EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org
office@vlawmo.org
(651) 204-6070

WATER MATTERS WORKSHOP: 6:15 PM

"Fish in Goose and Wilkinson Lakes" Steve McComas, Blue Water Science

Refreshments 6:40-7:00

BOARD OF DIRECTORS MEETING AGENDA

7:00 PM April 25, 2018

Vadnais Heights City Hall, Council Chambers; 800 County Road E, East, Vadnais Heights; Action items:

I. **Call to Order**, Chair, Dan Jones

II. **Approval of Agenda**

III. **Approval of Minutes** from February 28, 2018

IV. **Visitors and Presentations**

A. Acceptance & highlights from the 2017 Audit & Financial statements – Liz Towne & Chris Knopik

V. **Consent Agenda**

A. Contract for Noah& Associates for HR assistance

VI. **Operations and Administration - Reports**

A. TEC Report and Financial – February – Mark Graham/Stephanie
B. Education events
C. Project updates
    1. Sucker Channel & Whitaker Wetlands – Stephanie /Brian
    2. Goose Lake and Oak Knoll Pond Study - Tyler

VII. **Business**

A. Accept Annual Report for distribution – Nick/Stephanie
B. Lambert Creek – Engineering Study Update – Brian & Tyler
C. Community Blue grant – Connect the Drops, Nick
D. Vadnais Heights Local Water Plan approval – Stephanie
E. Birch Lake Project – update – Tyler
F. Watershed Based Funding priorities, Board direction. –Stephanie
G. Master Water Stewards 2018-19 – Nick
H. Chloride direction for VLAWMO

VIII. **Discussion**

A. Draft 2019 Budget
B. Zebra mussel studies

IX. **Administration Communication –** Grass-West & East Vadnais flow study

XI. **Adjourn**

Next regular meeting: June 27th

The Vadnais Lake Area Water Management Organization
800 East County Road E, Vadnais Heights, 55127 651-204-6070
Website: www.vlawmo.org; Email: office@vlawmo.org

MINUTES OF THE BOARD OF DIRECTORS
February 28, 2018

Attendance		Present	Absent
Dan Jones, Chair	City of White Bear Lake	X	
Jim Lindner, Vice Chair	City of Gem Lake	X	
Rob Rafferty, Secretary-Treasurer	City of Lino Lakes		X
Ed Prudhon	White Bear Township	X	
Gregg Nelson - alternate	City of North Oaks	X	
Terry Nyblom	City of Vadnais Heights	X	
Stephanie McNamara	Administrator	X	
Kristine Jenson	Program Mgr.	X	
Brian Corcoran	Water Resources Mgr.	X	
Nick Voss	Education & Outreach Cord.		X
Tyler Thompson	Water Resource Tech.	X	

Others in attendance: Margaret Behrens (Ramsey Conservation District), Mark Graham (City of Vadnais Heights Engineer & TEC Chair); Paul Duxbury (White Bear Township TEC representative); Scott Miller (Institution Community Work Crew – ICWC)

I. Call to Order

The meeting was called to order at 7:00 pm by Chair Jones. A quorum is present for the meeting. Rafferty had an excused absence.

II. Approval of Agenda

A request was made to change Item V.B.1 into an action item.

A motion was made by Lindner and seconded by Prudhon to approve the agenda as amended. Vote: all aye. Motion passed.

III. Approval of Minutes from December 13, 2017

A motion was made by Prudhon and seconded by Lindner to approve the minutes from the December 13, 2017 Board of Directors Meeting. Vote: all aye, Motion passed.

IV. Visitors and Presentations

Public Meeting: Spring maintenance work on targeted areas of Lambert Creek
Public Present for the meeting: Vadnais Heights residents - Doug & Barb VanVreede, Paul & Michelle Hakamaki, Antone Gregory, Steve Guida
Scott Miller Crew Supervisor from ICWC was introduced by Brian Corcoran to explain the program and the work we would like to complete this spring. The Institutional Community Work Crew (ICWC) program has been used successfully in many communities, counties, Indian tribes, local colleges around the state. 125 offenders in the program currently, none are sex offenders. Crews have worked on things from picking up sticks all the way up to constructing buildings. The offenders are looking to gain skills so when they are released, they can get a job and to reduce their sentences. They will be working Friday, Saturday, Sunday and can start as early as 7am – the hours can be set by VLAWMO.

Prudhon complimented Miller on the Township's experience with ICWC. Prudhon asked if this project is something they can do. Miller said that they can definitely perform these tasks.
Jones asked how large of a crew – up to 10 offenders and 1 crew leader supervisor. Offenders have ankle bracelets with GPS tracking on. Prudhon asked about timing – Miller stated that once the ice is out of the creek and Brian can work with him to determine the optimal time.
Jones opened the meeting up to the public.

Antone Gregory – asked if the scope of work is for debris removal or also the excavation of the ditch. Brian stated only debris removal. Gregory asked if there are plans for excavation. Brian stated that an engineering firm has been hired to survey, model and analyze the ditch.
Hakamati – supports this project 100% but states that due to erosion, some trees are about to tip over and if any of these would be addressed as part of this project. Brian stated that the scope for this go-around is removing already downed trees and branches. Hakamati asked if he has the right to cut down the trees himself. Brian stated that he could. Hakamati asked if he could hire this crew to do that. Miller stated they can only work for non-profits or government.

Stephanie indicated that the creek no longer appears on the public water inventory of the DNR.

Jones stated that this type of work is new for us and we have not yet set up a policy for how to address issues for ditch management but that we will be working on it.
Doug VanVreede - 3764 Brunet Ct – we have a large oak tree that is spanning the creek and wondering it will be taken out? Brian stated that it would be removed and set along the banks.
Steve Giuda - 3720 Edgerton St – he has been pulling out trees for 20 years. He has privacy concerns regarding people crossing his property. He has had City and State people cross on his property without knocking on the house. He would like to be given the courtesy to have someone knock on his door before people are accessing his property. He also has concerns about the trucks and their effect on the road. He wants to make sure that if they make any ruts in the road by his house, that they will fix it. Miller stated they will fix any damage if it occurs. Brian stated that they will also be notifying people again once they have dates solidified. Mark Graham stated that he knows many of the homeowners along this stretch of the creek and will help out with knocking on doors as well as finding appropriate places for the ICWC van and trailer to park.
Jones asked if there were any other comments or questions. There were none. Jones thanked the public and closed the public meeting.

V. New Business

A. Election of Officers

The 2017 slate of officers were Chair – Dan Jones, Vice Chair – Jim Lindner, and Secretary Treasurer – Rob Rafferty. Officers preside over Board meetings and become check signers for our account at US Bank. The Chair may speak for VLAWMO in public situations and the Secretary Treasurer is a member of the Finance Committee.

A motion was made by Prudhon and seconded by Lindner to elect Dan Jones as Chair for 2018. Vote: all aye. Motion passed.
Jones asked if Linder would be willing to continue as Vice Chair. He stated he would.
A motion was made by Prudhon and seconded by Nyblom to elect Jim Lindner as Vice Chair for 2018. Vote: all aye. Motion passed.
Rafferty informed Jones that he will continue as Secretary Treasurer if the Board wants him to stay in this role.
A motion was made by Jones and seconded by Lindner to elect Rob Rafferty as Secretary-Treasurer for 2018. Vote: all aye. Motion passed.
Jones thanked them for continuing their service in this capacity.
Committee assignments also need to be determined. We have the Policy and Personnel Committee which Dan Jones and Rob Rafferty have served on. They also serve on the Finance Committee.

VLAWMO requires the Board to appoint a Chair for our Technical Committee. The TEC has nominated Mark Graham to continue as TEC Chair. A motion was made by Nyblom and seconded by Lindner to appoint Mark Graham as Chair for the VLAWMO TEC for 2018. Vote: all aye. Motion passed.
Jones thanked Graham for his continued service.

B. Lambert Creek – Engineering Study Update

In addition to the main Ditch 14/Lambert Creek survey that was completed the second week in January 2018, the survey of Lambert Creek's branches 2, 3, 4, and 5 was completed on January 24th and 25th. The survey of the branches will not only make the H&H modeling of the drainage system more accurate, but will help determine repair and improvement options down the road. Now that the survey has been completed, the next step will be beginning the hydrologic and hydraulic modeling.

Thompson stated that there is a process for submitting the ditch data once it is completed but BWSR requires the Board to designate a staff person to be the representative for this process.
A motion was made by Jones and seconded by Prudhon designated Thompson as the VLAWMO representative for working with BWSR on the updating of the ditch system. Vote: all aye. Motion passed.

C. Community Blue Grant

The Board was provided the application and supporting materials for a grant request for a program called Water Heroes. The grant would go towards a watershed education summer program with White Bear Lake schools with Dawn Pape, a professional environmental educator from Lawn Chair Gardener.
The TEC reviewed the grant application at their last meeting and recommended Board approval for the program to be done in 4 schools within the District. Not all of the schools are within VLAWMO boundaries but it is reasonable to expect that participants at all the schools would include those that live within VLAWMO.
There is $10,000 in the Community Blue Grant program for 2018 and we are expecting another grant application within the next couple of months.

Discussion:

Prudhon asked if this voluntary or a summer school program? Stephanie stated that program is an enrichment class open to students in the school district.
Nyblom is concerned that Hugo Elementary is one of the sites and it is outside of VLAWMO. Stephanie indicated that the program would be advertised to the whole district. The summer enrichment school sites were selected by the school district.
Jones doesn't feel supportive of this because it is $106/student and he thinks it is too much. He doesn't think a puppet show cuts it and he would want it to be in schools in VLAWMO. He thinks it should go to projects.
Lindner stated that Community Blue is more about education and outreach rather than projects and therefore this does fit within the goals of the programs.
Prudhon asked if we can wait for Nick to be back to sell this project better. Stephanie stated that this program has gotten good reviews from other schools and participants. Stephanie also pointed out that something like this leverages staff time so that Nick doesn't have to be the one in charge of all the programs in the watershed. He has many other things to work on and this allows him to free up his time to do other duties.
A motion was made by Lindner and seconded by Jones to approve the Water Heroes Community Blue grant in the amount of $5,000. Vote: 2 aye; 3 nay (Prudhon, Jones, Nyblom). Motion failed.
Nelson asked how this fits into the mission of VLAWMO. Jones stated that this is part of our education program. Jones is concerned about the cost-benefit for this program. And he feels uncomfortable with schools outside of the watershed. Jones asked if Ramsey-Washington or Rice Creek were approached. Stephanie stated that the other watersheds doesn't have this type of grant program. Rice Creek has a small program ($500 max that could be used possibly). Ramsey-Washington has a robust educational program without the community education grant program.

Nelson thinks that kids probably don't know what a watershed is and through this program, they will learn it and likely go home and tell their parents which is a great thing. Stephanie asked if the Board would entertain a modified application if the issues were addressed

D. Birch Lake Project

As we have discussed at previous meetings, a nutrient reduction project at 4th & Otter Lake Road, in White Bear Lake, has been a priority for the watershed. Last year, we worked with Barr Engineering to do a study for the best possible projects to reduce nutrients from this particular site before the water flows into Birch Lake. Monitoring results have shown that this is a "hot spot" for nutrients entering the lake. Barr came up with a plan that includes adding a detention structure to the outlet pipe and installing an iron-sand filter to allow for nutrient capture. The City of White Bear Lake (WBL) showed their support for the project by earmarking $15,000 towards the project. The Birch Lake Improvement District (BLID) has also been very supportive. Kristine applied for a Clean Water Fund (CWF) Grant from the Board of Soil and Water Resources (BWSR) for which we have been awarded $97,000. Staff is requesting the Board consider the Grant Agreement from BWSR, designate an authorized signature for grant-related documents, and give approval for the watershed to move forward with the grant process. If the Board approves of moving forward, Kristine will be submitting a Work Plan to BWSR for the grant. If that meets their requirements, we would have the money available in April.

Kristine has also received a proposal from Barr Engineering to provide the necessary engineering and technical oversight for this project, as required by BWSR. Barr has estimated a cost of $30,000 to complete the necessary tasks (a copy of the proposal is with your Board packet). This cost is reasonable, given the items we are asking them to complete and staff recommends approval.

For today's meeting, staff requests the following:

1. Approve staff to move ahead with the BWSR CWF Grant by submitting the work plan and grant agreement to BWSR, and to designate who will be an authorized signer for grant documents.

A motion was made by Prudhon and seconded by Lindner to authorize the submittal of the Clean Water Fund Grant Work Plan and Grant Agreement to BWSR and designate Kristine as the authorized signature for grant documents. Vote: all aye. Motion passed.

2. Approve the Barr Engineering proposal to perform final engineering and technical oversight for the Birch Lake project so as to meet the requirements defined by BWSR.

A motion was made by Prudhon and seconded by Nybom to approve the Barr Engineering proposal for final technical engineering and oversight for this project at a cost not to exceed $30,000. Vote: all aye. Motion passed.

E. Pilot Watershed-based Funding Priorities

Background: The Board of Water and Soil Resources (BWSR) has developed a new way to spread funding from the Clean Water Fund. In the metro area, they have begun a pilot program where the funding is spread out based on the size of the Counties. Ramsey County is the smallest of the metro area counties and would receive $422,000 for the two-period of this program. Within the county, local agencies are eligible to receive funding if they have an approved water plan. There are 26 agencies within Ramsey County which can submit a plan with their list of priorities projects and programs with measurable outcomes. This must be submitted by June 30 in order to have a say in where the money should go to do the most good. If this cannot be done, BWSR will use the pot of

money for a competitive grant program. Currently, a proposal being discussed in Ramsey County is that the money would be divided up by watershed land area. Using that formula, VLAWMO could receive somewhere between $53,000-$59,000 (13.5% of the land in Ramsey County is with VLAWMO). If the money were to be distributed among all 26 agencies, we would receive approximately $17,000. The work involved with grant administration is a drain on staff time and therefore VLAWMO does not typically apply for grants unless we would receive at least $50,000. Some other agencies may feel that way as well. That's why dividing the pot up into larger pieces (per watershed agency) makes more sense. There will be a meeting in March with all agencies within Anoka and Ramsey counties to discuss this further. Any local unit has the option to opt out if they feel the amount of funding vs. the grant requirements and administration is not worth their time.

Board Action and Staff Recommendation: The process set up by BWSR requires that each agency that elects to participate in this collaborative process designate a representative that may speak and make decisions for VLAWMO at the meetings. Staff recommends that the Board designate the VLAWMO Administrator to be its delegate concerning this program funding and to speak for the Board at meetings.
A motion was made by Lindner and seconded Nelson by to designate the VLAWMO Administrator as the representative for VLAWMO at meetings relating to the Watershed-based Funding Program and to speak for the agency and the Board. Vote: all aye. Motion passed.

Discussion:
Staff brought a list of projects and programs that are in the 2017-2026 Water Plan to the last TEC meeting for discussion and recommendations. Following are a list of their top recommended projects for your preliminary discussion – not in any order. Keep in mind that we are talking about $53,000 that will need to have a 10% local match. It would be useful to have direction on priorities by your April meeting.

- Goose Lake shoreline restoration: There are three areas that could use restoration – on West Goose where the Ski Otters have their shows and at the channel on East Goose by the Polar Chevrolet car dealership.
- Spent lime feasibility study: Preliminary data collection of water chemistry and sediment analysis has already been done on Oak Knoll pond (Wood Lake). This would take it to the next step of designing a pilot project that could help us understand if treating with spent lime is good tool to use on some of very nutrient rich waters.
- Increase cost-share funding: The Board may in particular want to fund either in the smaller LL1 program that generally goes to homeowners or in the larger project funding, LL2, which could go for municipal or business projects. Some of the other metro watersheds use this to fund city water enhancement projects.
- Wilkinson Load study: We have been gathering data on what is coming in from the drainage area of this impaired water already. More monitoring is slated for this summer to better identify where the nutrient loading is coming from. The study would take all the available data to run models allowing a better understanding the lake. The study would also identify the best practices most likely to improve the water quality and health of the lake.

Discussion: Jones feels this money is tenuous and unpredictable. He is hesitant about using it for the cost share program because he doesn't want to promise money to people and then have the money gone.

Lindner stated that the spent lime study would be a good project to work on. The Goose Lake shoreline isn't worth doing as long as the Ski Otters use the area.
Nyblom suggested we consider another item – the study of chloride and asked Stephanie if it is stated in the Water Plan. Stephanie stated that it isn't listed as a priority issue other than that we do the annual analysis on the creek and the lakes as well as continue to work with Birch Lake for more chloride monitoring.

F. Administrator Annual Review

Jones stated that Stephanie did not receive a rate increase last year. Jones would like to give Stephanie a raise for 2017 of 3.5% and then another raise of 3.5% for 2018. The 3.5% is the average of the raises for the rest of the staff.
Nyblom doesn't understand why we would give her the raise for 2017 and why government is getting 3.5% when private sector gets 2%. Jones stated that these increases are in line with market rate.
Motion by Jones/Nelson for 2018 to increase McNamara's pay rate by 3.5% – vote all aye.
For 2017
Nelson asked if it would be paid in a lump sum or how it would be handled. Jones said it could be a lump sum or over time. Jones stated that paying her for 2017 is something he wants to do. Stephanie didn't ask for a raise and she didn't want Jones to ask for 2017 retro pay but Jones feels she deserves it because it wasn't given last year, partly because Jones neglected to do it. Jones stated that paying for this would come from the fact that we are paying less for Stephanie's health insurance since she is now on Medicare. Nelson stated that it is valuable to pay for staff that have history and experience.

Lindner/Nelson – 3.5% for 2017 as well. Vote: 4 aye, 1 nay (Nyblom)

VI. Consent Agenda

A. Contract for lab analysis for 2018

Staff sent out RFP's for 2018-2019 monitoring analysis. Three companies responded. Ramsey County Labs no longer does commercial analysis, Pace and RMB Laboratory provided proposals. Analysis will be for both our regular monitoring program as well as the wetland treatment pilot project. Staff summarized the proposals from both Pace and RMB at the February 9, 2018 TEC meeting (proposals are in the packet). The TEC has recommended to the Board that VLAWMO contract with RMB Laboratories for the 2018-2019 monitoring seasons.

B. Continuing Contract with Ramsey County GIS User Group

Staff is recommending the approval and signing of the 2018-2020 Joint Powers Agreement to continue in partnership with the Ramsey County GIS Users Group. This is a 3 year JPA. The prior JPA expired at the end of 2017, and this new JPA contains the exact same language as the previous, but with updated and current dates. As a member of the RCGISUG, VLAWMO pays an annual due of $254.26 and is a voting member and receives access to products and services funded by the Users Group. The annual due has not increased since 2006, and is not projected to change.

C. Continuing Contract with Ramsey Conservation District

VLAWMO contracts with Ramsey Conservation District as do other watersheds for a variety of technical services. They have helped with channel restoration design, rain garden designs, vegetation and bathymetric surveys and have completed retrofit analysis of all VLAWMO subwatersheds. This 2018-2019 contract is for service as needed with a cost not to exceed $14,000. Staff recommends approval of the 2018-2019 contract.

D. Designation of Legal Publication, Legal Counsel and 2018 Meeting Dates

Staff recommends confirmation of legal services with Kennedy & Graven, for 2018 on an as-needed basis.

Staff recommends continued use of Press Publications as its legal publication for public notices. The following dates for Board meetings are as follows: 2/28, 4/25, 6/27, 8/22, 10/24, 12/12.
A motion was made by Lindner and seconded Nelson by to approve all items under the Consent Agenda. Vote: all aye. Motion passed.

VII. Operations and Administration - Reports

A. TEC Report and Financial Report

Graham stated that VH cleared branch ditches and that they have piggybacked on with our

VIII. Discussion

B. Water Matters presentations

Staff are interested in reviving a long-lost VLAWMO tradition, the Water Matters series. This idea would be a 15-20 minute talk about a specific topic related to VLAWMO's work, and would occur prior to a board meeting and provide time for questions. The talk to begin at 6:15 so as to not affect Board meeting start time. The talks will be recorded and used as a valuable education/outreach tool. Each talk would invite a guest speaker who's an expert in the sub-topics that relate to VLAWMO's work:

- Aquatic Invasive Species
- Groundwater
- Water quality
- Road salt
- BMP (best management practice) design and function
    - Shoreline restorations
    - Raingardens
    - Bio swales and underground retention basins
- Wetland health and function

Examples of where the experts would be coming from include:

- Blue Water Science (VLAWMO's partner in fish surveys)
- Business contractors such as Natural Shore Technologies
- MN DNR
- MPCA
- Freshwater Society
- Metropolitan Council

Jones said he likes the concept but maybe a couple times per year rather than each Board meeting. Jones thinks a presentation about "who is in charge of water" and educating what the different agencies do – what is the chain of command. He said it could be done just as a packet of information for the Board.
Nyblom stated that the Friends of the Mississippi River are available, he'd like them to come to the April meeting to discuss chloride. Jones stated that none of our lakes are impaired for chloride. Nyblom stated that by the Board learning more about chloride, they may decide to make it more of a priority because once a lake is impaired for chloride, it is too late so doing what we can before they are impaired is important.
Jones thinks the first one can be April could be Steve McComas to discuss the fish surveys he has conducted for VLAWMO and then another one in August or October. Nyblom thinks a presentation about chloride would be important at April. Board decided that if we could get chloride speakers for April, to do that first. If they cannot come in April, then have Steve McComas come.
Nyblom stated that we should contact the local cable service to have someone come to record it so it can be broadcast.

C. **Agenda – Jones** asked Stephanie to remove this item from the agenda from now on.

IX. Administration Communication – Annual Report, Audit, 2019 Budget

Annual report will be at the April meeting and the audit was completed and they will be at the April meeting with their report. And prior to the April meeting, the Finance Committee will meet to start preparing the 2019 budget.

X. Public Comment

XI. Adjourn

A motion was made by Lindner and seconded by Nelson to adjourn at 8:51 pm. Vote: all aye. Motion passed.

Minutes compiled and submitted by Kristine Jenson.

VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E E, Vadnais Heights, MN 55127
www.vlawmo.org; Office@vlawmo.org

To: Board of Directors

From: Stephanie McNamara, Administrator

Date: April 19, 2018

Re: 2017 Audit Report

Liz Towne from Clifton Larson Allen, LLP will be on hand to present the findings from the 2017 Audit. The drafts for the Governance Communication Letter, Management Letter, and Financial Statement are included with your packet.

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION

FINANCIAL STATEMENTS AND SUPPLEMENTARY INFORMATION

YEAR ENDED DECEMBER 31, 2017

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
TABLE OF CONTENTS
YEAR ENDED DECEMBER 31, 2017

INTRODUCTORY SECTION

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
BOARD OF DIRECTORS AND APPOINTED OFFICIALS
YEAR ENDED DECEMBER 31, 2017

BOARD OF DIRECTORS		
Name	Title	Member City
Dan Jones	Chairperson	White Bear Lake
Jim Lindner	Vice-Chair	Gem Lake
Rob Rafferty	Treasurer	Lino Lakes
Marty Long	Board Member	North Oaks
Ed Prudhon	Board Member	White Bear Township
Terry Nyblom	Board Member	Vadnais Heights

TECHNICAL COMMISSION		
Name	Title	Member City
Mark Graham	Chairperson	Vadnais Heights
Jim Grisim	Vice-Chair	White Bear Lake
Bob Larson	Treasurer	North Oaks
Gloria Tessier	Commissioner	Gem Lake
Marty Asleson	Commissioner	Lino Lakes
Paul Duxbury	Commissioner	White Bear Township

FINANCIAL SECTION

CliftonLarsonAllen LLP
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INDEPENDENT AUDITORS' REPORT

Board of Directors
Vadnais Lake Area Water Management Organization
Vadnais Heights, Minnesota

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities and the major fund of the Vadnais Lake Area Water Management Organization (the Organization), Vadnais Heights, Minnesota, as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise the Organization's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and the major fund of the Organization as of December 31, 2017, and the respective changes in financial position and the budgetary comparison for the General fund for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Report on Summarized Comparative Information

We have previously audited Vadnais Lake Area Water Management Organization's 2016 financial statements of the governmental activities and major fund, and we expressed unmodified opinions on those financial statements in our report dated April 11, 2017. In our opinion, the summarized comparative information presented herein as of and for the year ended December 31, 2016 is consistent, in all material respects, with the audited information from which is has been derived.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 3 through 11, the schedule of employer's share of PERA net pension liability, and the schedule of employer's share of PERA contributions on page 39 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Organization's basic financial statements. The introductory section is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The introductory section has not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

CliftonLarsonAllen LLP

Minneapolis, Minnesota
April 25, 2018

As management of the Vadnais Lake Area Water Management Organization (the Organization), Vadnais Heights, Minnesota, we offer readers of the Organization's financial statements this narrative overview and analysis of the financial activities of the Organization for the fiscal year ended December 31, 2017. We encourage readers to consider the information presented here in conjunction with the financial statements, which follow this section.

Financial Highlights

- The assets and deferred outflows of resources of the Organization exceeded its liabilities and deferred inflows of resources at the close of the most recent fiscal year by $544,046 (*net position*). Of this amount, $135,137 (*unrestricted net position*) may be used to meet the Organization's ongoing obligations.

- The Organization's total net position increased by $322,561

- As of the close of the current fiscal year, the Organization's General fund reported combined ending fund balances of $417,049, an increase of $101,644 in comparison with the prior year.

- The ending General fund balance was $417,049. Of this balance, $316,550 is committed purposes disclosed in the financial statements.

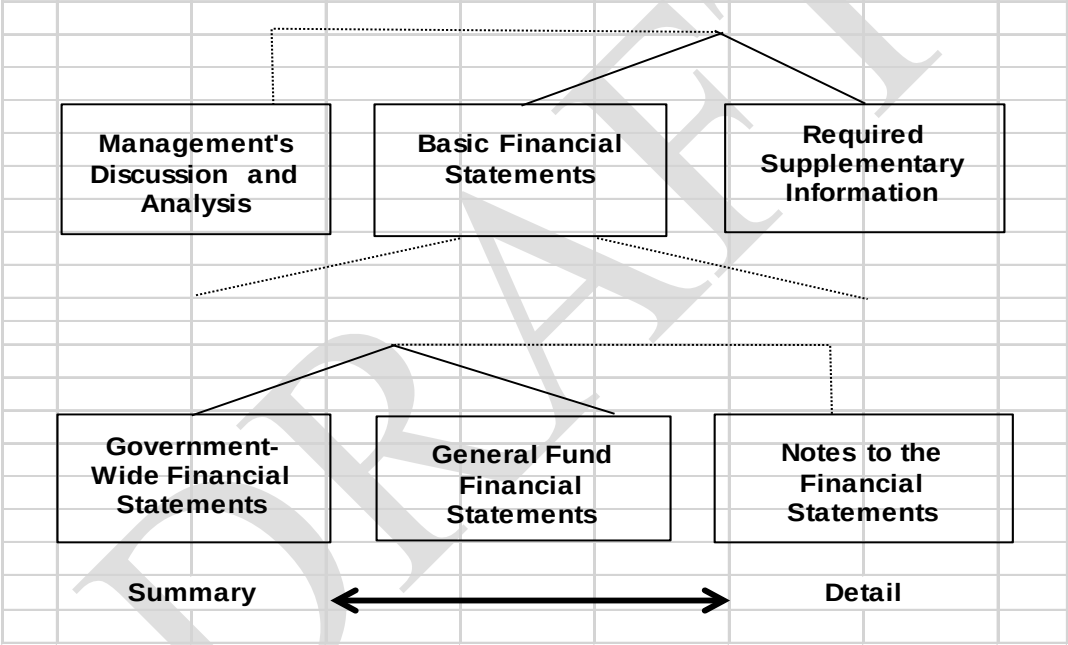
- The Organization's unrestricted cash and temporary investments as of December 31, 2017 increased to $458,142 from $417,256 as of December 31, 2016.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the Organization's basic financial statements. The Organization's basic financial statements are comprised of three components: 1) government-wide financial statements, 2) general fund financial statements, and 3) notes to the financial statements. This report also contains other required supplemental information in addition to the basic financial statements themselves.

The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of combining and individual fund financial statements and schedules that further explains and supports the information in the financial statements. Figure 1 shows how the required parts of this annual report are arranged and relate to one another.

Figure 1
Required Components of the Organization's Annual Financial Report



Overview of the Financial Statements (Continued)

Figure 2 summarizes the major features of the Organization's financial statements, including the portion of the Organization government they cover and the types of information they contain. The remainder of this overview section of management's discussion and analysis explains the structure and contents of each of the statements.

Figure 2
Major Features of the Government-Wide and Fund Financial Statements

	Fund Financial Statements	
	Government-Wide Statements	**General Fund**
Scope	Entire Organization	The activities of the Organization
Required financial statements	• Statement of Net Position • Statement of Activities	• Balance Sheet • Statement of Revenues, Expenditures, and Changes in Fund Balances
Accounting Basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets included
Type of deferred outflows/inflows of resources information	All deferred outflows/inflows of resources, regardless of when cash is received or paid	Only deferred outflows of resources expected to be used up and deferred inflows of resources that come due during the year or soon thereafter; no capital assets included
Type of inflow/out flow information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year; expenditures when goods or services have been received and payment is due during the year or soon thereafter

Government-Wide Financial Statements

The government-wide financial statements are designed to provide readers with a broad overview of the Organization's finances, in a manner similar to a private-sector business.

The *statement of net position* presents information on all of the Organization's assets and liabilities, with the difference between the two reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Organization is improving or deteriorating.

The *statement of activities* presents information showing how the Organization's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g., grants and earned but unused vacation and sick leave).

Government-Wide Financial Statements (Continued)

The governmental activities of the Organization include general and administrative, programs, and projects.

Fund Financial Statements

A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Organization, like other state and local government, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. The Organization currently only uses a general fund.

General Fund

The *General fund* is used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, the General fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as on *balances of spendable resources* available at the end of the fiscal year. Such information may be useful in evaluating a government's near-term financing requirements.

Because the focus of the General fund is narrower than that of the government-wide financial statements, it is useful to compare the information presented for the *General fund* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact by the government's near-term financing decisions. Both the General fund balance sheet and the General fund statement of revenues, expenditures and changes in fund balance provide a reconciliation to facilitate this comparison between the *General fund* and *governmental activities*.

The Organization adopts an annual appropriated budget for its General fund. A budgetary comparison statement has been provided for the General fund to demonstrate compliance with this budget.

Notes to the Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements.

Government-Wide Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of a government's financial position. In the case of the Organization, assets and deferred outflows of resources exceeded liabilities and deferred inflows of resources by $544,046 at the close of the most recent fiscal year.

The largest portions of the Organization's net position are unrestricted and available to meet the ongoing needs of the Organization. The Organization has a total of 75% classified as investment in capital assets (e.g., land, buildings, machinery, and equipment). The Organization uses these capital assets to provide services to its member cities; consequently, these assets are not available for future spending.

Government-Wide Financial Analysis (Continued)

Vadnais Lake Area Water Management Organization's Summary of Net Position

	December 31,		Increase
	2017	2016	(Decrease)
ASSETS			
Current	$ 1,336,785	$ 1,173,131	$ 163,654
Capital, Net of Accumulated Depreciation	408,909	107,973	300,936
Total Assets	1,745,694	1,281,104	464,590
DEFERRED OUTFLOWS OF RESOURCES			
Deferred Pension Resources	107,344	146,551	(39,207)
LIABILITIES			
Current	941,608	836,175	105,433
Noncurrent	316,951	342,952	(26,001)
Total Liabilities	1,258,559	1,179,127	79,432
DEFERRED INFLOWS OF RESOURCES			
Deferred Pension Resources	50,433	27,043	23,390
NET POSITION			
Net Investment in Capital Assets	408,909	107,973	300,936
Unrestricted	135,137	113,512	21,625
Total Net Position	$ 544,046	$ 221,485	$ 322,561

At the end of the current fiscal year, the Organization is able to report positive balances in both categories of net position.

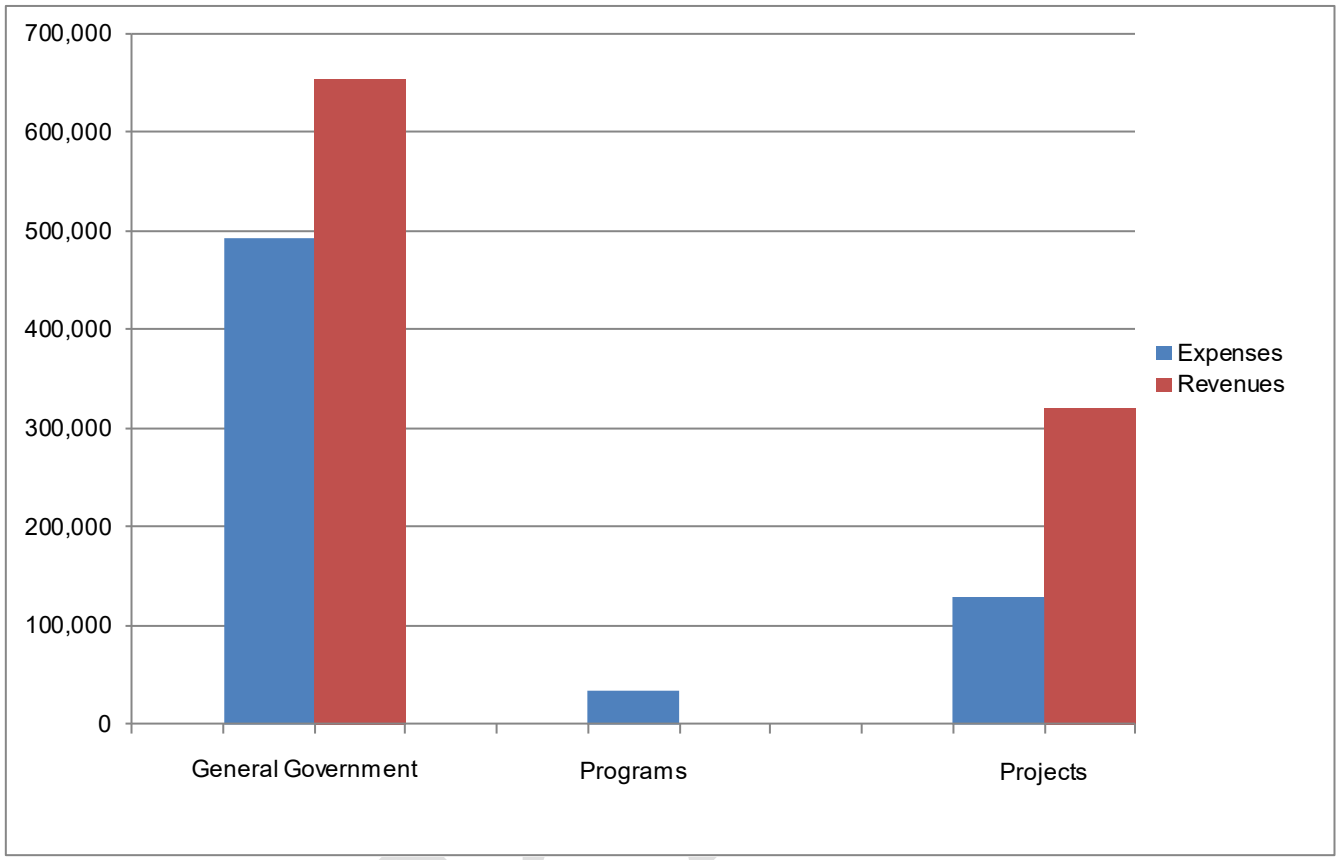
Government-Wide Financial Analysis (Continued)

Vadnais Lake Area Water Management Organization's Changes in Net Position

	December 31,		Increase
	2017	2016	(Decrease)
REVENUES			
Program:			
Charges for Services	$ 652,720	$ 503,759	$ 148,961
Operating Grants and Contributions	321,057	46,043	275,014
General:			
Unrestricted Investment Earnings	2,319	577	1,742
Total Revenues	976,096	550,379	425,717
EXPENSES			
General and Administrative	492,069	475,203	16,866
Programs	33,107	44,384	(11,277)
Projects	128,359	202,029	(73,670)
Total Expenses	653,535	721,616	(68,081)
CHANGE IN NET POSITION	322,561	(171,237)	493,798
Net Position - January 1	221,485	392,722	(171,237)
NET POSITION - DECEMBER 31	$ 544,046	$ 221,485	$ 322,561

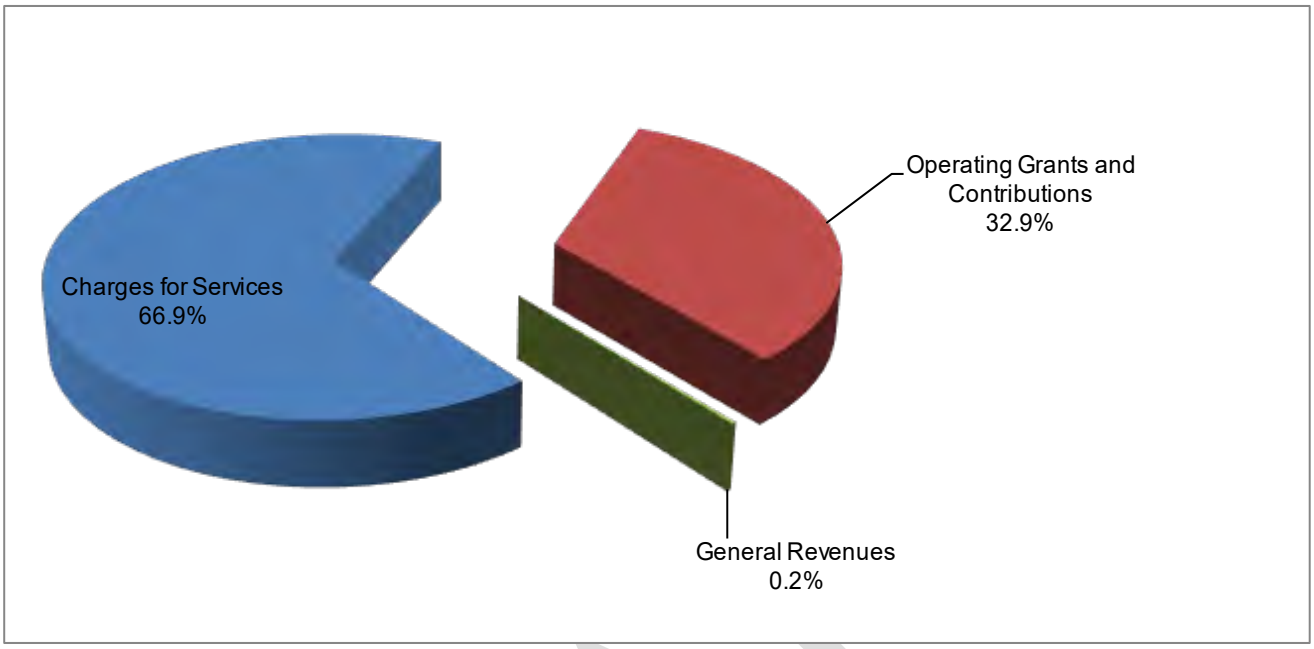
Government-Wide Financial Analysis (Continued)

Expenses and Program Revenues – Governmental Activities



Government-Wide Financial Analysis (Continued)

Revenues by Source – Governmental Activities



Financial Analysis of the General Fund

As noted earlier, the Organization uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

General Fund

The focus of the Organization's *General fund* is to provide information on near-term inflows, outflows, and balances of *spendable* resources. Such information is useful in assessing the Organization's financing requirements. In particular, *unassigned fund balance* may serve as a useful measure of a government's net resources available for spending at the end of the fiscal year.

As of the end of the current fiscal year, the Organization's General fund reported an ending fund balance of $417,049 an increase of $101,644 in comparison with the prior year. Approximately 24% of the total amount, $100,499, constitutes unassigned fund balance, which is available for spending at the Organization's discretion. The remainder fund balance of $316,550 is committed for purposes described in the notes to the financial statements. As a measure of the General fund's liquidity, it may be useful to compare total fund balance to total fund expenditures. Total fund balance represents 32% of 2017 fund expenditures and 51% of 2016 budgeted fund expenditures.

General Fund Budgetary Highlights

The Organization's General fund budget was not amended during the year. Actual revenues were over budget by $448,046, mainly due to intergovernmental grants exceeding budget by $356,049. Expenditures were under budget with a variance of $320,580 mostly due to project costs being lower than anticipated as one specific project is currently in construction in process at year-end.

Capital Asset and Debt Administration

Capital Assets

The Organization's investment in capital assets for its governmental activities as of December 31, 2017, amounts to $408,909 (net of accumulated depreciation). This investment in capital assets includes construction in process relating to the Whitaker Wetland project.

Additional information on the Organization's capital assets can be found in Note 3 of this report.

Economic Factors and Next Year's Budgets

The Organization considered and prepared the 2017 budget based on the following factors:

- Revenue is primarily from the storm sewer utility assessment, with occasional income from grants, service fees, and interest.
- Expenditures fall into three main categories: Programs, projects, and general and administration.
- Programs include: monitoring and data analysis, sustainable lake plans, cost-share, education and outreach, maintenance, and 30% of payroll for 5 employees.
- Projects include capital projects such as the Sucker Lake channel restoration, year four of the bacteria source monitoring on Lambert Creek, lower Kohler Lambert streambank restoration, and development of the Whitaker Treatment wetland project occupying 40% of payroll for 5 employees.
- Operations and administration include office rent and supplies, bookkeeping and general and program audit, information systems, insurance, and 30% payroll for 5 employees and legal expenses.

All of these factors were considered in preparing the Organization's budget for the 2017 fiscal year.

Requests for Information

This financial report is designed to provide a general overview of the Organization's finances for all those with an interest in the Organization's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to Stephanie McNamara, Administrator, Vadnais Lake Area Water Management Organization, 800 County Road E East, Vadnais Heights, MN 55127.

BASIC FINANCIAL STATEMENTS

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
STATEMENT OF NET POSITION
DECEMBER 31, 2017

	Governmental Activities
ASSETS	
Cash and Temporary Investments	$ 458,142
Restricted Cash	29,643
Receivables:	
Accounts	75,503
Special Assessments	773,497
Capital Assets:	
Depreciable Assets, Net of Accumulated Depreciation	408,909
Total Assets	1,745,694
DEFERRED OUTFLOWS OF RESOURCES	
Deferred Pension Resources	107,344
LIABILITIES	
Accounts Payable	85,329
Escrow Deposits Payable	29,638
Salaries Payable	32,176
Due to Other Government	10,461
Unearned Revenue	752,436
Compensated Absences Payable:	
Due Within One Year	31,568
Due in More than One Year	10,522
Net Pension Liability:	
Due in More than One Year	306,429
Total Liabilities	1,258,559
DEFERRED INFLOWS OF RESOURCES	
Deferred Pension Resources	50,433
NET POSITION	
Net Investment in Capital Assets	408,909
Unrestricted	135,137
Total Net Position	$ 544,046

See accompanying Notes to Financial Statements.

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2017

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net Revenue (Expense) and Changes in Net Position: Governmental Activities
GOVERNMENTAL ACTIVITIES					
General and Administrative	$ 492,069	$ 652,720	$ 311,801	$ -	$ 472,452
Programs	33,107	-	-	-	(33,107)
Projects	128,359	-	9,256	-	(119,103)
Total	$ 653,535	$ 652,720	$ 321,057	$ -	320,242
	GENERAL REVENUES				
	Unrestricted Investment Earnings				2,319
	CHANGE IN NET POSITION				322,561
	Net Position - January 1				221,485
	NET POSITION - DECEMBER 31				$ 544,046

See accompanying Notes to Financial Statements.

