punch list and close-out items remain and are expected to be complete and ready for final payment in the spring. Change order 1 is included in the consent agenda for board consideration at the February meeting. It provides Fitzgerald Excavating with a formal contract extension to allow time during the growing season to address restoration-related punch list items. Fence installation for each site, which is expected to be finished before the board meeting, is included in the punch list. This month's packet does not include a payment application.

CIP project repair and maintenance

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. The work will include review of current methods, development of a scoring system, and implementation of mobile data collection. This project will continue into 2022.

In January, Barr met with the RWMWD again to discuss final comments to incorporate into the spreadsheet version of the inspection standardization tool. Following, the team moved to task 004 of the scope, which is to develop a mobile application for conducting the inspections.

The inspection data collection will be completed using ArcGIS Collector, a web platform that uses a basemap and linked database to spatially collect data, house records, and collect additional information such as photos and notes in the field. The goal for the district's inspection Collector map will be to translate the spreadsheet into Collector-friendly forms. Each piece of infrastructure that the district inspects will be included in the Collector map so that a unique inspection can be recorded.

Barr and RWMWD GIS staff met in January to discuss basemap development and ArcGIS database design. We will continue these conversations through February, with the goal of a draft map by March. Following initial development of the Collector map, Barr and the RWMWD will test the application in the field to debug and identify additional needs to add to Collector.

CIP maintenance/repairs 2021 project (Barr project manager: Greg Nelson; 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.

All work was completed before the December 31 deadline, and final payment was provided to the contractor. This project is now complete.

CIP maintenance/repairs 2022 project (Barr project manager: Greg Nelson; 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.

The contractor (Fitzgerald Excavating) emailed the required submittals, including the signed agreement, performance and payment bonds, and certificate of insurance, to the district for review. Barr and Galowitz-Olson worked with the RWMWD to review the required submittals and permits from the contractor. Formal notice to proceed was issued on January 17. The contractor plans to begin work during the week of January 24, starting with City of Woodbury pond cleanouts. Barr will provide updates each month as a part of this status report.

Natural Resources Update – Bill Bartodziej and Simba Blood

Carp Management in the Owasso Chain of Lakes

Project goals

- Significantly reduce the adult carp population in the main chain of lakes below 100 lb/ac (threshold at which negative water quality impacts become evident)
- Block prime spawning areas during spring migration to reduce carp recruitment
- Continue to monitor the carp population to assess management effectiveness
- Use adaptive carp management over the long-term to sustain low carp numbers