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
BALANCE SHEET
GENERAL FUND
DECEMBER 31, 2017
(WITH SUMMARIZED COMPARATIVE INFORMATION AS OF DECEMBER 31, 2016)

	2017	2016
ASSETS		
ASSETS		
Cash and Temporary Investments	$ 458,142	$ 417,256
Restricted Cash	29,643	39,438
Receivables:		
Accounts	75,503	27
Special Assessments	773,497	674,422
Due from Other Governments	-	41,988
Total Assets	$ 1,336,785	$ 1,173,131
LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND FUND BALANCES		
LIABILITIES		
Accounts Payable	$ 85,376	$ 74,755
Escrow Deposits Payable	29,591	39,438
Salaries Payable	32,176	30,715
Due to Other Government	10,461	10,591
Unearned Revenue	752,436	650,521
Total Liabilities	910,040	806,020
DEFERRED INFLOWS OF RESOURCES		
Unavailable Revenue - Special Assessments	9,696	51,706
FUND BALANCES		
Committed	316,550	257,175
Unassigned	100,499	58,230
Total Fund Balances	417,049	315,405
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	$ 1,336,785	$ 1,173,131

See accompanying Notes to Financial Statements.

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
RECONCILIATION OF THE BALANCE SHEET
TO THE STATEMENT OF NET POSITION
GENERAL FUND
DECEMBER 31, 2017

Amounts reported for the governmental activities in the statement of net position are different because:	
Total Fund Balances - Governmental	$ 417,049
Capital assets used in governmental activities are not financial resources and therefore are not reported as assets in governmental funds.	
Cost of Capital Assets	517,647
Less: Accumulated Depreciation	(108,738)
Noncurrent liabilities are not due and payable in the current period and therefore are not reported as liabilities in the funds.	
Compensated Absences Payable	(42,090)
Pension Liability	(306,429)
Some receivables are not available soon enough to pay for the current periods expenditures, and therefore are unavailable in the funds.	
Special Assessments	9,696
Governmental funds do not report long-term amounts related to pensions.	
Deferred Outflows of Pension Resources	107,344
Deferred Inflows of Pension Resources	(50,433)
Total Net Position - Governmental Activities	$ 544,046

See accompanying Notes to Financial Statements.

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
STATEMENTS OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
GENERAL FUND
YEAR ENDED DECEMBER 31, 2017
(WITH SUMMARIZED COMPARATIVE INFORMATION FOR THE YEAR ENDED DECEMBER 31, 2016)

	2017	2016
REVENUES		
Charges for Services	$ 652,306	$ 502,687
Intergovernmental Grants	361,049	2,802
Interest on Investments	2,319	577
Miscellaneous	2,432	2,020
Total Revenues	1,018,106	508,086
EXPENDITURES		
Current:		
General and Administrative	454,060	437,675
Programs	32,407	36,384
Projects	429,995	213,086
Total Expenditures	916,462	687,145
EXCESS (DEFICIENCY) OF REVENUES		
OVER (UNDER) EXPENDITURES	101,644	(179,059)
Fund Balances - January 1	315,405	494,464
FUND BALANCES - DECEMBER 31	$ 417,049	$ 315,405

See accompanying Notes to Financial Statements.

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES
GENERAL FUND
YEAR ENDED DECEMBER 31, 2017

Amounts reported for the governmental activities in the statement of activities are different because:	
Total Net Change in Fund Balances - Governmental Funds	$ 101,644
Capital outlays are reported in governmental funds as expenditures. However in the statement of activities, the cost of those assets is allocated over the estimated useful lives as depreciation expense.	
Depreciation Expense	(12,337)
Capital Outlays	313,273
Certain revenues are recognized as soon as they are earned. Under the modified accrual basis of accounting, certain revenues cannot be recognized until they are available to liquidate liabilities of the current period.	
Special Assessments	(42,010)
Some expenses reported in the statement of activities do not require the use of current financial resources and, therefore, are not reported as expenditures in governmental funds.	
Pension Expense	(36,126)
Compensated Absences	(1,883)
Change in Net Position - Governmental Activities	$ 322,561

See accompanying Notes to Financial Statements.

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
BUDGET AND ACTUAL
GENERAL FUND
YEAR ENDED DECEMBER 31, 2017
(WITH COMPARATIVE ACTUAL AMOUNTS FOR THE YEAR ENDED DECEMBER 31, 2016)

	2017				2016
	Budgeted Amounts		Actual	Variance with	Actual
	Original	Final	Amounts	Final Budget	Amount
REVENUES					
Charges for Services	$ 564,360	$ 564,360	$ 652,306	$ 87,946	$ 502,687
Intergovernmental Grants	5,000	5,000	361,049	356,049	2,802
Interest on Investments	200	200	2,319	2,119	577
Miscellaneous	500	500	2,432	1,932	2,020
Total Revenues	570,060	570,060	1,018,106	448,046	508,086
EXPENDITURES					
General and Administrative:					
Wages	329,000	329,000	300,091	28,909	298,211
Payroll Taxes and Employee Benefits	70,000	70,000	80,106	(10,106)	62,343
Legal	8,000	8,000	4,020	3,980	3,608
Professional Services	8,300	8,300	20,039	(11,739)	21,006
Information Systems	22,000	22,000	15,050	6,950	19,890
Insurance	5,700	5,700	5,110	590	4,370
Office	22,660	22,660	20,362	2,298	20,582
Staff Training	4,000	4,000	2,727	1,273	1,781
Telephone	-	-	2,640	(2,640)	2,520
Miscellaneous	11,000	11,000	3,915	7,085	3,364
Programs:					
Monitoring	42,000	42,000	32,407	9,593	33,160
Maintenance	28,000	28,000	-	28,000	3,224
Projects	750,575	750,575	429,995	320,580	213,086
Total Expenditures	1,301,235	1,301,235	916,462	384,773	687,145
EXCESS (DEFICIENCY) OF REVENUES OVER (UNDER) EXPENDITURES	(731,175)	(731,175)	101,644	63,273	(179,059)
Fund Balances - January 1	315,405	315,405	315,405	-	494,464
FUND BALANCES - DECEMBER 31	$ (415,770)	$ (415,770)	$ 417,049	$ 63,273	$ 315,405

See accompanying Notes to Financial Statements.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity

The Vadnais Lake Area Water Management Organization (the Organization), Vadnais Heights, Minnesota, was established to meet the requirements of the Metropolitan Surface Water Management the Act, re-codified as Minnesota statutes, chapters 103-b and 103-d.

The general purpose of the Organization is to establish a jointly and cooperatively developed water management plan and program to (1) protect, preserve, and use natural surface and groundwater storage and retention systems; (2) minimize capital expenditures necessary to correct flooding and water quality problems; (3) identify and plan for means to effectively protect and improve surface and groundwater quality; (4) establish more uniform local policies and official controls for surface water, wetland and groundwater management; (5) prevent erosion of soil into surface water systems; (6) promote groundwater recharge; (7) protect and enhance fish and wildlife habitat and water recreational facilities; and (8) secure other benefits associated with the proper management of surface ground water, and be in accordance with the Act.

The Organization is governed by a board of directors which consists of six members, one from each of the following governmental units: City of North Oaks, City of White Bear Lake, City of Lino Lakes, White Bear Township, City of Vadnais Heights, and the City of Gem Lake. The board of directors exercises legislative authority and determines all matters of policy. The board of directors appoints personnel responsible for the proper administration of all affairs relating to the Organization's activities.

The Organization has considered all potential units for which it is financially accountable, and other organizations for which the nature and significance of their relationship with the Organization are such that exclusion would cause the Organization's financial statements to be misleading or incomplete. The Governmental Accounting Standards Board (GASB) has set forth criteria to be considered in determining financial accountability. These criteria include appointing a voting majority of an organization's governing body, and (1) the ability of the primary government to impose its will on that organization, or (2) the potential for the organization to provide specific benefits to, or impose specific financial burdens on the primary government. The Organization has no component units that meet the GASB criteria.

Government-Wide and General Fund Financial Statements

The government-wide financial statements (i.e., the statements of net position and the statements of activities) report information on all of the nonfiduciary activities of the Organization.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Government-Wide and Fund Financial Statements (Continued)

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

Separate financial statements are provided for the General fund.

Measurement Focus, Basis of Accounting, and Basis of Presentation

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

The General fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting.* Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be *available* when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Organization considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

Charges for service, assessments to members, grants, and interest associated with the current fiscal period are all considered susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenue items are considered to be measurable and available only when cash is received by the Organization.

Revenue resulting from exchange transactions, in which each party gives and receives essentially equal value, is recorded on the accrual basis when the exchange takes place. On a modified accrual basis, revenue is recorded in the year in which the resources are measurable and become available.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Measurement Focus, Basis of Accounting and Basis of Presentation (Continued)

Nonexchange transactions, in which the Organization receives value without directly giving equal value in return, include grants, entitlement, and donations. Eligibility requirements include timing requirements, which specify the year when the resources are required to be used or the year when use is first permitted, matching requirements, in which the Organization must provide local resources to be used for a specified purpose, and expenditure requirements, in which the resources are provided to the Organization on a reimbursement basis. On a modified accrual basis, revenue from nonexchange transactions must also be available before it can be recognized.

Unearned revenue arises when assets are recognized before revenue recognition criteria have been satisfied. Grants and entitlements received before eligibility requirements are met are also recorded as unearned revenue.

The Organization reports the following major governmental fund:

The *General fund* is the Organization's primary operating fund. It accounts for all financial resources of the Organization.

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

As a general rule the effect of interfund activity has been eliminated from government-wide financial statements.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position/Fund Balance

Deposits and Investments

The Organization's cash and temporary investments are considered to be cash on hand, demand deposits and short-term investments with original maturities of three months or less from the date of acquisition. Investments are reported at fair value.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position/Fund Balance (Continued)

Deposits and Investments (Continued)

The Organization may also invest idle funds as authorized by Minnesota statutes, as follows:

1. Direct obligations or obligations guaranteed by the United States or its agencies.
2. Shares of investment companies registered under the Federal Investment Company Act of 1940 and received the highest credit rating, rated in one of the two highest rating categories by a statistical rating agency, and have a final maturity of 13 months or less.
3. General obligations of a state or local government with taxing powers rated “A” or better; revenue obligations rated “AA” or better.
4. General obligations of the Minnesota Housing Finance Agency rated “A” or better.
5. Bankers’ acceptances of United States banks eligible for purchase by the Federal Reserve System.
6. Commercial paper issued by United States banks corporations or their Canadian subsidiaries, of highest quality category by at least two nationally recognized rating agencies, and maturing in 270 days or less.
7. Repurchase or reverse repurchase agreements and securities lending agreements with financial institutions qualified as a “depository” by the government entity, with banks that are members of the Federal Reserve System with capitalization exceeding $10,000,000, a primary reporting dealer in U.S. government securities to the Federal Reserve Bank of New York, or certain Minnesota securities broker-dealers.
8. Guaranteed Investment Contracts (GIC’s) issued or guaranteed by a United States commercial bank, a domestic branch of a foreign bank, a United States insurance company, or its Canadian subsidiary, whose similar debt obligations were rated in one of the top two rating categories by a nationally recognized rating agency.

The Minnesota Municipal Money Market (4M) fund operates in accordance with appropriate state laws and regulations. The 4M fund is an external investment pool not registered with the Securities and Exchange Commission (SEC); however, it follows the same regulatory rules of the SEC under rule 2a7. The reported value of the pool is the same as the fair value of the pool shares. Financial statements of the 4M fund can be obtained by contacting RBC Global Asset Management at 100 South Fifth Street, Suite 2300, Minneapolis, MN 55402-1240.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position/Fund Balance (Continued)

Restricted Assets

Certain assets of the Organization are set aside for repayment of individual property owners once they meet specific criteria.

Accounts Receivable

Accounts receivable include amounts billed for services provided before year-end.

Special Assessments

Special assessments represent storm sewer utility charges. These assessments are recorded as receivables upon certification to the County. Special assessments are recognized as revenue in the year they are collected or received in cash or within 60 days after year-end. General Fund special assessments receivables are offset by deferred inflows of resources or unearned revenue in the fund financial statements.

Capital Assets

Capital assets, which include property, plant, and equipment, are reported in the applicable governmental activities columns in the government-wide financial statements. Capital assets are defined by the Organization as assets with an initial, individual cost of more than $5,000 (amount not rounded) and an estimated useful life in excess of one year. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated fair market value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets lives are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed. Interest incurred during the construction phase of capital assets is included as part of the capitalized value of the assets constructed.

Property, plant, and equipment of the Organization are depreciated using the straight-line method over the following estimated useful lives:

Infrastructure	20 – 30 Years
Equipment	5 – 7 Years

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position/Fund Balance (Continued)

Deferred Outflows of Resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The Organization has only one item that qualifies for reporting in this category. Accordingly, the item, deferred pension resources, is reported only in the statements of net position. This item results from actuarial calculations and current year pension contributions made subsequent to the measurement date.

Compensated Absences

It is the Organization's policy to permit employees to accumulate earned but unused vacation and sick benefits, which will be paid to the employee upon separation without the considerations of number of years of service. A liability for these amounts is reported in the General fund only if they have matured, for example, as a result of employee resignations and retirements. The General fund is used to pay employee benefits upon termination for governmental and proprietary funds.

Pensions

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

Deferred Inflows of Resources

In addition to liabilities, the statement of financial position and fund financial statements will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The government has only one type of item, which arises only under a modified accrual basis of accounting, that qualifies as needing to be reported in this category. Accordingly, the item, unavailable revenue, is reported only in the General fund balance sheet. The General fund reports unavailable revenues from one source: special assessments. The unavailable amounts are deferred and recognized as an inflow of resources in the period that the amounts become available. Furthermore, the Organization has an additional item which qualifies for reporting in this category. The item, deferred pension resources, is reported only in the statements of net position, and results from actuarial calculations.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position/Fund Balance (Continued)

Fund Balance

In the General fund financial statements, fund balance is divided into five classifications based primarily on the extent to which the Organization is bound to observe constraints imposed upon the use of resources reported in the General fund. These classifications are defined as follows:

Nonspendable - Amounts that cannot be spent because they are not in spendable form, such as prepaid items.

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

Committed - Amounts constrained for specific purposes that are internally imposed by formal action (resolution) of the board of directors, which is the Organization's highest level of decision-making authority. Committed amounts cannot be used for any other purpose unless the board of directors modifies or rescinds the commitment by resolution.

Assigned - Amounts constrained for specific purposes that are internally imposed. In the General fund, assigned amounts represent intended uses established by the board of directors itself or by an official to whom the governing body delegates the authority. The board of directors has adopted a fund balance policy which delegates the authority to assign amounts for specific purposes to the Administrator.

Unassigned - The residual classification for the General fund and also negative residual amounts in other funds.

The Organization considers restricted amounts to be spent first when both restricted and unrestricted fund balance is available. Additionally, the Organization would first use committed, then assigned, and lastly unassigned amounts of unrestricted fund balance when expenditures are made.

The Organization has formally adopted a fund balance policy for the General Fund. The Organization's policy is to maintain a minimum unassigned fund balance of 35% to 50% of budgeted operating expenditures for cash-flow timing needs.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Assets, Deferred Outflows of Resources, Liabilities, Deferred Inflows of Resources, and Net Position/Fund Balance (Continued)

Net Position

Net position represents the difference between assets and liabilities. Net position is displayed in three components:

a. Net investment in capital assets - Consists of capital assets, net of accumulated depreciation reduced by any outstanding debt attributable to acquire capital assets.

b. Restricted net position - Consist of net position balances restricted when there are limitations imposed on their use through external restrictions imposed by creditors, grantors, laws or regulations of other governments.

c. Unrestricted net position - All other net position balances that do not meet the definition of “restricted” or “net investment in capital assets”.

Comparative Data/Reclassifications

Comparative total data for the prior year has been presented for the fund financial statements in order to provide an understanding of the change in financial position. Certain amounts presented in prior year data have been reclassified in order to be consistent with the current year’s presentation.

NOTE 2 STEWARDSHIP, COMPLIANCE, AND ACCOUNTABILITY

Budgetary Information

Annual budgets are prepared on a basis consistent with accounting principles generally accepted in the United States of America for the General Fund. All annual appropriations lapse at year-end. The Organization does not use encumbrance accounting.

During the budget year, supplemental appropriations and deletions are or may be authorized by the board of directors. The budget was not amended by the board of directors in 2017.

NOTE 3 DETAILED NOTES ON ACCOUNTS

Deposits and Investments

Deposits

Custodial credit risk for deposits and investments is the risk that in the event of a bank failure, the Organization's deposits may not be returned or the Organization will not be able to recover collateral securities in the possession of an outside party. In accordance with Minnesota statutes and as authorized by the board of directors, the Organization maintains deposits at those depository banks which are members of the Federal Reserve System.

Minnesota statutes require that all Organization deposits be protected by insurance, surety bond or collateral. The market value of collateral pledged must equal 110% of the deposits not covered by insurance or bonds, or irrevocable standby letters of credit from Federal Home Loan Banks.

Authorized collateral in lieu of a corporate surety bond includes:

- United States government Treasury bills, Treasury notes, Treasury bonds;
- Issues of United States government agencies and instrumentalities as quoted by a recognized industry quotation service available to the government entity;
- General obligation securities of any state or local government with taxing powers which is rated "A" or better by a national bond rating service, or revenue obligation securities of any state or local government with taxing powers which is rated "AA" or better by a national bond rating service;
- General obligation securities of a local government with taxing powers may be pledged as collateral against funds deposited by that same local government entity;
- Irrevocable standby letters of credit issued by Federal Home Loan Banks to a municipality accompanied by written evidence that the bank's public debt is rated "AA" or better by *Moody's Investors Service, Inc.*, or *Standard & Poor's Corporation*; and
- Time deposits that are fully insured by any federal agency.

Minnesota statutes require that all collateral shall be placed in safekeeping in a restricted account at a Federal Reserve Bank, or in an account at a trust department of a commercial bank or other financial institution that is not owned or controlled by the financial institution furnishing the collateral. The selection should be approved by the Organization.

At year-end, the Organization's carrying amount of deposits was $29,075 and the bank balance was $29,643. The entire bank balance was covered by federal depository insurance.

NOTE 3 DETAILED NOTES ON ACCOUNTS (CONTINUED)

Deposits and Investments (Continued)

Investments

The Organization does not have an investment policy and is permitted to invest its idle funds as authorized by Minnesota Statutes as follows:

- Direct obligations or obligations guaranteed by the United States or its agencies.
- Shares of investment companies registered under the Federal Investment Company Act of 1940 and received the highest credit rating, are rated in one of the two highest rating categories by a statistical rating agency and all of the investments have a final maturity of 13 months or less.
- General obligations rated “A” or better; revenue obligations rated “AA” or better.
- General obligations of the Minnesota Housing Finance Agency rate “A” or better.
- Bankers’ acceptances of United States banks eligible for purchase by the Federal Reserve System.
- Commercial paper issued by United States banks corporations or their Canadian subsidiaries, of highest quality category by a least two nationally recognized rating agencies, and maturing in 270 days or less.
- Guaranteed investment contracts guaranteed by United States commercial banks or domestic branches of foreign banks or United States insurance companies if similar debt obligations of the issuer or the collateral pledged by the issuer is in the top two rating categories.
- Repurchase or reverse purchase agreement and securities lending agreements financial institutions qualified as a “depository” by the government entity, with banks that are members of the Federal Reserve System with capitalization exceeding $10,000,000, a primary reporting dealer in U.S. government securities to the Federal Reserve Bank of New York, or certain Minnesota securities broker-dealers.

Interest rate risk – Interest rate risk is defined as the risk that changes in interest rates will adversely affect the fair value of an investment. Investments are categorized to give an indication of the level of interest rate risk assumed at year-end. Investments as of December 31, 2017 are as follows:

Type of Investments	Credit Quality/ Ratings (1)	Segmented Time Distribution (2)	Fair Value and Carrying Amount
Pooled Investments:			
Minnesota Trust Term Series	N/A	Less than 6 Months	$ 357,603
Minnesota Municipal Money Market Fund	N/A	Less than 6 Months	100,539
Total Investments			$ 458,142

(1) Ratings are provided by Moody’s where applicable to indicate associated credit risk.
(2) Interest rate risk is disclosed using the segmented time distribution method.
N/A Indicates not applicable or available.

NOTE 3 DETAILED NOTES ON ACCOUNTS (CONTINUED)

Deposits and Investments (Continued)

Investments (Continued)

The investments of the Organization are subject to the following risks:

- *Credit Risk*. Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Ratings are provided by various credit rating agencies and where applicable, indicate associated credit risk. Minnesota statutes limit the Organization's investments to the list on page 29 of the notes.

- *Custodial Credit Risk*. The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in the possession of an outside party.

- *Concentration of Credit Risk.* Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer.

- *Interest Rate Risk.* Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment.

The Organization does not have an investment policy that addresses the risks described above.

The Minnesota Municipal Money Market Fund Trust and the US Bank Money Market are money market accounts that are valued at amortized cost with maturities of investments of one year or less.

The Minnesota Municipal Money Market Trust Fund does not have its own credit rating. PMA Financial Network, Inc., who administers the Minnesota Municipal Money Market Fund Trust, holds an organization credit rating of AA by *Standard & Poor's*.

A reconciliation of cash and temporary investments as shown in the financial statements of the Organization follows:

Carrying Amounts of Deposits	$	29,075
Investments		458,686
Cash on Hand		24
Total	$	487,785
Cash and Investments		
Unrestricted	$	458,142
Restricted		29,643
Total	$	487,785

NOTE 3 DETAILED NOTES ON ACCOUNTS (CONTINUED)

Fair Value Measurements

The Organization uses fair value measurements to record fair value adjustments to certain assets and liabilities and to determine fair value disclosures.

The Organization follows an accounting standard that defines fair value, establishes a framework for measuring fair value, establishes a fair value hierarchy based on the quality of inputs used to measure fair value, and requires expanded disclosures about fair value measurements. In accordance with this standard, the Organization has categorized its investments, based on the priority of the inputs to the valuation technique, into a three-level fair value hierarchy. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). If the inputs used to measure the financial instruments fall within different levels of the hierarchy, the categorization is based on the lowest level input that is significant to the fair value measurement of the instrument.

Financial assets and liabilities recorded on the combined statement of financial position are categorized based on the inputs to the valuation techniques as follows:

- *Level 1* – Financial assets and liabilities are valued using inputs that are unadjusted quoted prices in active markets accessible at the measurement date of identical financial assets and liabilities. The inputs include those traded on an active exchange, such as the New York Stock Exchange, as well as U.S. Treasury and other U.S. government and agency mortgage-backed securities that are traded by dealers or brokers in active over-the-counter markets.
- *Level 2* – Financial assets and liabilities are valued based on quoted prices for similar assets, or inputs that are observable, either directly or indirectly for substantially the full term through corroboration with observable market data.
- *Level 3* – Financial asset and liabilities are valued using pricing inputs which are unobservable for the asset, inputs that reflect the reporting entity's own assumptions about the assumptions market participants and would use a pricing the asset.

Assets measured at fair value on a recurring basis:

	December 31, 2017			
Type	Level 1	Level 2	Level 3	Total
N/A	$ -	$ -	$ -	$ -
Subtotal	$ -	$ -	$ -	-
Investments Held at Amortized Cost				458,686
Total Investments				$ 458,686

The Minnesota Municipal Money Market Fund Trust is an external investment pool (Pool) that is managed to maintain a dollar-weighted average portfolio maturity of no greater than 60 days and seeks to maintain a constant net asset value (NAV) per share of $1.00. The Pool elects to measure its investments at amortized cost in accordance with accounting statements issued by the Government Accounting Standards Board.

NOTE 3 DETAILED NOTES ON ACCOUNTS (CONTINUED)

Restricted Assets

The Organization set aside the following cash balances for repayment of individual property owners:

Mitigation Restricted Cash	$ 29,643

Capital Assets

Capital asset activity for the year ended December 31, 2017 was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Governmental Activities				
Capital Assets, Being Depreciated:				
Infrastructure	$ 181,219	$ -	$ -	$ 181,219
Equipment	23,155	-	-	23,155
Construction in Process	-	313,273	-	313,273
Total Capital Assets Being Depreciated	204,374	313,273	-	517,647
Less Accumulated Depreciation for:				
Infrastructure	(85,841)	(9,538)	-	(95,379)
Equipment	(10,560)	(2,799)	-	(13,359)
Total Accumulated Depreciation	(96,401)	(12,337)	-	(108,738)
Total Governmental Activities	$ 107,973	$ 300,936	$ -	$ 408,909

The full depreciation expense amount was charged to projects.

NOTE 3 DETAILED NOTES ON ACCOUNTS (CONTINUED)

Operating Lease

The Organization entered into a lease agreement with the City of Vadnais Heights for office space. The lease agreement has an effective period beginning January 1, 2015 and terminated on December 31, 2017. The Organization entered into a new lease agreement with the City of Vadnais Heights for office with an effective period beginning January 1, 2018 and will be terminated on December 31, 2020.

The lease agreement calls for monthly payments for office space, as well as amounts for the Organizations portion of normal operating expenses, such as: janitorial, secretarial, office supplies, postage, utilities, IT support, and any other costs that arise.

The Organization paid $20,362 and 20,582 for rent and other office expenses in 2017 and 2016. The Organization's future obligations for rent and office expenses under their new lease are as follows:

Year Ending December 31,	Amount
2018	$ 21,360
2019	21,780
2020	22,200
Total	$ 65,340

Unearned Revenue

The General Fund reports unearned revenue in connection with receivables for revenues that have been received, but not yet earned. At the end of the current fiscal year, the various components of unearned revenue reported were as follows:

	Unearned
Special Assessments Receivable	$ 752,436

Changes in Long-Term Liabilities

Long-term liability activity for the year ended December 31, 2017 was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance	Current Portion
Governmental Activities					
Net Pension Liability	$ 332,900	$ -	$ (26,471)	$ 306,429	$ -
Compensated Absences Payable	40,207	29,531	(27,648)	42,090	31,568
Government-Type Activity					
Long-Term Liabilities	$ 373,107	$ 29,531	$ (54,119)	$ 348,519	$ 31,568

NOTE 3 DETAILED NOTES ON ACCOUNTS (CONTINUED)

Fund Balance Classifications

At December 31, 2017, portions of the Organization's fund balance are not available for appropriation due to board of directors' action (committed). The following is a summary of the commitments:

Commitments:	
Insurance	$ 500
Information Systems	2,500
Legal Assistance	3,900
Storm Sewer Utility	3,000
Training	500
Misc and Mileage	4,000
Admin-Payroll	4,000
Goose Lake	57,365
Birch Lake	4,700
Gil, Black, Tam, Wilkin	5,185
Pleasant Charley	3,700
Education and Marketing	700
Equipment	3,500
Sucker Vadnais	65,000
Lambert Creek Restoration	106,290
Project Research and Feasibility	16,500
Community Blue	5,000
Landscape	4,500
Facilities Maintenance	25,710
Total Committed	$ 316,550

NOTE 4 DEFINED BENEFIT PENSION PLANS – STATEWIDE

Plan Description

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

General Employees Retirement Fund (GERF)

All full-time and certain part-time employees of the Organization, other than teachers, are covered by the General Employees Retirement Fund (GERF). GERF members belong to either the Coordinated Plan or the Basic Plan. Coordinated Plan members are covered by Social Security and Basic Plan members are not. The Basic Plan was closed to new members in 1967. All new members must participate in the Coordinated Plan.

NOTE 4 DEFINED BENEFIT PENSION PLANS – STATEWIDE (CONTINUED)

Benefits Provided

PERA provides retirement, disability, and death benefits. Benefit provisions are established by state statute and can only be modified by the state Legislature.

Benefit increases are provided to benefit recipients each January. Increases are related to the funding ratio of the plan. Members in plans that are at least 90% funded for two consecutive years are given 2.5% increases. Members in plans that have not exceeded 90% funded, or have fallen below 80%, are given 1% increases.

The benefit provisions stated in the following paragraphs of this section are current provisions and apply to active plan participants. Vested, terminated employees who are entitled to benefits but are not receiving them yet are bound by the provisions in effect at the time they last terminated their public service.

General Employees Fund Benefits

General Employees Plan benefits are based on a member's highest average salary for any five successive years of allowable service, age, and years of credit at termination of service. Two methods are used to compute benefits for PERA's Coordinated and Basic Plan members. The retiring member receives the higher of a step-rate benefit accrual formula (Method 1) or a level accrual formula (Method 2). Under Method 1, the annuity accrual rate for a Basic Plan member is 2.2% of average salary for each of the first ten years of service and 2.7% for each remaining year. The annuity accrual rate for a Coordinated Plan member is 1.2% of average salary for each of the first ten years and 1.7% for each remaining year. Under Method 2, the annuity accrual rate is 2.7% of average salary for Basic Plan members and 1.7% for Coordinated Plan members for each year of service. For members hired prior to July 1, 1989 a full annuity is available when age plus years of service equal 90 and normal retirement age is 65. For members hired on or after July 1, 1989 normal retirement age is the age for unreduced Social Security benefits capped at 66.

Contributions

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

General Employees Fund Contributions

Basic Plan members and Coordinated Plan members were required to contribute 9.1% and 6.50%, respectively, of their annual covered salary in calendar year 2017. The Organization was required to contribute 11.78% of pay for Basic Plan members and 7.50% for Coordinated Plan members in calendar year 2017. The Organization's contributions to the General Employees Fund for the years ended December 31, 2017 and 2016 were $23,227 and $19,128, respectively. The Organization's contributions were equal to the required contributions for each year as set by state statute.

NOTE 4 DEFINED BENEFIT PENSION PLANS – STATEWIDE (CONTINUED)

Pension Costs

General Employees Fund Pension Costs

At December 31, 2017, the Organization reported a liability of $306,429 for its proportionate share of the Genereal Employees Fund's net pension liability. The Organization's net pension liability reflected a reduction due to the State of Minnesota's contribution of $6 million to the fund in 2017. The State of Minnesota is considered a nonemployer contributing entity and the State's contribution meets the definition of a special funding situation. The State of Minnesota's proportionate share of the net pension liability associated with the Organization totaled $3,859. The net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The Organization proportion of the net pension liability was based on the Organization contributions received by PERA during the measurement period for employer payroll paid dates from July 1, 2016, through June 30, 2017, relative to the total employer contributions received from all of PERA's participating employers. At June 30, 2017, the Organization's proportion was 0.0041% which was the same as its proportion measured as of June 30, 2016.

For the year ended December 31, 2017, the Organization recognized pension expense of $59,432 for its proportionate share of GERF's pension expense. In addition, the Organization recognized an additional $111 as pension expense (and grant revenue) for its proportionate share of the State of Minnesota's contribution of $6 million to the General Employees Fund.

At December 31, 2017, the Organization reported its proportionate share of General Employees Plan's deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences Between Expected and Actual Experience	$ 10,099	$ 19,713
Changes in Actuarial Assumption	50,874	-
Net Difference Between Projected and Actual Earnings on Plan Investments	1,979	-
Changes in Proportion	33,176	30,720
Contributions to GERF Subsequent to the Measurement Date	11,216	-
Total	$ 107,344	$ 50,433

NOTE 4 DEFINED BENEFIT PENSION PLANS – STATEWIDE (CONTINUED)

Pension Costs (Continued)

General Employees Fund Pension Costs (Continued)

$11,216 reported as deferred outflows of resources related to pensions resulting from the Organization's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ending December 31, 2018. Other amounts reported as deferred outflows and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31,	Amount
2018	$ 26,982
2019	27,639
2020	4,081
2021	(13,007)

Actuarial Assumptions

The total pension liability in the June 30, 2017 actuarial valuation was determined using the following actuarial assumptions:

Inflation	2.50% Per Year
Active Member Payroll Growth	3.25% Per Year
Investment rate of Return	7.50%

Salary increases were based on a service-related table. Mortality rates for active members, retirees, survivors, and disabilitants were based on RP-2014 tables for males or females, as appropriate, with slight adjustments to fit PERA's experience. Benefit increases for retirees are assumed to be 1% per year for all future years for the General Employees Plan through 2044 and then 2.5% thereafter.

Actuarial assumptions used in the June 30, 2017 valuation were based on the results of actuarial experience studies. The most recent four-year experience study in the General Employees Plan was completed in 2015.

The following changes in actuarial assumptions occurred in 2017:

General Employees Fund

- The Combined Service Annuity (CSA) loads were changed from 0.8% for active members and 60% for vested and nonvested deferred members. The revised CSA loads are now 0.0% for active member liability, 15.0% for vested deferred member liability, and 3.0% for nonvested deferred member liability.
- The assumed post-retirement benefit increase rate was changed from 1.0% per year for all years to 1.0% per year through 2 044 and 2.5% per year thereafter.

NOTE 4 DEFINED BENEFIT PENSION PLANS – STATEWIDE (CONTINUED)

Actuarial Assumptions (Continued)

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

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic Stock	39.00%	5.10%
International Stock	19.00	5.30
Bonds	20.00	0.75
Alternative Assets	20.00	5.90
Cash	2.00	-
Total	100.00%	

Discount Rate

The discount rate used to measure the total pension liability in 2016 and 2017 was 7.5%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and employers will be made at rates set in Minnesota Statutes. Based on these assumptions, the fiduciary net positions of the General Employees Fund and the Police and Fire Fund was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Pension Liability Sensitivity

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

	City Proportionate Share of NPL		
	1% Decrease (6.50%)	Current (7.50%)	1% Increase (8.50%)
GERF	$ 475,294	$ 306,429	$ 168,182

NOTE 4 DEFINED BENEFIT PENSION PLANS – STATEWIDE (CONTINUED)

Pension Plan Fiduciary Net Position

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

NOTE 5 OTHER INFORMATION

Risk Management

The Organization is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters for which the Organization carries insurance. The Organization pays annual premiums for its workers compensation and property and casualty insurance. Settled claims have not exceeded the Organization's coverage in any of the past three fiscal years.

Liabilities are reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated. Liabilities, if any, include an amount for claims that have been incurred but not reported (IBNRs). The Organization's management is not aware of any incurred but not reported claims.

REQUIRED SUPPLEMENTARY INFORMATION

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION
REQUIRED SUPPLEMENTARY INFORMATION
DECEMBER 31, 2017

Schedule of Employer's Share of PERA Net Pension Liability – General Employees Retirement Fund

		Required Supplementary Information						
				States Proportionate			Organization 's Proportionate Share of the	
			Organization 's	Share of the			Net Pension	Plan Fiduciary
		Organization 's	Proportionate	Net Pension			Liability as a	Net Position as
		Proportion of	Share of the	Liability		Organization 's	Percentage	a Percentage
Fiscal	Fiscal	the Net	Net Pension	Associated		Covered	of Covered	of the Total
Year	Year	Pension	Liability	with the City	Total	Payroll	Payroll	Pension
Ending	Ending	Liability	(a)	(b)	(a+b)	(c)	((a+b)/c	Liability
6/30/2017	6/30/2017	0.0041%	$ 306,429	$ -	$ 306,429	$ 309,693	98.9%	68.9%
6/30/2016	6/30/2016	0.0041%	$ 332,900	$ -	$ 332,900	$ 286,044	116.4%	78.2%
6/30/2015	6/30/2015	0.0041%	$ 212,483	$ -	$ 212,483	$ 242,844	87.5%	78.2%

Schedule of Employer's Share of PERA Contributions – General Employees Retirement Fund

	Required Supplementary Information				
		Contributions in			Contributions
		Relation to the			as a
	Statutorily	Statutorily	Contribution	Organization 's	Percentage of
	Required	Required	Deficiency	Covered	Covered
Year	Contribution	Contribution	(Excess)	Payroll	Payroll
Ending	(a)	(b)	(a-b)	(c)	(b/c)
12/31/17	$ 23,227	$ 23,227	$ -	$ 309,693	7.50%
12/31/16	$ 19,128	$ 19,128	$ -	$ 255,040	7.50%
12/31/15	$ 19,530	$ 19,530	$ -	$ 260,400	7.50%

Note: Information is required to be presented for 10 years. However, until a full 10-year trend is compiled, the Organization will present information for only those years for which information is available.

OTHER REQUIRED REPORT

CliftonLarsonAllen LLP
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INDEPENDENT AUDITORS' REPORT ON MINNESOTA LEGAL COMPLIANCE

Board of Directors
Vadnais Lake Area Water Management Organization
Vadnais Heights, Minnesota

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the governmental activities and the major fund of the Vadnais Lake Area Water Management Organization (the Organization), Vadnais Heights, Minnesota, as of and for the year ended December 31, 2017, and the related notes to the financial statements as and have issued our report thereon dated April 25, 2018.

The *Minnesota Legal Compliance Audit Guide for Other Political Subdivisions*, promulgated by the State Auditor pursuant to Minnesota statute §6.65, contains six categories of compliance to be tested: contracting and bidding, deposits and investments, conflicts of interest, claims and disbursements, miscellaneous provisions, and tax increment financing. Our audit considered all of the listed categories except for tax increment financing because the Organization does not have any established tax increment financing districts.

In connection with our audit, nothing came to our attention that caused us to believe that the Organization failed to comply with the provisions of the *Minnesota Legal Compliance Audit Guide for Other Political Subdivisions*. However, our audit was not directed primarily toward obtaining knowledge of such noncompliance. Accordingly, had we performed additional procedures, other matters may have come to our attention regarding the Organization's noncompliance with the above referenced provisions.

This report is intended solely for the information and use those charged with governance and management of the Organization and the State Auditor and is not intended to be and should not be used by anyone other than these specified parties.

CliftonLarsonAllen LLP

Minneapolis, Minnesota
April 25, 2018

CliftonLarsonAllen LLP
CLAconnect.com

Board of Directors
Vadnais Lake Area Water Management Organization
Vadnais Heights, Minnesota

We have audited the financial statements of the governmental activities and the major fund of Vadnais Lake Area Water Management Organization (the Organization) as of and for the year ended December 31, 2017, and have issued our report thereon dated April 25, 2018. We have previously communicated to you information about our responsibilities under auditing standards generally accepted in the United States of America, as well as certain information related to the planned scope and timing of our audit. Professional standards also require that we communicate to you the following information related to our audit.

Significant audit findings

Qualitative aspects of accounting practices

Accounting policies

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Organization are described in Note 1 to the financial statements.

No new accounting policies were adopted and the application of existing policies was not changed during 2017.

We noted no transactions entered into by the Organization during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. There were no accounting estimates affecting the financial statements which were particularly sensitive or required substantial judgments by management.

- Management's estimate of the useful lives of capital assets is based on authoritative guidance and past experience. We evaluated the key factors and assumptions used to develop the useful lives of capital assets in determining that it is reasonable in relation to the financial statements taken as a whole.
- Management's estimate of the amount of the year-end compensated absences payable to employees is based on historical trends and anticipated leave time activity.
- Management's estimate of the City's proportionate share of Public Employees' Retirement Association of Minnesota net pension liabilities as well as the related deferred inflows and outflows of resources is based on guidance from GASB Statement No. 68, GASB Statement No. 71, and the plans' allocation tables. The plans' allocation tables allocate a portion of the plans' net pension liabilities based on the City's contributions during the plans' fiscal years as a percentage of total contributions received for the related fiscal year by the plans.

Financial statement disclosures

Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. There were no particularly sensitive financial statement disclosures.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties encountered in performing the audit

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

Uncorrected misstatements

Professional standards require us to accumulate all misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management did not identify and we did not notify them of any uncorrected financial statement misstatements.

Corrected misstatements

The following material and immaterial misstatements detected as a result of audit procedures were corrected by management:

- Reversing and recording special assessments receivable.
- Reversing and recording accrued wages and other payables.
- Adjusting beginning retained earnings to tie to prior year financial statements.
- Recording other receivables related to grants.

Disagreements with management

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

Management representations

We have requested certain representations from management that are included in the management representation letter dated April 25, 2018.

Management consultations with other independent accountants

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

Significant issues discussed with management prior to engagement

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

Other audit findings or issues

We have provided a separate letter to you dated April 25, 2018, communicating internal control related matters identified during the audit.

Other information in documents containing audited financial statements

With respect to the required supplementary information (RSI) accompanying the financial statements, we made certain inquiries of management about the methods of preparing the RSI, including whether the RSI has been measured and presented in accordance with prescribed guidelines, whether the methods of measurement and preparation have been changed from the prior period and the reasons for any such changes, and whether there were any significant assumptions or interpretations underlying the measurement or presentation of the RSI. We compared the RSI for consistency with management's responses to the foregoing inquiries, the basic financial statements, and other knowledge obtained during the audit of the basic financial statements. Because these limited procedures do not provide sufficient evidence, we did not express an opinion or provide any assurance on the RSI.

With respect to the net pension liability schedules (collectively, the supplementary information) accompanying the financial statements, on which we were engaged to report in relation to the financial statements as a whole, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period or the reasons for such changes, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves. We have issued our report thereon dated April 25, 2018.

* * *

This communication is intended solely for the information and use of the board of directors and management of Vadnais Lake Area Water Management Organization and is not intended to be, and should not be, used by anyone other than these specified parties.

CliftonLarsonAllen LLP

Minneapolis, Minnesota
April 25, 2018

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Board of Directors and Management
Vadnais Lake Area Water Management Organization
Vadnais Heights, Minnesota

In planning and performing our audit of the financial statements of the governmental activities and the major fund of the Vadnais Lake Area Water Management Organization (the Organization) as of and for the year ended December 31, 2017, in accordance with auditing standards generally accepted in the United States of America, we considered the Organization's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Organization's internal control. Accordingly, we do not express an opinion on the effectiveness of the Organization's internal control.

Our consideration of internal control was for the limited purpose described in the preceding paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and, therefore, material weaknesses or significant deficiencies may exist that were not identified. However, as discussed below, we identified certain deficiencies in internal control that we consider to be material weaknesses and significant deficiencies.

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

Material weaknesses

We consider the following deficiencies in the Organization's internal control to be material weaknesses.

Financial reporting process

The board of directors and management share the ultimate responsibility for the Organization's internal control system. While it is acceptable to outsource various accounting functions, the responsibility for internal control cannot be outsourced.

The Organization engages CliftonLarsonAllen LLP (CLA) to assist in preparing its financial statements and accompanying disclosures, including adjustments for the conversion from modified to full accrual balances. Adjustments also included recording special assessments receivable and other receivables and payables. However, as independent auditors, CLA cannot be considered part of the Organization's internal control system. As part of its internal control over the preparation of its financial statements, including disclosures, the Organization has implemented a comprehensive review procedure to ensure that the financial statements, including disclosures, are complete and accurate. Such review procedures should be performed by an individual possessing a thorough understanding of accounting principles generally accepted in the United States of America and knowledge of the Organization's activities and operations.

Material weaknesses (continued)

Financial reporting process (continued)

The Organization's personnel have not monitored recent accounting developments to the extent necessary to enable them to prepare the Organization's financial statements and related disclosures, to provide a high level of assurance that potential omissions or other errors that are material would be identified and corrected on a timely basis. If the financial statements are not properly monitored, the financial statements on a monthly basis may not be consistent with the annual financial statements.

The outsourcing of this service is not unusual in organizations of your size and is a result of management's cost benefit decision to use our accounting expertise rather than to incur internal resource costs.

Significant deficiencies

A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. We consider the following deficiency in the Organization's internal control to be a significant deficiency:

Bank reconciliation process

During our testing of cash balances, we noted the checking account is not being reconciled to the general ledger. It is our understanding the bank statement is being compared to the general ledger and reviewed; however, there is no review of uncleared transactions that are on the general ledger but not on the bank statement. Without proper and monthly reconciliations of the checking account, errors may not be reconciled timely. We recommend implementing a formal bank reconciliation process including documentation of review.

None of the identified significant deficiencies are considered to be material weaknesses.

Other deficiencies in internal control and other matters

During our audit, we became aware of other deficiencies in internal control and other matters that are opportunities to strengthen your internal control and improve the efficiency of your operations. While the nature and magnitude of the other deficiencies in internal control were not considered important enough to merit the attention of the board of directors they are considered of sufficient importance to merit management's attention and are included herein to provide a single, comprehensive communication for both those charged with governance and management.

Documentation and review

During our testing of internal controls, it was noted in several areas the documentation of review was not retained or indicated on the supporting statements. These areas include payroll registers, invoices, expense reimbursements, credit card statements, and journal entries. We recommend the Organization review their policies and procedures and ensure a formal review process is in place for all areas. These review processes should include proper documentation of the reviews.

Other deficiencies in internal control and other matters (continued)

Credit cards

During our testing of credit card disbursements, it was noted there were multiple instances where transactions were missing receipts. Proper receipts should be included for all charges to ensure appropriate charges. We recommend reviewing the credit card policy and implement a policy surrounding receipts

Fund balance policy

During our preparation of the financial statements, it was noted the Organization is not meeting their own fund balance policy of keeping unassigned fund balance at 35-50% of next year's budgeted expenditures. In prior year unassigned fund balance was 8% of next year's budgeted expenditures and in the current year unassigned fund balance was 13%. Not aligning with policies related to fund balance can lead to cash flow problems in the future. We recommend reviewing the next year's budget and reviewing the fund balance policy to ensure proper cash flow and adherence to such policy.

We will review the status of these comments during our next audit engagement. We have already discussed many of these comments and suggestions with various Organization personnel, and we will be pleased to discuss them in further detail at your convenience, to perform any additional study of these matters, or to assist you in implementing the recommendations.

* * *

This communication is intended solely for the information and use of management, board of directors, and others within the Organization, and is not intended to be, and should not be, used by anyone other than these specified parties.

CliftonLarsonAllen LLP

Minneapolis, Minnesota
April 25, 2018

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

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To: the Board of Directors

From: Stephanie McNamara, Administrator

Re: V. Consent Agenda

A. **Contract with Noah and Associates**. In 2014, VLAWMO, leaning heavily on job description analysis and market research done of other watersheds in the metro area set up a job family and classification system. Part of the intention was to make sure VLAWMO could retain valuable, experienced and skilled employees and allow them to advance in their careers. That has remained the intention of the Board. Noah and Associates has worked with many other metro area watersheds on human resource and market analysis matters. They are very experienced and have offered a cost-effective proposal. It has been four years since an update was done, with the original plan being done in-house. Also the Board will be looking at the budget for 2019 over the next few months so we will be considering our budget 5 years from the last 'market correction.' Payroll is, frankly, a significant portion of the budget. Experienced, energized staff really provide the 'hydropower' for the watershed. Knowing if we need another, hopefully minor, correction based on sound science is important for VLAWMO and for the staff that infuses energy into the system.

The proposal is within budget.

The recommendation of the Policy and Personnel committee is to approve the proposal review VLAWMO job descriptions and current family classification system; collect and analysis salary survey data; discuss recommendations and present to the Policy and personnel or Board. Cost not to exceed $4,000 without authorization from the committee.

4/1/2018		Actual 4/1/18	Actual to Date	2018 Budget	2017 carry over/Grants	Remaining in Budget	2018 available (B+C=O)	Act vs. Budget
BUDGET #	**INCOME 5.1**							
5.11	Storm Water Utility	$0	$11,365	$745,400	$0	$734,035	$745,400	2%
5.12	Service Fees	$0	$0	$500	$0	$500	$500	0%
5.13	Interest	$385	$1,082	$500	$0	($582)	$500	216%
5.14	Misc. income - WCA admin grant	$0	$1,380	$5,000	$0	$3,620	$5,000	28%
5.15	Other Income Grants	$0	$70,697	$20,000	$0	($50,697)	$0	
5.16	Transfer from reserves	$0	$0	$0	$316,540	$0	$316,540	
	TOTAL	$385	$84,524	$771,400	$316,540	$686,876	$1,067,940	11%
	EXPENSES							
3.1	**Operations & Administration**							
3.110	Office - rent, copies, post tel sup	$1,938	$5,816	$23,700	$0	$17,884	$23,700	25%
3.120	Information Systems	$1,107	$7,415	$21,500	$2,500	$16,585	$24,000	31%
3.130	Insurance	$25	$25	$5,200	$500	$5,675	$5,700	0%
3.141	Consulting - Audit	$3,500	$3,520	$6,400	$0	$2,880	$6,400	55%
3.142	Consulting - Bookkeeping	$0	$0	$2,000	$0	$2,000	$2,000	0%
3.143	Consulting - Legal	$60	$259	$3,000	$3,890	$6,631	$6,890	4%
3.150	Storm Sewer Utility	$1,560	$1,895	$13,500	$3,000	$14,605	$16,500	11%
3.160	Training (staff/board)	$90	$865	$4,000	$500	$3,635	$4,500	19%
3.170	Misc. & mileage	$54	$645	$5,200	$4,000	$8,555	$9,200	7%
3.191	Administration - staff	$26,951	$107,672	$314,000	$4,000	$210,328	$318,000	34%
3.192	Employer Liability	$6,187	$27,432	$83,000	$0	$55,568	$83,000	33%
3.2	**Monitoring and Studies**							
3.210	Lake and Creek lab analysis	$0	$0	$22,500	$0	$22,500	$22,500	0%
3.220	Equipment	$0	$0	$2,500	$3,500	$6,000	$6,000	0%
3.3	**Education and Outreach**							
3.310	Public Education	$17	$2,094	$7,000	$200	$5,106	$7,200	29%
3.320	Marketing	$460	$1,250	$7,000	$500	$6,250	$7,500	17%
3.330	Community Blue Ed Grant	$0	$0	$10,000	$5,000	$15,000	$15,000	0%
Total Core functions: Ops, Monitoring, Educ		*$41,949*	*$158,888*	*$530,500*	*$27,590*	*$399,202*	*$558,090*	*28%*
Capital Improvement Projects and Programs								
3.4	**Subwatershed Activity**							
3.410	Gem Lake	$0	$0	$0	$0	$0	$0	
3.420	Lambert Creek	$13,915	$101,679	$57,000	$106,290	$61,611	$163,290	62%
3.425	Goose Lake	$3,600	$1,227	$60,000	$57,365	$116,138	$117,365	1%
3.430	Birch Lake	$0	$0	$22,200	$4,700	$26,900	$26,900	0%
3.440	Gilf Black Tam Wilk Amelia	$2,900	$5,892	$30,000	$5,185	$29,293	$35,185	17%
3.450	Pleasant Charley Deep	$0	$1,998	$5,700	$3,700	$7,402	$9,400	21%
3.460	Sucker Vadnais	$0	$0	$0	$65,000	$65,000	$65,000	0%
3.48	**Programs**							
3.481	Landscape 1	$187	$439	$24,000	$4,500	$28,061	$28,500	2%
3.482	Landscape 2	$0	$0	$30,000	$0	$30,000	$30,000	0%
3.483	Project Research & feasibility	$0	$7,197	$5,000	$16,500	$14,303	$21,500	33%
3.484	Facilities Maintenance	$0	$0	$5,000	$25,710	$30,710	$30,710	0%
3.5	**Regulatory**							
3.510	Engineer Plan review	$1,586	$1,586	$2,000	$0	$414	$2,000	79%
	Total CIP & Program	*$22,188*	*$120,018*	$240,900	$288,950	*$409,832*	*$529,850*	*23%*
	Total of Core Operations & CIP	**$64,137**	$278,906	$771,400	$316,540	**$809,034**	$1,087,940	**26%**

Fund Balance	3/1/2018	4/1/2018
4M Account	$180,665	$113,235
4M Plus Savings	$200,777	$201,009
Total	$381,443	$314,244

Restricted funds	4/1/2018
Mitigation Savings	$29,647
Term Series (NA)	

Vadnais Lake Area Water Management Organization
Check Detail
April 1 - 13, 2018

	Type	Num	Date	Name	Item	Account	Paid Amount	Original Amount
	Check	**4488**	**04/13/2018**	**Houston Engineering, Inc**		**Checking - 1987**		**-13,915.00**
						3.420 · Lambert Creek Restoration	-13,915.00	13,915.00
TOTAL							-13,915.00	13,915.00
	Check	**4489**	**04/13/2018**	**Ehlers & Associates, Inc.**		**Checking - 1987**		**-1,560.00**
						3.150 · Storm Sewer Utility	-1,560.00	1,560.00
TOTAL							-1,560.00	1,560.00
	Check	**4490**	**04/13/2018**	**Innovative**		**Checking - 1987**		**-57.38**
						Supplies	-57.38	57.38
TOTAL							-57.38	57.38
	Check	**4491**	**04/13/2018**	**Blue Water Science**		**Checking - 1987**		**-6,500.00**
						3.425 · Goose Lake	-3,600.00	3,600.00
						3.440 · Gilfillan Black Tamarack Wilkin	-2,900.00	2,900.00
TOTAL							-6,500.00	6,500.00
	Check	**4492**	**04/13/2018**	**riot creative imaging**		**Checking - 1987**		**-284.55**
						3.320 · Marketing	-284.55	284.55
TOTAL							-284.55	284.55
	Check	**4493**	**04/13/2018**	**CliftonLarsonAllen**		**Checking - 1987**		**-3,500.00**
						3.141 · Audit	-3,500.00	3,500.00
TOTAL							-3,500.00	3,500.00

	Type	Num	Date	Name	Item	Account	Paid Amount	Original Amount
	Check	**4494**	**04/13/2018**	**Hewlett-Packard Company**		**Checking - 1987**		**-165.11**
						IT Systems - Hardware	-165.11	165.11
TOTAL							-165.11	165.11
	Check	**4495**	**04/13/2018**	**Bullis Insurance Agency LLC**		**Checking - 1987**		**-25.00**
						3.130 · Insurance	-25.00	25.00
TOTAL							-25.00	25.00
	Check	**4496**	**04/13/2018**	**City of White Bear Lake**		**Checking - 1987**		**-32,959.50**
						payroll - $26,950.60		
						Administration FICA	-2,003.57	2,003.57
						Administration PERA	-2,021.29	2,021.29
						Insurance Benefit	-1,605.76	1,605.76
						Insurance Benefit	-333.36	333.36
						Admin payroll processing	-44.92	44.92
TOTAL							-32,959.50	32,959.50
	Check	**4497**	**04/13/2018**	**City Of Roseville**		**Checking - 1987**		**-942.00**
						IT Support	-942.00	942.00
TOTAL							-942.00	942.00
	Check	**4498**	**04/13/2018**	**Kennedy & Graven, Chartered**		**Checking - 1987**		**-60.17**
						3.143 · Legal	-60.17	60.17
TOTAL							-60.17	60.17
	Check	**4499**	**04/13/2018**	**Nicholas Voss**		**Checking - 1987**		**-140.31**
						3.170 · Misc. & mileage	-54.35	54.35
						3.310 · Public Education	-17.25	17.25

	Type	Num	Date	Name	Item	Account	Paid Amount	Original Amount
						3.320 · Marketing	-68.71	68.71
TOTAL							-140.31	140.31
	Check	**4500**	**04/03/2018**	**City of Vadnais Heights**		**Checking - 1987**		**0.00**
	Check	**4501**	**04/03/2018**	**City of Vadnais Heights**		**Checking - 1987**		**-1,880.98**
						Rent	-1,510.00	1,510.00
						Phone/Internet/Machine Overhead	-200.00	200.00
						Phone/Internet/Machine Overhead	-70.00	70.00
						Postage	-48.85	48.85
						Copies	-46.62	46.62
						Copies	-5.51	5.51
TOTAL							-1,880.98	1,880.98
	Check	**4502**	**04/03/2018**	**Tom Falk**		**Checking - 1987**		**-70.00**
						3.320 · Marketing	-70.00	70.00
TOTAL							-70.00	70.00

Vadnais Lake Area Water Management Organization
Account QuickReport
As of March 30, 2018

	Type	Date	Jur	Name	Memo	Split	Amount	Balance
US Bank CC								**604.38**
	Credit Card Charge	02/21/2018		EDCO		3.170 · Misc. & mileage	97.92	702.30
	Credit Card Charge	02/23/2018		University of Minnesota	Harmful Algal Blooms workshop - Nic	3.160 · Training (staff/board)	40.00	742.30
	Credit Card Charge	02/25/2018		Adobe "Creative Cloud		Software	32.20	774.50
	Credit Card Charge	02/28/2018		Fresh Thyme	BOD Refreshments	3.170 · Misc. & mileage	11.39	785.89
	Credit Card Charge	03/01/2018		Google*SVCAPPS_VLAWM		WEB	20.83	806.72
	Credit Card Charge	03/06/2018		Amazon.com	Large lettering	3.320 · Marketing	4.39	811.11
	Credit Card Charge	03/07/2018		Amazon.com		3.320 · Marketing	91.29	902.40
	Credit Card Charge	03/08/2018		HyVee	TEC Refreshments	3.170 · Misc. & mileage	24.73	927.13
	Credit Card Charge	03/13/2018		Amazon.com		3.320 · Marketing	19.03	946.16
	Transfer	03/20/2018			Funds Transfer	Checking - 1987	-811.11	135.05
	Credit Card Charge	03/27/2018		NAI	5/15/2018 Training - Nick	3.160 · Training (staff/board)	50.00	185.05
Total US Bank CC							-419.33	185.05
TOTAL							**-419.33**	**185.05**

Vadnais Lake Area Water Management Organization
Profit & Loss Detail
March 10 through April 13, 2018

	Type	Date	Num	Name	Memo	Original Amount	Paid Amount
Ordinary Income/Expense							
Income							
Mitigation Interest							
	Deposit	03/30/2018		U.S. Bank	Deposit	1.51	1.51
Total Mitigation Interest							1.51
5.1 · Income							
5.13 · Interest							
	Deposit	03/31/2018		U.S. Bank	Deposit	153.14	153.14
	Deposit	03/31/2018		U.S. Bank	Deposit	231.36	231.36
Total 5.13 · Interest							384.50
Total 5.1 · Income							384.50
Total Income							386.01
Gross Profit							386.01
Expense							
3.1 · Administrative/Operations							
3.110 · Office							
Copies							
	Check	04/03/2018	4501	City of Vadnais Heights	color copies	46.62	46.62
	Check	04/03/2018	4501	City of Vadnais Heights	b/w copies	5.51	5.51
Total Copies							52.13
Phone/Internet/Machine Overhead							
	Check	04/03/2018	4501	City of Vadnais Heights	phone/computer connection	200.00	200.00
	Check	04/03/2018	4501	City of Vadnais Heights	copy/postage/fax fees	70.00	70.00
Total Phone/Internet/Machine Overhead							270.00
Postage							
	Check	04/03/2018	4501	City of Vadnais Heights	postage	48.85	48.85
Total Postage							48.85
Rent							
	Check	04/03/2018	4501	City of Vadnais Heights	rent	1,510.00	1,510.00
Total Rent							1,510.00
Supplies							
	Check	04/13/2018	4490	Innovative	Order ID: SO-1994454	57.38	57.38
Total Supplies							57.38
Total 3.110 · Office							1,938.36
3.120 · Information Systems							
IT Support							
	Check	04/13/2018	4497	City Of Roseville	Inv 0224348 - March IT	942.00	942.00
Total IT Support							942.00
IT Systems - Hardware							
	Check	04/13/2018	4494	Hewlett-Packard Company	Docking Station	165.11	165.11
Total IT Systems - Hardware							165.11
Total 3.120 · Information Systems							1,107.11

	Type	Date	Num	Name	Memo	Original Amount	Paid Amount
3.130 · Insurance							
	Check	04/13/2018	4495	Bullis Insurance Agency LLC	Invoice# 144780	25.00	25.00
Total 3.130 · Insurance							25.00
3.141 · Audit							
	Check	04/13/2018	4493	CliftonLarsonAllen	2017 Audit	3,500.00	3,500.00
Total 3.141 · Audit							3,500.00
3.143 · Legal							
	Check	04/13/2018	4498	Kennedy & Graven, Chartered	Legal through 2/28/2018	60.17	60.17
Total 3.143 · Legal							60.17
3.150 · Storm Sewer Utility							
	Check	04/13/2018	4489	Ehlers & Associates, Inc.	Invoice 76509	1,560.00	1,560.00
Total 3.150 · Storm Sewer Utility							1,560.00
3.160 · Training (staff/board)							
	Credit Card	03/27/2018		NAI	5/15/2018 Training - Nick	50.00	50.00
Total 3.160 · Training (staff/board)							50.00
3.170 · Misc. & mileage							
	Check	04/13/2018	4499	Nicholas Voss	Mileage & Parking	54.35	54.35
Total 3.170 · Misc. & mileage							54.35
3.191 · Employee Payroll							
Total 3.191 · Employee Payroll							26,950.60
3.192 · Employer Liabilities							
Admin payroll processing							
	Check	04/13/2018	4496	City of White Bear Lake	Invoice 11608	44.92	44.92
Total Admin payroll processing							44.92
Administration FICA							
	Check	04/13/2018	4496	City of White Bear Lake	Invoice 11608	2,003.57	2,003.57
Total Administration FICA							2,003.57
Administration PERA							
	Check	04/13/2018	4496	City of White Bear Lake	Invoice 11608	2,021.29	2,021.29
Total Administration PERA							2,021.29
Insurance Benefit							
	Check	03/21/2018	EFT	Reliance Standard	Short-term Disability - April	172.98	172.98
	Check	03/22/2018	EFT	SelectAccount	HSA fee - March 2018	5.00	5.00
	Check	04/13/2018	4496	City of White Bear Lake	Invoice 11608 - Health Ins.	1,605.76	1,605.76
	Check	04/13/2018	4496	City of White Bear Lake	Invoice 11608 - HS.A	333.36	333.36
Total Insurance Benefit							2,117.10
Total 3.192 · Employer Liabilities							6,186.88
Total 3.1 · Administrative/Operations							41,432.47
3.3 · Education and Outreach							
3.310 · Public Education							
	Check	04/13/2018	4499	Nicholas Voss	Public Education	17.25	17.25
Total 3.310 · Public Education							17.25
3.320 · Marketing							
	Credit Card	03/13/2018		Amazon.com	Large letters	19.03	19.03

	Type	Date	Num	Name	Memo	Original Amount	Paid Amount
	Check	04/03/2018	4502	Tom Falk	Stormwater Plinko materials	70.00	70.00
	Check	04/13/2018	4492	riot creative imaging	inv 54MNI9002959	284.55	284.55
	Check	04/13/2018	4499	Nicholas Voss	Marketing	68.71	68.71
Total 3.320 · Marketing							442.29
Total 3.3 · Education and Outreach							459.54
3.4 · Capital Imp. Projects/Programs							
3.420 · Lambert Creek Restoration							
	Check	04/13/2018	4488	Houston Engineering, Inc	Lambert Creek Engineering As	13,915.00	13,915.00
Total 3.420 · Lambert Creek Restoration							13,915.00
3.425 · Goose Lake							
	Check	04/13/2018	4491	Blue Water Science	Goose Lake Fish Survey	3,600.00	3,600.00
Total 3.425 · Goose Lake							3,600.00
3.440 · Gilfillan Black Tamarack Wilkin							
	Check	04/13/2018	4491	Blue Water Science	Wilkinson Fish Survey	2,900.00	2,900.00
Total 3.440 · Gilfillan Black Tamarack Wilkin							2,900.00
Total 3.4 · Capital Imp. Projects/Programs							20,415.00
3.48 · Programs							
3.481 · Landscape 1 - cost-share							
	Check	03/13/2018	4486	John Ollech	Rainbarrel Reimbursement	86.97	86.97
	Check	03/13/2018	4487	Mark Battista	Rainbarrel Reimbursment	100.00	100.00
Total 3.481 · Landscape 1 - cost-share							186.97
Total 3.48 · Programs							186.97
Total Expense							62,493.98
Net Ordinary Income							-62,107.97
Net Income							**-62,107.97**

TEC Report to the Board
April 2018

Programs & Projects	Effort Level LOW MED HIGH	Completion Date	Comments
Projects			
Priority Lakes		2017	Sediment cores done on East Goose, West Goose, and Oak Knoll Pond/Wood Lake. Awaiting report from Barr.
Sucker Lake Channel		Spring 2018	2017 Construction is complete. Spring 2018 will include installation of native plants, signage, and fencing.
Lambert Creek - Ditch Survey		2018	Field work has been completed, desk work beginning, branch work pending. Records Reestablishment draft report received and under review.
Birch Lake		2017-18	Working on Op & Maint agreement between project partners, awaiting BWSR grant approval, and working with land owners.
Whitaker Wetlands		2018	Project about 90% complete, solar panels, plantingd and battery packs will be installed spring 2018
Programs			
Outreach		ongoing	VLAWMO raingarden workshop (May 2) and native plant workshop (May 9th), SPRWS open house (May 10), Landscape Revival in Shoreview (6/2), NO Garden Club (5/12), and WB Tnshp Days in Sept. See website calendar for more volunteer events and descriptions.
Education		ongoing	Outreach: Children's Discovery, include picture posts, interpretative signage at Sucker Channel and Whitaker Wetlands. Education tools: on the VLAWMO website under "residents" and "schools", groups may borrow kits, etc to suppot events and meetings, no VLAWMO staff needed.
Website		ongoing	Spring RG workshop registration (5/2 & 5/9), several blog entries such as lake monitoring summaries. Residents page updated for Spring and Summer with resources about water conservation, preparing us for upcoming discussions on White Bear Lake water use policies.
WAV		ongoing	WAV has had a boost in attendance in 2018, helping with events, citizen advisory, and education efforts. Raingarden maintenance activities scheduled for Spring and early summer. Co-presented raingarden maintenance workshop on June 13th between Nick and WAV members. Workshop will be filmed by local cable to enable distribution.
Cost Share		ongoing	Program has received its 1st LL1 grant application of the year, and 2 rainbarrels reimbursment requests. MIDs being calculated for applications.
GIS		ongoing	Drainage authority, cost share program, E&O work and projects facilitation
Monitoring		ongoing	Spring monitoring ready to go
WCA		ongoing	Scheuneman Rd reconstruction, some wetland impact, stormwater & sanitary improvements, De minimis exemption

TEC Report to the Board
April 2018

Admin & Operation			
SLMPs		2017-18	Charley SLMP draft is complete and posted for stakeholder review. Deep Lake is scheduled this year with veg & bathymetric studies- awaiting thaw to begin
Audit & annual reporting		April 2018	The 2017 Annual audit will be presented at 4-25-18 mtg by CLA staff. The 2017 Annual report will be ready for Board approval.
Administration		June 30, 2018	Watershed cleanwater funding for plan elements pilot is proceeding. Dividing funds by land area is proceeding with
WCA		ongoing	Year end WCA reporting for BWSR complete.

FINANCIAL SUMMARY as of 4/1/2018		
4M Account (1.10)	4M Plus (1.23)	Total
$113,235	$201,009	$314,244

CD's	4M Term Series	
	Maturity	Rate
Term series	NA	

Budget Summary	Actual Expense YTD	2018 Budget amended	Remaining in Budget	% YTD
Operations	$158,888	$558,090	$399,202	28%
CIP	$120,018	$529,850	$409,832	23%
Total	$278,906	$1,087,940	$809,034	26%

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org
office@vlawmo.org
(651) 204-6070

April 25th, 2018
To: The VLAWMO Board of Directors
From: Nick Voss, Education and Outreach Coordinator
Re: VI.B

Education Events

Aqua Fair	April 28th
NE Metro Community Business Expo	April 29th
SPRWS Open House	May 10th
North Oaks Garden Club	May 12th
Landscape Revival	June 2nd
Vadnais Heights Ice Cream Social	June 19th
MarketFest	July 26th

Raingarden Workshop	May 2nd
Native Plant Workshop	May 9th
Raingarden Maintenance Workshop	June 13th

Visit vlawmo.org/events for a complete web calendar. Additional watershed action volunteers meetings and activities will also be posted in the weeks to come. VLAWMO has also connected with White Bear Township to participate in WBT days in September.

EST 1983
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(651) 204-6070

To: the Board of Directors

From: Stephanie McNamara & Brian Corcoran

Re: V.I. C. 1. Project updates

Sucker Channel Restoration Update

As the main construction was completed in 2017. Once the spring thaw occurs, planting, fencing and signage can occur in 2018. Billing to VLAWMO for its share of the Project will begin soon.

Whitaker Treatment Wetlands

The main construction was complete in 2017. This spring the pump, solar panels and interpretive signage and planting of the wetland will take place. VLAWMO is working with Burns & McDonnell on the monitoring plan for the nutrients and bacteria in the wetland and with the University of MN on the pathogen monitoring plan. Monitoring starts this summer.

Time for a "Grand Opening"! We would like to have the Board, all the stakeholders, the press and anyone interested to tour the wetlands as they start to grow this summer. We'll have an opportunity to talk about what we hope to learn about this unique research project. We'll keep you posted on when it will be. We will need our Board members there.

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org

To: The Board of Directors

From: Tyler Thompson

RE: VI. C. 2. Goose Lake and Oak Knoll Pond Study

Staff has received the Feasibility Study for options of reducing phosphorus loading in both the Goose Lake basins, as well as upstream at Oak Knoll Pond/Wood Lake. **The Study made several direct recommendations** for moving forward with different project options based on cost/benefit and feasibility:

1.) alum dosing on the East and/or West basins of Goose Lake to reduce internal loading

2.) initiate spent lime study for internal load control in Oak Knoll Pond

3.) VLAWMO work with the DNR to develop a Lake Vegetation Management Plan (LVMP) for East & West Goose Lake.

Moving forward, the next step is to set up a comprehensive meeting with the stakeholders of Goose Lake and its watershed to discuss these projects, their possible impacts, and gauge which have the most support for implementation to improve the water quality of the Goose Lake subwatershed.

Staff is seeking direction on which of the above project(s) the Board supports.

Staff also recommends and is requesting permission to begin setting up stakeholder meetings to disperse and explain the learned information, as well as garner input into which combination of projects have the most support within the community.

East Goose and West Goose Lakes (and Oak Knoll Pond) In-Lake Treatment Feasibility Study

Prepared for
Vadnais Lake Area Water Management Organization (VLAWMO)

April, 2018

DRAFT

East Goose and West Goose Lakes (and Oak Knoll Pond) In-Lake Treatment Feasibility Study

Prepared for
Vadnais Lake Area Water Management Organization (VLAWMO)

April, 2018

DRAFT

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
952.832.2600
www.barr.com

East Goose and West Goose Lakes (and Oak Knoll Pond) In-Lake Treatment Feasibility Study

April, 2018

Contents

List of Tables

List of Figures

1.0 Project Background and Purpose

Barr Engineering Company (Barr) was retained by Vadnais Lake Area Water Management Organization (VLAWMO) to provide engineering services to build on past efforts (Barr, 2017) by completing sediment monitoring and aluminum sulfate (alum) dosing for East and West Goose Lake, and optionally, Oak Knoll Pond to improve the lake/pond and downstream lake water quality. This feasibility study includes sediment core collection/analysis, determination of an alum dosage plan, and compilation/consolidation of supporting information for a BWSR grant application to complete in-lake management practices.

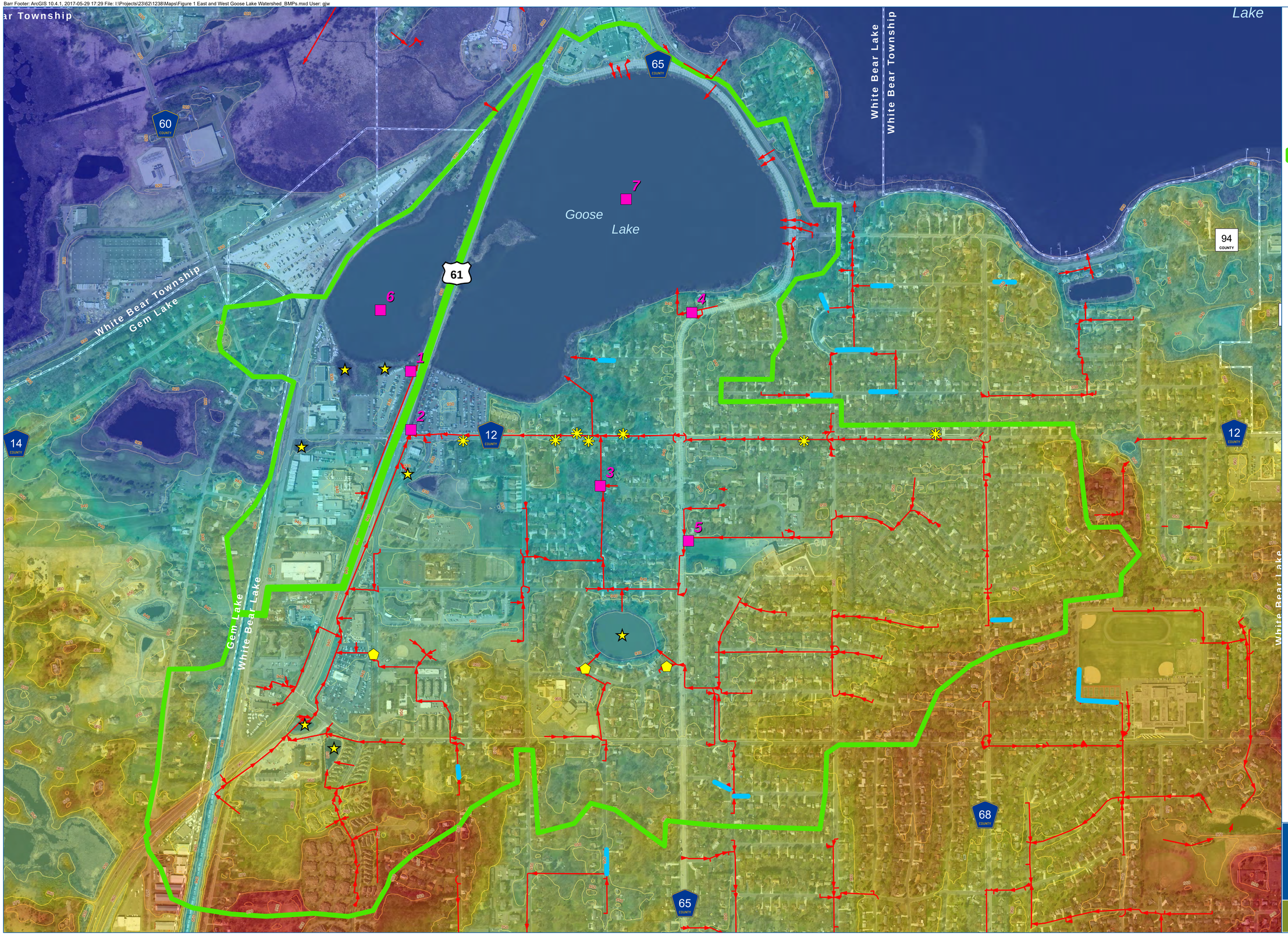
Figure 1-1 shows the topography, watershed divides and drainage patterns for East and West Goose Lakes while the same information, including subcatchments and monitoring stations. Table 1-1 shows the lake morphology/depth and other watershed/water body characteristics for each basin (as published in the TMDL report).

Table 1-1 Lake Morphology and Watershed Characteristics

Parameter	East Goose Lake	West Goose Lake
Surface Area (acres)	116	24
Average Depth (feet)	5.5	4.4
Maximum Depth (feet)	9	7
Residence Time (years)	2.3	0.3
Direct Drainage Area (acres)	578	239

1.1 Summary of Lake TMDLs and Past Studies

In preparing for a stakeholder charrette (Barr, 2017), the Barr/Young Environmental team systematically reviewed reports and data collected on Goose Lake and Wilkinson Lake, including the total maximum daily load (TMDL) report and implementation plan, sustainable lake management plans, storm sewer and treatment practice plans, proposed redevelopment plans, fish and aquatic plant survey reports, bathymetric surveys and internal loading analyses. Through the stakeholder participation process and personal communications we also became more aware of the potential for boating impacts on water quality changes in the Goose Lake basins and the conservation planning efforts to limit significant land use changes in the Wilkinson Lake watershed.



Lake Watersheds
Storm Sewer

Existing BMPs

- POND
- RWG
- SP
- Storm Retention Area Boundary
- 10-Foot Elevation Contour
- 2-Foot Elevation Contour
- Recommended BMPs

Aerial Imagery: Ramsey County/MnGeo 2016

BARR

N

0 500 1,000
Feet

EAST AND WEST
GOOSE LAKE WATERSHED
Vadnais Lakes Area
Watershed Management
Organization

FIGURE 1-1

The TMDL report (Wenck, 2014a) and implementation plan (VLAWMO, 2014) called for the following total phosphorus load reductions for the respective lakes:

- 91% reduction for East Goose Lake—corresponds to 96% reduction of internal load and 63% reduction from stormwater runoff
- 70% reduction for West Goose Lake—corresponds to 71% reduction of internal load, 77% reduction from East Goose Lake and 86% reduction from stormwater runoff
- 63% reduction for Wilkinson Lake—corresponds to 76% reduction from stormwater runoff

Anoxic sediment phosphorus release rates determined from laboratory experiments on Goose Lake cores (James, 2010 and Wenck, 2014b) were approximately an order of magnitude lower than the release rates used for the lake water quality modeling in the TMDL study. The difference in internal load was attributed to resuspension associated with motor boat activity (Wenck, 2014a). A subsequent study (UW Stout and Wenck, 2015) of sediment resuspension as a potential phosphorus source indicated that Goose Lake sediment has a high potential for resuspension, but does not release or desorb phosphorus and plays a minor role in contributing bioavailable phosphorus to the lake.

Lake and watershed modeling, along with the associated GIS mapping, from the TMDL study were obtained and reviewed for use in the most recent feasibility analysis. In addition to the aforementioned limitations of the temporal scale of the lake water quality modeling (see Section 2.1), it was determined that the following data gaps and limitations of the past analyses would also need to be addressed to better evaluate the sources of phosphorus during the critical condition and potential improvement options for the respective study lakes:

- The P8 watershed modeling from the TMDL study did not simulate the existing Best Management Practices (BMPs) in the West and East Goose Lake watersheds. As discussed in Section 2, this may have led to overestimated phosphorus loadings for each watershed in the TMDL study.
- The GIS mapping (and associated P8 watershed modeling) from the TMDL study included a significant landlocked area from Gem Lake in the West Goose Lake watershed. This may have also led to overestimated phosphorus loading for this watershed in the TMDL study.

1.2 Summary of Recent Water Quality Monitoring

Table 1-2 shows the eleven-year summer average total phosphorus concentrations observed for each lake, as well as the average surface water concentration measured in Oak Knoll Pond during 2017. All three water bodies experience low dissolved oxygen in the bottom waters, periodically, during the summer months.

Table 1-2 Observed Lake and Pond Water Quality

Water Body	Average Summer Total Phosphorus Concentration (µg/L), 2007-2017
East Goose	255
West Goose	175
Oak Knoll Pond	168 (2017 only)

Figures 1-2, 1-3 and 1-4 show how the last ten years of average summer total phosphorus, chlorophyll-a and Secchi disc transparency, respectively, have varied for each lake. The first four years of the records shown in each figure represent the data used for the TMDL analyses of the respective lakes. The monitoring data shows that the lakes are not meeting any of the three shallow lake criteria during the period of record. Figure 1-2 shows that average total phosphorus concentrations were generally better for the lakes in 2011 and significantly worse in 2016. As a result, these two years became the focus of the updated lake and watershed modeling discussed in Section 2.

Figure 1-2 Summer Average (June-Sept.) Total Phosphorus Concentrations (µg/L) since 2007

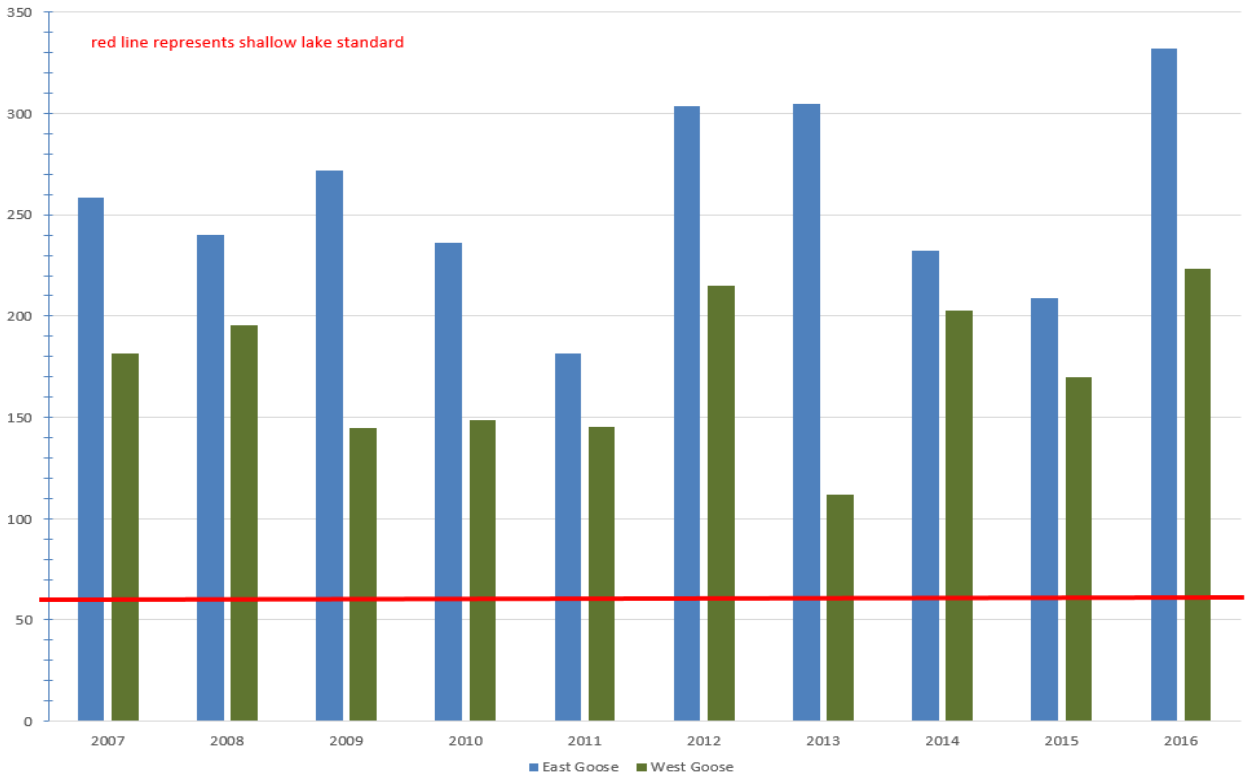


Figure 1-3 Summer Average (June-Sept.) Chlorophyll-a Concentrations (µg/L) since 2007

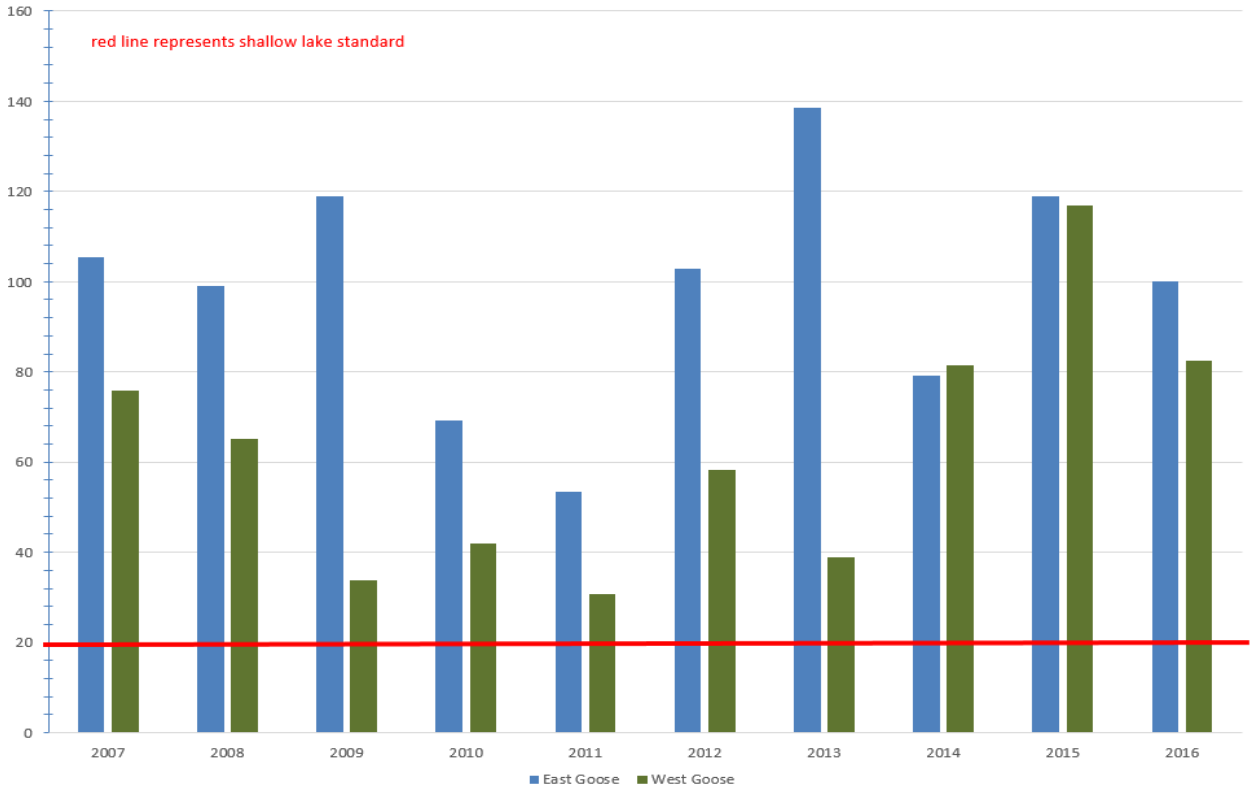


Figure 1-4 Summer Average (June-Sept.) Secchi Disc Transparency (meters) since 2007

1.3 Current Analysis of Lake Sediment Cores

Phosphorus from stormwater over time accumulates in the bottom sediments of lakes and ponds. During the spring and fall, this phosphorus is largely tied-up and the sediments, but during the warm summer months the phosphorus can be released from bottom sediments and move upward into the water column. This can lead to summer and sometimes early fall algal blooms. Not all of the phosphorus that is incorporated into bottom sediments releases into the water column. Phosphorus in sediment is typically attached to something and can be found in the following forms (often referred to as "fractions"): calcium bound phosphorus (Ca-P), aluminum bound phosphorus (Al-P), iron bound phosphorus (Fe-P), and organically bound P (Org-P). Ca-P and Al-P are largely inert and are immobilized in the bottom sediment. Org-P decays over time and release phosphorus into the water column over the course of several years. Fe-P is the phosphorus form that readily releases into the water column during warm summer months as oxygen is depleted in the sediment.

The primary purposes of collecting sediment cores is to quantify the amount of Fe-P and Org-P in sediment. The more Fe-P and Org-P in sediment the more alum will need to be applied to immobilize these phosphorus fractions. In general, aluminum treatment (either as alum or sodium aluminate, for example), forces the Fe-P to bind to aluminum and form Al-P (the inert form of aluminum). In most cases, alum treatments are designed to also provide excess aluminum in sediment which can then bind phosphorus years after the treatment. When aluminum in the form of alum or other solutions is added to a pond, it forms an aluminum hydroxide floc that settles to the lake bottom. The aluminum floc will mix into the top few to several inches of sediment over time and becomes diluted. The sediment phosphorus data collected at different depths was used to help determine the expected sediment mixing depth for each lake.

The total mass of Fe-P and Org-P in the actively mixed layers of sediment were determined for each lake. Alum doses were then calculated for each lake by determining an appropriate Al:Al-P ratio following techniques designed by Pilgrim et al. (2007).