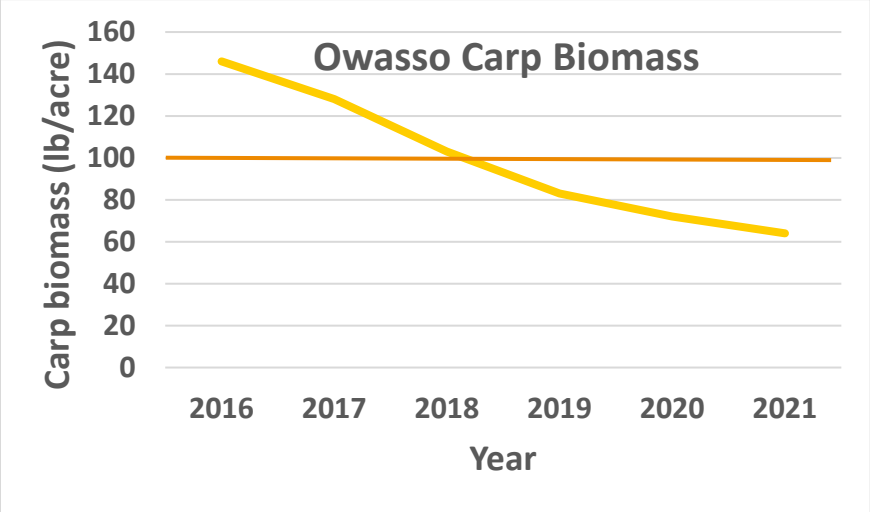
Highlights and Insights

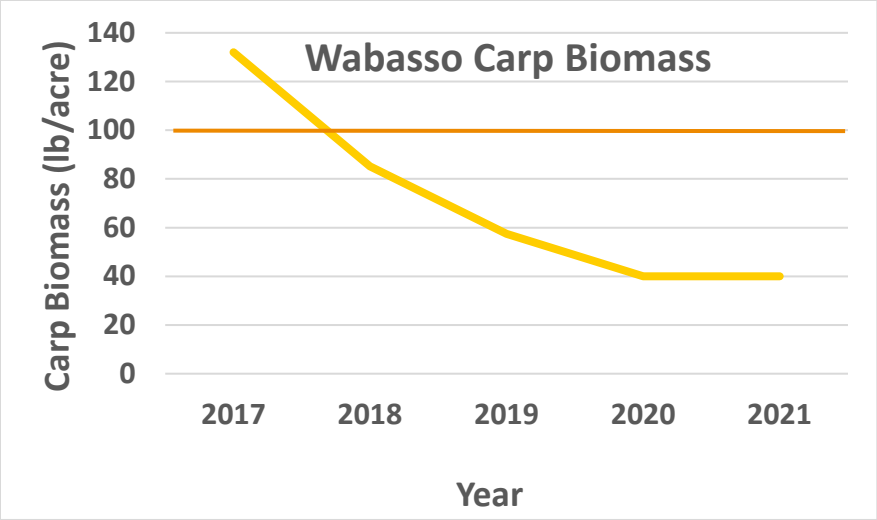
Although low water levels impacted our netting efforts, overall, we had another successful year in reducing the adult carp population and preventing large movements of carp into prime spawning areas. In 2021, a total of 743 adult carp were removed from the Owasso Chain of Lakes. Below is a breakdown of our carp harvest:

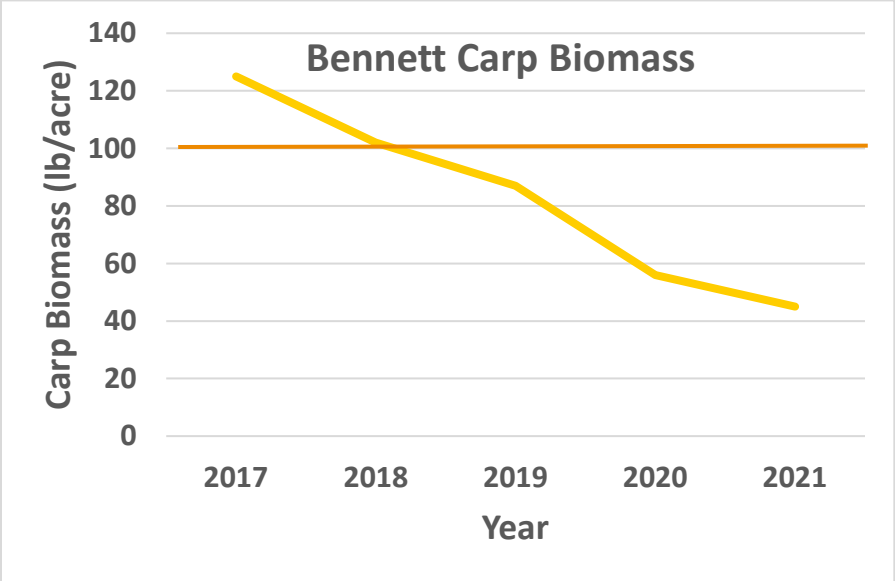
Location	# removed - hand netting	# removed – box netting
Lake Owasso		483 (2 nets)
Owasso – inlet barrier	97	
Owasso – outlet barrier	74	
Wabasso – outlet barrier	0 (no water flow)	
Bennett Lake		15 (1 net)
Frog Pond – outlet barrier	74	
Totals =	**245**	**498**

- Although we captured 498 carp with the box nets in Owasso and Bennett, our catch per unit effort has considerably decreased. Because of this, we are planning to place more emphasis this year on hand netting and block netting at the barriers. If catch rates are high during the spring migration, we may elect not to use the box nets in the summer.