Sediment cores were collected on October 25, 2017 in the following waterbodies: West Goose Lake (2 cores), East Goose Lake (4 cores), and Oak Knoll Pond (1 core) (see Figures 1-5, 1-6, and 1-7, respectively). Each sediment core was sliced into 2-cm sediment samples down to a depth of 10 cm, and 4 cm intervals were collected down to 18 cm or deeper. Sediment samples were returned to the Barr Engineering laboratory and analyzed for the phosphorus fractions identified previously. In general, Fe-P concentrations in sediment the sediment of East Goose Lake and West Goose Lake were low, while organic-P was high. Phosphorus concentrations and physical characteristics were relatively similar among all four cores of East Goose Lake. The two sediment cores in West Goose Lake were also similar to one another.

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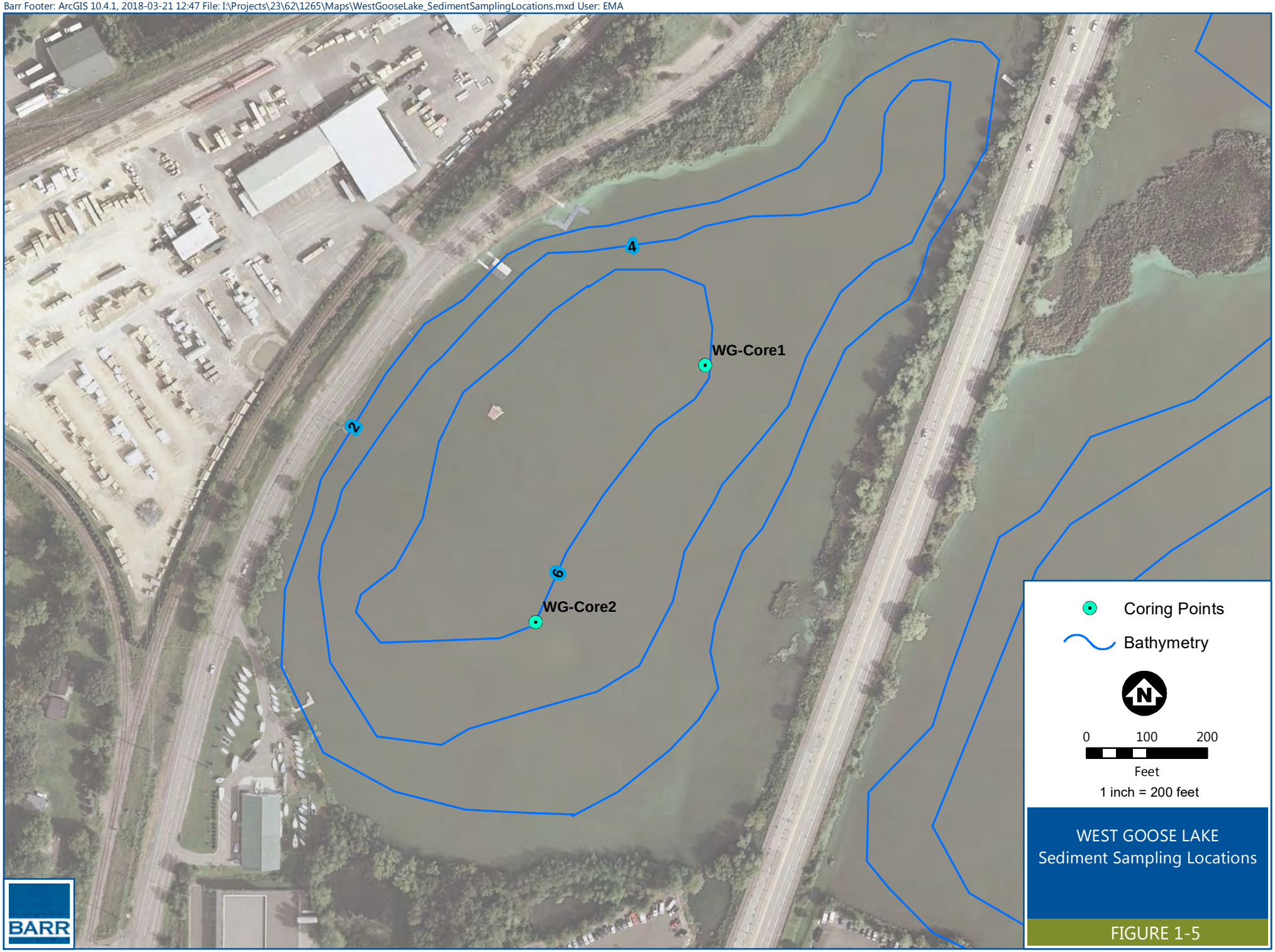

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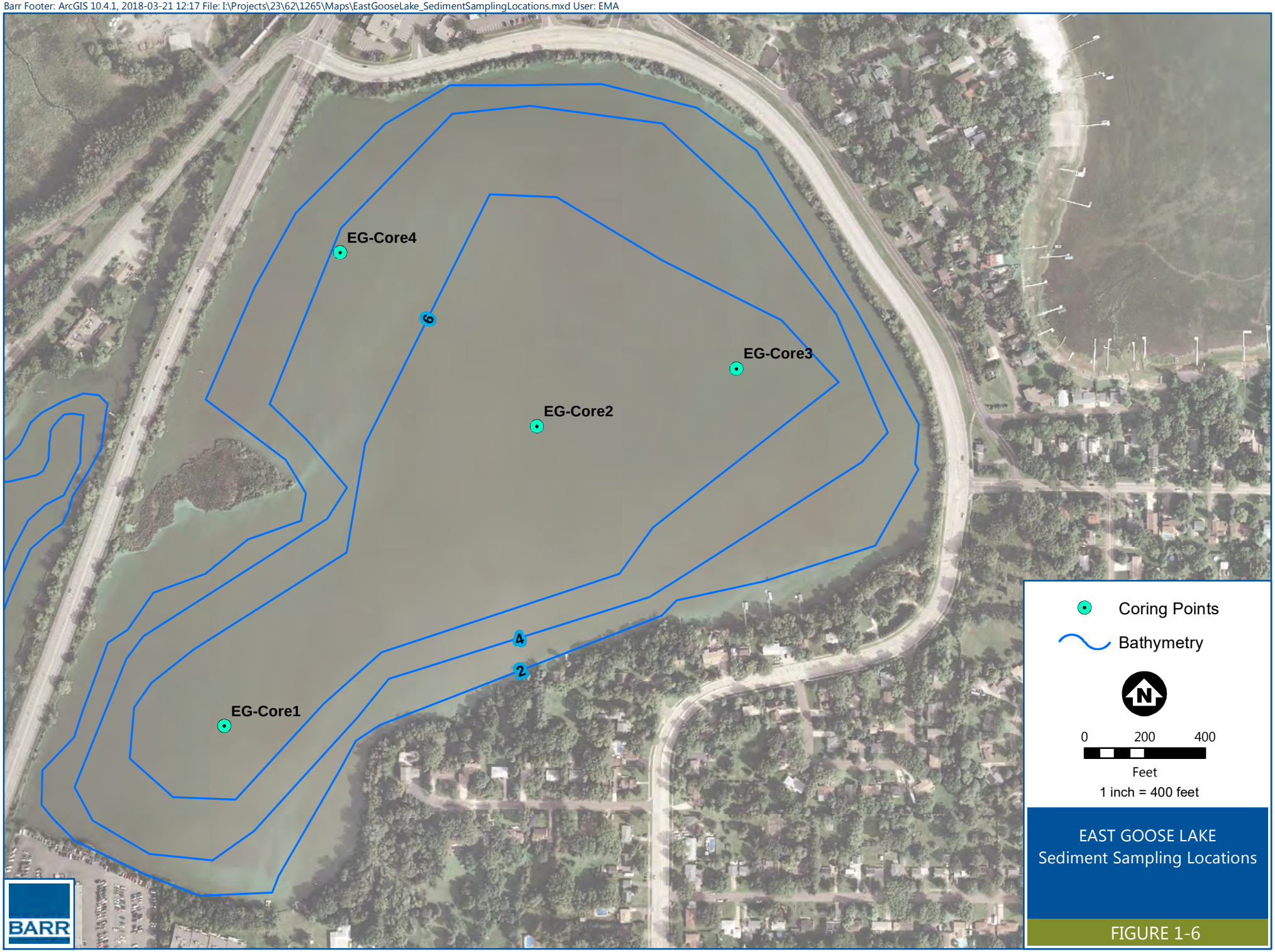

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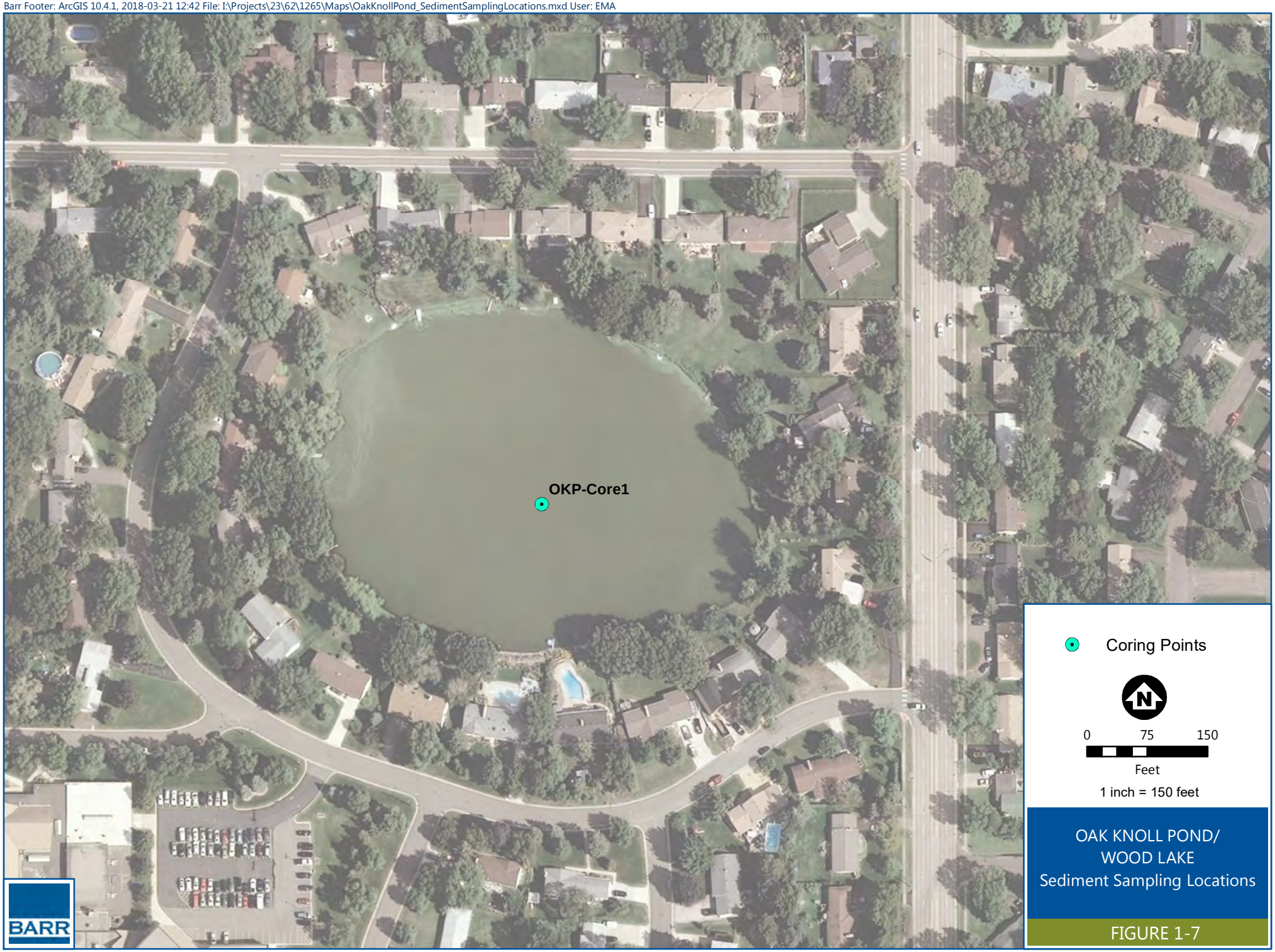


BARR

OAK KNOLL POND/
WOOD LAKE
Sediment Sampling Locations

FIGURE 1-7

2.0 Water Quality Modeling and Analysis

A key component to performing diagnoses is selecting a rigorous approach to evaluating potential water quality benefits. The simplified lake and watershed modeling approach used in the 2014 TMDL project did not account for intra-annual variations in lake water quality was not considered for use in the previous feasibility analysis (Barr, 2017) as it lumps parameters at an annual time scale, treats lakes as fully mixed in a steady-state with uniform residence time, and does not adequately distinguish internal phosphorus loading sources from watershed sources during the critical conditions for water quality impairment. Based on our review of the available monitoring data and understanding of the purpose of the feasibility study, an approach was developed for evaluating the primary drivers of water quality impairment in each lake that adds further clarity, because it is based on updated monitoring data and accounts for intra-annual variations and recent management actions. Differentiating the individual drivers of lake water quality is based on the observed dynamics of each lake to set realistic expectations for future management actions.

The approach for this analysis used existing monitoring data, professional judgment, and modeling to identify the best approach to cost-effectively improve lake water quality. Relevant subtasks included:

- Review current and historic water chemistry and biological data. Evaluate long- and short-term water quality trends.
- Review sediment phosphorus data and use it to estimate the internal phosphorus loading potential.
- Using existing watershed modeling, develop an updated lake phosphorus balance that includes phosphorus loads from watershed and in-lake sources and evaluate results to better understand the effect of varying climatic and sensitivity to management changes.
- Analyze fish data to evaluate potential impacts of carp and black bullhead on lake water quality and to determine the impact of water quality dynamics on the fish community.
- Consider the effects that recreational boating are expected to have on lake water quality.
- Integrate data analyses from above to diagnose causes of lake water quality problems, including feedback loops and dynamics between biological measurements and lake water quality observations.
- Evaluate water quality improvement options to identify feasible and cost-effective water quality improvement options for each lake basin.
- Complete an evaluation of feasible water quality improvement options to estimate expected lake water quality changes that could be attained.

2.1 Existing Management Practices

2.1.1 Watershed Best Management Practices (BMPs)

Figure 1-1 shows the locations in the East and West Goose Lake watersheds where the city of White Bear Lake and Ramsey County have previously implemented BMPs for stormwater treatment. These existing BMPs include seven ponds, seven rainwater gardens, three swirl separators and five infiltration pipes.

Since it wasn't clear how well these BMPs have been maintained and the watershed mapping did not delineate the direct drainage areas tributary to each practice, the updated P8 watershed modeling did not account for treatment for these BMPs (Barr, 2017). However, a sensitivity analysis was performed with the lake water quality modeling to evaluate how much a 50 percent reduction in total phosphorus loading would influence the respective lake concentrations (see Section 2.2).

In discussing the existing watershed BMPs (see Figure 1-1) with White Bear Lake staff it was understood that some of the practices may not have been inspected and/or maintained on a regular basis, or were in-need of more documentation for maintenance activities (Barr, 2017). However, this past summer, a maintenance agreement was established for the rainwater gardens along County Road F in that the County hired an MCC crew to maintain the plantings and clean out the inlets. Future work will likely include weeding, trash removal, addition of mulch, supplemental plantings and replacement of the inlets, where necessary. Similarly, it is recommended that MS4 and VLAWMO staff coordinate to document inspections and maintenance of all existing watershed BMPs. Depending on existing BMP performance, it can be used to adapt future maintenance activities and inform or change the priority for implementing some of the BMPs identified in Section 4.

Based on an evaluation of the GIS mapping (see Figure 1-1), it is estimated that two-thirds of the East Goose Lake watershed is currently receiving stormwater treatment of the runoff phosphorus loading on an annual basis, while approximately 40 percent of the West Goose Lake watershed is receiving stormwater treatment.

2.1.2 Past In-Lake Treatment Measures and Aquatic Invasive Species Control

Other in-lake treatment measures completed within the past 15 years included the removal of nearly 19,000 pounds of bullheads from Goose Lake between 2012 and 2015, as well as ongoing herbicide spot treatments in West Goose Lake. An updated fish survey (Blue Water Science, 2017) indicates that commercial fishing successfully reduced bullhead densities and no other fish management is needed at this time. In addition, common carp were not observed during the fish survey.

Goose Lake had the lowest diversity of aquatic plant species relative to the other lakes surveyed for the TMDL study (Wenck, 2014a). VLAWMO staff identified only two species in each basin of the lake: narrowleaf pondweed and elodea (Canada waterweed). In East Goose Lake plants were only found along the western edge of the lake, which connects to the western basin. In West Goose Lake plants were found throughout the lake, but consisted mostly of elodea, which was mostly concentrated along the eastern edge connecting to East Goose.

2.2 East Goose Lake

Updated lake and watershed modeling was developed for this study and optimized to reproduce the observed water quality for each lake during the summer periods of interest. Figure 2-1 shows how the predicted and measured total phosphorus concentrations compare during the summer of 2016 for East Goose Lake. Approximately 85 percent of the phosphorus load was attributed to sediment phosphorus release during this time period. As a result, Figure 2-1 also shows that the predicted phosphorus concentration in East Goose Lake would be much more sensitive to an 80 percent reduction in internal load (similar to what would be expected following an in-lake alum treatment) than it would have been in response to a 50 percent reduction in stormwater loading (similar to what would be expected with widespread BMP implementation) during 2016. It should also be noted that the results of these analyses are based on the same starting phosphorus concentration at the beginning of the summer. Over time, following full-scale BMP implementation or in-lake alum treatment, it is expected that the starting concentrations would be closer to the shallow lake standard at the beginning of each summer season. Based on the results shown in Figure 2-1, this in turn, should ensure that an in-lake alum treatment would maintain lake water quality at levels that would be consistent with the shallow lake standards.

Figure 2-1 2016 Water Quality Modeling Results for East Goose Lake

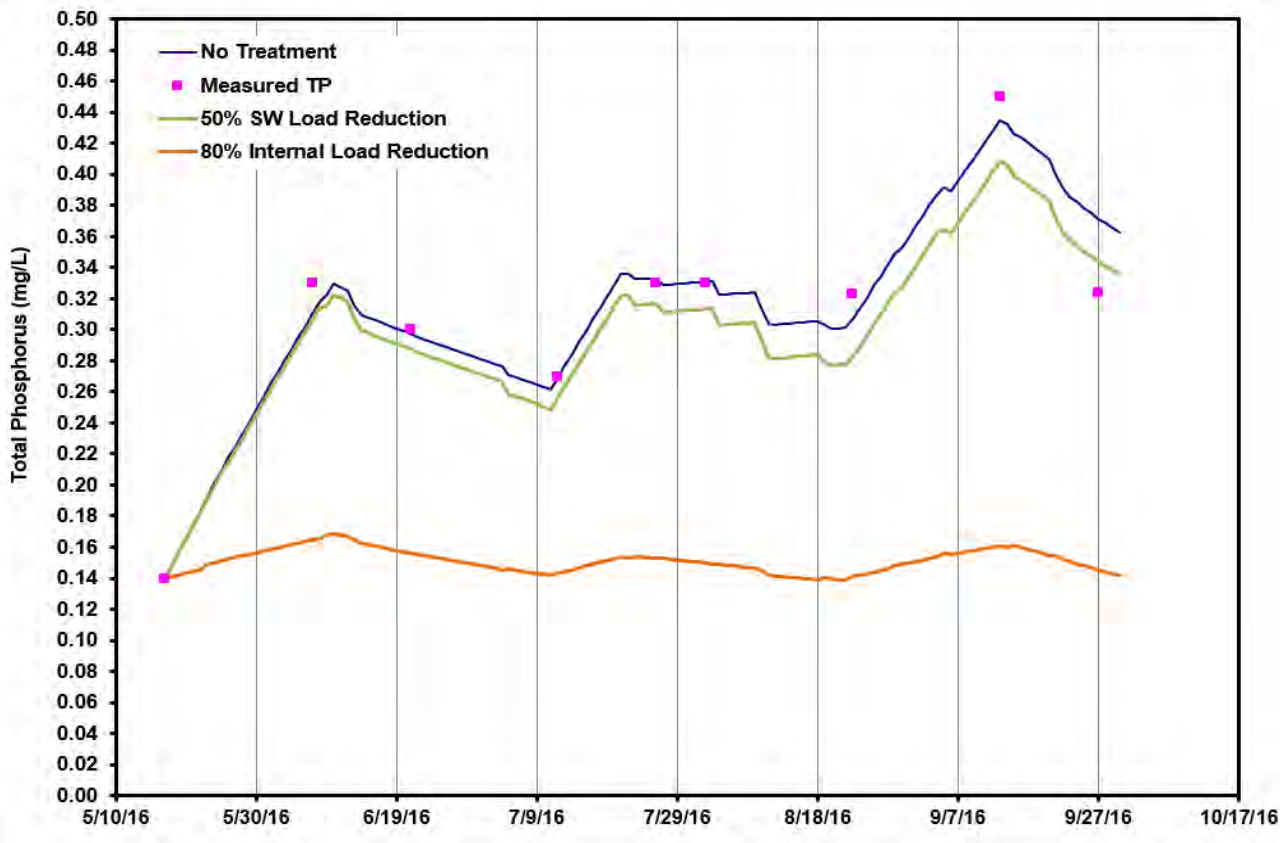
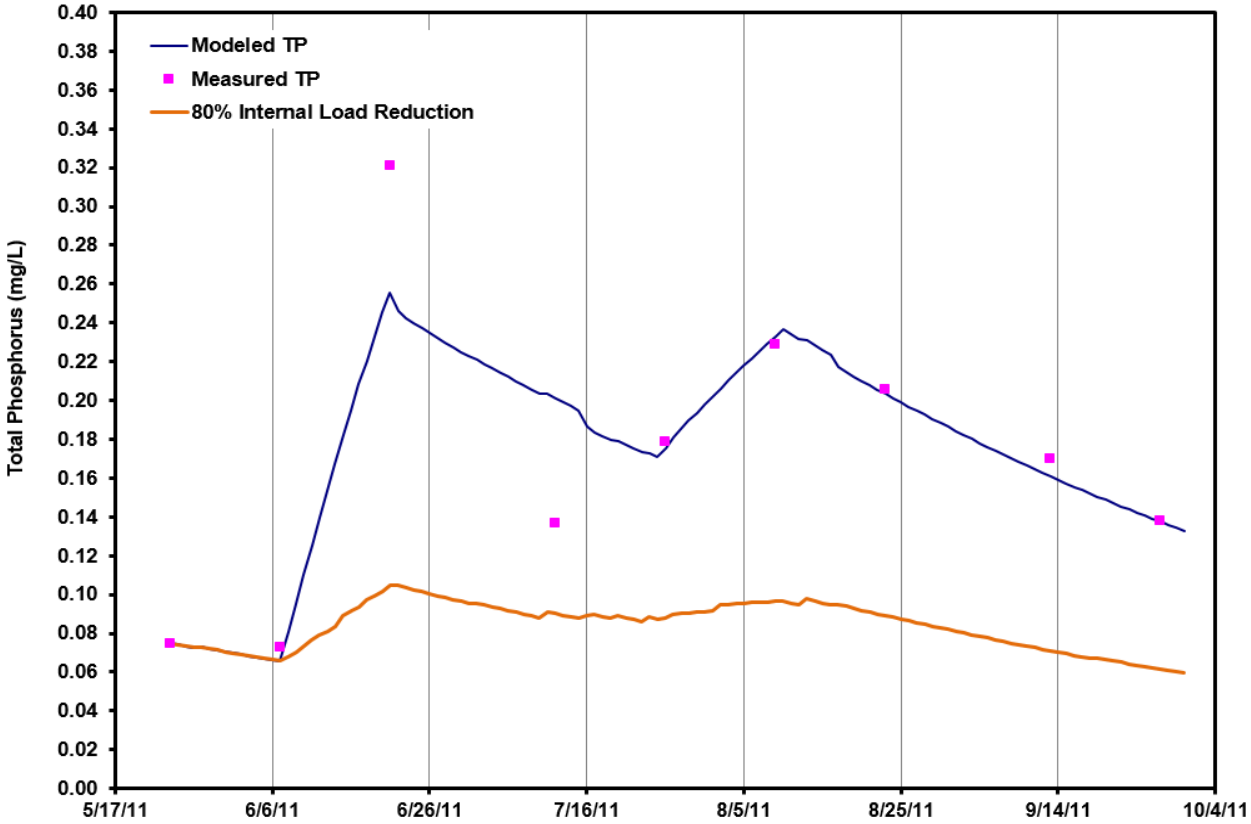


Figure 2-2 shows how the predicted and measured total phosphorus concentrations compare during the summer of 2011 for East Goose Lake. Approximately 80 percent of the phosphorus load was attributed to sediment phosphorus release during this time period. As a result, Figure 2-2 shows that the predicted

phosphorus concentration in East Goose Lake would respond well to an 80 percent reduction in internal load (similar to what would be expected following an in-lake alum treatment) during 2011. Again, based on the results shown in Figure 2-2, an in-lake alum treatment would maintain lake water quality at levels that would be consistent with the shallow lake standards.

Figure 2-2 2011 Water Quality Modeling Results for East Goose Lake

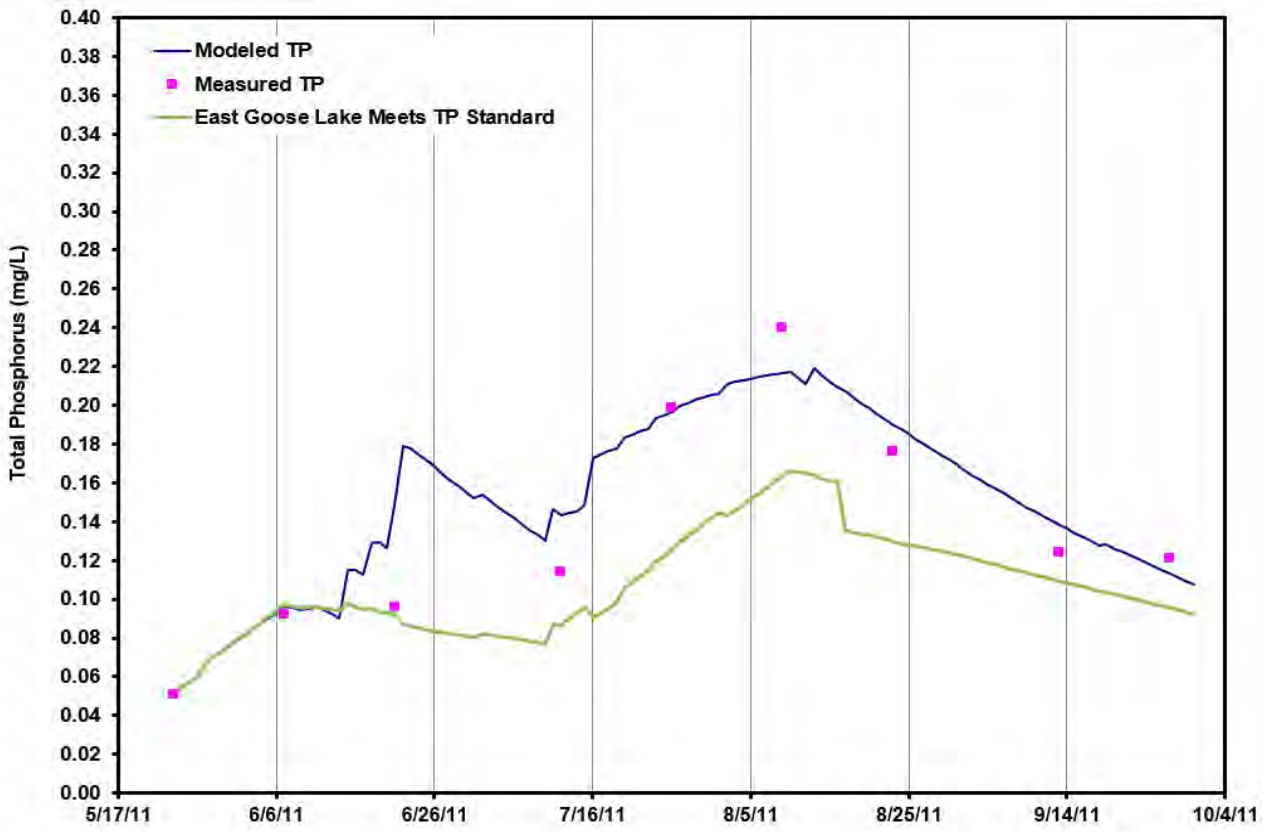


2.3 West Goose Lake

Figure 2-3 shows how the predicted and measured total phosphorus concentrations compare during the summer of 2011 for West Goose Lake. Approximately 26 percent of the phosphorus load was attributed to sediment phosphorus release, 34 percent can be attributed to stormwater runoff and 39 percent to upstream contributions from East Goose Lake during this time period. As a result, Figure 2-3 also shows that the predicted phosphorus concentration in West Goose Lake is more sensitive to a reduction in incoming phosphorus concentration from East Goose Lake (similar to what would be expected if East Goose Lake had a phosphorus concentration that met the 60 µg/L standard) during 2011. Over time, following an in-lake alum treatment (and to a lesser extent, full-scale BMP implementation), it is expected

that the concentrations would be maintained closer to the shallow lake standard throughout the summer season.

Figure 2-3 2011 Water Quality Modeling Results for West Goose Lake



3.0 Social Implications of In-Lake Management

Understanding the inner working and prescribing management strategies of lake systems requires use of complex mathematical watershed and lake models. However, the resultant management strategies, although technically supported, are often difficult to convey to the public. To address the issue, a stakeholder engagement process was incorporated into the 2017 feasibility study (Barr, 2017). The goal of the stakeholder engagement process was to involve the public, regulatory agencies and VLAWMO staff in the process of identifying and vetting management solutions for each lake.

A Stakeholder Charrette was attended by members of the public, non-governmental organizations (Midwest Ski Otter Ski Club and North Oaks Homeowners Association), municipal agencies (Cities of North Oaks and White Bear Lake and Ramsey Conservation District), state government (Minnesota Department of Natural Resources and Minnesota Pollution Control Agency) and VLAWMO staff. The attendees convened for a state of the lake presentation for each lake followed by collaborative group discussions.

According to the groups, Goose Lake can support non-motorized activities, waterskiing, pontooning, and fishing for crappies and bass. The groups also acknowledged concerns about the absence of waterfowl and bald eagles, and the presence of curlyleaf pondweed. In addition to the concerns acknowledged, they also thought plant herbicides or harvesting warranted further investigation, as well as the correlation between bullhead removal and improvements in water quality and clarity, and whether water skiing and aquatic plants can coexist in Goose Lake.

When group attendees were asked about what role fish and aquatic plants play they were interested in discerning the difference between invasive and non-invasive plants. It was noted that the lakes have curlyleaf pondweed and Eurasian water milfoil edging into East Goose Lake from the southwest corner. Also, there was concern about the lack of species diversity and how that would affect the ecological functions of the lakes. They were also interested in an evaluation of the following:

- Investigating how fish and plants interact within the lake system and the possibility of using alum treatment on all or part of East Goose Lake;
- Encouraging recreational use in one of the Goose Lake basins.

Based on follow-up discussion with staff from State agencies and Commission members, it was recommended (Barr, 2017) that VLAWMO complete a Lake Vegetation Management Plan (LVMP) and further evaluate in-lake management practices (see Section 4).

4.0 Summary

4.1 Potential Improvement Options

As discussed in Section 2.1, and shown in Figure 1-1, there are several existing BMPs in the East and West Goose Lake watershed. An evaluation of the storm sewer conveyances that did not have any existing stormwater treatment revealed that there are approximately five high-priority watershed locations where BMPs should be considered for implementation.

Table 4-1 provides rough estimates of planning level construction costs for the respective watershed BMPs at the recommended BMP locations, based on experience with similar practices in Metro lake watersheds. It is expected that wider-scale implementation of rainwater gardens throughout the watershed would be more cost-effective than the other watershed BMPs shown in Table 4-1, but they may not be feasible and would likely need to be implemented as a part of street reconstruction projects to realize significant cost savings. It is also expected that the alum treatment costs for Options 6 and 7 will be closer to the values shown, assuming that both basins are treated at the same time, as they reflect the current collection and analysis of additional sediment cores across each lake surface for phosphorus fractionations and dose determinations. Table 4-1 confirms that in-lake alum treatment is significantly more cost-effective than the available watershed BMPs.

Table 4-1 Summary of Water Quality Improvement Options

Water Quality Improvement Option	Estimated Annual TP Reduction (lbs/yr)	Opinion of Potential Costs	Annual Cost per Pound TP Removed ($/lb)
Option 1—Retrofit Lake Bay for Improved Stormwater Treatment	10	$100,000	$10,000
Option 2—Construct Off-Line Filtration System for Low Flows	25	$300,000	$12,000
Option 3—Construct Pond On-Line With 36"-dia. Storm Sewer	25	$300,000	$12,000
Option 4—Infiltration Pipe Upstream of Storm Sewer Outfall to East Goose Lake	5	$50,000	$10,000
Option 5—Infiltration Pipe on School Property	25	$100,000	$4,000
Option 6—Alum Treatment of West Goose Lake	100	$55,000	$550
Option 7—Alum Treatment of East Goose Lake	800	$170,000	$213

4.2 Recommendations

4.2.1 Alum Treatment for East and West Goose Lakes

The application of aluminum has two expected mechanisms: (1) aluminum binds with iron-bound phosphorus in the sediment, thereby forming Al-P, and (2) a residual amount of unbound aluminum remains in the sediment and is available to bind phosphorus that is released from the decay of Org-P. For most lake systems alum dosing is designed to provide some amount of "excess" aluminum to bind phosphorus released from decayed Org-P. However, the aluminum added to the sediment will age over time and be less effective at capturing more phosphorus. Due to the high amount of Org-P in East Goose Lake and West Goose Lake sediment, it is recommended that the alum treatments of East Goose Lake and West Goose Lake be split into two applications separated by a few years or more in order to capture more of the Org-P in the sediment as it decays over time. By splitting the alum treatment into two applications separated by two or more years, more of the decomposing Org-P can be captured by the alum.

Two forms of aluminum are typically applied to lakes: alum and sodium aluminate. When alum is added to a lake, it will lower the pH (make it more acidic), while sodium aluminate will raise the pH (more basic). Therefore, these two chemicals are often added in combination to neutralize the pH effects during treatment. At lower doses, alum-only applications can be conducted without adversely affecting the pH (i.e. pH stays above 6). Alum is typically less expensive and easier to work with than sodium aluminate, and an alum-only treatment may be preferable when it will not cause an unacceptable change in pH. Alkalinity and pH were tested in each of the waterbodies on October 25, 2017. A higher alkalinity indicates a lake is more resistant to a change in pH from an alum treatment. East Goose Lake had the lowest alkalinity, and would therefore be most susceptible to a pH change from the addition of alum. A chemical model called PHREEQC was used to model the pH change from the prescribed alum dose to East Goose Lake; model inputs included the measured pH and alkalinity, and the prescribed alum dose. The model demonstrated that the pH would remain above 6.0 with an alum treatment only for the individual alum applications prescribed in Table 4-2. A minimal pH target of 6.0 will minimize the risk of adversely affecting aquatic life and ensure that aluminum hydroxide floc ($Al[OH]_3$) will form readily and settle quickly.

Table 4-2 Recommended Alum Dosing for Split Applications

Lake	First Application		Second Application		Total	
	gallons alum/acre	gallons alum	gallons alum/acre	gallons alum	gallons alum/acre	gallons alum
East Goose	288	27,329	288	27,329	575	54,658
West Goose	346	5,887	346	5,887	693	11,774

Alum is typically less expensive and easier to apply than a combined application of alum and sodium aluminate; therefore, it is recommended that alum-only treatments be utilized for East Goose and West Goose Lakes for the alum doses described in Table 4-2. The pH in the waterbody must be closely

monitored during alum applications, and if the pH reaches the critical value of 6.0, the treatment should be stopped until the pH can recover. If pH and alkalinity conditions are different at the time of treatment and show a greater potential to lower pH below 6.0 during treatment, the treatment plan could be altered to replace a portion of the alum with sodium aluminate in order to buffer the pH.

Barr recommends that the alum treatments of East Goose Lake and West Goose Lake be split into two applications in order to capture more of the Org-P in the sediment that will decay over time. The second application would occur two or more years after the first application. Each alum-only application would be at a low enough dose that the lake's pH would not be expected to lower below the threshold of 6.0, eliminating the need for a combined alum and sodium aluminate application. The recommended alum doses for East Goose Lake and West Goose Lake are summarized in Table 4-2.

Splitting the alum treatment into multiple applications would also allow for adjustments to the final alum dose, based on observations of water quality and/or sediment chemistry following the first application. The total estimated costs (including engineering and treatment oversight) for the recommended split application of alum to each lake are shown in Table 4-1. It is expected that the split treatment will extend the effective life of the alum treatment for each lake and VLAWMO will be responsible for any future maintenance that will be needed to achieve the effective life of the project.

4.2.2 Spent Lime for Internal Load Control in Oak Knoll Pond

Barr (1992) previously demonstrated the potential use of spent lime sludge from water treatment operations as a bottom sealer to prevent phosphorus release from anoxic sediments collected from Goose Lake. The study used a sediment/water microcosm approach that showed that various small doses of spent lime were capable of completely controlling sediment phosphorus release under anoxic conditions. Since these experiments were conducted, Barr has demonstrated the efficacy of using spent lime to treat phosphorus and solids in stormwater runoff, but in-lake treatment for sediment phosphorus control has not been attempted outside of the lab setting. Since a significant portion of the cost of in-lake alum treatment is associated with the chemical costs, it is worth considering alternatives such as spent lime, which is a byproduct of water treatment operations that currently incurs significant expense for disposal by local utilities.

It is recommended that VLAWMO initiate a study, in cooperation with Barr, to evaluate pilot-scale implementation of this treatment approach in Oak Knoll Pond as well as development of the conceptual design and potential cost-effectiveness for full-scale implementation of in-lake treatment for any other watershed basins that are currently experiencing high levels of sediment phosphorus release. The recommended study objectives would include assessments of spent lime availability and transportation costs, savings in comparison with current disposal methods, the equipment needs and costs for surface water applications including both filter cake and slurry forms of spent lime, and assessments of sediment and surface water quality improvements as well as the overall life-cycle cost-effectiveness for comparison with other in-lake treatment options. It is expected that the consulting costs for this pilot-scale study could range from $15,000 to $30,000, depending on the treatment extent and monitoring requirements.

4.2.3 Lake Vegetation Management Plan (LVMP)

A lake vegetation management plan (LVMP) is a document the Minnesota Department of Natural Resources (DNR) develops with public input to address aquatic plant issues on a lake. The LVMP is intended to balance riparian property owner's interest in the use of shoreland and access to the lake with preservation of aquatic plants, which is important to the lake's ecological health. It is recommended that VLAWMO work with the DNR and the public to develop a LVMP for both East and West Goose Lakes that will prescribe the permitted aquatic plant management actions (mechanical and/or herbicides) for a five-year period, including controls for invasive plants and restoration of lake shore habitat. VLAWMO should also pass along Ramsey Conservation District's plant survey and inquire with DNR about whether the survey information can be used as the control for future plant management actions.

5.0 References

Barr Engineering Company. 1992. The Effects of Spent-Lime Sludge Additions on the Anoxic Sediment Phosphorus Release Rates of Goose Lake, Ramsey County, Minnesota. Prepared for St. Paul Water Utility.

Barr Engineering Company. 2017. East Goose, West Goose and Wilkinson Lakes Feasibility Study. Prepared for Vadnais Lake Area Water Management Organization (VLAWMO) in partnership with Young Environmental Consulting Group.

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James W.F. 2010. Internal Phosphorus Loading and Sediment Phosphorus Fractionation Analysis for West Goose Lake, Minnesota. ERCD Eau Galle Aquatic Ecology Laboratory.

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UW Stout and Wenck. 2015. Equilibrium Exchanges of Soluble Phosphorus by Resuspended Sediment in Goose Lake, MN.

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Wenck. 2014a. Vadnais Lake Area WMO Total Maximum Daily Load (TMDL) and Protection Study. Prepared for VLAWMO.

Wenck. 2014b. Internal Phosphorus Loading and Sediment Phosphorus Fractionation Analysis for Eastern Basin of Goose Lake, MN.

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

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office@vlawmo.org
(651) 204-6070

April 25th, 2018
To: The VLAWMO Board of Directors
From: Nick Voss, Education and Outreach Coordinator
Re: VII.A

Accept Annual Report for Distribution

The annual report and its summary have been drafted for Board review. Upon approval, these documents are submitted to the Board of Water and Soil Resources as required by state statute.

Draft documents can be viewed at the following links.

Annual Report Summary:
http://www.vlawmo.org/files/4015/2399/5991/2017_Annual_Report_summary_-_draft.pdf

Full annual report:
http://www.vlawmo.org/files/8415/2399/7671/2017_annual_report_-_draft.pdf

In addition, a monitoring summary compliments the 2017 water monitoring report:
http://www.vlawmo.org/files/4315/2399/5855/2017_Monitoring_Report_Summary.pdf

2017

ANNUAL REPORT

VADNAIS LAKE AREA WATER MANAGEMENT ORGANIZATION

EST 1983

VLAWMO

Vadnais Lake Area Water Management Organization

Vadnais Lake Area Water Management Organization (VLAWMO)
800 East County Road E
Vadnais Heights, Minnesota 55127

Website: www.vlawmo.org
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In compliance with Minnesota Administrative Rules | Chapter 8410 | Part 8410.0150

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

Table of Contents

IN SHORT:
Introduction and background

IN THIS SECTION

Letter from the Administrator

Greetings!

2017 was the kick off for our new 10-year Water Management Plan. Our Board and Technical Commission, partners, and a host of stakeholders have guided our projects and programs and it's time for action. They came up with a busy year.

Two capital projects were installed in the fall. We're especially excited about the Whitaker treatment wetlands in White Bear Township (details on page 9). Another success story was restoring a degraded section of Sucker channel just south of Hwy. 96. With the help of Ramsey County Parks and Recreation, Ramsey Conservation District, the Saint Paul Regional Water Services, and State of Minnesota grant money (also found on page 9). Both projects serve to improve water quality and add deep-rooted native plantings to the watershed. We hope you take a look at these projects at Columbia Park and Vadnais/Sucker Lake Park this summer!

Lambert Creek is an important focus for our watershed. The Board directed much of its energy to understanding its responsibility as the ditch authority for Lambert Creek (Co. ditch 14) and Dillan ditch (Co. ditch 13). Working sessions with legal staff and Vadnais Heights led to winter ditch cleaning and more maintenance efforts in spring, 2018. VLAWMO hired Houston Engineering to survey all of Lambert Creek, complete modeling, and update historical records for the state database. This work will continue in 2018 but the groundwork was laid in 2017. We look forward to the improvement projects that will come from Houston's report.

Nick Voss, the Education & Outreach Coordinator has been working hard in multiple areas. Regular Facebook posts, a website blog, news articles, volunteer events, an adopt-a-drain program, and an expanded video library continue to carry our message to the community.

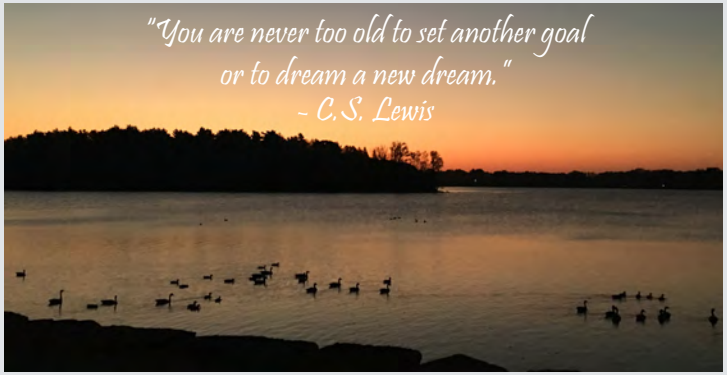
Kristine Jenson has worked to keep our cost-share programs popular as we partner with homeowners and businesses around the watershed. The Raingarden and native plant workshops were held in the spring. Our Landscape Level 1 grant program ran out of funding by May.