- The most significant and promising news to report is that carp biomass remains below the 100 lb/ac threshold (see graphs below) in all of the main lakes. In addition, we did not detect any young carp in the lakes, suggesting that carp spawning in connected ponds and wetlands has been limited by the barrier installation.







- In May, we observed large schools of carp swimming around the Owasso outlet structure. To see a short video clip, go to: https://youtu.be/HNlrQZ1H9iQ . We have observed this behavior in previous years during the spring spawning migration. Because of the numbers of carp that consistently aggregate in this area during spring, this year we are planning to install a block net around the outlet. When the carp school, the net will be tripped to encircle and trap the aggregation. If this approach works, there is the potential to harvest hundreds, and perhaps even a thousand, adult carp in one netting attempt.

- Due to the low water levels, the new electric barrier that was installed in the West Vadnais outlet was never tested. In 2021, we did not observe any carp activity in the outlet channel. Carp did not move into the channel due to minimal water flows. This year, we plan to continue operating the barrier and monitoring carp activity.

- The carp fishing contest at Lake Owasso proved to be a successful public outreach event. However, because of the lower carp numbers in the system, fishing was challenging and only 15 carp were harvested as part of this event.

- Carp Solutions investigated the potential of netting carp in Grass Lake. Their team concluded that the low water levels would prevent boat launching from the walking pathway (there is no boat ramp). Thus, box netting was not possible last year. Currently, the PVC barrier at the Wabasso outlet and the low water prevents carp movement into or out of Grass Lake. We will continue to monitor and further investigate options for carp management in Grass Lake.

- Overall, we are encouraged with these results and look forward to continuing to use adaptive management to control the invasive carp in the Owasso system.


LAKE PHALEN
Walleyefest


DANGER!

Public Involvement and Education Program – Sage Passi

"Dream Big, Do Right" Motto Inspires Mounds Park Academy's Buffer Redesign

On January 24, the head of Mounds Park Academy, Bill Hudson and upper school science teacher Mitch Thomsen met online with Watershed staff Paige Ahlborg and Sage Passi and Senior Landscape Architects from Barr Engineering, Marcy Bean and Andrea Wedul to discuss plans for a redesign of the south end of the school's buffer next to the pond. The south side of the pond, with its parking row so close to the pond (see photo above left) has been a concern for quite some time with sand and salt runoff going directly into the pond and a very scant buffer protecting it.

"We have noticed sand slowly filling in this south side and while the salt content is still acceptable, it is most likely higher than it was several years ago. In addition, the trees and plants in this area take quite a beating from the mountains of snow deposited on this narrow strip from our parking lot," Mitch noted.

Mitch cites that this buffer area, the pond and the adjacent rain garden basins are a rich source of study for the biology classes at his school. "We have been involved in many citizen science projects including bumble bee watch, the turtle census, blue bird nest boxes, macro invertebrates study, water quality monitoring, Invasive plant identification and removal, golden rod gall studies, Seton watching, native plant growing and planting (typically we grow over 500 plants each year), tree and plant identification, bird identification, and trail maintenance."

A recent visit to the school in late fall by Paige Ahlborg prompted her to reach out to Barr staff to start the process of developing a concept plan for the site. A fun synergy emerged when Paige discovered that one of Barr's landscape architects engaged in the project, Andrea Wedul is a 1995 graduate of Mounds Park Academy! During the online meeting with Mounds Park Academy staff, Wedul recalled a number of colleagues' and teachers names and memories from her high school days at the school and recounted her transition from being a pre-med student in college to becoming a landscape architect.

In Wedul's concept plan, a row of parking spaces next to the buffer would be removed to make room for a rain garden that can capture and filter stormwater from the parking lot and driveway before it overflows into the pond. The rain garden would be planted with native perennials, shrubs, and trees. This additional buffer area with a rain garden would still allow for a two -way 24 foot driving lane between the buffer and an existing parking lot island.