Water quality monitoring continued on 12 lakes as well as Lambert creek. In 2017 the bacteria molecular monitoring program completed its fourth and final year on Lambert Creek. A full report will be available to local partners and state agencies in 2018. This innovative project addressing the source and transport of bacteria in urban stormwater has generated interest among professionals in the Twin Cities Metro. We're excited to be able to share our results.

Other water monitoring highlights include our work with Wilkinson and Goose Lakes, both high nutrient impaired water bodies prioritized for improvements. A planning session was held in early 2017 to lay out the options, needs, and interests from stakeholders. To understand each lake's needs VLAWMO staff, sometimes in concert with consultants conducted a variety of storm sample, sediment core and water column tests. Monitoring reports with a wealth of information are posted on the VLAWMO website under the "resources" tab (browse by checking categories and studies).

2018 shows great promise as well. Grant funding was awarded to address a Birch Lake runoff problem area. Look for reports on Goose Lake, Lambert Creek, Charley, and Deep Lakes, and first year results from Whitaker wetlands. Thank you for supporting our mission of watershed protection and enhancement!

- Stephanie McNamara, VLAWMO Administrator



Early Morning on Vadnais Lake

Background

The Vadnais Lake Area Water Management Organization (VLAWMO) was formed in 1983 to protect the Vadnais Lake watershed area in northern Ramsey County and a small portion of Anoka County. Our organization was formed through a Joint Powers Agreement (JPA) that was ratified by the 6 cities within VLAWMO boundaries to comply with the State of Minnesota Metropolitan Surface Water Management Act (Minnesota statute Chapters 103A – 103H). We are governed by a 6 member Board of Directors that is represented by an elected official from each of the communities. VLAWMO covers approximately 25 square miles and includes portions of Vadnais Heights, White Bear Township, White Bear Lake, Gem Lake, Lino Lakes, and all of North Oaks.

OUR APPROACH

Managing a watershed area to protect our vital water resources has become the primary approach across the country. Since water flows across political boundaries, partnerships among local governments, regional, state and federal agencies are vital. Because Vadnais Lake is used as the drinking water reservoir for approximately 400,000 customers in the St. Paul area, VLAWMO frequently partners with the St. Paul Regional Water Service (SPRWS) on a variety of water quality monitoring and improvement projects.

OUR CORE PRINCIPLES

To guide our efforts towards achieving our mission. VLAWMO shares responsibility with its member communities to:

- Protect surface water quality
- Protect groundwater quality and recharge areas
- Provide public education to promote good stewardship of water resources
- Protect and manage wetlands through the Wetland Conservation Act
- Collaborate with other public and private organizations
- Manage stormwater and control flooding through the use of best management practices
- Require good erosion control practices, both during development and as a part of good stewardship

Vadnais Lake pumping house, early 1900s - courtesy of MN Historical Society

Mission Statement

Our mission at the Vadnais Lake Area Water Management Organization is to protect and enhance the water resources within the watershed.

Activities we work on include: water quality monitoring, education and outreach projects, wetland protection, and water quality enhancement projects.

"How Watersheds Work" courtesy of Michigan Sea Grant (MICHU-10-728)

What is a Watershed?

A watershed is all the land area that drains to a specific water resource, such as a lake or stream. Watersheds range in size from a few square miles to an entire continent. As rain and melting snow run downhill, they carry sediment and other materials into streams, lakes, and groundwater.

The land use activities within a watershed have a direct impact on the quality of the water. 96% of the land use within VLAWMO is urban with a small area of agricultural land in the northern end.

Watersheds provide water for drinking, irrigation, streams, and activities such as fishing, swimming, and boating. In addition, watersheds also provide food and shelter for wildlife.

OUR GOALS

Accomplishing our mission requires a focus on common goals. The VLAWMO will pursue the following goals as a way of proceeding towards the mission.

- Protect and improve surface water quality
- Protect and enhance wetland resources
- Protect and improve waters for wildlife habitat and recreation
- Enhance public participation and stewardship
- Make and enable informed decisions
- Optimize public resources
- Protect and improve groundwater quality and quantity
- Analyze and use alternative funding sources
- Improve communications
- Prevent flooding

WHAT IS A WMO?

A watershed management organization (WMO) is a local government agency charged with protecting water resources within its boundaries. All land within the metropolitan area must be within an organized watershed (State Statutes Chapters 103B & 103D). Watershed Districts are governed by County Commissioners while Water Management Organizations are governed on the municipal level.

WHO PAYS FOR IT?

The Vadnais Lake Area Water Management Organization is funded by a stormwater utility fee. Property owners within the watershed are charged a fee to manage the stormwater that runs off their property. This public utility fee is determined by land use (eg residential, commercial etc), and is included on Ramsey County property tax statements. The authority to charge and collect a stormwater utility fee is governed by Minnesota State Law.

Water Resources in the Watershed

LAKES

There are 16 lakes within VLAWMO. East Goose Lake, West Goose Lake and Birch Lake are located in White Bear Lake. Tamarack Lake, Fish Lake and Ox Lake are Located in White Bear Township. Gem Lake is located in Gem Lake. Amelia Lake is Located in Lino Lakes. Pleasant Lake, Charley Lake, Deep Lake, Black Lake, Wilkinson Lake and Gilfillan Lake are located in North Oaks. Sucker Lake, East and West Vadnais Lake are located in Vadnais Heights.

East Vadnais Lake is the drinking water reservoir for the City of Saint Paul. East Vadnais Lake is supplied with water pumped from the Mississippi River in Fridley that flows via underground aqueduct into Lake Charley in North Oaks. The water then flows east to Pleasant Lake, then south into Sucker Lake, and then into East Vadnais.

LAMBERT CREEK

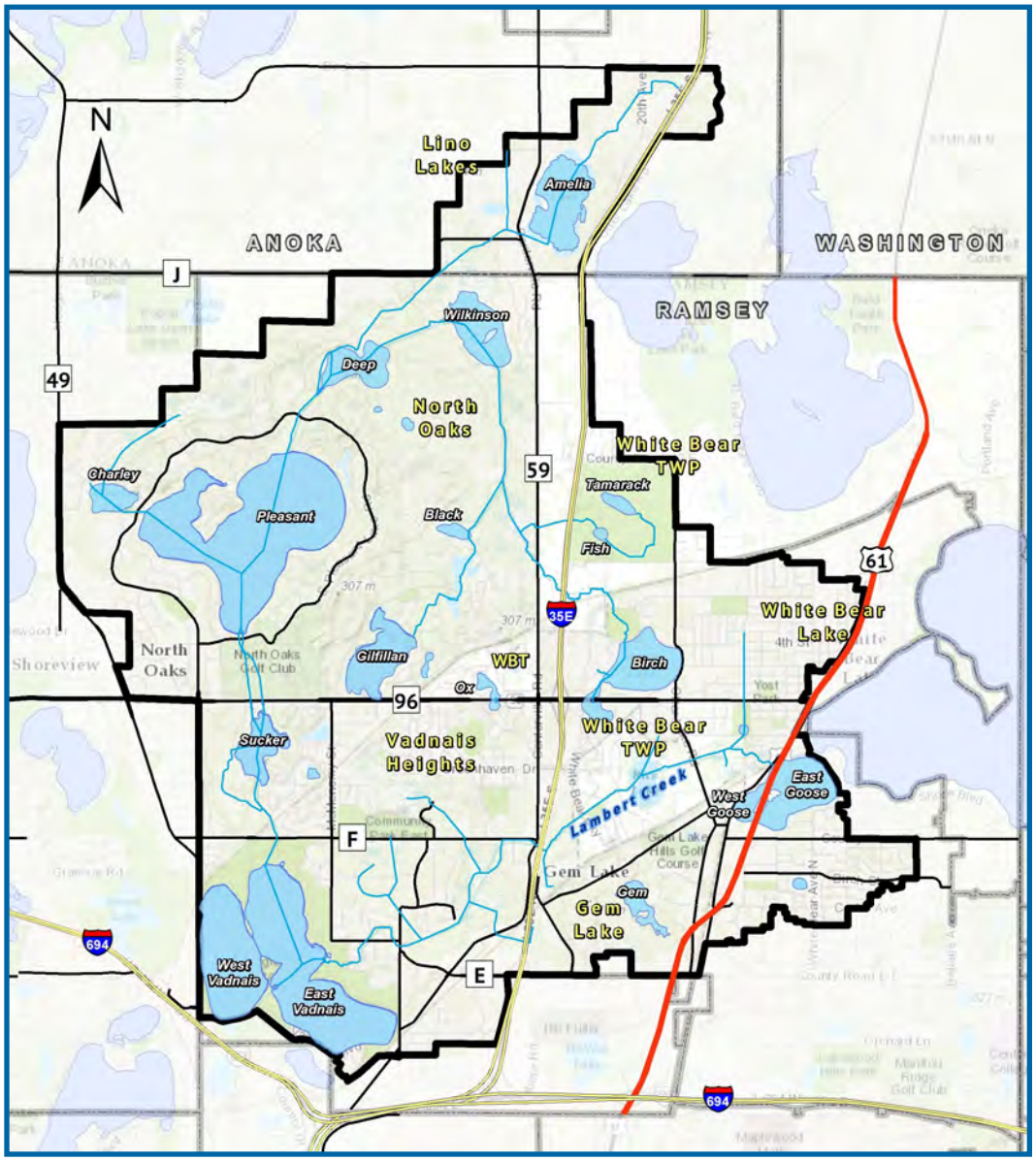
VLAWMO has jurisdiction over Lambert Creek, 4.5 miles of creek and wetland that runs from West Goose Lake and eventually empties into East Vadnais Lake.

WETLANDS

There are over 500 wetlands within VLAWMO. Tamarack, Grass, Wilkinson, Rice, Lambert, and Sobota Slough are a few of the largest tracts of wetlands in the watershed.

GROUNDWATER

Groundwater beneath the land surface of the Watershed flows to local lakes, the Mississippi River, and aquifers including the Prairie du Chien aquifer.



THE YEAR IN REVIEW:
2016 activities, projects, and improvements

IN THIS SECTION

Research

FISH SURVEYS

In support of VLAWMO's 2017-2026 water plan, fish surveys are conducted every few years to keep close tabs on what's happening in our lakes. Fish surveys are a useful tool in lake management because it tells us about nutrients, sedement, and vegetation in addition to the actual fish population. Comparing vegetation studies, fish studies, and water monitoring data forms a deeper understanding and gets us closer to the true status of the lake.

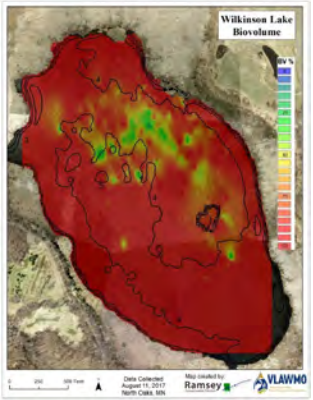
The last time a fish survey was conducted at Goose Lake was 2012. At that time, bullheads were abundant in the lake, indicating a high amount of sediment stirring into the water column. This is because bullhead, like carp, are "rough fish" that routinely stir up the lake bottom with their feeding habits. The result is released nutrients such as phosphorus that promotes algae growth.

This year, 206 fish were netted, recorded, and set free. This is down from the 2012 survey, that included 312 fish, but we also see an improvement in the rough fish population. Bullhead have been decreased from 80 to 22, and black crappie has increased from 33 to 150. This tells us that the crappie population is established enough to control the bullhead population through predation of their eggs. While Goose Lake is still impaired for high nutrients, we can assume that the lake is heading in the right direction. See the full report on the VLAWMO website.

BATHYMETRY & VEGETATION STUDIES

Bathymetry and vegetation studies are a doctor's check-up for a lake. If a shallow lake is rich in vegetation, this implies a healthy lake that holds its nutrients in plants instead of in the water column through algae. However the diversity of the plant life, the ammount, and the shape of the lake bottom are also important. With these we can draw conclusions in in things like the lake's wintering ability and limits in holding nutrients. With this we can set realistic goals for lake improvement.

As seen above, Charley Lake Bathymetry studies showed us how water moves through the lake and creates a deep channel.



At right, we see how Wilkinson Lake is heavily vegetated throughout. Using both of these studies, VLAWMO determines if the amount of vegetation is adequate for lake depth and water quality.

Like a check-up, these reports are useful for future decisions and are a record of the lake's health. As an impaired lake, Wilkinson is a higher priority for improvements.

Large Projects

WHITAKER TREATMENT WETLANDS

Grant Funds: MN Legislative-Citizen Commision on Minnesota Resources (LCCMR)
Location: White Bear Township
Completion: Spring, 2018
Cost: $500,000

The Whitaker Treatment Wetlands are an innovative research project that also serves a filter for Lambert Creek. VLAWMO is excited to partner with the University of Minnesota, White Bear Township, and Barr Engineering for this project. VLAWMO is thankful to receive a grant from LCCMR for this project.

The structure of three treatment 'wetlands' are fed water from stormwater runoff. This runoff is the start of Lambert Creek, which flows in to Vadnais Lake, and is impaired for E. coli bacteria and is high in nutrients. The polluted stormwater is pumped through the three wetland cells that consist of different engineered soils called *sorptive material*. The water is monitored and directed back into Lambert Creek.

Water monitoring will help us understand which soil mixture is most effective at treating stormwater runoff and removing bacteria. Findings for this project could have major implications for stormwater treatment across the country. The design was done by Burns and McDonnel Engineering.

Three wetland cells are filled with sorptive material and ready for Spring planting.

SUCKER CHANNEL RESTORATION

Capital Improvement Project
Location: Vadnais Heights
Completion: May, 2018
Amount Awarded: $20,000

The Sucker Channel restoration is a collaboration between Ramsey County Parks, Ramsey Conservation District (RCD), VLAWMO, and the Saint Paul Regional Water Services (SPRWS). This popular park and fishing destination was exeriencing heavy erosion between Pleasant Lake and Sucker Lake, harming water quality in Sucker Lake and creating inneficiencies in the water filtration process. To improve aquatic habitat and protect this source of drinking water, the shoreline was stabilized with riprap, coir logs, and new vegetative cover. Enhhanced handicap accessibility, fishing nodes, a platform along the culvert at highway 96, and native plantings improve the park for guests, wildlife, and water.

Above: The channel pre-construction had turf grass directly down to the water line. Grass clippings, eroded soil, goose droppings, and crumbled concrete from the 90's were washing into the channel, bringing nutrients and contaminants into the water.

Above: The new channel is nearly complete in late fall, awaiting planting in Spring, 2018.

In the Community

COMMUNITY EVENTS

Staffing a booth at popular local events is a fun and valuable way to connect with community members. At events VLAWMO has the opportunity to share its work, provide brochures, give away prizes such as rainbarrels or tote bags, and answer questions for event goers. This year, community events served a dual purpose by also providing a place to conduct community surveys for the Education and Outreach Plan (p. 11).

VLAWMO booths were presented at the following 2017 events:

- Vadnais Heights Community Business Expo - April
- Saint Paul Regional Water Service Open House - May
- 2017 White Bear Lake Water Symposium - June
- North Oaks Community Fair - June
- WBL Marketfest: Conservation and Environment Day - July
- Taste of Vadnais - July
- Vadnais Heights Farmers Market - August

Vadnais Heights Community Business Expo

Marketfest

Taste of Vadnais - hiding out from the rain

Education Programs

MACROINVERTEBRATES FIELD DAY

Macroinvertebrate ("water bug") workshops are a way for students to interact with our local water resources and glimpse a day in the life of an ecologist. Field trips from AFSA high school, Vadnais Heights summer programs, White Bear Lake Area Schools summer programs, and the general public visited the Vadnais/Sucker Lakes park for the activity.

After a brief explanation of the activity, students spend time netting in the Sucker Lake channel to try to gather interesting specimens that can lead to clues about the water quality in the channel. Upon a successful netting, students sort the macroinvertebrates in an ice cube tray and ID them using charts. Certain species prefer clean water, and certain species are able to live in murky, aglea-rich, or polluted water. At the end of the day, students make an educated conclusion about the water.

WORKSHOPS

VLAWMO continues to offer it's classic raingarden workshop each Spring. Participants in the raingarden workshop learned about the watershed, stormwater runoff, how to build and maintain a raingarden, and got a head start with tools such as the Blue Thumb Guide to Raingardens and VLAWMO's web-based geographic information systems (GIS) map.

2017 was also the first year for a new workshop in native plants. Participants ranged from previous raingarden cost-share recipients as well as plant and garden enthusiasts. This workshop dug deep into plant identification, planting plans and strategies, and how native vegetation is a valuable asset for the watershed.

RAINGARDEN WORKSHOP - 14 PARTICIPANTS
NATIVE PLANTS WORKSHOP - 30 PARTICIPANTS

Cost Share Programs

VLAWMO's Cost Share Program exists to provide assistance to public and private landowners for implementing programs and projects that support one or more of the following:

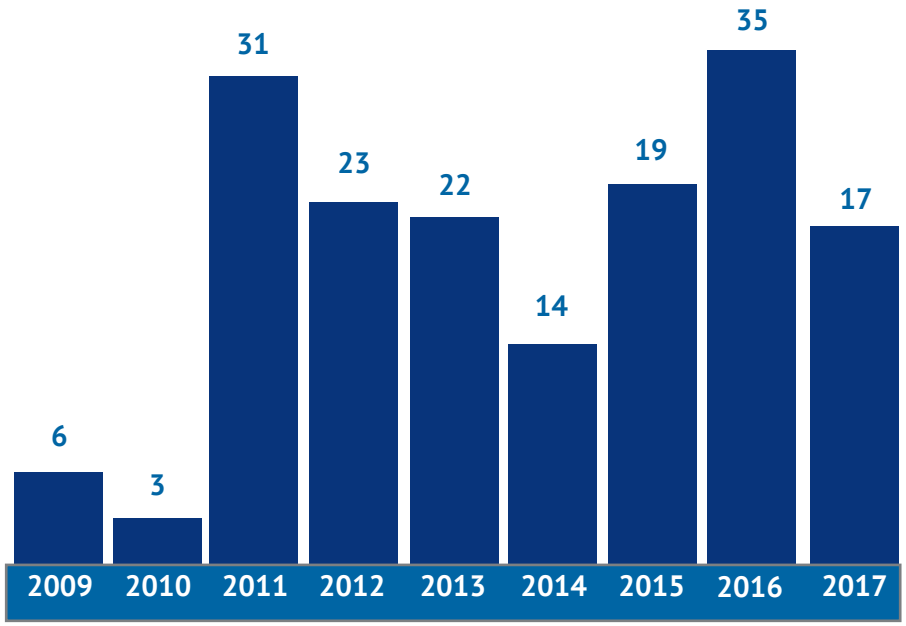
- Prevention of flooding or mitigation of drought
- Water quality improvement or increase in watershed storage capacity
- Preservation, protection, and restoration of native plant and wildlife communities, especially along lakes, streams, and wetlands
- Protection and preservation of groundwater quality and quantity

Available funds vary by year. Once the annual amount is depleted, applicants are advised to reapply the following year.

There are 3 cost share programs:

- Rainbarrel
- Landscape Level 1
- Landscape Level 2

Total Annual Grants: Landscape & Rainbarrel



Left: Shoreline Restoration on Birch Lake
Shoreline Restoration on a stormpond in Vadnais Heights

LANDSCAPE COST SHARE PROGRAMS

Landscape Level 1: Reimburses property owners 75% of the costs associated with implementing approved water quality improvement projects. The maximum reimbursement is $2,000 for this program. Typical projects include raingardens, shoreline restoration, native habitat restoration, or pervious paver installation.

Landscape Level 2: Projects with a larger total cost (minimum total cost of $5,000) and will reimburse 75% of the costs, up to $20,000. The program was updated in 2015 to allow funding to be more available for applicants.

VLAWMO uses the Minimal Impact Design Standards (MIDS) to measure the impact of landscape improvement projects. The impact of 2017's projects are esimated to improve water quality by:

- Reducing phosphorus by **5.43 lbs** per year.
- Reducing suspended solids by **987 lbs** per year.
- Infiltrating **2,173,524 gallons** of water into groundwater annually.

Shoreline Restoration on Birch Lake

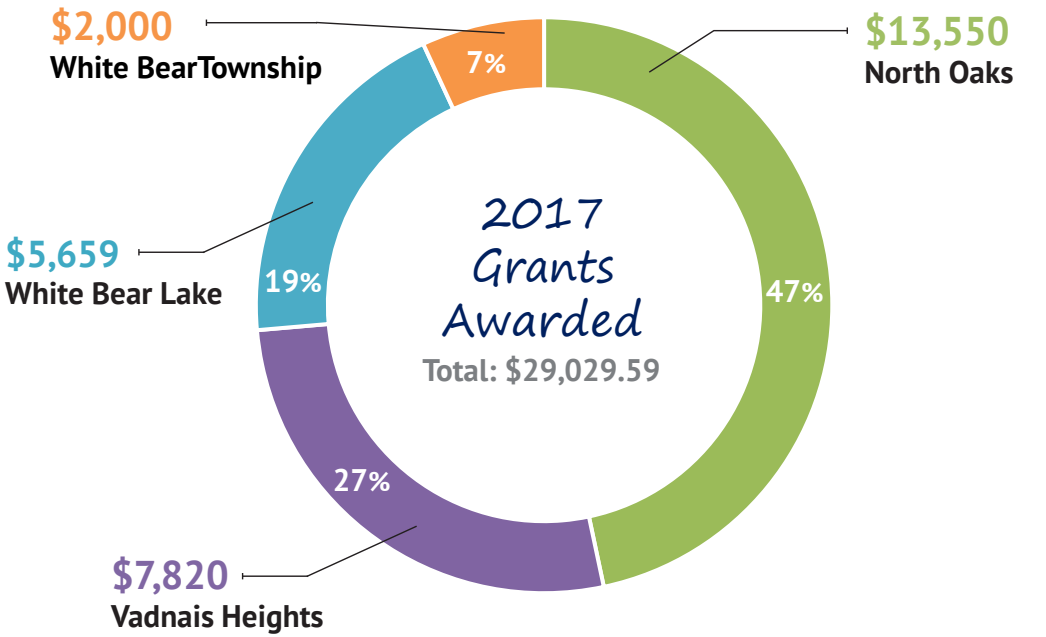
LANDSCAPE LEVEL 1 SUMMARY

For Landscape level one, *13* grants were awarded funding for a total of $18,450. This was the largest year for landscape level 1 grants in the program's history. Because of this, level one cost-share funds were depleted halfway through 2017.

Of the 13 level one grants, four were native plant restorations totaling 20,500 ft^2. Four were raingardens totaling 3,380 ft^2. One was a pervious pavement installation totaling 165 ft^2.

LANDSCAPE LEVEL 2 SUMMARY

1 Landscape level two grant was awarded for a total of $10,000. This project was an aeration improvement at the Pines of North Oaks. Installed sensors or "smart controllers" complete with software allow the new system to adjust lawn watering according to the weather, providing greater efficiency and water savings - now that's smart watering!



RAINBARREL COST SHARE PROGRAM

The Rainbarrel Program reimburses residents 50% of the cost towards the purchase of up to 2 rainbarrels. Applicants are limited to $125 maximum reimbursement per rainbarrel. In promotion of the program

RAINBARREL SUMMARY

In 2017 VLAWMO awarded grants for *3* rainbarrels, for a total of $154.59.
A total of 83 rainbarrel grants have been awarded since the program began in 2007. Each time the barrels are filled, up to 4,400 gallons of water is available for reuse. If each rainbarrel gets filled 10 times throughout the year, that's 44,000 gallons! An additional 4 rainbarrels were awarded as prizes during 2016 public events (pictured left).

COMMUNITY BLUE GRANT PROGRAM

Community Blue is an education focused grant program for community groups within VLAWMO. It funds educational events and resources as they relate to water resources, and provides support in making existing stormwater, wetland, or watershed improvements into educational tools with public exposure. 1 Community Blue grant was completed in 2017 for the amount of $700 (page 14).

Community Blue

WHITE BEAR WATER SYMPOSIUM

In 2017 the Community Blue program funded an actor-educator presentation at the first annual White Bear Water Symposium. White Bear School District, being the recipients of the grant, contracted Climb Theater to provide the presentation on how to be a "water hero". The presentation covered local and global water issues, in a way that was easy for kids to grasp and apply to their lives.

The presentation was a part of a larger effort to bring students, families, and the public together with a focus on local water resources. Students presented educational videos and "enviro-scapes", which are mini watershed models that demonstrate the concept of stormwater runoff. The event also featured booths from different watershed districts, presentations from the experts, poly-bots (a mixture of robotics, water, and seed growing), as well as lunch.

If your community has an idea on how to harness education, demonstrations, the arts, or instruction in a way that relates to water stewardship, contact us to explore the possibilities of a Community Blue grant application.

Stakeholder Meetings

25 X 25 TOWNHALL

The 25 x 25 town hall was a state-wide initiative from Governor Dayton. The goal is to improve Minnesota's water quality by 25% by year 2025. To coordinate a local edition, VLAWMO partnered with Rice Creek Watershed District, Conservation Minnesota, and the City of White Bear Lake.

Each organization presented on their work, challenges, and future aspirations. Input was gathered in the form of public comments to be used for the state water quality improvement plan.

GOOSE LAKE & WILKINSON LAKE CHARETTE

Goose and Wilkinson lakes are water bodies that need water quality improvements, but also have multiple priorities and uses. Planning in these situations is nearly impossible, unless all parties are present and part of the plan. A Goose and Wilkinson planning charette took place in January, 2017.

Stakeholders include the North Oaks Corporation, MNDOT, The White Bear Ski Otters, the MN Pollution Control Agency, the City of White Bear Lake, the City of North Oaks, and Ramsey Conservation District. This work continues in 2018.

Outreach

ADOPT-A-DRAIN

The adopt-a-drain program is a convenient and practical way to make a positive impact on a nearby waterbody. Residents, community groups, or businesses commit to checking their stormdrain 3 times/ month, with a rate of cleaning that is up to the volunteer. Upon registration, an info-packet is sent to volunteers containing instructions and background information on why stormwater is an important issue. Data is kept throught the year and compiled in December to document the pounds of sand, grass clippings, leaves, and other debris that is spared from lakes and wetlands.

Each volunteer makes a major difference in this effort, raising awareness in their community and directly reducing algae-producing nutrients and sediments that clog up our lakes and wetlands. Visit our website at vlawmo.org/get-involved to learn more and sign-up to join the team!

RAINBARREL WINNERS

The tradition continues at VLAWMO's Spring and Summer events. Fair goers at MarketFest, Taste of Vadnais, the North Oaks Community Fair, and Vadnais Heights Farmer's Market had the opportunity to enter to win a free rainbarrel upon signing up to our seasonal email list. 5 rainbarrels were given away, allowing VLAWMO's audience to grow while capturing and re-using stormwater runoff at the same time. Our emails contain no spam - we promise!

PHENOLOGY IN NORTH OAKS

In July, 2017, VLAWMO teamed up with the North Oaks Home Owner's Association and the U of M's Backyard Phenology program to offer phenology training. Homeowners learned about how to observe seasonal changes in their yards, parks, and trails. Residents also learned how to participate in a picture post project between Deep and Pleasant Lakes.

This post allows volunteers to easily and consistently and regularly photograph the shoreline and nearby wetland. Photos are uploaded to the Picture Post website and will be a valuable tool for home owners, North Oaks, the Saint Paul Regoinal Water Service, and VLAWMO to better understand the subtle trends and changes that occur on the shoreline and in the water. Examples include tracking ice-out, algae blooms, erosion, and more .

MEDIA

Water resource topics can be complicated because there's always multiple interests involved. Videos are a helpful way to convey our message in an effective way that's also accessible to the public.

Videos produced in 2017 include:

- Tour the Watershed presentation
- Lambert Creek: Past & present
- Winter maintenance for clean water: parts 1 & 2

Blog found at VLAWMO.org

Follow our social media with the handle: "@VLAWMO"

Volunteer Activities

Volunteers bring VLAWMO's work into the community. Volunteers help with water sampling, booth staffing, community outreach, advising VLAWMO on public interest and priorities, and leading by example.

CITIZEN LAKE MONITORING PROGRAM (CLMP)

VLAWMO would like to thank the following volunteers for their role in the Citizen Lake Monitoring Program, collecting water samples bi-weekly from May through September. The volunteers for 2017 were: Jim Grisim (Birch Lake), Justine Rowe (East Vadnais Lake) and Shannon Stewart (Tamarack Lake).

WATERSHED ACTION VOLUNTEERS (WAV)

VLAWMO is grateful for the volunteers who have supported the Watershed Action Volunteers in 2017: Alina/Vadnais Heights Clinic nurses, St. Mary's of the Lake youth group, Erik Barsness, Bob Larsen, Diane Gorder, Grace Watkins, Micah Watkins, Connie Winterhalter, and Gina Schmidt.

2017 volunteer activities included:

- Staffing VLAWMO booths at community events: MarketFest, Taste of Vadnais (pictured left).
- Stormdrain stenciling and cleaning while promoting adopt-a-drain
- Raingarden maintenance
- Creating educational videos for decreasing home salt use
- Advising VLAWMO on public interest, priorities, and opportunities

Water Monitoring

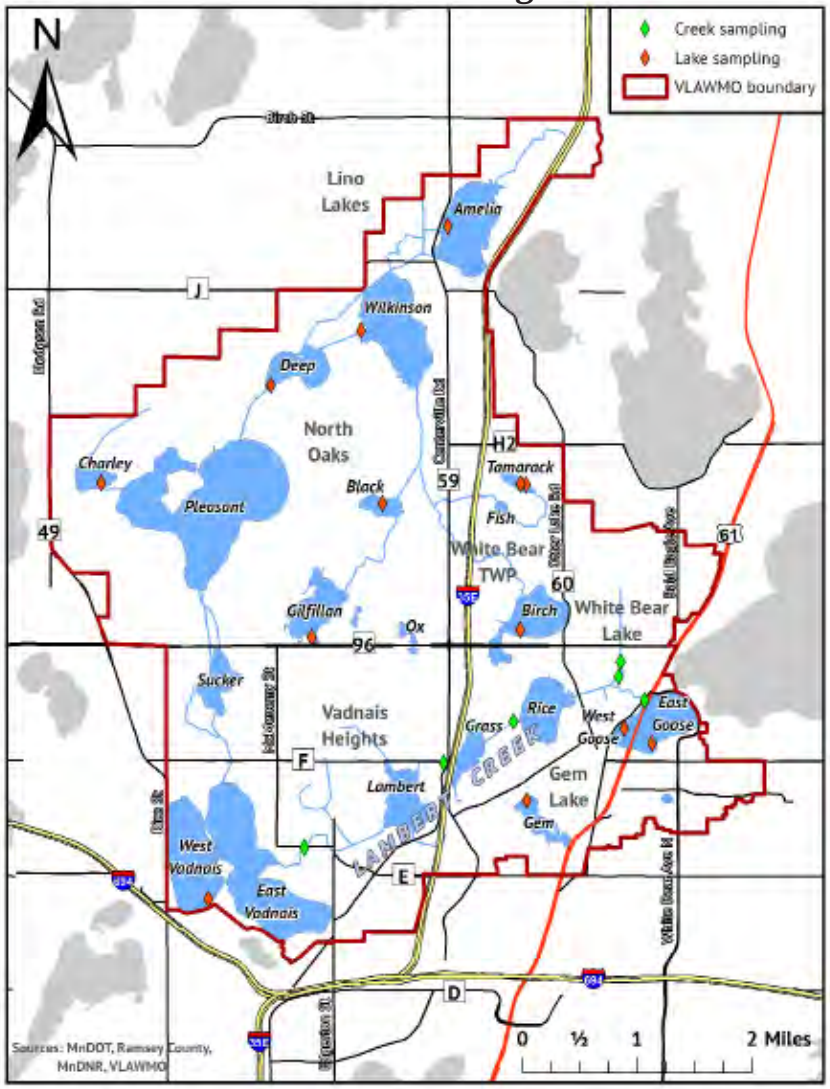
INTRODUCTION

VLAWMO's regular water quality monitoring program includes nutrient sampling on 6 Lambert Creek sites, and nutrient sampling on 12 of the Vadnais Lake Area Watershed lakes. Nutrients and pollutants sampled for data include: total phosphorus, chlorophyll-A, soluble-reactive phosphorus, iron, total nitrogen, nitrate, total suspended solids, and chloride. VLAWMO's specialty monitoring programs, such as E coli and winter chloride sampling, will continue. See the 2016 Annual Report Summary for a map of monitoring locations.

2016 was officially the wettest year on record in Minnesota. Part of VLAWMO's water monitoring includes rainfall measurements because rainfall and the timing of rainfall are factors that influence water quality. Typically, more precipitation implies more water runoff, which carries more contaminants from the land surface into water bodies.

Lakes are summarized with a grading system called the Trophic State Index (TSI). This system was developed in the 1970's to calculate average phosphorus, chlorophyll-A, and Secchi disk readings, and generate a summarizing number. Letter grades are developed from the Metropolitan Council matrix for annual averages.

VLAWMO Monitoring Locations



Monitoring results are used to guide local water policies and management, and to help prioritize and locate future water quality projects such as raingardens, underground retention basins, and shoreline restorations. The full 2016 monitoring report is available at: **vlawmo.org/resources**

WATER MONITORING SUMMARY

» **Gem Lake:** Gem Lake's chemistry has improved over the last 5 years which coincides with the work that was done on Highway 61 and the reconstructed grass swales flowing into the lake. Water quality parameters are below state standards. The MNPCA is currently looking into delisting Gem Lake from the impaired list.

» **Lake Gilfillan:** Gilfillan is also on the State Impaired List. Since the augmentation system went in (2012) to raise the water level, the water quality has improved (most likely due to dilution). We have been told that no augmentation has occurred the last five years so it has been maintaining its water level on its own. Nutrient levels look to be slightly rising over the last five years near state standards.

» **East Goose & West Goose**: Booth Goose Lakes are still very high nutrient levels. Bullhead removal did not make the water quality impact we hoped, but it did reduce nutrient levels a little, and a 2017 fish survey indicated the bullhead population is still under control. Sediment cores and enhanced sampling were completed in 2017 for possible future alum treatment.

» **Wilkinson:** Wilkinson's phosphorus is well over state standards but Chlorophyll A is well below standard. Wilkinson acts more like a wetland and therefore what goes on in the watershed has a greater effect on the chemistry. A special study was done on the wetland complex connecting Amelia to Wilkinson and results indicate nutrient loading from that system

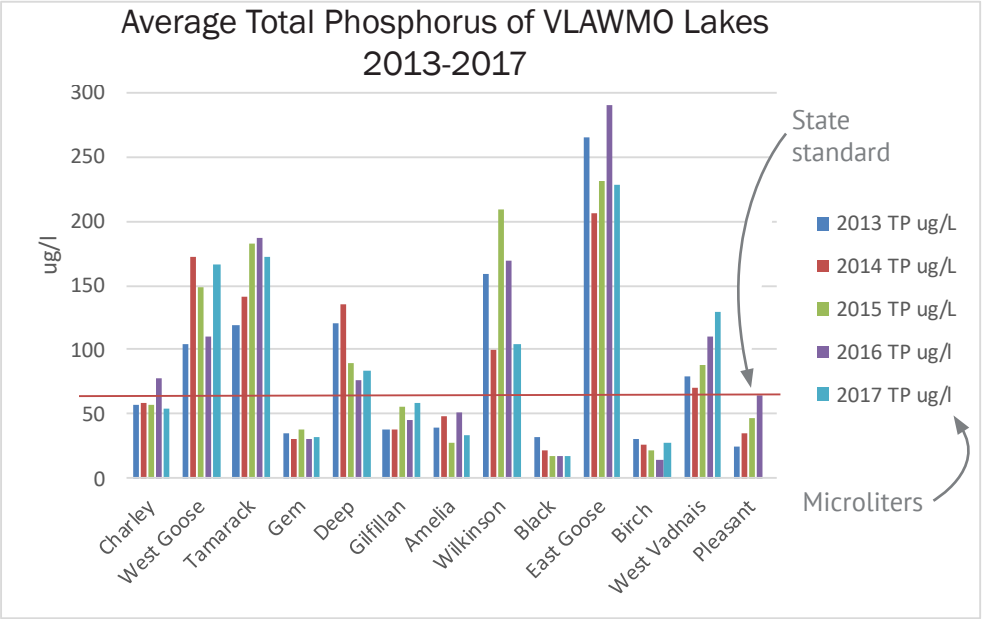
» **Tamarack Lake:** Data for nutrient levels are still high. The floating wetland has not shown any effect as of yet. This is the fifth full year of monitoring the island. Samples were taken right next to the island and compared it to samples taken off the dock. There is no difference between the two spots. So far the water chemistry is similar to what was seen in the past. Monitoring will continue. The floating island currently provides good habitat and educational opportunities and will hopefully help improve water quality over the next few years.

» **Automated sampler:** This was installed at 4th and Otter Lake Rd. This area drains stormwater into Birch Lake. Results showed very high nutrient levels during storms.

» **Chloride Levels:** Overall were similar to last year. We have been sampling for 8 years and there have been no significant changes within the lakes. Black Lake has the lowest levels. Birch Lake and East Goose are the highest which makes sense due to the proximity to major roads. All of the lakes are below the current State standards. The creek samples are difficult to catch because it has to be done when water is flowing. Year round chloride sampling on Birch Lake was done for the second year and levels have stayed steady

» **Wet weather E. coli study:** showed that the flow from storm events in the creek has a correlation to the amount of E. coli in the samples. Stormwater runoff seems to be the source of high E. coli levels in the Whitaker and Goose subwatersheds, mainly from the runoff carrying high levels of e.coli off of terrestrial soils and road gutters.

The complete 2017 Monitoring Report and a summary can be found at VLAWMO.org/resources/reports

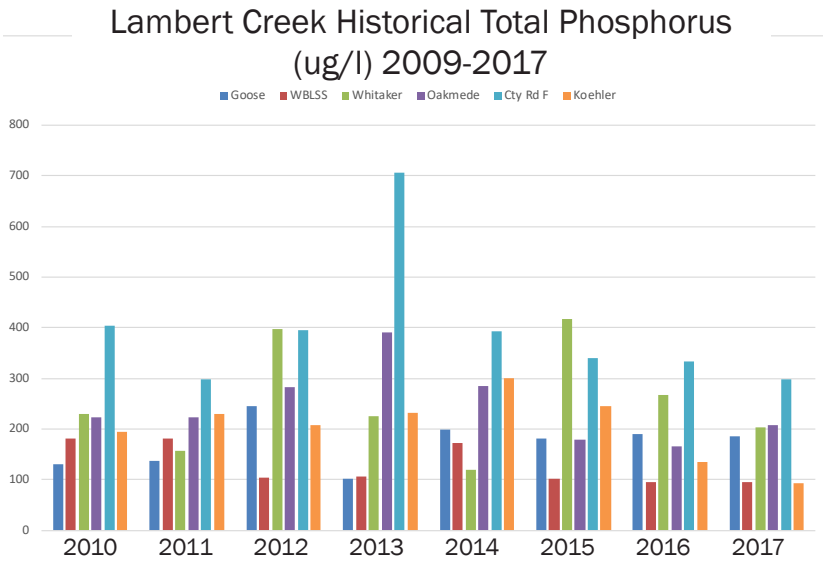


MONITORING SUMMARY - CONTINUED

E. COLI BACTERIA SOURCING PROJECT

Lambert Creek is currently on the State Impaired Waters 303(d) list for high levels of *E. coli* bacteria. The creek was monitored for *E. coli* at 5 sub-watershed sampling locations weekly during the summer from 2008-2012. VLAWMO has been working with a consultant to perform target monitoring and molecular sourcing to discover the source of the *E. coli* impairment (whether the bacteria comes from human, animal or avian sources). The recently approved Total Maximum Daily Load study (TMDL) suggests a 37%-61% reduction in current bacteria loads to the creek.

At the completion of this project we hope to have an understanding of exactly where the *E. coli* is coming from at these locations on the creek and also determine proper best management practices (BMP's) to reduce the amount of bacteria in the creek. 2014 source monitoring focused on the County Road F and Oakmede sites, while 2015 sampling targeted the Whitaker and Goose drainage sites. The 2016 focus was on wet weather sourcing at County Road F and Oakmede sites. The 2017 focus was on wet weather sourcing at Whitaker and Goose sites.



THE E. COLI SOURCING PROCESS

VLAWMO is working with a consultant to perform target monitoring to clarify geographic source of E. coli. Further, DNA analysis is uncovering the host animal source of the E coli impairment (whether the bacteria comes from human, avian, canine, or other animal sources. 3 rain events were targeted for sampling, each containing hundreds of samples taken right before and during rain events.

E.COLI SOURCING RESULTS AND REPORT

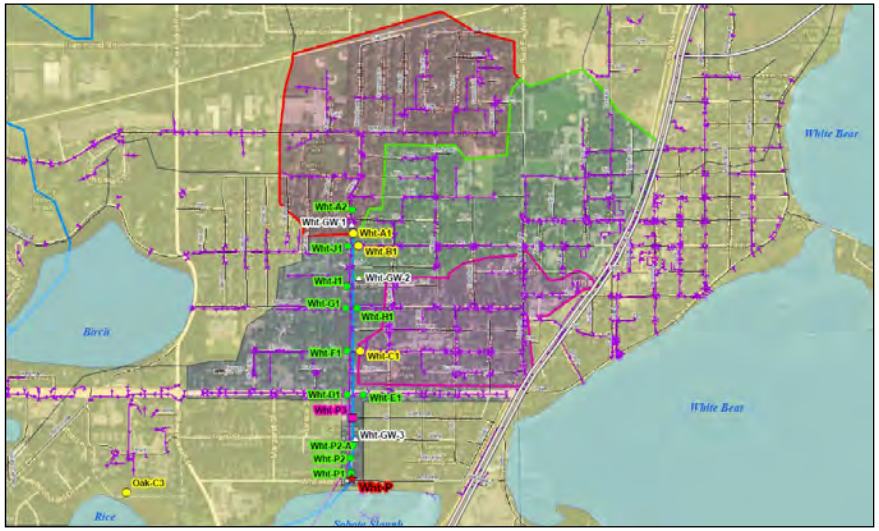
In 2016, VLAWMO completed the County Road F and Oakmede sub-drainages this summer for wet conditions. *E. coli* concentrations were monitored at primary sites as well as tested for the human, canine, and avian genetic markers along with sediment studies in the sub-drainages.

The results from County Road F and Oakmede wet weather E. coli concentrations showed above state chronic standard levels of *E. coli* (more than 126cfu/100ml), indicating the impairment is wet weather related at these sites. Both sites were also negative for the human genetic marker suggesting there are no septic or sanitary sewer leaks contaminating ground water in these areas leeching into the creek. Both sites were positive for the avian and canine markers, suggesting that waterfowl and dog waste have an influence on the bacteria levels in the creek.

The four year E. coli soucing project final report will be available in Summer, 2018.

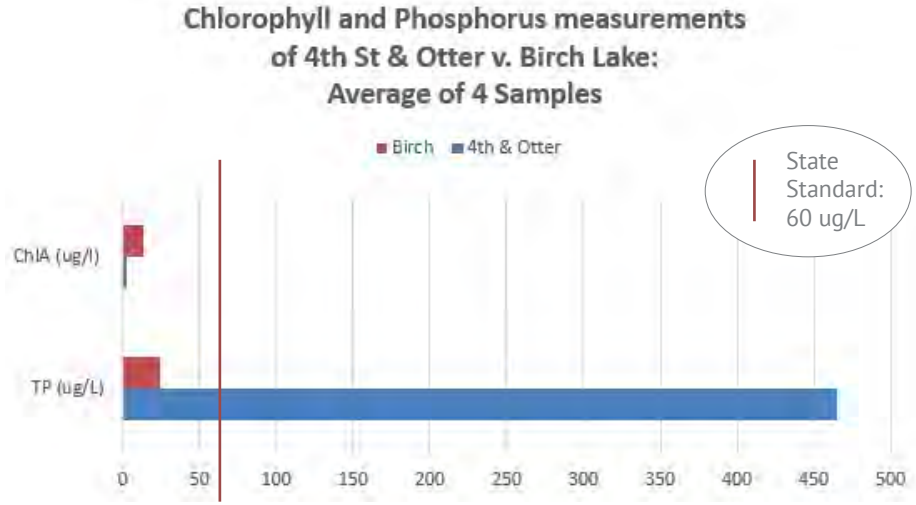
The above map displays Goose Lake sampling locations. Stormwater runnof was monitored during rain events to assess sources of contaminants and nutrients flowing into the lake.

MONITORING SUMMARY - CONTINUED



The above map displays sampling location that drain into Whitaker Pond and Lambert Creek.

Automated sampler: VLAWMO's automated sampler is used to take stormwater samples from rainstorm events to measure increases in nutrient loading that are introduced to our water bodies. The sampler is used in areas where stormwater-enduced nutrient loading is suspected to be an issue. The graph below illustrates the nutrient load to Birch Lake.



Review of 2017 Work Plan

2017 was the first year of action for the 2017-2026 comprehensive water plan. It was adopted by the Board in October, 2016 and hit the ground running ever since. The new Education and Outreach Plan and the VLAWMO water policy update were also adopted at the same time. Stakeholder input went into all three planning and policy documents, which will continue to guide VLAWMO's work for years to come (see page 8). Another major project was the Sucker Channel restoration, which required partnerships with Ramsey County Parks and the Saint Paul Regional Water Services (page 9).

It was a big year for innovation. The long-awaited Whitaker Treatment Wetlands system was installed in the Fall, supported by a grant from the Legislative-Citizen Commision on Minnesota Resources (LCCMR). The results of this study and stormwater treatment method may bring insights in stormwater management across the country. We're thankful for White Bear Township's support in this project!

For the first time, our cost-share program depleted its funding before the year's half-way mark, due to heavy demand in the landscape level 1 program. The Community Blue Grant Program kept active with an educational grant for the public in white Bear Lake. The monitoring program continued lake and stream monitoring, compiling data for VLAWMO's annual monitoring report (available on vlawmo.org).

Review of 2017 Work Plan

Acronyms:

BOD: Board of Directors
BMP: Best Management Practice (pertaining to stormwater treatment)
RFP: Request for Proposal
TEC: Technical Commission

CAPITAL IMPROVEMENT PROJECTS - 2017

Project Name	Description	Goal: Going into 2017	Goal: 2017 Result
Sucker Lake Channel Restoration	This project is a joint effort in partnership with Ramsey County Parks, Ramsey Conservation District, and the St. Paul Regional Water Service. When completed it will restore approximately 700 linear feet of shoreline that has eroded. Includes fishing access locations to support the current use of the site.	Finalize designs, secure partner agreements, go out for bid Summer, 2017.	Agreements secured, designs finalized, bid complete. Installation complete except for planting, to be finished Spring, 2018.
Whitaker Treatment Wetlands	A stormwater treatment project partnering with the U of MN with funding through LCCMR grant funding. Stormwater from Whitaker Pond is routed to wetland treatment cells then infiltrated into shallow groundwater. The study will determine which of three sorption materials is most effective at filtering pollutants, contaminants, and bacteria.	Finalize design and cost estimates. Release project for bid. Start installation and preliminary sample collection.	Bid complete, design finalized, installation complete except planting and preliminary sample collection, to be completed Spring, 2018.
Lambert Creek: Lower Kohler channel restoration	This project will restore approximately 200 ft. of streambank downstream of the Kohler flume. Engineered armoring will be part of first section below the flume. Native vegetation will planted to help stabilize the banks. Partner with City of Vadnais Heights on downstream restoration.	Installation complete by Spring of 2017.	Project complete
Goose & Wilkinson Lakes: Load assessment for project development	VLAWMO will work with consultants to assess all data and information collected on these water bodies, engage with stakeholders (see page 14), and determine the next best steps for nutrient reduction.	Determine next steps to reduce nutrient levels. Begin development plans for 2018 installations. Assist MS4's in achieving their WLA's.	Next steps pending
Birch Lake: 4th and Otter Road Project Development	VLAWMO to work with a consultant to assess the options for BMPs at the 4th and Otter Lake Rd site. Conceptual designs of best possible projects will be completed and VLAWMO will work with its partners to finalize design and secure funding.	Capture stormwater from residential area and reduce incoming nutrients. Secure funding.	Funding secured through BWSR (Board of Water and Soil Resources) grant.

GRANT PROGRAMS

CORE ACTIVITY #	Project Name	Description	Goal: Going into 2017	Goal: 2017 Result
3.4	**Landscape Level 1**	Establish relationships and provide grants to property owners within the watershed to install water quality enhancement projects.	Install at least 10 projects Achieve .25 lbs of phosphorus/year removed from local waters.	Complete
3.4	**Landscape Level 2**	Landscape Level 2 Cost Share Program is aimed at assisting landowners with implementing larger BMP projects within the watershed. Preference for projects that have high visibility, educational value and/or local citizen support.	Install at least 1 project. Achieve .25 lbs of phosphorus/year removed from local waters.	Complete
3.3	**Community Blue**	A communication and outreach grant program to provide money for projects big and small that otherwise might not qualify for other grant awards. Projects must provide education and outreach benefits that directly relate to water quality.	Initiate at least 1 approved grant that has a tangible connection to water resources education. Receive 2 grant applications.	1 grant complete. Recieved 2 grant applications.

PUBLIC EDUCATION AND OUTREACH

CORE ACTIVITY #	Project Name	Description	Goals: Going into 2017	Goals: 2017 Result
3.3	**Watershed Action Volunteers (WAV)**	WAV is a group of volunteer residents that assist with idea development and implementation of outreach opportunities and projects. A new stormdrain stenciling program will allow volunteer groups such as scouts and youth groups to protect our water through stenciling service projects. A new "Adopt-a-Drain" program educates residents and businesses the importance of adopting a stormdrain. WAV also strives to encourage awareness and interaction with local water resources using phenology and basic environmental monitoring.	At least 2 volunteers will help staff community booths more than once. Hold at least 5 WAV meetings. Host at least 3 stenciling service projects, adopt 12 stormdrains, install 1 picture post. Complete at least 1 educational video related to water resources.	1 volunteer helped at booth. 3 WAV meetings held. 3 stenciling projects. 10 drains adopted. 1 picture post in progress. 1 educational video complete.
3.3	**Workshops**	Hold raingarden workshops for residents covering watershed processes, raingarden function, and installation how-to. Introduce VLAWMO's cost-share program to participants. In addition to a raingarden workshop, add a native plant workshop based on a survey of past workshop attendees.	Achieve at least 25 raingarden workshop participants. At least 3 residents who attend a raingarden or native plant workshop will pursue a cost-share grant.	44 workshop participants. ____ residents from workshop pursued a grant.

PUBLIC EDUCATION AND OUTREACH

CORE ACTIVITY #	Project Name	Description	Goals: Going into 2017	Goals: 2017 Result
3.3	**Community Events**	Staff a VLAWMO booth at various community events. Develop information and engagement components for community events. A rainbarrel giveaway contest is used to attract event goers, and number of entries signify how many people stopped by the VLAWMO booth. Prizes such as tote bags, boating kits, and craft soda will be provided for free to guests who engage the booth.	Attend at least 5 community events annually. Receive at least 200 entries total in rainbarrel giveaways. Giveaway at least 100 prizes to booth guests.	7 events attended. 93 rainbarrel entries recieved. Prize giveaway # no longer relevant - undocumented.
3.3	**Commun-ications**	Create and update material and publications for social media, website, seasonal Enews, and local publications. Make all sections of the website active. Create and maintain communications to promote public awareness for responsible use of our water resources.	Appear in at least 3 news articles in local papers. Appear in at least 4 City/Township newsletters with opportunities and education. Reach 200 views on website.	3 City/township newsletters. 43 website views.
3.3	**K-12**	Develop youth involvement opportunities and programs that improve/ benefit VLAWMO's goals and activities: Macroinvertabrates field days, STEM lessons. Reach multiple age demographics through school involvement. Assist schools in establishing and maintaining stormwater best management practices (BMP's).	Reach 10% of the school age population in 2017 through education and BMP maintenance. At least 5 adults will contact VLAWMO about cost-share grants as a result of hearing about their student's school activities.	3% of school age population reached. 0 adults contacting VLAWMO - school reach still developing.
3.3	**Citizen Science**	Picture posts will be a new initiative for VLAWMO to explore phenology (ice-out, algae blooms) and AIS monitoring, with support from volunteers. Citizens assist lake monitoring each year through the Citizen Lake Monitoring Program (CLMP).	Install at least 1 picture post in the water for phenology monitoring (AIS, ice-out, foliage, etc.) and display data on VLAWMO website. Volunteers will collect samples for 3 lakes for the 2017 lake monitoring season.	Picture post in progress. 3 lakes for collected by volunteers for monitoring season.

PUBLIC EDUCATION AND OUTREACH - 2018 WORK PLAN

CORE ACTIVITY #	Project Name	Description	Goals: Going into 2017	Goals: 2017 Results
3.3	**Partnerships**	Continue support of existing partners and partner activities: NEMO, Watershed partners, local businesses, etc. Provide MS4 education summary for SWPPP; Improve stormwater guidance and information.	Attend meetings with at least 4 partners annually, totaling at least 10 meetings.	6 partnerships with a total of 16 meetings.

MONITORING PROGRAM

SUB-WATERSHED	Project Name	Description	Goals: Going into 2017	Goals: 2017 Result
Lambert Creek	***E. coli* Sourcing**	Continue wet weather monitoring of the Goose and Whitaker sites (wet weather= during rainfall event).	Address bacteria impairment on Lambert creek through source and transport mechanism identification.	Project complete, final report of last four years in progress.
Lambert Creek	**Lambert Creek monitoring program**	Monitor basic phosphorus, nitrogen, Chlorophyll A, chloride, and sediment levels at 6 sites along with pH, conductivity and DO at the 3 flumes. Maintain automated flow meter and precipitation gauge at Whitaker.	Document and evaluate the general health of the creek.	Complete
Multiple	**Lake Level Program**	Gilfillan, Birch, Gem & Goose Lake gauges are calibrated in the spring and read up to 11 times during the summer.	Monitor lake levels on 4 targeted lakes in the watershed to track short & long term trends.	Complete
Multiple	**Lake Surveys**	VLAWMO will work with Ramsey Conservation District to perform bathymetry and vegetation surveys on Wilkinson and Charley Lakes and with Blue Water Science to perform fish surveys on East & West Goose Lakes and Wilkinson Lake. These surveys assist in determining future management of the lakes.	Complete all identified surveys.	Surveys complete
Multiple	**Stormwater Monitoring**	Automated and manual sampling, including flow measurements on targeted streams into Birch Lake.	Document watershed nutrient loading into Birch Lake to assist selection of implementation strategies.	Samples collected at 4th and Otter & Wilkinson drainage

MONITORING PROGRAM

Project Name	Description	Goals: Going into 2017	Goals: 2017 Results
Lake Monitoring Program	Monitor chemistry of 12 of VLAWMO's lakes through nutrient and sediment sampling, along with pH, conductivity, and dissolved oxygen (DO) measurements. Continue integration of automated sampling.	Keep water quality record of watershed's lakes. Utilize water quality data for future projects and CIPs.	Complete
Chloride Measurements	Sample lakes and Lambert Creek. Partner with Birch Lake Improvement District (BLID) for summer monitoring of Birch Lake.	Check monthly measurement.	Complete

ADMINISTRATION & REGULATION - 2017 WORK PLAN

Project Name	Description	Goals: Going into 2017	Goals: 2017 Results
Budget & Stormwater Utility	Storm sewer rates are based on the adopted budget and certified to the counties for collection.	Provide necessary financing for watershed.	Complete
Wetland Conservation Act (WCA)	Complete boundary and type & other determinations in consultation with the TEP. Respond to WCA questions.	Administer WCA Rules with VLAWMO as LGU.	All determinations complete for 2017.

SUSTAINABLE LAKE MANAGEMENT PLAN (SLMP) - 2017 WORK PLAN

Project Name	Description	Goals: Going into 2017	Goals: 2017 Results
Charley Lake SLMP	A report covering the subwatershed of Charley Lake on its health and trends, with lake management plans to sustain its health.	Collect background data, share with lake stakeholders to develop a prioritized list of management strategies.	Complete

LOOKING AHEAD:
2018 goals, plans, and projections

IN THIS SECTION

VLAWMO CORE ACTIVITIES

WATER PLAN STRUCTURE

2017 WORK PLAN PROJECTION

VLAWMO will put the 2017-2026 comprehensive water plan into action. The water plan structure (above) informs issues that will be addressed, goals that VLAWMO will set, and the strategies employed to reach those goals. See the 2017-2026 comprehensive water plan on our website under About > Why Water Matters for a more in-depth look at these plan components.

The 2017 work plan on the following pages is color coded according to the VLAWMO core activities diagram above. Each core activity also has a number, conveyed in the 2017-2026 comprehensive water plan.

ACRONYMS:

WLA: Waste Load Allocation
DNR: Department of Natural Resources
MS4: Municipal Seperate Storm Sewer System
NEMO: Northland
SWPPP: Storm Water Polluiton Prevention Program
STEM: Science, Technology, Engineering, Mathematics
BMP's: Best Management Practices
CIP's: Capital Improvement Project
LGU: Local Governing Unit
LCCMR: Legislative Citizen Commision on Minnesota Resources
AIS: Aquatic Invasive Species
TMDL: Total Maximum Daily Load
TEP: Technical Evaluation Panel

CAPITAL IMPROVEMENT PROJECTS - 2018 WORK PLAN

SUB-WATERSHED

	Project Name	Description	Goals	Timeline
Sucker-Vadnais	**Sucker Lake Channel Restoration**	This project is a joint effort in partnership with Ramsey County Parks, Ramsey Conservation District, and the St. Paul Regional Water Service. When completed it will restore approximately 700 linear feet of shoreline that has eroded. Includes fishing access locations to support the current use of the site.	Complete final planting and install educational signs.	Finished by June 2018
Lambert Creek	**Whitaker Treatment Wetlands**	A stormwater treatment project partnering with the U of MN with funding through LCCMR grant funding. Stormwater from Whitaker Pond will be routed to underground wetland treatment cells and then infiltrated into shallow groundwater. Treatment cells contain different sorption material - the study will determine which material is most effective at filtering pollutants. VLAWMO will monitor for nutrients and bacteria, while the U of MN will monitor for pathogens.	Finalize installation and monitoring plan. Begin year one of two of monitoring.	April 2018 May 2018
Lambert Creek	**Goose & Wilkinson Lakes Project Development**	VLAWMO worked with consultants in 2018 to assess all data and information collected on these waterbodies, engage with stakeholders (see page 14), and determine the next best steps for nutrient reduction. Out of the potential projects that were discovered, work is now directed to selecting a project and its methods. Options include spent lime or alum treatment.	Continue assessment for BMP"s, research grant opportunities. Define BMP options.	End of 2018
Lambert Creek	**Birch Lake: 4th & Otter Lake Road Project Development**	VLAWMO will work with a consultant to assess the options for BMPs at the 4th and Otter Lake Rd site. Conceptual designs of best possible projects will be completed and VLAWMO will work with its partners to finalize design and secure funding for 2018 installation.	Capture stormwater from residential area and reduce nutrients prior to reaching Birch Lake.	Installation by winter 2018

GRANT PROGRAMS - 2018 WORK PLAN

CORE ACTIVITY #	Project Name	Description	Goals	Timeline
3.4	**Landscape Level 1**	Establish relationships and provide grants to property owners within the watershed to install water quality enhancement projects.	Install at least 10 projects Achieve .25 lbs of phosphorus/year removed from local waters.	Ongoing
3.4	**Landscape Level 2**	Landscape Level 2 Cost Share Program is aimed at assisting landowners with implementing larger BMP projects within the watershed. Preference for projects that have high visibility, educational value and/or local citizen support.	Install at least 1 project. Achieve .25 lbs of phosphorus/year removed from local waters.	Ongoing
3.3	**Community Blue**	A communication and outreach grant program to provide money for projects big and small that otherwise might not qualify for other grant awards. Projects must provide education and outreach benefits that directly relate to water quality.	Initiate at least 1 approved grant that has a tangible connection to water resources education.	Ongoing

PUBLIC EDUCATION AND OUTREACH - 2018 WORK PLAN

CORE ACTIVITY #	Project Name	Description	Goals	Timeline
3.3	**Watershed Action Volunteers (WAV)**	WAV is a group of volunteer residents that assist with idea development and implementation of outreach opportunities and projects. A new stormdrain stenciling program will allow volunteer groups such as scouts and youth groups to protect our water through stenciling service projects. A new "Adopt-a-Drain" program educates residents and businesses the importance of adopting a stormdrain. WAV also strives to encourage awareness and interaction with local water resources using phenology and basic environmental monitoring.	Volunteer participation to grow 10% WAV emai list to reach 100 readers Host at least 3 stenciling service projects, adopt 12 stormdrains, install 1 picture post. Establish a volunteer program with 2 dedicated volunteers with specific role descriptions.	Ongoing
3.3	**Workshops**	Hold raingarden workshops for residents covering watershed processes, raingarden function, and installation how-to. Introduce VLAWMO's cost-share program to participants. In addition to a raingarden workshop, add a native plant workshop based on a survey of past workshop attendees.	Achieve at least 25 raingarden workshop participants. At least 3 residents who attend a raingarden or native plant workshop will pursue a cost-share grant.	Workshops: April-May Cost-share: ongoing

PUBLIC EDUCATION AND OUTREACH - 2018 WORK PLAN

CORE ACTIVITY #	Project Name	Description	Goals	Timeline
3.3	**Community Events**	Staff a VLAWMO booth at various community events. Develop information and engagement components for community events. A rainbarrel giveaway contest is used to attract event goers, and number of entries signify how many people stopped by the VLAWMO booth. Prizes such as tote bags, boating kits, and craft soda will be provided for free to guests who engage the booth.	Attend at least 5 community events annually. Receive 50 entries total in rainbarrel giveaways. Hold a press conference/public opening for Whitaker Treatment Wetlands	April - October
3.3	**Commun-ications**	Create and update material and publications for social media, website, seasonal Enews, and local publications. Make all sections of the website active. Create and maintain communications to promote public awareness for responsible use of our water resources.	Appear in at least 6 news articles in local papers. Appear in at least 3 City/Township newsletters with opportunities and education. Reach 200 views on website.	Ongoing
3.3	**K-12**	Develop youth involvement opportunities and programs that improve/benefit VLAWMO's goals and activities: Macroinvertabrates field days, STEM lessons. Reach multiple age demographics through school involvement. Assist schools in establishing and maintaining stormwater best management practices (BMP's).	Reach 10% of the school age population in 2018 through education and BMP maintenance. At least 5 adults will contact VLAWMO about cost-share grants as a result of hearing about their student's school activities.	Ongoing
3.3	**Citizen Science**	Picture posts will be a new initiative for VLAWMO to explore phenology (ice-out, algae blooms) and AIS monitoring, with support from volunteers. Citizens assist lake monitoring each year through the Citizen Lake Monitoring Program (CLMP).	Install at least 1 picture post in the watershed for phenology monitoring (AIS, ice-out, foliage, etc.) each with a team of dedicated volunteers (5-12) and display data on VLAWMO website. Volunteers will collect samples for 3 lakes for the 2018 lake monitoring season.	May-November

PUBLIC EDUCATION AND OUTREACH - 2018 WORK PLAN

	Project Name	Description	Goals	Timeline
3.3	**Partnerships**	Continue support of existing partners and partner activities: NEMO, Watershed partners, local businesses, etc. Provide MS4 education summary for SWPPP; Improve stormwater guidance and information.	Form one new partnership and sustain previous partnerships with meeting attendance and project development.	Ongoing

MONITORING PROGRAM - 2018 WORK PLAN

SUB-WATERSHED	Project Name	Description	Goals	Timeline
Lambert Creek	***E. coli* Sourcing**	Dry and wet weather monitoring of the Goose, Oakmede, County Road F, and Whitaker sites (wet weather= during rainfall event). Four-year summary is currently in the works, presentation to be completed in 2018.	Complete final report of four-year project, present report to stakeholders.	Fall 2018
Lambert Creek	**Lambert Creek monitoring program**	Monitor basic phosphorus, nitrogen, Chlorophyll A, chloride, and sediment levels at 6 sites along with pH, conductivity and DO at the 3 flumes. Maintain automated flow meter and precipitation gauge at Whitaker.	Document and evaluate the general health of the creek.	April - September
Multiple	**Lake Level Program**	Gilfillan, Birch, Gem & Goose Lake gauges are calibrated in the spring and read up to 11 times during the summer.	Monitor lake levels on 4 targeted lakes in the watershed to track short & long term trends.	May - September
Multiple	**Lake Surveys**	VLAWMO will work with Ramsey Conservation District to perform bathymetry and vegetation surveys on Wilkinson and Charley Lakes and with Blue Water Science to perform fish surveys on East & West Goose Lakes and Wilkinson Lake. These surveys assist in determining future management of the lakes.	Complete all identified surveys.	Surveys will be completed by Summer 2018 and reports on findings submitted by Fall 2018.
Multiple	**Stormwater Monitoring**	Automated and manual sampling, including flow measurements on targeted streams into Birch Lake and Wilkinson Lake.	Document watershed nutrient loading into Birch and Wilkinson to assist selection of implementation strategies.	May - September

MONITORING PROGRAM - 2018 WORK PLAN

SUB-WATERSHED

Project Name	Description	Goals	Timeline
Lake Monitoring Program (Multiple)	Monitor chemistry of 12 of VLAWMO's lakes through nutrient and sediment sampling, along with pH, conductivity, and dissolved oxygen (DO) measurements. Continue integration of automated sampling.	Keep water quality record of watershed's lakes. Utilize water quality data for future projects and CIPs.	March - September
Chloride Measurements (Birch)	Sample lakes and Lambert Creek. Partner with Birch Lake Improvement District (BLID) for summer monitoring of Birch Lake.	Check monthly measurement.	Jan. - September

ADMINISTRATION & REGULATION - 2018 WORK PLAN

CORE ACTIVITY #

#	Project Name	Description	Goals	Timeline
3.1	**Budget & Stormwater Utility**	Storm sewer rates are based on the adopted budget and certified to the counties for collection.	Provide necessary financing for watershed.	April - October
3.5	**Wetland Conservation Act (WCA)**	Complete boundary and type & other determinations in consultation with the TEP. Respond to WCA questions.	Administer WCA Rules with VLAWMO as LGU.	Ongoing

SUSTAINABLE LAKE MANAGEMENT PLAN (SLMP) - 2018 WORK PLAN

#	Project Name	Description	Goals	Timeline
3.2	**Deep Lake SLMP**	A report covering the subwatershed of Deep Lake on its health and trends, with lake management plans to sustain its health.	» Collect background data, share with lake stakeholders to develop a prioritized list of management strategies.	2018

LOGISTICS:
Core operations

IN THIS SECTION

Wetland Conservation Act (WCA)

VLAWMO administers the Wetland Conservation Act with review. There were 21 landowner contacts in which wetland related technical assistance was provided during 2017. There were 4 potential WCA violation sites investigated, all 4 were resolved.

WCA SUMMARY

Type of Application	Approved	Denied	Withdrawn
Boundary and Type	4	0	0
No-Loss	2	1	0
Exemption	0	0	0
Sequencing	0	0	0
Replacement Plan	0	0	0

Local Plan Adoption

Adoption of Local Plans: Gem Lake, Lino Lakes, North Oaks, White Bear Lake, White Bear Township, Vadnais Heights are all complete and have been adopted.

Member Community	Last Local Water Plan Update Year
Gem Lake	2010
Lino Lakes	2011
North Oaks	2009
Vadnais Heights	2010
White Bear Lake	2007
White Bear Township	2010

Partnerships

One of VLAWMO's greatest successes is working together with partners to use resources wisely and maximize effectiveness. Workshops, meetings, and webinars allow VLAWMO to be on the cutting edge of the water resources in the Northeast Metro.

- » Metro Watershed Partners provides monthly meetings to keep updated with other watersheds, receive feedback and strategy assistance, as well as hear from guest speakers to enhance education and outreach efforts.
- » Ramsey County GIS User Group focuses on sharing, developing, and promoting GIS data and technology. As a member agency, VLAWMO contributes and receives data, and has a voting hand in the content the Group funds and develops. Regular RCGISUG membership fees go to producing aerial images of Ramsey County and other GIS data.
- » Ramsey Conservation District holds informative forums on topics of general concern (AIS, State of the Waters, groundwater). They also provide technical assistance for lake studies and BMP design. Lastly, they provide financial partnership in grant funding of projects.
- » Many other organizations and groups (p. 35) help carry out VLAWMO's mission through events, outreach strategies, and project planning.

Biennial Solicitation for Proposals

Proposals for professional auditing services and legal services will be solicited for in 2018.

2017 Partners

- **Metro Watershed Partners**
- **Ramsey County GIS User Group**
- **Ramsey Conservation District**
- **Vadnais Heights Economic Development Corp.**
- **Birch Lake Improvement District**
- **North Oaks Home Owners Association**
- **Tamarack Nature Center**
- **Minnesota Pollution Control Agency**
- **MN Erosion Control Association**
- **Conservation Minnesota**
- **H_2O for Life**
- **White Bear Lake School District, White Bear Preserve Townhomes, and Cities in VLAWMO.**

Parntership Highlights

In a field of complex land-use decisions with many interests verging together, partnerships are critical to success. We're grateful for the support and partnerships we built in 2017.

Ramsery Conservation District (RCD) worked with VLAWMO on the lower Kohler streambank resoration that was finished in 2017. They brought technical assistance and grant funding to the project. Staff from RCD also completed vegetation and bathymetric studies on Chrlie and Wilkinson lakes in North Oaks.

Our Cities and the Township are always partners on projects within their communities. In 2017 White Bear Lake has partnered on the Birch Lake effort that secured State funding for stormwater runoff improvments at the intersection of 4th and Otter. White Bear Lake also supported and assisted our effort to study Goose Lake in the pursuit of identifying cost-effective ways to address the lake (VLAWMO's most impaired lake). White Bear Township has been a great partner in the creation of the Whitaker Treatment Wetlands, located at the start of Lambert Creek in Columbia Park.

Education and Outreach efforts have been expanded through valuable connections to H_2O for Life and the Vadnais Heights Economic Development Corporation (VHDEC). New opportunities with school and business outreach are now possible for 2018.

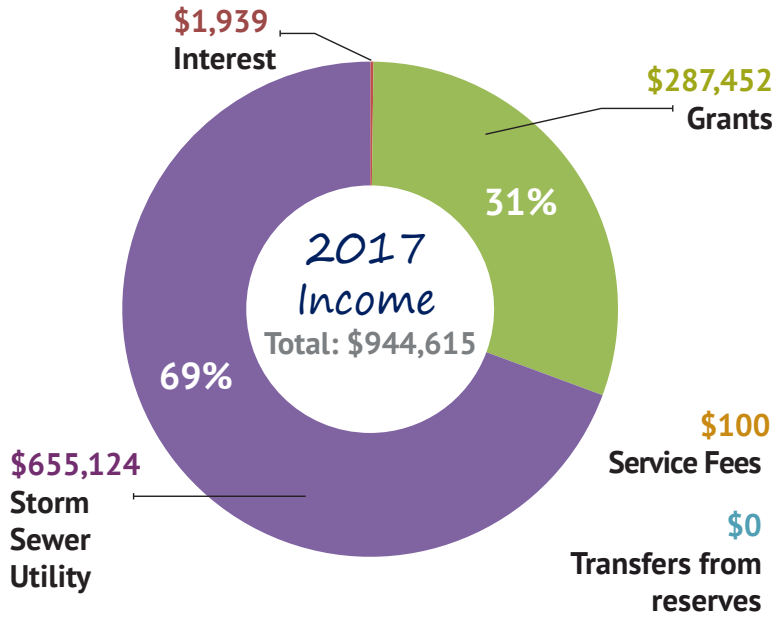
The cost-share and Landscape 1 & 2 programs rmain popular as we partner with homeowners and businesses throughout the watershed.

DOLLARS AND CENTS:
Financial statement and budget

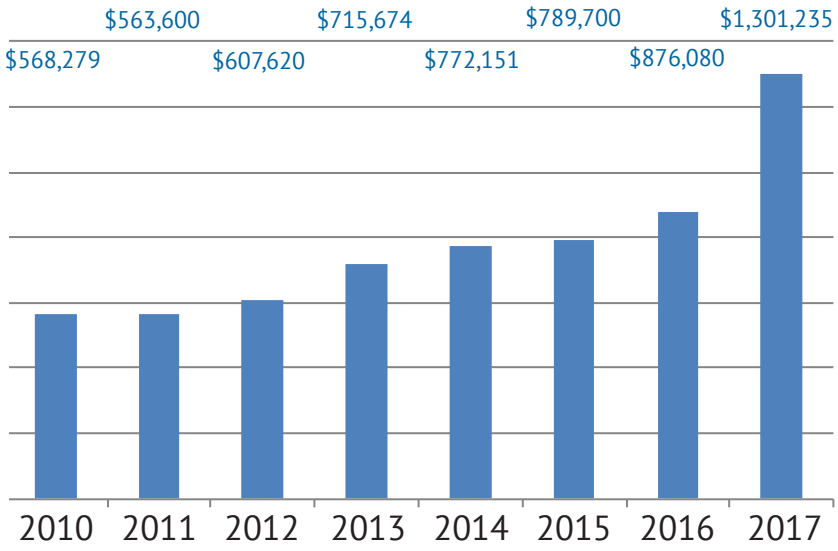
IN THIS SECTION

Finance and Budget

The 2017 budget was established by the Board of Directors in June 2016 with carry over project and program funds added in December 2016. The Budget and Finance Committee with members from the Technical Commission and the Board reviews and makes recommendation on the budget to the Board. Two important changes to the budget happened in 2017. The budget was reorganized to reflect the implementation of the updated VLAWMO Water Plan. The Board also directed the operations, program and project budgets no longer be subsidized by VLAWMO reserves.

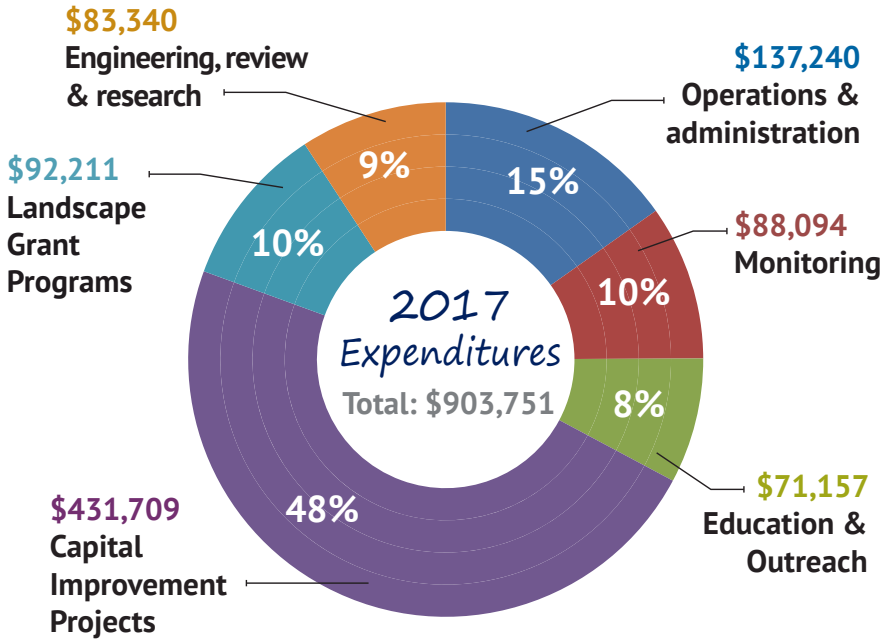


VLAWMO Budget with Fund Balance



INCOME

The mainstay of support for VLAWMO work comes from its Storm Sewer Utility (SSU) fees. These fees are based on an estimate of impervious surface for each parcel of land that is in line with its land use classification. $564,360 in SSU was certified to Ramsey and Anoka Counties. The average single family homeowner paid $32.43 per year to support all of the projects and programs conducted by the watershed. That's about $2.70 per month. The 12.1% increase in storm sewer utility fees reduced the drain on reserves. No reserve funds were needed in 2017. Ongoing projects resulted in a significant amount of funding being carried over from 2016 to 2017.



EXPENSES

Total cash expenses for 2017 were less than budgeted at $903,749. This was an increase from 2016 and reflects funding that will be carried over for planned projects. The Whitaker treatment cells project kicked off in 2017 with the help of grant funding from the Legislative Citizens Commission for Minnesota Resources. Several studies were also completed setting the stage for the next phase of projects. Further detail is available in the annual audit attached as an Appendix to this Report.

GRANTS AND PARTNERSHIPS

Grant funds received in 2016 included both direct and indirect funding. Wetland Conservation Act reimbursement funds totaled $3360. Partnerships have facilitated indirect grant funding for projects implemented with VLAWMO. Ramsey Conservation District applied for and received $50,000 in State funding for the lower Kohler restoration project. Most of the project was installed in late 2016 with the grant funding passing through the VLAWMO budget in 2017.

RCD also secured state funding for the Sucker channel restoration project which will be installed in 2017-2018. Funding was carried over to 2018. Other cost-sharing partners include Ramsey County Parks and Recreation and St. Paul Regional Water Service. Partner contributions make the Sucker channel restoration possible but are not be reflected in the VLAWMO budget. The public will have the benefit of a long-awaited channel restoration project the will offer multiple benefits.


A baby bluegill caught and released during a Goose Lake fish survey.

CAPITAL IMPROVEMENT PROJECTS

Installation started for pilot wetland treatment cells above Whitaker pond thanks to the LCCMR grant for $500,000. The grant will allow VLAWMO to install treatment wetlands in White Bear Township near the outlet of Dillan ditch as it empties into Lambert Creek. The focus will be on the removal of bacteria, nutrients and other pollutants. A linked study on pathogens will be done by the University of Minnesota. Funding will be carried over to the 2018 budget.

WHO WE ARE:
The people behind VLAWMO

IN THIS SECTION

The VLAWMO office is located at:
800 E County Road E
Vadnais Heights, MN 55127

Who we are:

VLAWMO Employs five full-time staff for everyday operations. Consultants are required for a variety of purposes including auditing, bookkeeping, engineering, and technical assistance. The VLAWMO Board of Directors consists of one elected official from each of the six cities within the watershed. Each board member is appointed for a three year term. The VLAWMO Technical Commission consists of one citizen representative from each of the six cities. The Technical Commission meets to review and consider watershed business as well as make recommendations to the Board for wider scope decisions.

BOARD OF DIRECTORS (BOD)

Primary Directors	*Alternate Directors*
Dan Jones, Vice Chair 1956 Lakeaires Blvd White Bear Lake, MN 55110 651.283.6097	Bill Walsh White Bear Lake
Jim Linder, Treasurer 4200 Otter Lake Rd Gem Lake, MN 55110 651.492.5083	Jim Linder Rick Bosak Gem Lake
Marty Long 10 Larch Lane North Oaks, MN 55127 651.407.8507	Gregg Nelson North Oaks
Ed Prudhon 470 Otter Lake Rd White Bear Twp, MN 55110 651.426.2311	Bob Kermes White Bear Township
Terry Nyblom	*No alternate available* Vadnais Heights
Rob Rafferty 1573 Merganser Ct Lino Lakes, MN 55038 651.982.2492	Dave Roeser Lino Lakes

TECHNICAL COMMISSION (TEC)

Commissioners can be reached by contacting VLAWMO

Primary	*Alternate*
Mark Grahm, Chair Vadnais Heights	Kevin Watson Vadnais Heights
Gloria Tessier Gem Lake	Gretchen Artig-Swomley Gem Lake
Jim Grisim White Bear Lake	*No alternate available* White Bear Lake
Bob Larson, Treasurer North Oaks	Diane Gorder North Oaks
Paul Duxbury White Bear Township	*No alternate available* Gem Lake
Marty Asleson Lino Lakes	*No alternate available* Lino Lakes

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Houston Engineering Inc.
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Maple Grove, MN 55369
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St Paul, MN 55113
651.266.6350

Wenck Associates
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Maple Plain, MN 55359
763.479.4200

VLAWMO

Vadnais Lake Area
Water Management Organization

TECHNICAL MATTERS

VLAWMO's primary source of income is through Storm Sewer Utility (SSU) fees. The average single family homeowner in VLAWMO pays $28.92/year ($2.41/month) to support all of the projects and programs conducted by the watershed.

Additional funding for projects comes from grants from the Minnesota Board of Water and Soil Resources (BWSR) and the Legislative-Citizen Commission on Minnesota Recourses (LCCMR).

2017 Quick Stats:

- **17** Cost-share grants
- **6** Workshops facilitated
- **7** Events attended
- **4** WCA permits approved

EDUCATION & OUTREACH

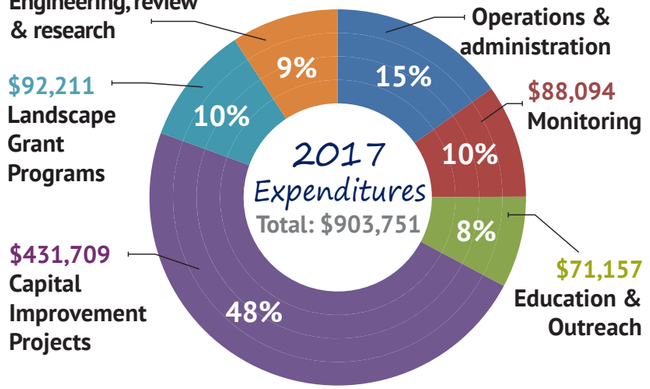
Stewardship is fun when teamwork is involved. This year, the Alina Nurses, Sunrise Park Middle School, and residents from White Bear Lake and Vadnais Heights participated in stormdrain clean-up and labeling events.

Each of the 4 events included cleaning debris from stormdrains, labeling "no dumping-drains to lake" signs, and promoting adopt-a-drain to neighbors. Thank you to all of our great volunteers!

REGULATIONS

As a local governing unit, VLAWMO administers the Wetland Conservation Act (WCA). WCA oversees new developments as they pertain to wetland conservation: any wetlands lost to development, by law, are to be replaced either on-site or elsewhere in the state through the purchase of wetland banking credits.

FINANCE



DRAINAGE

Lambert Creek and its branch ditches have been a major focus of VLAWMO's work since its beginning in 1983. In 2017, we continued this work with bank restorations, weir inspections, and surveying how sediment is moving and gathering along the creek and it's major wetlands. This prepares us for future maintenance projects.

Looking Ahead

BIRCH LAKE IMPROVEMENT GRANT

VLAWMO received a 2018 grant for $97,000 from the MN Board of Soil and Water Resources (BWSR) to install a stormwater filter at Birch Lake in White Bear Lake. The filter will treat thousands of gallons of stormwater from a nearby neighborhood, reducing nutrients and contaminants that wash into the lake.

VLAWMO staff used an automated storm sampler (right) to capture incoming stormwater at the intersection of 4th and Otter. Results showed that this is a problem area for Birch Lake.

What can you do?

Water stewardship also includes everyday lawn care, fixing auto leaks, proper use of de-icers, water conservation, and more. Learn more on our website, or check out the Watershed Action Volunteers under 'get involved' to adopt a nearby stormdrain and hear of other ways to be involved.

Adopt a Drain

WAV Watershed Action Volunteers

www.vlawmo.org

YouTube

ANNUAL REPORT SUMMARY

VLAWMO

Vadnais Lake Area Water Management Organization

Established in 1983, VLAWMO is a unit of government co-created by Gem Lake, Lino Lakes, North Oaks, Vadnais Heights, White Bear Lake, and White Bear Township. Together, we use science and partnerships to protect and improve the water resources in the watershed.

From the administrator

2017 was the first year of our 2017-2026 water plan, and we've hit the ground running. It's been a year of new and innovative projects, successful grant applications, lake and creek studies, and ditch maintenance planning. We look forward to sharing what we've learned in our upcoming 2018 reports, and continuing the valuable partnerships that are instrumental to watershed improvements.

Stephanie McNamara
651-204-6073
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WHAT DID WE DO IN 2017?

- Event/booth locations
- Water monitoring sites
- Workshops/stakeholder planning
- Projects

FISH SURVEYS

Surveying fish populations in Wilkinson and Goose Lakes helps us understand and track the changes of our most impaired water bodies. Results are available on the VLAWMO website.

VEGETATION & BATHEMETRY SURVEYS

Working with Ramsey Conservation District, VLAWMO studied these water bodies to understand their needs and gain tools for future actions.

WHITAKER TREATMENT WETLANDS

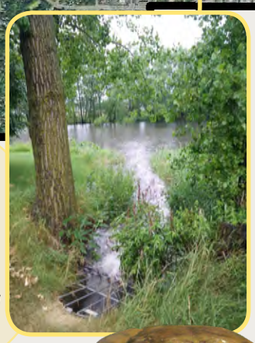
Three lined wetland cells are being used to study bacteria treatment and treat polluted stormwater at the start of Lambert Creek. Filtration happens through various fill materials and native wetland plants.

SUCKER CHANNEL RESTORATION

An improved channel between Pleasant Lake and Sucker Lake will prevent erosion and nutrient loading into the lake. New fishing platforms and trails increase handicap accessibility.

SEDIMENT CORES

Water and sediment samples were taken and meetings held to improve areas that drain to Goose Lake. A residential stormdrain clean-up event served as action and education.



E. COLI SOURCING AT LAMBERT CREEK

As a state-listed impaired water for E. coli, we're investigating where the E. coli is coming from, and how runoff influences bacteria levels.

Amelia
Wilkinson
Deep
Charley
Pleasant
Black
Tamarack
Fish
Gilfillan
Ox
Birch
Sucker
Rice
West Goose
East Goose
Grass
Lambert
Lambert Creek
West Vadnais
East Vadnais

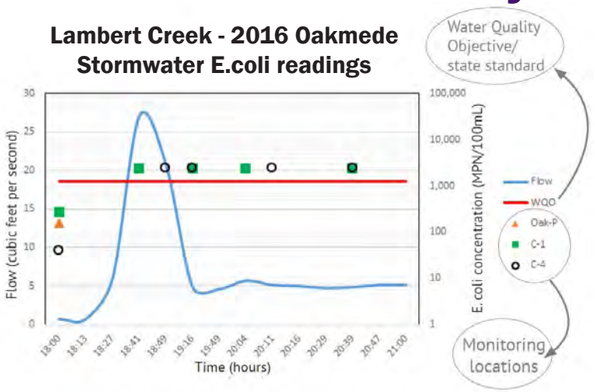
0 ½ 1 2 Miles

Sources: MNDNR, Metropolitan Council, MNGSC, VLAWMO, ESRI

THERE'S MORE!

Read all about the year in the complete annual report or on www.VLAWMO.org

Watershed Summary



From 2015-2017, VLAWMO has been monitoring E. coli levels in Lambert Creek. The graph above shows the storm flow that occurs during a rain event. Readings taken at Oakmede in White Bear Township show how E. coli washed into the creek from the landscape. Readings above the state standard (red line) are a top concern for VLAWMO.

One strategy being taken to address this issue is the creation of the Whitaker Treatment Wetlands, built in 2018 and put to action in 2018 (more info at vlawmo.org). This system will treat incoming stormwater going into Whitaker Pond, the start of Lambert Creek. Some E. coli has shown to be from canines - meaning a higher responsibility in pet waste pick-up is needed to improve the creek water quality.