The redesign plans incorporate an outdoor classroom limestone sitting space to be paid for by the school and removal of the speedbump adjacent to the buffer so that stormwater flow from that segment of the road can be directed into the rain garden. The tentative timeline for this project is for the project to go out for bid in early April, with approval needed at RWMWD's Board's May 2022 meeting and construction taking place over the summer. The hope is for the project to engage students in the planting of the buffer redesign project in the fall. Stay tuned! This **Dream Big, Do Right** motto that Mounds Park Academy holds has been set into motion!

Winter Preparation of Seeds at Battle Creek Elementary

We continued our engagement efforts at an additional school in January by involving three fourth grade classes in our seed stratification lessons. Watershed Education staff worked with classes at this school with the help of Ramsey County Master Gardener, Judie Ginter and Master Naturalist, Mike Laughton. Thank you to these volunteers and the 4th grade teachers, for opening up their classrooms to this hands on activity that engaged their students in this introduction to what it takes to set the stage for plant germination, the unique types of seeds that native plants produce and the preparations that make it possible to grow seedlings indoors during the winter. Can you say, "abscisic acid" and "gibberellins?"

Upcoming Blue Thumb Workshops

Several online workshops are being planned in partnership with Blue Thumb and will be co-sponsored by Vadnais Lake Area Water Management Organization, Rice Creek Watershed District and Ramsey-Washington Metro Watershed District over the coming spring months. Stay tuned to our website and social media channels for more details.

Here are the upcoming dates:

Resilient Yards: March 29 and May 5

Pollinator Plantings: April 5

Lawns to Legume Project Follow-ups: April 12

We are also in the process of planning several in-person rain garden maintenance workshops at several sites in Ramsey County over the spring, summer and early fall.

Lawns to Legumes Deadline is Coming Up Soon!

For 2021-2022, Minnesota residents are eligible to apply for Lawns to Legumes cost-share funding of up to $300 to create pollinator habitat in their yards. The application period is open until Feb. 15 and applicants will be picked in March. Applications will be chosen through a randomized drawing, though priority will be given to projects within higher priority areas. Go to the link below for the application and link to a map of priority areas.

https://bluethumb.org/lawns-to-legumes/apply-for-lawns-to-legumes-assistance/

Communications and Outreach Program Report – Lauren Hazenson

Website Redesign

The website prototype was completed this month, which outlines the site structure and basic navigation. This prototype will be presented to the Board at the February meeting to solicit your feedback. Then, we will commence usability testing with several volunteers, ideally a second group distinct from user interviews to expand opportunities for user input. Lauren and Simba also met with St. Paul Media to launch the site design process. The contract site designer will present three design options to the staff website team in early February. A draft design should be ready in early March and will be presented to the Board at this time if we remain on schedule. RWMWD staff working on the website project will also assist with content population for the website in the next few months, particularly in areas where new content needs to be created.

Volunteer Program

Sage, Simba, and Lauren met twice this month to further develop the volunteer program and expand capacity in several program areas. We completed a volunteer needs assessment for the organization and began developing a volunteer supervisor structure in addition to volunteer role descriptions. The Communications program expects to add outreach volunteers to the department later this year.

Video Production

Editing and production of several videos filmed in the summer and fall of 2021 began this month. These videos primarily focus on Stewardship Grant projects, but video content focusing on water-friendly yard practices and other seasonal resources will also be included. We aim to include some of these videos in the educational resource sections of the new website, as well as part of communications campaigns during the 2022 growing season.

December Newsletter

This newsletter contained a yearly summary of 2021 program activities and highlights. It was exceptionally successful, with an open rate of 10% above industry standard. We will continue to publish a year end summary newsletter for subsequent years as the metrics show this is an audience interest.

Subscribers: 1,580

Open rate: 47.5%

Click rate: 8%

Social Media (Facebook, Twitter, Instagram)

Numbers as of January 26:

Audience: 2,738

Impressions/Post Views: 4,762

Engagement (likes, comments, shares): 182

Communications Intern Hiring

We have received twelve applications for the Communications Intern position and will begin interviews on a rolling basis throughout February. There has been a marked increase in the volume, overall experience, and diversity of applicants this year.

Resident Communications/Professional Development/Misc.

- Minnesota Association of Government Communicators Networking, 1/27