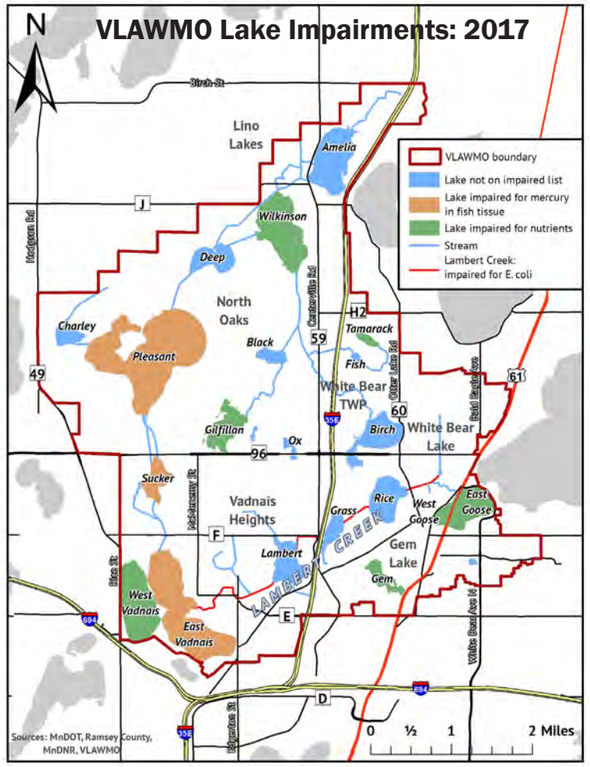

SPRWS* cleaning out zebra mussels at the Sucker Lake channel.

VLAWMO Lake Grades

Lake	2016	2017	TSI Status
Amelia	B	B+	Eutrophic
Birch	B	B+	Mesotrophic
Black	A-	A-	Mesotrophic
Charlie	C	C+	Eutrophic
Deep	C	C	Eutrophic
Gem	B	B	Mesotrophic
Gilfillan	C+	C	Eutrophic
E. Goose	D-	D	Eutrophic - Hypereutrophic
W. Goose	D	D	Eutrophic - Hypereutrophic
Tamarack	D	D-	Eutrophic - Hypereutrophic
West Vadnais	D-	D-	Eutrophic - Hypereutrophic
Wilkinson	D+	C	Eutrophic

*SPRWS: Saint Paul Regional Water Services

Visit **VLAWMO.org** to learn what's being done to resolve these issues and how you can be a part of the solution!



Our watershed has several water bodies listed on the 303(d) state impaired list, from the MN Pollution Control Agency (MPCA). Lake in green are lakes impaired for nutrients (see table below). Lakes shown in orange have been listed for high mercury content in fish tissue. These same lakes have also been infested with zebra mussels (see left). VLAWMO monitors their potential spread at Goose, Birch, Gilfillan, and Wilkinson lakes.

VLAWMO uses the State Trophic Scale Index (TSI) to summarize lake health. For convenience, the index values are transfered to a familiar letter grade. The TSI pertains to nutrient levels (*trophic*). "Eutrophic" means high nutrients (left), while hypereutrophic is a very high over abundance of nutrients. "Meso" means medium. Clear, Northern MN lakes would be "oligotrophic", but VLAWMO has none of these lakes due to differences in depth, habitat, and development.

Eutrophfication - over nutrification of lakes - is similar to when a person has too much ice cream, high nutrients in a lake are like a stomach ache; there is such a thing as too much of a good thing.

EST 1983 VLAWMO Vadnais Lake Area Water Management Organization

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Vadnais Lake Area Water Management Organization

2017 Water Monitoring Report: Summary

VLAWMO's monitoring program consists of:

- 12 Lakes
- Lambert Creek
- Water quality sampling every other week from May to September

Phosphorus, nitrates, chlorophyll-A, chloride, turbidity, bacteria, pH, and storm sampling

See the complete report at www.VLAWMO.org/resources/reports

Lake summaries

Gem Lake: Gem Lake's chemistry has improved over the last 5 years which coincides with the work that was done on Highway 61 and the reconstructed grass swales flowing into the lake. Water quality parameters are below state standards. The MPCA is currently looking into delisting Gem Lake from the impaired list.

Lake Gilfillan is also on the State Impaired List. Since the augmentation system went in (2012) to raise the water level, the water quality has improved (most likely due to dilution). We have been told that no augmentation has occurred the last five years so it has been maintaining its water level on its own. Nutrient levels look to be slightly rising over the last five years near state standards.

East & West Goose: Booth Goose Lakes are still very high nutrient levels. Bullhead removal did not make the water quality impact we hoped, but it did reduce nutrient levels a little, and a 2017 fish survey indicated the bullhead population is still under control. Sediment cores and enhanced sampling were completed in 2017 for possible future alum treatment.

Wilkinson Lake: Wilkinson's phosphorus is well over state standards but Chlorophyll A is well below standard. Wilkinson acts more like a wetland and therefore what goes on in the watershed has a greater effect on the chemistry. A special study was done on the wetland complex connecting Amelia to Wilkinson and results indicate nutrient loading coming from that system.

Tamarack Lake: Data for nutrient levels are still high. The floating wetland has not shown any effect as of yet. This is the fifth full year of monitoring the island. Samples were taken right next to the island and compared it to samples taken off the dock. There is no difference between the two spots. So far the water chemistry is similar to what was seen in the past. Monitoring will continue. The floating island currently provides good habitat and educational opportunities and will hopefully help improve water quality over the next few years.

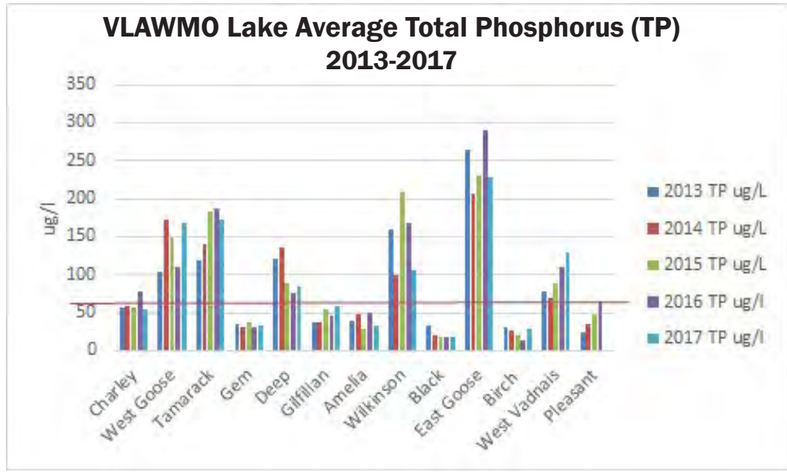
The **automated storm sampler** was installed at 4th and Otter Lake Rd. This area drains stormwater into Birch Lake. Results showed very high nutrient levels during storms.

The **treatment wetlands system** at Whitaker was installed and is about 90% complete. Sampling on the system will begin next spring, 2018.

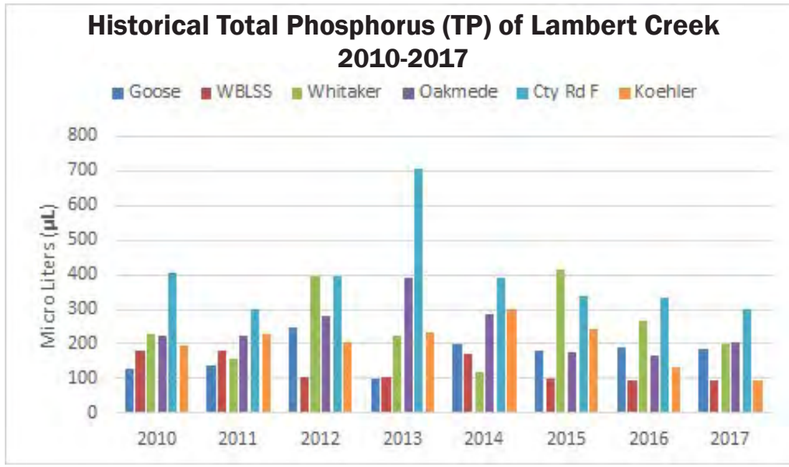
Chloride levels overall were similar to last year. We have been sampling for 8 years and there have been no significant changes within the lakes. Black Lake has the lowest levels. Birch Lake and East Goose are the highest which makes sense due to the proximity to major roads. All of the lakes are below the current State standards. The creek samples are difficult to catch because it has to be done when water is flowing. Year round chloride sampling on Birch Lake was done for the second year and levels have stayed steady

The **wet weather E. coli study** showed that the flow from storm events in the creek has a correlation to the amount of E. coli in the samples. Stormwater runoff seems to be the source of high E. coli levels in the Whitaker and Goose sub-watersheds, mainly from the runoff carrying high levels of E. coli off of terrestrial soils and road gutters.

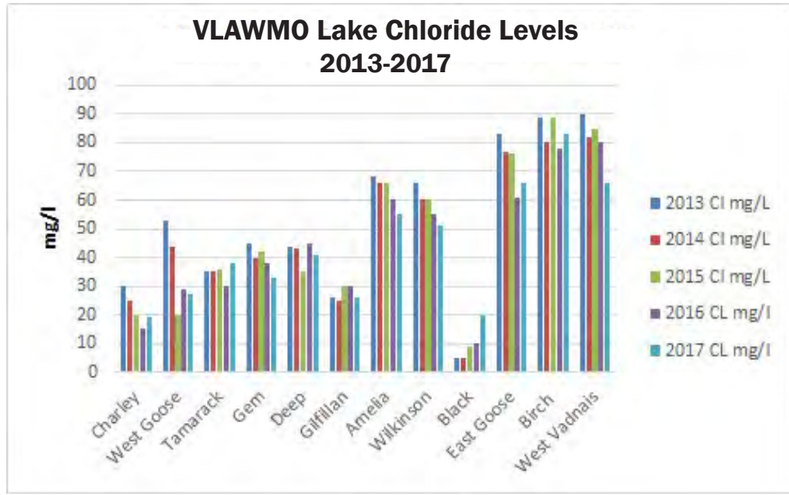
Data summary



Phosphorus is a main contributor in algae growth and one of the main measurements we use to assess lake health. With 1lb of phosphorus yielding up to 500 lbs of algae, this is a major influencer of lake oxygen levels, habitat quality, and overall usability of the water resource. The red line marks the level that a lakes becomes officially impaired by the State.



Lambert Creek receives stormwater runoff from suburban development, which brings sediment and nutrients including phosphorus into the creek and eventually to Vadnais Lake, the drinking water source of Saint Paul. In addition, Lambert Creek has tested positive for canine, human, and avian E. coli (see back page).



Thankfully, all of VLAWMO's lakes are below the chloride state standard of 230 mg/L. However keeping them low is vital to the long-term health of our water resources, and requires a team effort. Chloride is also a permanent pollutant to water quality. Many of VLAWMO's lakes keep water moving through the system, but some such as Tamarack and Black are 'dead ends' where water ends up in a low, bog basin. These lakes are strong indicators as to what the impact of our chloride (salt/de-icer) use is on water resources.

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org

To: The Board of Directors

From: Brian Corcoran & Tyler Thompson

RE: VII. B. Lambert Creek Engineering Study Update

The draft *RCD14 Records Reestablishment Memorandum* has been received from Houston for the main truck of Ditch 14. The draft Branch Ditch reestablishment memorandum is currently in production and waiting for some better weather to get survey shots at a few locations that were not accessible this winter. Houston is also working on the ditch modeling as well as the engineers report for the main ditch. A draft of this information is scheduled for mid-July.

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E East. Vadnais Heights, MN 55127
www.vlawmo.org
office@vlawmo.org
(651) 204-6070

April 25th, 2018
To: The VLAWMO Board of Directors
From: Nick Voss, Education and Outreach Coordinator
Re: VII.C

Community Blue Grant: Connect the Drops

VLAWMO has the opportunity to collaborate with Growing for Green Hearts, LLC. Heidi Ferris, the director and applicant for this grant, has had a long history of outreach and education in faith communities across the metro. Her proposed program provides a faith and science curriculum that teaches congregations and youth groups about local water resources and plugs each community into projects to take action for positive improvements in our watershed. The application requests $5,000.

This program takes three stages:

- Train local clergy members in the Growing Green Hearts (GGH) curriculum,
- Educate students in a series of classes and activities
- Facilitate the student outreach projects that promote water-minded actions and behaviors.

The range of outcomes for VLAWMO include new cost-share applications from churches, new stormdrains adopted, hundreds of citizens exposed to the ideas and recommendations of the curriculum, and relationships built between VLAWMO and the churches. Both Heidi as well as the Churches involved will be valuable points of contact in the future, expanding to other congregations directly through the local church network. Heidi's emphasis and language fill a niche that VLAWMO as a government agency is unable to provide.

As per the Community Blue guidelines, VLAWMO is able to customize the fund dispersal intervals according to project need. As EOC I recommend funds be allocated in two stages: **Stage 1)** Objectives 1-2 upfront ($3,800) and **stage 2)** Objectives 3-5 ($1,200) upon VLAWMO's verification of the progress of objectives 1-2. A progress report in the August, 2018 BOD meeting will provide an outlet for VLAWMO to verify that objectives 1 and 2 are satisfactory, thus allocating the remaining funds for the completion of the program. The measure for objectives 1 and 2 will be that all participating Churches have begun their clergy leadership training and have plans in place for student training by August, 2018. The second portion of the grant funds will provide for the kick-off event in October, 2018, as well as the student projects that go into 2019. Depending on what students choose to focus on for their projects, they could be highly seasonal. A range of possible projects are listed in objective 4 to guide students to select projects that fit GGH's and VLAWMO's scope and focus.

Please see the grant application, Growing Green Hearts supplementary PDF, and letters of recommendation from participating Churches (3) attached with this memo.

Links for more on Growing for Green Hearts:
http://growinggreenhearts.com
Connect the Drops Faith Science Leadership
Why eSTEM at Church

Vadnais Lake Area Water Management Organization
800 East County Rd E
Vadnais Heights, MN 55127
vlawmo.org
(651) 204-6070

COMMUNITY BLUE GRANT APPLICATION

Please submit form and required materials to: NICK VOSS
Nick.Voss@vlawmo.org

PROJECT BACKGROUND

BASIC INFORMATION

PROJECT NAME	**Connect the Drops (with Faith, Science & Youth Leadership)**
CONTACT PERSON	Heidi Ferris, Growing Green Hearts (GGH), LLC
ADDRESS	75 Rice Creek Way
CITY ZIP	Fridley, MN
ORGANIZATION	Growing Green Hearts, LLC
PHONE	763.516.3513
EMAIL ADDRESS	heidi@growinggreenhearts.com
WHAT GEOGRAPHIC AND/OR DEMOGRAPHIC AREA DO YOU SERVE?	All participating churches are within VLAWMO
HOW MUCH ARE YOU REQUESTING? (BETWEEN $200 AND $5,000)	$5000
HOW MUCH ARE YOU PREPARED TO MATCH OR PROVIDE IN-KIND?	$6550+ in the form of volunteer hours, travel, donations, communications, and staff time.

INTRODUCTION & GOAL

1. A: DESCRIBE THE MISSION AND GOALS OF YOUR ORGANIZATION/PROFESSION AND WAYS IT RELATES TO WATER RESOURCES.

   B. IN 2-3 SENTENCES: WHAT DOES THE PROJECT DO (LIST HARD DETAILS OF #, PLACE, EVENT, ETC) AND WHAT'S THE GOAL?

The goal of Growing Green Hearts (GGH) is to foster tangible connection between environmental stewardship, community action, and worship in the Christian tradition between generations. Water, and nurture of this shared resource, is specific to traditions of baptism, scripture, health, healing.

Connect-the-Drops addresses watershed discipleship and provides a tangible way for members in places of worship to engage their local watershed with education and service learning. Education of faith and science together through eSTEM (environmental science technology engineering & math) connects young and old, community leaders with local needs, al while building long-term relationships with the watershed district for greater impact. For a peek as to what the curriculum, events, and collaborative community capacity can do, please see the video provided at this link:
https://vimeo.com/260109870/de7da820b7

PROJECT BACKGROUND

2. DESCRIBE HOW YOUR PROJECT WILL PROTECT OR IMPROVE WATER QUALITY. FOR EDUCATIONAL COMPONENTS, DESCRIBE BEHAVIORS AND ACTIONS THAT WILL ENCOURAGED THROUGH THE PROJECT AS THEY RELATE TO WATER.

Water quality will be improved by moving water knowledge to water action. Connect-the-Drops uses local stories (land use history, water quality data, church elders, etc) to inspire new community norms and behaviors around water. Connect-the-Drops uses an existing faith, science and youth leadership curriculum (25 youth groups thus far); facilitates student-led action projects; and draws from local organizations such as VLAWMO for data and resources. The program includes the following:

- Defining and mapping the watershed
- Explaining the importance of getting water to sink into the ground and the importance of impervious surfaces
- Adoption of storm drains
- Teaching of proper use protocols for reduction of salt and fertilizer
- Increase perennial, native plants to filter water and reduce erosion (rain gardens, shorelines)
- Engage participants in the interconnectedness of natural systems: hydrosphere, biosphere, geosphere, atmosphere

3. DESCRIBE ANY PROJECT PARTNERS, THEIR ROLE IN THE PROJECT, THEIR QUALIFICATIONS, AND THEIR ROLE IN YOUR PROJECT. FOR PROJECTS WITH INVOLVED PARTNERSHIPS, A SEPARATE CONFIRMATION LETTER MAY BE REQUESTED.
Please provide specifics (names, titles, email or phone #)

Pastor Gary Walpole, Peace UMC & Director of Youth Ministry Vee Blomgren 651.484.2226

Pastor Chris Steubing, Christ the Servant ELCA 651.429.6595

Frassati Catholic Academy / St. Mary's of the Lake 651.429.7771

Secondary Project Partners:

Pastor Jen Hackbarth, Christ the King ELCA 651.429.4828

Pastor Bill Eaves, White Bear Lake United Methodist 651.429.9026

Pastor Janet Karvonen, Incarnation Lutheran ELCA 651.484.7213

Note that many conversations have taken place with congregational leaders at the about churches, and pastor Gary Walpole at Peace UMC has contacted many of the clergy as well. As of early April, Peace UMC and Christ the Servant have met twice to discuss this long-term project and scheduling, and are committed to the project. Teachers and leaders at Frassati (a religious based STEM school) and other churches listed above are in conversation with their church council leaders and have the opportunity to participate in the program without requiring increase to project budget. Letters of commitment have been requested from all parties before the BOD meeting date.

PROJECT OBJECTIVES

4. IN THE SPACE BELOW, PLEASE BREAK DOWN YOUR PROJECT INTO OBJECTIVES (**UP TO 5**). THESE SHOULD TELL THE STORY OF YOUR PROJECT FROM PREPARATION TO ACTION TO FOLLOW-UP MEASURES. INCLUDE AN ESTIMATED COMPLETION DATE (left box) AND COST (right box) TO EXPIDITE PROJECT BUDGETING AND FUND DISPERSAL.

1

OBJECTIVE	Connect the Drops leader training	COMPLETION DATE (M/Y) COST (right box)	6/2018	800
DESCRIPTION _____ POSSIBLE BARRIERS	A minimum of 10 leaders from all participating churches gather for 4 hour curriculum training by GGH in collaboration with VLAWMO E/O staff. Training includes eSTEM (Science Technology Engineering and Math) activities, faith & science discussions, VLAWMO impaired waters information, team-building, resources/tools. *Barriers listed on attached supplement due to space.*			

2

OBJECTIVE	Water programming + project mngmt	COMPLETION DATE (D/M/Y) COST (right box)	12/2018	3000
DESCRIPTION _____ POSSIBLE BARRIERS	At 4 churches there will be 2 clergy led hours specific to water quality (ex. Bible study, small group meeting, youth group, worship service), and a minimum of 2 Growing Green Hearts hands on science site visits, and an engineering design challenge for youth to design a project. Groups are intergenerational whenever possible, depending upon the host site community.			

3

OBJECTIVE	Kick-off outreach event	COMPLETION DATE (D/M/Y) COST (right box)	10/2018	400
DESCRIPTION _____ POSSIBLE BARRIERS	Creation of a community event at one of the project partner's sites that includes water-focused service learning, water education component, and relationship building. Scheduling with enough advance notice for multiple community groups to schedule & advertise			

4

OBJECTIVE	Student led eSTEM water projects	COMPLETION DATE (D/M/Y) COST (right box)	12/2019	400
DESCRIPTION _____ POSSIBLE BARRIERS	A minimum of 3 student-led eSTEM water projects will be planned with students based on VLAWMO impaired waters and watershed needs.			

5

OBJECTIVE	"Collaborate and Celebrate" events	COMPLETION DATE (D/M/Y): COSTS: (right box)	12/2019	400
DESCRIPTION _____ POSSIBLE BARRIERS	Share stories (student water projects) of water service learning and positive human impact through video or student leadership. Because sharing is a part of the engineering design process and the Connect-the-Drops curriculum. Examples include presentations to congregations, news press releases, and video summaries.			

PROJECT PLAN

MEASUREMENT AND EVALUATION

5. DESCRIBE HOW YOU WILL MEASURE THE SUCCESS OF YOUR PROJECT.
Measurements should be phrased as a final result. What tangibles will prove that the objective was met? Example: Number of participants, number of installations, gallons of storm water infiltrated, etc. Effective measurables relate back to the goal and purpose of the project – VLAWMO will make recommendations as needed. If an objective doesn't need a measurable please indicate another objective that has a measureable that serves to measure both.

OBJECTIVE 1: Success looks like training church leaders (such as clergy, mentors, youth directors, church council members, parents, green team members) on specifics of VLAWMO and water faith & science curriculum with a specific goal of 2 leaders per church.

OBJECTIVE 2: Success in increasing science literacy specific to water will be measured by increase in specific hours dedicated to water education per church including but not limited to: water worship connections, education hour water topics, service learning connected to water, large group water related events, youth group meetings centered on water. Success will be measured in 10 hours per church.

OBJECTIVE 3: Establish partnerships between VLAWMO and churches within it's boundaries through relationship building within and between communities to build community capacity for water protection and care. The measurable goal here is initial engagement with all 4 church congregations with 2 forms of communication per participating church promoting, inviting, sharing water connections (church newsletter, flyer, email blast, bulletin board, social media posts, announcement in worship) and all four churches having representation at the event, totaling 40 people in attendance.

OBJECTIVE 4: Success in increasing student leadership looks like projects defined and completed by middle school, high school, or intergenerational church groups with a goal of 1 project per participating church including but not limited to: rain garden, storm drain stenciling, shoreline restoration, water quality testing (funded by GGH), summer lawn maintenance, winter parking lot maintenance, native plant education, watershed hikes, water-focused event hosting/planning, facility (church, home) water conservation. Across participating churches, the measurable goal is 10 stormdrains adopted by a churches or their members. These activities will be supplemented by additional VLAWMO cost-share applications by individual churches when applicable and when host-site has investment to commit to the cost-share application in it's entirety, independent of GGH.

OBJECTIVE 5: Water education outreach for churches will define watershed, identify a stormdrains, map the VLAWMO, name needs of VLAWMO and address positive human impacts & solutions for water quality.
In sharing positive news and stories about water learning and students' water service learning projects ; the measurable outreach goal here is 2 forms of communication per participating church promoting, inviting, sharing water actions and connections. Examples include: church newsletter, presentations to congregations, flyers to local residents, video summaries, website, Facebook, Twitter, Instagram postings.

GGH in partnership with host churches will document the outreach methods that occur at each host site including: number of people exposed to outreach, number of student leaders involved, number of people participating in watershed actions, number and location of stormdrains adopted, and description of results that occurred at the host site pertaining to grounds maintenance or water conservation measures.

BUDGET DESCRIPTION

6. DESCRIBE THE BUDGET: List 1) materials and services that the requested funds will go towards and 2) description of Match funds that go with that objective/expense.

OBJECTIVE 1/EXPENSE 1: Training event + materials: $600(GGH flat rate for STEM training is $150/hr includes prep and communications) +$200 for 30 page curriculum guides for leaders

OBJECTIVE 2: Hands-on STEM site visits + project coaching: $2200 + books: $800 (full color 28 pg, CtDrops books are $10/ea)

GGH flat rate is $250/2hr event, including science equipment w/consumables, and GGH most churches book 2-4 hours of hands-on science programming. GGH rate for consulting is $75/hr and most churches pick 2-4 hrs for specific strategizing and curriculum coaching with programming staff or worship team. Note that GGH is putting 30+ in-kind volunteer hours, plus a reduced rate (VLAWMO values volunteer $25/hr) towards this project.

OBJECTIVE 3: Kick-off Event $400 for community building, education, guest speaker and/or event specific materials

OBJECTIVE 4: Student Project funds: $400 for each participating church to begin with $100 then additional grant funding may be applied for through VLAWMO

OBJECTIVE 5: Celebrate Water community events: $400. Note that this could be combined with C above. Some churches may choose to use project funds to create a celebration event.

BUDGET

7. COMPLETE THE FOLLOWING TABLE FOR PROJECT COSTS. IF ADDITIONAL COSTS EXIST INDEPENDENT OF GRANT FUNDING LIST THEM AS FUNDING AS OTHER SOURCE. PLEASE SPECIFY AN AMMOUNT PER EXPENSE AND A TOTAL. THE GREEN BOX IN PART 7 MUST EQUAL THE GREEN BOX IN PART 8. USE WORK PLAN SPREADSHEET FOR MORE DETAIL. TIP: ALIGN EXPENSES ACCORDING TO OBJECTIVES IN PART 5.

EXPENSES Reflect objective #	**PERSONNEL COSTS** "N/A" if blank	**MATERIALS / SUPPLIES** "N/A" if blank	**FUNDING FROM OTHER SOURCE** "N/A" if blank	**TOTAL**
EXPENSE 1:	600	200	N/A	800
EXPENSE 2:	2,200	800	N/A	3,000
EXPENSE 3:	300	100	N/A	400
EXPENSE 4:	*Same as expense 1*	400	N/A	400
EXPENSE 5:	300	100	N/A	400
TOTALS	**3,400**	**1,600**	N/A	**5,000**

Description of other source funding: N/A

TOTAL EXCLUDING MATCH FUNDS: $5,000

GRANT FUNDING & MATCH FUNDS

8. PLEASE FILL IN THE TABLE BELOW WITH HOW YOU PLAN TO ALLOCATE YOUR FUNDING.
Match funds are required assets for the project that strive to support community investment and exposure. Match funds may be cash from other sources, mileage, pre-existing materials involved in the project, or provided in-kind (i.e. volunteer services). In-kind match hours may be volunteer service hours, voluntary presentations, etc.
Consult with VLAWMO staff for discussion on what applies as match funds.
THE BLUE BOX SHOULD BE AN ADDITIONAL 25-100% OF THE GREEN BOX.
PROJECT APPLICATIONS ARE WEIGHED WITH A PREFERENCE FOR PROJECTS WITH HIGHER MATCH FUNDS, IN ADDITION AND ARE VOTED ON THROUGH THE VLAWMO TECHNICAL COMMISION.

VOLUNTEER HOURS ARE VALUED AT **$25/HR**
MILEAGE IS VALUED AT **$0.525/MI**

EXPENSES	**REQUESTED VLAWMO FUNDING**	**MATCH FUNDS**		**TOTAL**
		Cash	In-kind	
EXPENSE 1:	800	--	1,100	1,900
EXPENSE 2:	3,000	--	2,100	5,100
EXPENSE 3:	400	100	850	1,350
EXPENSE 4:	400		850	1,250
EXPENSE 5:	400	200	1,350	1,950
TOTALS	5,000	6,500		11,550

FUTURE POTENTIAL

9.) WILL YOU OR THE PROJECT PARTNERS BE ABLE TO REPEAT THIS PROJECT? EXPLAIN HOW THE PROJECT WILL BE CARRIED ON IF 1) THE PROJECT IS A SUCCESS AND 2) ADDITIONAL FUNDS WERE AVAILABLE

Project partners will be able to continue with spin-off projects and embed lessons into their education initiatives. When the project is successful, there will be relationships and a framework for action in place for water service learning projects and gatherings to continue. For example, one church may try educating about salt this fall but learn from another church about a rain garden. Through the power of story and relationships the churches teach each other and aim for a new water-focused project for the next season. Success looks like knowledge to action projects going beyond water into waste reduction, climate change, soil resources, or local food gardening. Success may also look like a church embedding the CtDrops curriculum into the typical 3yr confirmation cycle for middle school youth. If additional funds are available, the same churches may use the process with new audiences. For example, a group that tried CtDrops with middle schoolers may aim for an intergenerational group to try it; or design a retreat around the process for the church council to look for closely at practices around lawn care, parking lot maintenance, water collection, or graywater. Overall, success looks like water being an ongoing part of the multi-faceted water conversations at church- from water quality in nearby lakes to water in worship to environmental justice to our everyday uses of water.

10.) HOW DID YOU HEAR ABOUT OUR GRANT PROGRAM?

Kris Jenson – VLAWMO Staff

VLAWMO Community Blue Grant Application

Expanded descriptions due to space constrictions on application

BASIC INFORMATION

Connecting Our Drops

***with* Faith, Science & Youth Leadership**

Gary Walpole, Peace United Methodist Church

Heidi Ferris, Growing Green Hearts, LLC

Methodist and Lutheran Churches within the VLAWMO boundaries

Requesting $5000

Match/In-kind includes: church staff time, communications, outreach to network of 1000's, community capacity

BASIC INFORMATION

Connecting Our Drops with Faith, Science & Youth Leadership

Contact: Gary Walpole, Peace United Methodist 651.484.2226 gary@peaceumc.com

5050 Hodgson Road, North Oaks 55126

Heidi Ferris, GrowingGreenHearts.com 763.516.3513 heidi@growinggreenhearts.com

What geographic and/or demographic area do you serve?

All participating churches are within VLAWMO

How much are you requesting?

$5000

How much are you prepared to match in-kind?

$6550+ in the form of volunteer hours, travel, donations, communications, and staff time.

INTRODUCTION & GOAL

1A. Environmental stewardship is embedded into church values, worship, outreach, and community action. Water, and nurture of this shared resource, is specific to traditions of baptism, scripture, heatlth, healing. Education of faith and science together through environmental STEM meets church needs to address vocation and youth leadership simultaneously. Church lands and congregation members and many of their residential properties are located within the VLAWMO watershed, yet are often disconnected. Addressing watershed disciplineship to members in places of worship using VLAWMOs stated needs, stats, and existing tools allows church youth and elders to do water justice and share the water messages and service learning actions. For a peek as to what the curriculum, events, and collaborative community capacity can do, please see the video provided at this link:

1B. Connect-the-Drops: Faith, Science & Youth Leadership will…

a. Increase science literacy specific to local water quality to local church leaders
b. Lift up student leaders by empowering them in water knowledge to action
c. Build sense-of-place and community capacity towards water goals in partnership with VLAWMO and churches

2. Water quality will be improved by moving water knowledge to water action. The shared water care stories to new community norms and behaviors around water. With relationship building with VLAWMO churches; use of Connect-the-Drops: Faith, Science & Youth Leadership curriculum; and student-led action projects—the following will be addressed:

- Watershed defined and mapped
- Getting water to sink into the ground and the importance of impervious surfaces
- Adoption of storm drains
- Salt and fertilizer reduction
- Increase plants to filter water and reduce erosion (rain gardens, shorelines)
- Interconnectedness of natural systems: hydrosphere, biosphere, geosphere, atmosphere

3. Project Partners

Pastor Gary Walpole, Peace UMC & Director of Youth Ministry Vee Blomgren 651.484.2226

Pastor Chris Steubing, Christ the Servant ELCA 651.429.6595

Heidi Ferris, Growing Green Hearts, LLC 763.516.3513

Additional Project Potential Partners:

Pastor Jen Hackbarth, Christ the King ELCA 651.429.4828

Pastor Bill Eaves, White Bear Lake United Methodist 651.429.9026

Pastor Janet Karvonen, Incarnation Lutheran ELCA 651.484.7213

Frassati Academy & St. Mary's on the Lake 651.429.7771

PROJECT OBJECTIVES

Objective 1. Connect-the-Drops Leader Training

May or June 2018

Description:

10-20 leaders gather for 4 hour curriculum training by GGH in collaboration with VLAWMO (eSTEM, faith&science, VLAWMO impaired waters, team-building, resources/tools)

Possible Barriers:

Common meeting time

Church calendar planning

Objective 2. Scheduled Water Programming at 3-5 Churches

July 2018-Dec 2019

Description:

At 3-5 churches there will be 2-4 clergy led hours, 2-4 Growing Green Hearts hands on science site visits, and engineering design challenge for youth or intergenerational group to design a project

Possible Barriers:

Various programming needs/frameworks for different churches

Teaching of science where it has not traditionally been taught

Objective 3. Kick-off Outreach Event

October 2018

Description:

Creation of a community event that includes water-focused service learning + water education component + + relationship building

Possible Barriers:

Scheduling with enough advance notice for multiple community groups to schedule & advertise

Weather

Objective 4. Student-led eSTEM water projects

July 2018-December 2019

Description:

3-5 student-led eSTEM water projects based on VLAWMO impaired waters and stated needs

Possible Barriers:

Wide scope of projects students will be interested in, so GGH and VLAWMO must coach (not tell) in order to assist students in narrowing their focus to a single project

Objective 5. Water Outreach through Collaborate & Celebrate Events & Stories

July 2018-December 2019

Description:

Share stories of water service learning and positive human impact through video or student leadership

Possible Barriers:

Timing of student projects, which may be seasonal (winter rain gardens or stormdrain stenciling?)

Schedule events with advance notice for multiple churches to participate

MEASUREMENT AND EVALUATION

The success of the project will be measured in the following ways…

Objective 1. Connect-the-Drops Leader Training

Success looks like training church leaders (such as clergy, mentors, youth directors, church council members, parents, green team members) on specifics of VLAWMO and water faith & science curriclum with a specific goal of 2 leaders per church.

Objective 2. Scheduled Water Programming at 3-5 Churches

Success in increasing science literacy specific to water will be measured by increase in specific hours dedicated to water education per church including but not limited to: water worship connections, education hour water topics, service learning connected to water, large group water related events, youth group meetings centered on water. Success will be measured in 10 hours per church.

Objective 3. Kick-off Outreach Event

Establish partnerships between VLAWMO and churches within it's boundaries through relationship building within and between communities to build community capacity for water protection and care. The measurable goal here is 2 forms of communication per participating church promoting, invititing, sharing water connections. Examples include: church newsletter, flyer, email blast, website, facebook, Twitter, Instagram.

Objective 4. Student-led eSTEM water projects

Success in increasing student leadership looks like projects defined and completed by middle school, high school, or intergenerational church groups with a goal of 1 project per participating church including but not limited to: rain garden, storm drain stenciling, shoreline restoration, water quality testing, sand vs. salt education initiative, native plant education, watershed hikes, water-focused event hosting/planning, water audits for church or homes, etc. Across participating churches, the measurable goal is 10 stormdrains adopted by a churches or their members. These activities could be supplemented by additional stormwater project cost-share grants by individual churches.

Objective 5. Water Outreach through Collaborate & Celebrate Events & Stories

Water education outreach for churches will define watershed, identify a stormdrains, map the VLAWMO, name needs of VLAWMO and address postive human impacts & solutions for water quality.

In sharing positve news and stories about water learning and students' water service learning projects ; the measurable outreach goal here is 2 forms of communication per participating church promoting, invititing, sharing water connections. Examples include: church newsletter, flyer, email blast, website, facebook, Twitter, Instagram.

FUTURE POTENTIAL

Project partners will be able to continue with spin-off projects and embed lessons into their education initiatives. When the project is successful, there will be relationships and a framework for action in place for water service learning projects and gatherings to continue. For example, one church may try educating about salt this fall but learn from another church about a rain garden. Through the power of story and relationships the churches teach each other and aim for a new water-focused project for the next season. Success looks like knowledge to action projects going beyond water into waste reduction, climate change, soil resources, or local food gardening. Success may also look like a church embedding the CtDrops curriculum into the typical 3yr confirmation cycle for middle school youth. If additional funds are available, the same churches may use the process with new audiences. For example, a group that tried CtDrops with middle schoolers may aim for an intergneratioanl group to try it; or design a retreat around the process for the church council to look for closely at practices around lawn care, parking lot maintenance, water collection, or graywater. Overall, success looks like water being an ongoing part of the multi-faceted water conversations at church- from water quality in nearby lakes to water in worship to environmental justice to our everyday uses of water.

Peace United Methodist Church

5050 Hodgson Road • Shoreview, MN 55126
(651) 484-2226 • Cell (651) 387-4095
www.peaceumc.com

March 24, 2018

To whom in which this letter might interest:

Here at Peace Community of Faith, we understand the importance of clean, healthy waters. We are aware that almost half of all rivers are too polluted to go fishing or swimming in. We worry that in the next decade, water shortage will be a reality and detrimental to our drinking supply. We understand the urgency of helping to keep erosion and pollution from flowing into our waters. With every year losing over 30 million acres of forests, we need to quickly figure out how we can supplement all those natural water filters and help preserve our waters.

Peace Community of Faith of the United Methodist Church is committed to working with VLAWMO and exploring water stewardship. We plan to have representations from our Trustee Committee, Youth Director, Garden Committee, Congregation, and two of our youth members. What you can expect is a group of committed individuals that will be fully engaged in exercising stewardship and fellowship with our surrounding communities.

Devotedly,

Gary Walpole

Pastor, Peace Community of Faith

4690 Bald Eagle Ave.
White Bear Lake, MN 55110
651-429-7771

FRASSATI
CATHOLIC ACADEMY

To Whom It May Concern,

The Frassati Catholic Academy Middle School and the St. Mary's confirmation leaders would be interested in participating in this project funded by the Vadnais Lakes Area Watershed Management for many reasons.

First, as a Catholic school, we are called to stewardship, which of course includes our precious water supply. We are a part of the Vadnais Lakes Area watershed by our proximity to Lake Owasso and other lakes.

Conversations in the community around the use and stewardship of water have been highlighted in recent years given the water reduction levels in White Bear Lake.

Second, as a STREAM school, we are called to educate our students, staff and community regarding our environment and our care of its resources, and to translate that education into action.

We are hopeful that this grant will be funded, and that we will be a part of it.

The Frassati Catholic STREAM School Middle School teaching team

Mary Beth Jambor, Director of Sacraments and Worship, St Mary of the Lake

EST 1983
VLAWMO
Vadnais Lake Area
Water Management Organization

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org
office@vlawmo.org
(651) 204-6070

To: the Board of Directors

From: Stephanie McNamara, Administrator

Re: VII.D Local Water Plan Approval: Vadnais Heights Surface Water Management Plan

The local water plan update for Vadnais Heights has been received and reviewed by VLAWMO staff. All comments have been addressed in the current Vadnais Heights plan with the exception of the Design standards updates.

Recommendation: Staff recommends the approval of the Vadnais Heights Surface Water Management Plan conditional upon receipt of updates to the stormwater design standards consistent with VLAWMO standards.

800 County Road E East, Vadnais Heights, MN 55127
www.vlawmo.org

To: The Board of Directors

From: Tyler Thompson

RE: VII. E. Birch Lake Project Update

The grant agreement with the BWSR and VLAWMO was signed and submitted, and the work plan for the Project has been approved. By the terms of the Grant, VLAWMO may now have Barr begin the design phase of the 4th & Otter Project, incurring costs to which VLAWMO can be billed for, up to $30,000 as per agreed in the Engineering Proposal. In addition, VLAWMO has been working with the City of White Bear Lake and now Ramsey County to assign responsibilities for the 25-year Operations & Maintenance Agreement for care of the Project.

It was originally believed both of the property parcels the Project was planned to be built upon, or impact were both owned by the City of White Bear Lake. However, only 1 of the parcels is publically-owned by Ramsey County, and the other is privately-owned. The owner has been contacted and expresses the interest of selling that parcel because it is not buildable, and is a tax burden. A meeting is set for Tuesday, April 24 with the property management company to explore the idea of one of the public project partners purchasing the property at a well-reduced rate below market value. In this case, a perpetual easement would be possible for the Project.

Also, at the February BOD meeting, Kristine was approved to be the authorized project representative. As she is no longer an employee of VLAWMO, staff is asking that Tyler be made the authorized representative for the Project and Grant Agreement with the BWSR.

Staff recommends and is requesting the BOD set a maximum cost at which VLAWMO could either purchase the north parcel, or supply the majority or all of the capital required for the purchase by another project partner. Also, that Tyler Thompson be approved as the authorized representative for the Project and the Grant Agreement.

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To: the Board of Directors

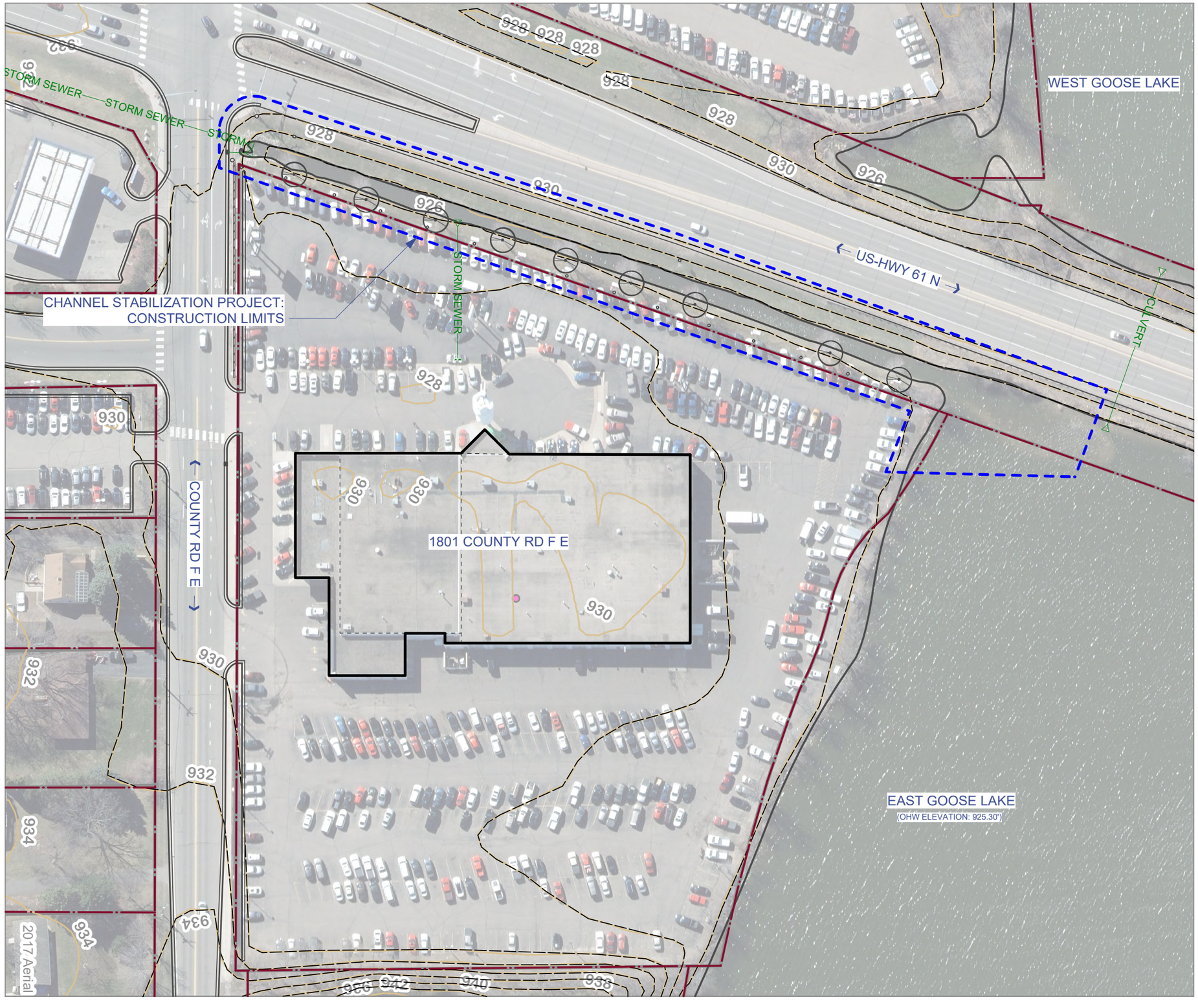
From: Stephanie McNamara, Administrator

Re: VII. F. Watershed Based Funding priorities

At the last Board meeting, these regular (every biennium) grant funds that could be used on targeted and prioritized Watershed priorities were discussed. The funds available to VLAWMO will be about $53,000 for 2018-2019. Four options from the Water Plan and recommended by the TEC were brought for your early consideration and comment. At this point I will need to identify the first and second priority project for these funds as the distribution plan for Ramsey County is moving forward. The template identifying each watersheds projects is being completed for submission to BWSR. More information on this pilot metro program is available on the BWSR website: General Program Information: http://www.bwsr.state.mn.us/cleanwaterfund/index.html

Keep in mind that we will need to have a 10% local match to the $53,000.

- **Goose Lake shoreline restoration**. This could be in any of three area. There are significant erosion areas on West Goose – Ski Otter show area and the Cabin 61 shoreline and on East Goose – Polar car dealership channel. Right now, it appears the Polar channel on East Goose is the
- **Spent lime feasibility study**. Preliminary data collection of water chemistry and sediment analysis has already been done on Oak Knoll pond (Wood Lake). This would take it to the next step of designing a pilot project that could help us understand if treating with spent lime is good tool to use on some of very nutrient rich waters. Engineering costs would be $15,000- $30,000. Application and monitoring costs would be on top of that
- **Increase cost-share funding**. The Board may in particular want to fund either in the smaller LL1 program that generally goes to homeowners or in the larger project funding, LL2 which could go for municipal or business projects. Some of the other metro watershed use this to fund city water enhancement projects.
- **Wilkinson Load study**. We have been gathering data on what is coming in from the drainage area of this impaired water already. More monitoring is slated for this summer to better identify where the nutrient loading is coming from. The Load study would take all the available data to run models allowing a better understanding the lake. The study would also identify the best practices most likely to improve the water quality and health of the lake.



Ramsey Conservation District

RAMSEY CONSERVATION DISTRICT
1425 PAUL KIRKWOLD DR
ARDEN HILLS, MN 55112
651-266-7274
www.ramseyconservation.org

PROJECT: POLAR-CEHV CHANNEL
LOCATION:
1801 COUNTY RD F E
WHITE BEAR LAKE, MN 55110

WATERSHED DISTRICT:

VLAWMO EST 1983 Vadnais Lake Area Water Management Organization

DESIGNER: MPS
DATE: 04/16/2018
REVISION:
REVISION:
REVISION:
REVISION:
REVISION:
CHECKED BY: JL
TAA: JL

NOTES:
LAYOUT PLAN FOR REFERENCE USE ONLY. NOT FOR CONSTRUCTION

PROJECT LOCATED WITHIN COUNTY & MNDOT RIGHT-OF-WAY

TRAFFIC CONTROL PLAN/PERMITS REQUIRED

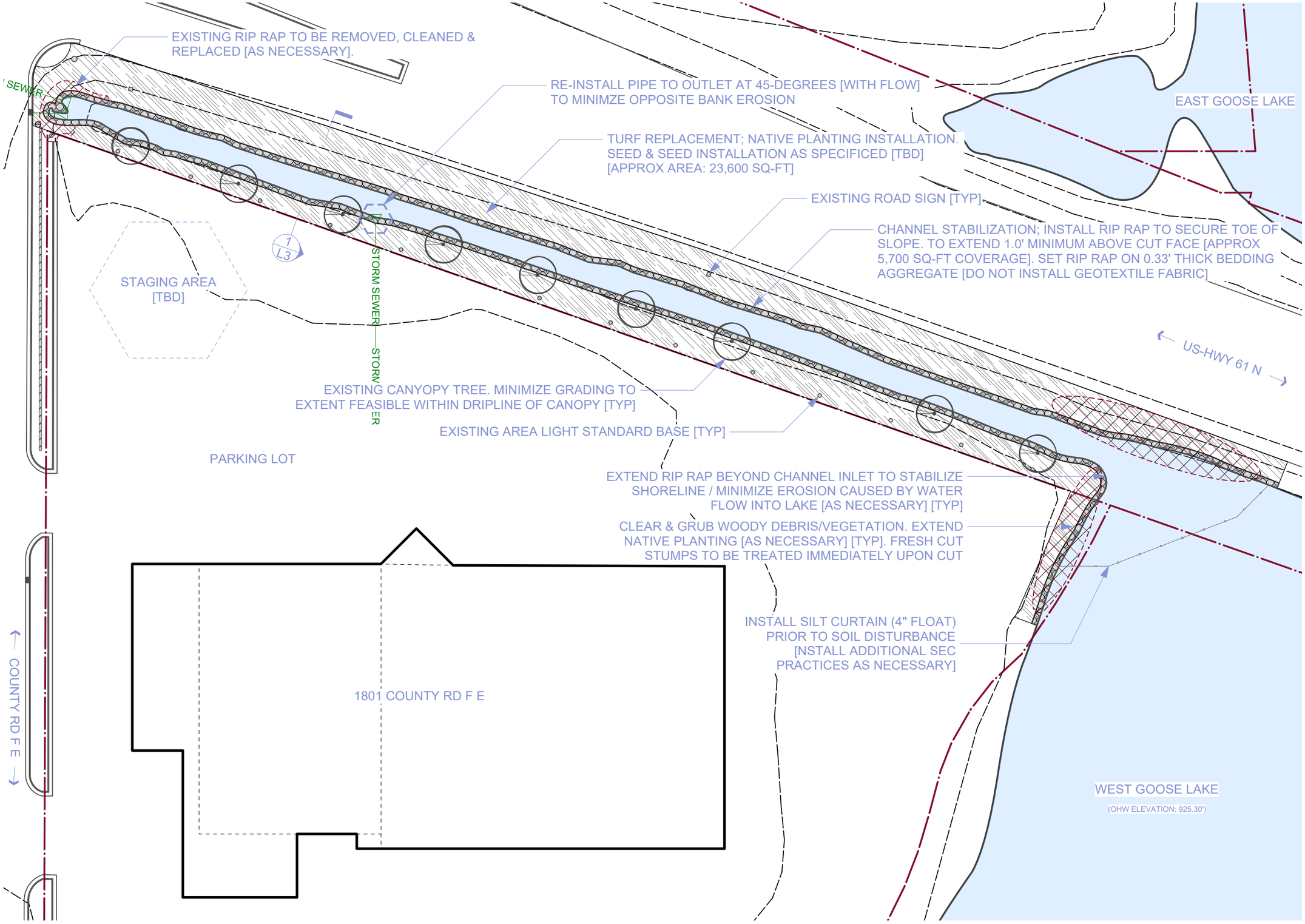
11" X 17" SHEET SIZE

SCALE: 1"=80'0"

SITE PLAN

N

L1.1



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WATERSHED DISTRICT:

VLAWMO EST 1983 Vadnais Lake Area Water Management Organization

DESIGNER: MPS
DATE: 04/16/2018
REVISION:
REVISION:
REVISION:
REVISION:
REVISION:
CHECKED BY: JL
TAA: JL

NOTES:
LAYOUT PLAN FOR REFERENCE USE ONLY. NOT FOR CONSTRUCTION

PROJECT LOCATED WITHIN COUNTY & MNDOT RIGHT-OF-WAY

TRAFFIC CONTROL PLAN/PERMITS REQUIRED

11" X 17" SHEET SIZE

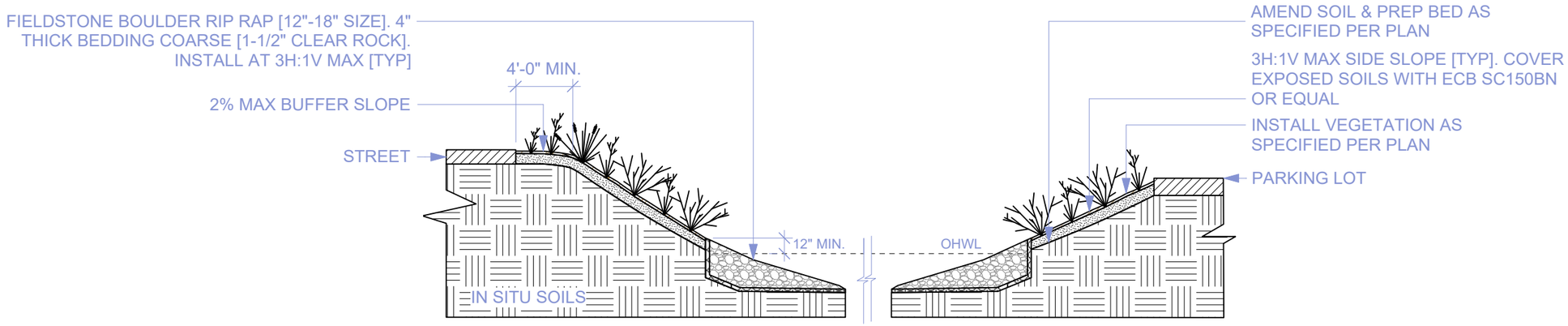
SCALE: 1"=50'0"

LAYOUT PLAN

N

L1.2

1 CHANNEL CROSS-SECTION [TYPICAL]
NOT TO SCALE



2 PERMANENT NATIVE SEED MIX

PERMANENT NATIVE SEED MIX				
	SCIENTIFIC NAME	**COMMON NAME**	**% OF MIX**	**PLS LBS**
GRASSES:	BOUTELOUA CURTIPENDULA	SIDE-OATS GRAMA	35.00	0.00
	BROMUS KALMII	PRAIRIE BROME	15.00	0.00
	CAREX BREVIOR	PLAIN'S OVAL SEDGE	5.00	0.00
	KOELERIA MACRANTHA	JUNEGRASS	10.00	0.00
	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	35.00	0.00
FORBS:	ASCLEPIAS VERTICILLATA	WHORLED MILKWEED	0.50	0.00
	DALEA PURPUREA	PURPLE PRAIRIE CLOVER	0.50	0.00
	RUDBECKIA HIRTA	BLACK-EYED SUSAN	0.50	0.00
ALT. SPP:	CALAMGROSTIS CANADENSIS	BLUEJOINT GRASS		
	BOUTELOUA GRACILIS	BLUE GRAMA		
	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED		

(SEEDING RATE: 40 LBS/ACRE)

NOTE: SIGHTLINES TO BE MAINTAINED BY PLANT SPECIES SELECTION. SPECIES HEIGHTS NOT TO EXCEED 3'-0" (INCLUDING INFLORESCENCE)

Ramsey Conservation District

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PROJECT: POLAR-CEHV CHANNEL
LOCATION:
1801 COUNTY RD F E
WHITE BEAR LAKE, MN 55110

WATERSHED DISTRICT:

EST 1983 VLAWMO Vadnais Lake Area Water Management Organization

DESIGNER: MPS
DATE: 04/16/2018
REVISION:
REVISION:
REVISION:
REVISION:
REVISION:
CHECKED BY: JL
TAA: JL

NOTES:
LAYOUT PLAN FOR REFERENCE USE ONLY. NOT FOR CONSTRUCTION

PROJECT LOCATED WITHIN COUNTY & MNDOT RIGHT-OF-WAY

TRAFFIC CONTROL PLAN/PERMITS REQUIRED

11" X 17" SHEET SIZE

SCALE: N/A

SITE DETAILS

L1.3

Ramsey Conservation District

MATERIAL & COST ESTIMATE

[FOR REFERENCE USE ONLY - NOT FOR THE PURPOSE OF BIDDING]

Polar-Chev Channel
1801 County Rd F E
White Bear Lake, MN 55110
BMP Type: Channel Stabilization
Number of BMPs: 1

County: Ramsey
Date: 17-Apr-18

Materials:

Item	Qty	Unit	Unit Cost	Amount
FIELDSTONE BOULDER RIP RAP (12"-18")	530.00	TON	$ 56.00	$ 29,680.00
BEDDING COARSE; 4" THICK (CLEAR ROCK 1-1/2")	114.00	TON	$ 27.00	$ 3,078.00
SEED & SEEDING AS SPECIFIED	23600.00	SQ-FT	$ 0.10	$ 2,360.00
ECB BLANKET (SC150BN OR EQUAL)	2623.00	SQ-YD	$ 1.40	$ 3,672.20
6" SDR 35 PVC PIPE + 45 DEGREE ELBOW	10.00	LIN-FT	$ 7.00	$ 70.00
			Subtotal	$ 38,860.20

Labor:

SITE PREP	1.00	LS	$ 1,250.00	$ 1,250.00
(CHEMICAL SPRAYING, MOWING & SEED BED PREP AS NECESSARY)				
MOBILIZATION	1.00	LS	$ 3,500.00	$ 3,500.00
GRADING	1.00	LS	$ 5,000.00	$ 5,000.00
DELIVERIES	35.00	EACH	$ 100.00	$ 3,500.00
DISPOSAL/SOIL DISPOSAL	1.00	LS	$ 4,800.00	$ 4,800.00
SITE REPAIR	1.00	LS	$ 1,100.00	$ 1,100.00
MATERIAL INSTALLATION	1.00	LS	$ 16,800.00	$ 16,800.00
			Subtotal	$ 35,950.00

Additional Bid Items [as necessary]

SEDIMENT & EROSION CONTROL PRACTICES	1.00	LS	$ 500.00	$ 500.00
(SILT CURTAIN - 4" FLOAT)				
PERMITS	1.00	LS	$ 500.00	$ 500.00
HYDRO-SEEDING	23600.00	SQ-FT	$ 0.20	$ 4,720.00
CLEAR & GRUB / CHEMICAL TREATMENT (WOODY DEBRIS)	1.00	LS	$ 2,500.00	$ 2,500.00
1-YR MAINTENANCE	1.00	LS	$ 2,000.00	$ 2,000.00
(ASSUMES PROJECT CONTRACT INCLUDES WATERING REGIMENT/ESTABLISHMENT PHASE)				
			Subtotal	$ 10,220.00

***ITEMS / COST NOT INCLUDED IN PROJECT TOTAL**

Project Total:

Materials Estimate	$ 38,860.20
Labor Estimate	$ 35,950.00
Project Estimate	$ 74,810.20
:-10%	$ 67,329.18
:+10%	$ 82,291.22

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April 25th, 2018
To: The VLAWMO Board of Directors
From: Nick Voss, Education and Outreach Coordinator
Re: VII.G

Master Water Stewards 2018/2019

VLAWMO staff have formulated a new vision for volunteering with the watershed. In addition to regular Watershed Action Volunteer (WAV) activities, the inclusion of a Master Water Steward would greatly expand VLAWMO's education and outreach initiatives.

The Master Water Stewards program is coordinated by Freshwater Society, a metro non-profit that's influential in water issues across the state. A "Water Steward" is a volunteer elected by a host organization (in this case, VLAWMO), and is trained in watershed concepts and management for 40 hours over the span of 10 weeks. After the course, which is taught by water experts delegated by Freshwater Society, volunteers plan and begin their independent project, which is to occur within the host site's watershed. This project is guided and advised by the host site. The cost to host a steward is $2,500 each. VLAWMO's 2019 budget combined with E/O funds is equipped to host 2 stewards in the cohort starting in October, 2018. VLAWMO staff would be involved in the recruiting and selection of the volunteer steward, and will play a role in guiding the steward towards a project that meets both the steward's interests and VLAWMO's needs.

For the following years after the initial training, the volunteer is expected to provide 40 hours of volunteer service to the watershed annually in order to keep their status as a "Master Water Steward". This annual service can cover maintenance of the steward's project, as well as time spent helping with other activities provided by VLAWMO. With the steward's training, they'll be equipped to volunteer with a higher par of excellence, hosting workshops and events to a professional standard, in addition to helping to recruit more volunteers on a peer-to-peer basis.

Many other watershed districts and WMO's are utilizing this program, a few of which host to up to a dozen Stewards. VLAWMO would be excited to tap into this resource to engage more projects, volunteers, and community members. VLAWMO is prepared to provide ongoing volunteer tasks to meet this program's 40 hours commitment. See the attached annual report for a description of the Master Water Stewards, a promo video from a neighboring watershed, or visit their webpage for more information: Master Water Stewards webpage.

2016 program highlights

In 2016 the program engaged 79 stewards in seven watershed organizations and one municipality, and is now expanding statewide. By 2018, we hope to see many of Minnesota's 46 watershed districts implementing the MWS program.

> My goal is for local community members to become personally involved and invested in water conservation, through understanding the critical role it plays for our environment, and act one-person-at-a-time to impact water quality.
>
> — Arun

Leaning about water.

In the pipeline

Dorothy, Janine & Glenn

Project
Two projects at Greensboro Square Condominiums in St. Louis Park:

- Two 1,700-gallon cisterns with an irrigation system, collecting water to feed sprinklers
- Rain garden, to infiltrate water on-site

Impact
79,050 gal/year in water savings from cistern/irrigation system

116,250 gal/year water infiltrated through rain gardens and cistern/irrigation system

> The ultimate goal is building awareness of watersheds and how we can use our resources wisely and cost-effectively in a sustainable model.
>
> — Janine

Getting a tour.

Examining a stormwater practice

Master Water Stewards

Annual Report | 2013-2016

Freshwater Society developed the Master Water Stewards (MWS) program in 2013 to equip citizens with the knowledge and skills needed to help improve water quality at the grassroots level.

Stewards are certified by participating in a broad training curriculum led by experts in the fields of hydrology, stormwater management, water policy, community-based social marketing, landscape assessment, and installation of clean water practices. They must complete a capstone project that captures rainfall and allows more water to soak into the ground, and lead a community outreach event. Stewards then become a point of knowledge and influence in their communities.

Master Water Stewards are volunteering their time for watershed districts and environmental groups, participating on city and local government boards, influencing policy, and changing the health of our waters.

Community Leadership for Clean Water

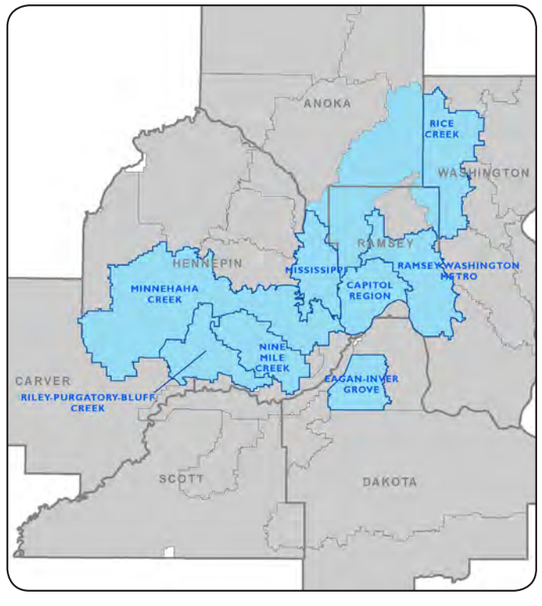
Program impact

Master Water Stewards volunteer 50 hours of community service in their initial year of certification, at least 25 hours each subsequent year, and attend eight hours of continuing education to maintain their certification. To date, stewards have accomplished a tremendous amount through their service.

They have:

- Connected with thousands of people through outreach and educational events
- Installed rain gardens, rain barrels, cisterns, a dry creek bed, and a permeable driveway
- Prevented more than 1.2 million gallons of polluted stormwater runoff from entering our lakes, rivers, and creeks each year!

Going forward, hundreds of pounds of silt, leaves and plant material, animal waste, automobile gas and oil spillage, excess salt, and other debris will be removed from our neighborhoods annually.



Managing urban runoff

Roxanne, Sue & Erika

Project
Rain garden (capturing water from 1076 sq. ft. of surface) containing more than 100 native plants and two berms to reduce runoff

Impact
672.5 gal of rainwater captured for every inch of rain. Downsprout redirection and permeable pavers also promote more infiltration into the water garden

Project
Water cistern with holding capacity of 1,700 gallons

Impact
Cistern with accompanying rain garden collectively captures 424-572 gallons of water for every inch of rain

Community leadership

Terry

Project
Rain garden (250 sq. ft., 9 in. deep)

Motivation
The 22 properties in Terry's local townhome complex were paying nearly $10,000 in stormwater fees. Reducing runoff lowers this cost and also keeps lakes and rivers clean.

> "[This capstone] is really a big deal because to the best of our knowledge it's the first townhome that has done such a major retrofit."
>
> — Terry

Impact
- 27,500 gallons/year stormwater captured
- 45 local residents better understand the value of stormwater management, after attending a community outreach coffeehouse event

Outreach

Sue & Randy

Project
Three projects at Union Congregational Church in St. Louis Park:
- Connnected rain gardens (900 total sq. ft.)
- Permeable paver patio, adjacent to the gardens
- 275-gallon cistern

Impact
- Gardens drain and filter water from parking lot, host pollinators, and provide education to community
- Daycare children use water from cistern for vegetable garden
- Patio created community gathering space

> "The monarchs have invaded! A corner that was so quiet and lifeless has come alive with movement."
>
> — Sue

2013-2016

81 projects installed or planned

2,542 volunteer hours served

79 stewards certified and 64 in current class

ANNUALLY

1,162,084 gallons of water infiltrated

543 lbs of sediment removed

2.96 lbs of phosphorus removed

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April 25th, 2018
To: The VLAWMO Board of Directors
From: Nick Voss, Education and Outreach Coordinator
Re: VII.H

Chloride Direction for VLAWMO

Staff will do a quick summary of the MPCA Metro Chloride TMDL as well as the Metro Chloride Management Plan and the chloride monitoring guidance from the MPCA. Summary of VLAWMO chloride data as well as results from the Shingle Creek Chloride TMDL 5yr review will also be presented.

The Winter Maintenance Assessment Tool (WMAt) is a practical, useful tool for Cities and businesses to track past and current salt use. Because the new initiatives at the MPCA, Fortin Consulting, and the liability legislation (to limit lawsuit liability for applicators) are still developing, VLAWMO can benefit from building familiarity with existing tools and resources such as the WMAt.

The tool allows an applicator to answer a series of questions, enter purchase and application data, and assess their policies and procedures. Using the assessment tool has a variety of benefits such as providing material and graphs for presentations, tracking progress, setting goals, and engaging in a state-wide discussion with everyone else who's using the tool.

Council members and City employees can attend a Smart Salting level 1 training for general knowledge, while applicators and managers can attend the level 2 training to learn how to use the assessment tool.

Categories of questions included in the tool:

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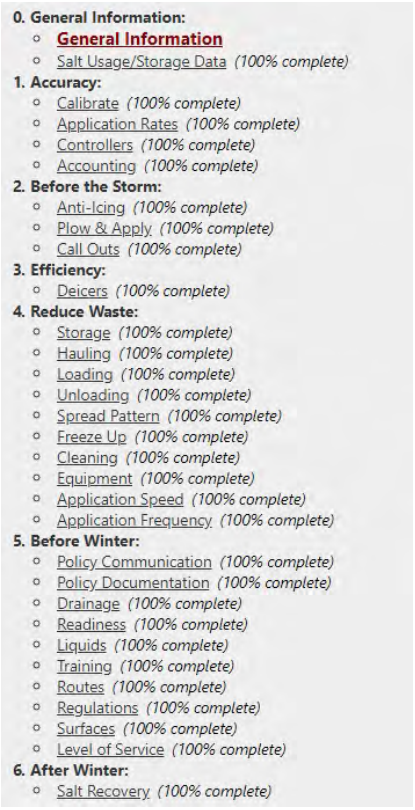
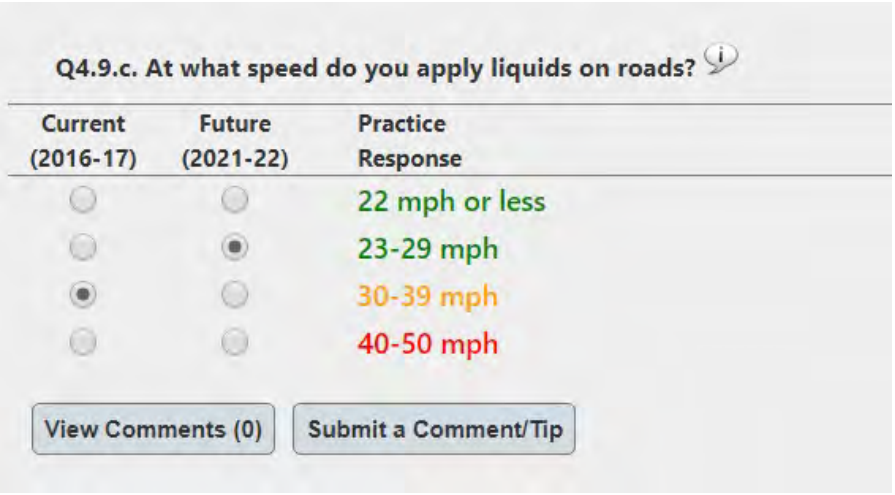


Example of a question and scale of the practice (red to green, green for advanced practice):



Example chart to summarize completion of assessment:

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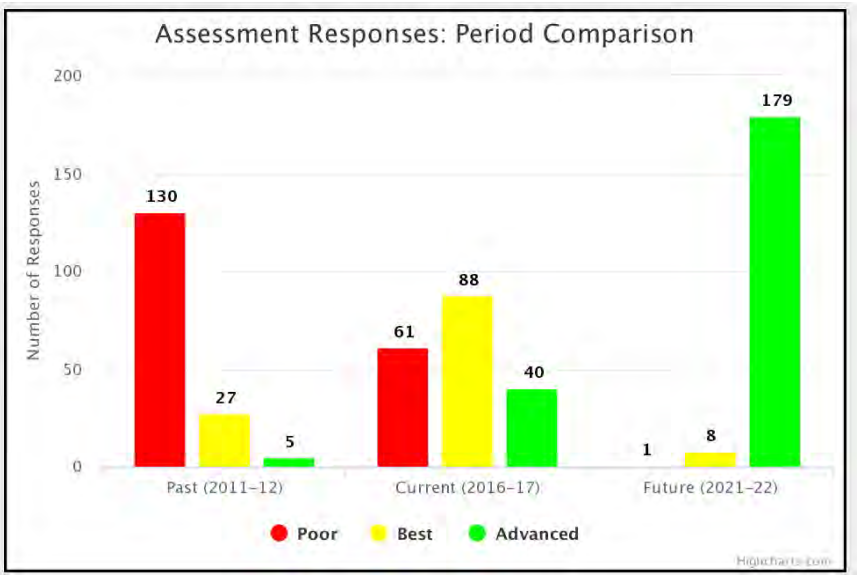

There are no "wrong" answers in using the assessment, as it's a tool for organizational assessment and tracking. With active use of the tool, strategies and details get highlighted for discussion and consideration, which help shape future goals and actions. VLAWMO encourages the use of this tool to support and guide other independent efforts Cities take in the watershed. More information on trainings and additional resources are available.

Staff is looking for direction

1.) STAY COURSE- EDUCATION AND MONITORING
2.) MONITOR PONDS- EXTRA MONITORING IN DIFFERENT COMMUNITIES
3.) AID TO CITIES FOR CHLORIDE REDUCTION EQUIPMENT
4.) OTHER

Chloride discussion background for Board:

1. Monitoring and Studies
    a. Highlights of MPCA Metro –
        i. Feb. 2016; 37 lakes, streams wetlands impaired in metro – none in VLAWMO, etc.
        ii. Implementation strategy – Fig. 10, Page 38
        iii. Monitoring recommendations
    b. VLAWMO chloride monitoring results
2. Education and Outreach efforts
    a. Current efforts
        i. Municipal (MS4) partner education (videos, trainings, website, print materials
        ii. Homeowner- videos, print, web, salt cups, etc.
        iii. Private contractor – trainings
    b. Focus of future education efforts: MPCA tool – WMAt information
3. Board direction and Water Plan priority discussion

VLAWMO BUDGET 2018 EXPENSE			2016 budget with fund	Actual 2016	2017	Actual 2017	Approved 2018	approved fund balance	2018 Working Budget (w-FB)	Draft 2019 Budget	budget	
3.1		Operations & Ad	######	#######	$459,740		$481,500	$18,390	$499,890	$518,250		
	3.110	Office	$23,375	$22,000	$23,740	$23,001	$23,700	$0	$23,700	$24,980	$1,280	
	3.120	Information system	$25,417	$19,890	$19,500	$14,911	$21,500	$2,500	$24,000	$22,000	$500	
	3.130	Insurance	$5,200	$4,370	$5,200	$5,110	$5,200	$500	$5,700	$6,000	$800	
	3.141	Consulting -Audit	$6,100	$6,780	$6,800	$6,170	$6,400	$0	$6,400	$6,700	$300	
	3.142	Consulting - Bookke	$1,500	$2,148	$1,500	$1,420	$2,000	$0	$2,000	$2,000	-500	
	3.143	Consulting - Legal	$11,000	$3,607	$3,000	$4,020	$3,000	$3,890	$6,890	$4,000	$1,000	
	3.150	Storm Sewer Utility	$16,000	$12,078	$16,000	$12,449	$13,500	$3,000	$16,500	$13,500	$0	
	3.160	Training - staff, boa	$4,000	$1,781	$4,000	$3,016	$4,000	$500	$4,500	$4,500	$500	
	3.170	Misc & contingency	$11,000	$3,236	$7,000	$4,026	$5,200	$4,000	$9,200	$5,500	-500	
	3.191	Employee payroll	#######	$298,211	$303,000	$298,761	$314,000	$4,000	$318,000	$340,260		$340,260
	3.192	Employee liability	$60,250	$62,343	$70,000	$79,939	$83,000	$0	$83,000	$88,810		$88,810
3.2		Monitoring & St	#####	$20,617	$25,500		$25,000	$3,500	$28,500	$26,000		
	3.210	Lake & creek progr	######	$18,751	$23,000	$23,523	$22,500	$0	$22,500	$24,000	1500	
	3.220	Equipment	$4,700	$1,866	$2,500	$1,454	$2,500	$3,500	$6,000	$2,000	-500	
3.3		Education & Out	#####	$13,292	$34,000		$24,000	$5,700	$29,700	$28,000		
	3.310	Public Education	$8,250	$977	$7,000	$6,136	$7,000	$200	$7,200	$9,500	$2,500	
	3.320	Outreach and mark	$8,250	$4,315	$7,000	$1,204	$7,000	$500	$7,500	$8,500	$1,500	
	3.330	Community Blue ed	######	$8,000	$20,000	$700	$10,000	$5,000	$15,000	$10,000	$0	
3.4		Capital Improveme	#####	#######	$125,900		$240,900	#######	$527,850	$250,000		
		Subwatershed Activity					*$174,900*	***$242,240***	***$417,140***	***$187,000***		
	3.410	Gem Lake subwatershed			$0	$0	$0	$0	$0	$0		
	3.420	Lambert Creek subv	######	$111,358	$1,000	$323,384	$57,000	$106,290	$163,290	$30,000	$30,000	
	3.425	Goose Lake subwat	######	$19,096	$14,900	$12,534	$60,000	$57,365	$117,365	$67,000	$67,000	
	3.430	Birch Lake subwatershed		$0	$5,700	$12,469	$22,200	$4,700	$26,900	$10,000	shoreline work, catchment RG	
	3.440	Gilfillan Black Tamarack Wilki		$0	$17,600	$17,915	$30,000	$5,185	$35,185	$50,000	Wilk BMP, SLMP study	
	3.450	Pleasant Charley De	######		$5,700	$0	$5,700	$3,700	$9,400	$15,000	Charley sed. Study	
	3.460	Sucker Vadnais sub	######		$0	$0	$0	$65,000	$65,000	$15,000	Sucker channel	
	3.48	*Programs*						***$46,710***	***$110,710***	***$61,000***		
	3.481	Landscape 1 - cost-	######	$14,270	$24,000	$19,094	$24,000	$4,500	$28,500	$24,000		
	3.482	Landscape 2	######	$20,000	$30,000	$10,000	$30,000	$0	$30,000	$20,000		
	3.483	Project research an	######	$18,676	$17,000	$20,223	$5,000	$16,500	$21,500	$12,000		
	3.484	Maintenance & ope	######	$3,224	$10,000	$2,290	$5,000	$25,710	$30,710	$5,000		
3.5		Regulatory	$0	$0	$5,000		$2,000		$2,000	$2,000		
	3.510	Engineering plan re	$0	$0	$5,000	$0	$2,000	$0	$2,000	$2,000		
Total budget			####	######	$650,140	#####	$773,400	######	$1,087,940	**$824,250**		

INCOME											
5.1		2016	2016 Actua	2017		Ap. 2018		Ap 2018	Dr. 2019	Increase	
5.11	Storm Sewer Utility	$503,350	$498,792	$645,440	$655,124	$747,400	$0	$747,400	**$817,750**	$70,350	
5.12	Fees for Service	$500	$500	$500	$100	$500	$0	$500	$200	0.0941263	
5.13	Interest	$150	$577	$200	$1,581	$500	$0	$500	$1,300	$42.63	
5.14	Misc. income - WCA	$5,000	$5,848	$4,000	$4,360	$5,000	$0	$5,000	$5,000	$46.64	
5.15	Other funding sourc	$0		$0	$202,264	$20,000	$0	$20,000	$0	$4.01	
5.16	Transfer from reser	#######	$50,000	$0	$90,000	$0	$316,540	$316,540	$0	$1,002,250	w-grants
Total income		####	######	$650,140	#####	$773,400	######	$1,089,940	$824,250	$288,487.50	FB target

Footnotes for the 2018 VLAWMO Budget

1. **3.110** - ***$24,980 Office***. The rental expenses are anticipated to increase under a lease with the City of Vadnais Heights. Details are in the table below. Rent includes the main office, 4 cubicles, storage space and access to conference rooms. Telephone, internet and office machine overhead is $3,100 for 2014. Postage, copies and supplies are estimated.

Office expense	2016 amended	2017 amended	2018 proposed	2019	2020
Rent	17400	17,400	17,640	17880	18,120
Tel /Internet/ machine use	2820	2820	3000	3180	3,360
Postage	550 *	600 *	600 *	600 *	620 *
Copies	450 *	500 *	500 *	550	550
Supplies	1950 *	2000 *	2000 *	2050	2050
total	$23,170	$23,320 *	$23,740 *	$24,260	$24,700 *

*estimated

2. **3.12 - $22,000**. **Information systems** – This covers the critical IT annual maintenance costs:
    a. Roseville – Metro INET 14% or $50/mo inc.$13,673
    b. website hosting, support & email (HDR) $2000,
    c. Google apps for government $250
    d. GIS web hosting & update to the GIS mapping system (Houston), $1300,
    e. Adobe software for 2 ($53 + 22) * 12 = $900
    f. ESRI ArcView license renewal ($700) & GIS User group dues $250.
    g. Software updates: $500
    h. Hardware updates (1.33 laptops): $2000
3. **3.13 - $6000. Insurance**. Public official's errors and omissions insurance is no longer offered by United Fire & Casualty. The new insurance has additional broker fees. Worker's compensation insurance tracks with payroll costs.
4. **3.141- $6700**. **Consulting - Audit**. This amount reflects the total in the second year of our contract with Clifton Allen Larson.
5. **3.142 $2000 Consulting - Bookkeeping**. We have taken bookkeeping in house with the loss of our bookkeeper. At this point we are still determining how cost-effective this will be. The line item will allow for the hire of a new bookkeeper for 2019 if this proves most efficient or to secure Quick books technical help.
6. **3.143 $4000 Consulting - Legal** This was increased based on actual 2017 costs. We may want to consider a JPA update to address insurance needs.
7. **3.150 $13,500 Storm Sewer Utility**. This budget item provides consultant assistance to translate our annual budget into SSU fees for each of 11,000+ parcels within VLAWMO and assistance certifying those parcels to two Counties. This assistance is critical to the SSU, the main source of VLAWMO funding. Consulting fees vary slightly from year to year depending on property divisions and other changes during the year. Property roll changes later in the calendar year tend to be more expensive to us as it requires reapportioning already

determined or certified fees. Certification payments to the counties are about $4500.

8. **3.160 $4,500 Training: staff, Board, TEC**. Five staff and some volunteers taking advantage of occasional excellent workshops. $1000 is included the training budget to provide the beginning of the educational assistance fund consistent with the policy adopted by the Board to provide up to $1000 annually to staff going back to school. So far staff has not taken advantage of this but there is interest. The $1000 if not used is intended to roll over in case more than one at a time is taking advanced training or coursework.
9. **3.170 Misc. & contingency $5500** This item was reduced in 2017 based on 2016 expenditures. Mileage at federal rates and other expenses are paid with this budget item. Our contingency budget represents less than 1.0% of the total budget.
10. **3.191 & 3.092. Administration or staff payroll: $340,260 + $88,810 = $429,070 (**employer liability – FICA, PER, health stipend**)** is proposed for 2017 which allows for up to a 3% cost-of-living increase and market adjustments. Background: 2016 is the first full year of five full time employees. This was not budgeted in 2016 which resulted in about $30,000 drawn from reserves. After functioning at 4 staff members for the first 4 months of 2016 the fifth staff member started in as an intern May. This allowed for some 2016 savings. The 2017 budget was already approved by the time the Board considered health insurance for employees. Changes in the health insurance market which have not been reflected in the health benefit stipend (remained @ $4700 for 8 years) have moved the Board to authorize health insurance & an Health Savings Account in 2017. It is anticipated that the health insurance will cause our actual expenditures to be about $8000 more than budgeted. The 2018 budget reflects 3% average COLA increase for payroll and a $15.7% increase due to health insurance premiums. Paying staff is our biggest single expense, but critical to all other programs. Some other changes on the horizon may include a step increase for a couple of the staff, possible need to change the health care stipend and the over-time exemption for professional employees. Again: VLAWMO benefits include PTO for vacation and sick leave (based on length of service), paid holidays, health insurance & HSA which is the same for the last 7 years, PERA (required public pension) and short term disability.
11. **3.21. $24,000 Lake and creek lab analysis** . Actual costs have rose in 2017 due to additional testing. VLAWMO still partners with Ramsey County on chloride testing. We anticipate some savings this year due to the new lab costs. VLAWMO is partnering with the St. Paul Regional Water Service enumeration bacteria sampling and analysis. The bacteria testing costs are reflected in the project costs rather than here in the general program expenses SPRWS does the analysis and VLAWMO purchases the testing media. The first years of Whitaker wetland monitoring will paid from the CIP budget under the grant. DNA analysis was done by Weston labs in California and is paid under the CIP.
12. **3.22. $2,000 Equipment** We anticipate replacing the canoe in 2019.. Life jackets need replacement. This pays for bacteria processing supplies, ice & dry ice for transport and other supplies.

13. **3.310 Public Education - $9,500**. This was increase to provide funding for training Master Water Stewards. It also provides materials and books for working with schools, community organizations and our municipal partners. It pays dues to partner organizations such as NEMO, and Watershed Partners. This is for expenses associated with the Annual Report and subsidizing books for workshops.
14. **3.320 $8500 Outreach and marketing.** As Master Water Stewards will provide outreach assistance and energy a portion of the training costs were allocated here too. $1000 will be reallocated from the existing budget. This portion of the budget would fund brochures, community event materials and non- project related signage. Facebook ads, constant contact for e-news distribution, brochures, branding material & swag are included.
15. **3.330 $10,000 Community Blue Education grant.** Community Blue. This will be the 3rd year of the education grant program that partners with community groups within the watershed to promote water resource stewardship. The amount available is set in the budget rather than the policy guidance. While interest has been increasing in the program the amount available in 2018 has been reduced to Interest has been increasing in this grant program. $10,000 was used in 2016 in Rice Lake. About $700 funded portion of the Water Symposium in White Bear.
16. **3.410 $0 Gem Lake Subwatershed.** for 2019. The Water Plan describes expenses in other years.
17. **3.320 $30,000 Lambert Creek Subwatershed.**. BMP's identified in the engineering study. The majority of the funding for the Whitaker Treatment wetlands will come from the LCCMR grant and not reflected here. $20,000 of this is grant funding. Monitoring by both the University of MN and VLAWMO starts in 2018.
18. **3.425 $67,000 Goose Lake Subwatershed.** $67,000 is anticipated to build a project fund or provide grant match funds with partners. The Projects include Alum treatment on Goose Lake, shoreline restoration of targeted areas and a pilot spent lime project in the drainage area.
19. **3.430 $10,000 Birch Lake Subwatershed**. This is monitoring and follow up work for the project on 4th and Otter Lake Road. The rest is for other collaborative work with BLID.
20. **3.440 $50,000 Gilfillan Black Tamarack Wilkinson Amelia Subwatershed**. Wilkinson feasibility/BMP work.
21. **3.450 $15,000 Pleasant Charley Subwatershed.** Charley and or Pleasant special monitoring and feasibility work.
22. **3.460 $15,000 Sucker Vadnais Subwatershed**. Sucker channel maintenance work.
23. **3.381 $24,000. Landscape 1 (cost-share)**. The budget item has increased slightly in 2017 reflecting policy changes as well as popularity of a program that puts the funds directly back into BMP's in the ground. It remains the same for 2019. The Board and TEC have seen this as a good opportunity to put good stormwater practices directly back into the watershed and foster stewardship and education.

24. **3.382 $20,000 Landscape 2.** The Landscape Level 2 grant program as the funding source for those larger (greater than $10,000) projects brought to VLAWMO by community partners who otherwise could not implement their best management practice. This was reduced based on current use.
25. **3.383 $10,000 Project research and feasibility – watershed wide.** This provides technical and engineering assistance or special monitoring efforts for projects that do not target one specific subwatershed. The main chain from Charley to Vadnais remains a concern. This could provide seed money to partner on an effort. This could provide a phased H & H study (hydraulic & hydrology) that would bring our understanding of the watershed to a new level.
26. **3.484 $5,000 Maintenance and operations (Facilities maintenance).** This was reduced in 2017. This is based on actual expenditures. The Board has been rolling over unspent funds at year end so the available balance has so far met the 3% increase goal identified in the Water Plan. As VLAWMO installs more projects, out maintenance liability also increases.
27. **3.510 $2000 Plan reviews – engineering assistance**. This is a new category established as a core activity under the new plan. Much of the work is done in-house by staff. This would provide assistance of a water resources or civil engineer.

28. **INCOME. 5.51 $817,750 Storm Sewer Utility fees.** Last year was: $747,400. This is an increase of $9.4%.

29. **5.12 Service fees ($200)** reduced based on actual although this income varies from year to year.
30. **5.13 Interest ($1300)** has also been increased to better reflect current interest rates.
31. **5.14 WCA subgrant & misc. income ($5000)** – this is dependent on what development activity is happening during the year.
32. **5.15 $0 Other funding sources – grants, donations.** No funds are reflected in the budget. However, the final year of the Whitaker grant will be funding monitoring by VLAWMO and the U of M spent & reimbursed (about $15K). The Clean Water Watershed plan funding may be used in either 2018-19 for the identified project (see Goose Lake subshed above).
33. **5.16 Transfer from reserves and grants: $0** is budgeted. VLAWMO is in the process of rebuilding reserves.

Ramsey Conservation District PSA 2018-2019

1. Cost share - $4000 total, $2,000 each year. To come from 6.4.4 Financial incentives (6.3.4) in 2016 and Landscape I (3.381) in 2017.
2. Technical & design assistance - $5,000. Other design assistance. Funding will come from Research and feasibility (3.383) in 2019.
3. Subwatershed work on Deep and Amelia (3.35) $5000. Amelia vegetation/ bathymetric SLMP study.