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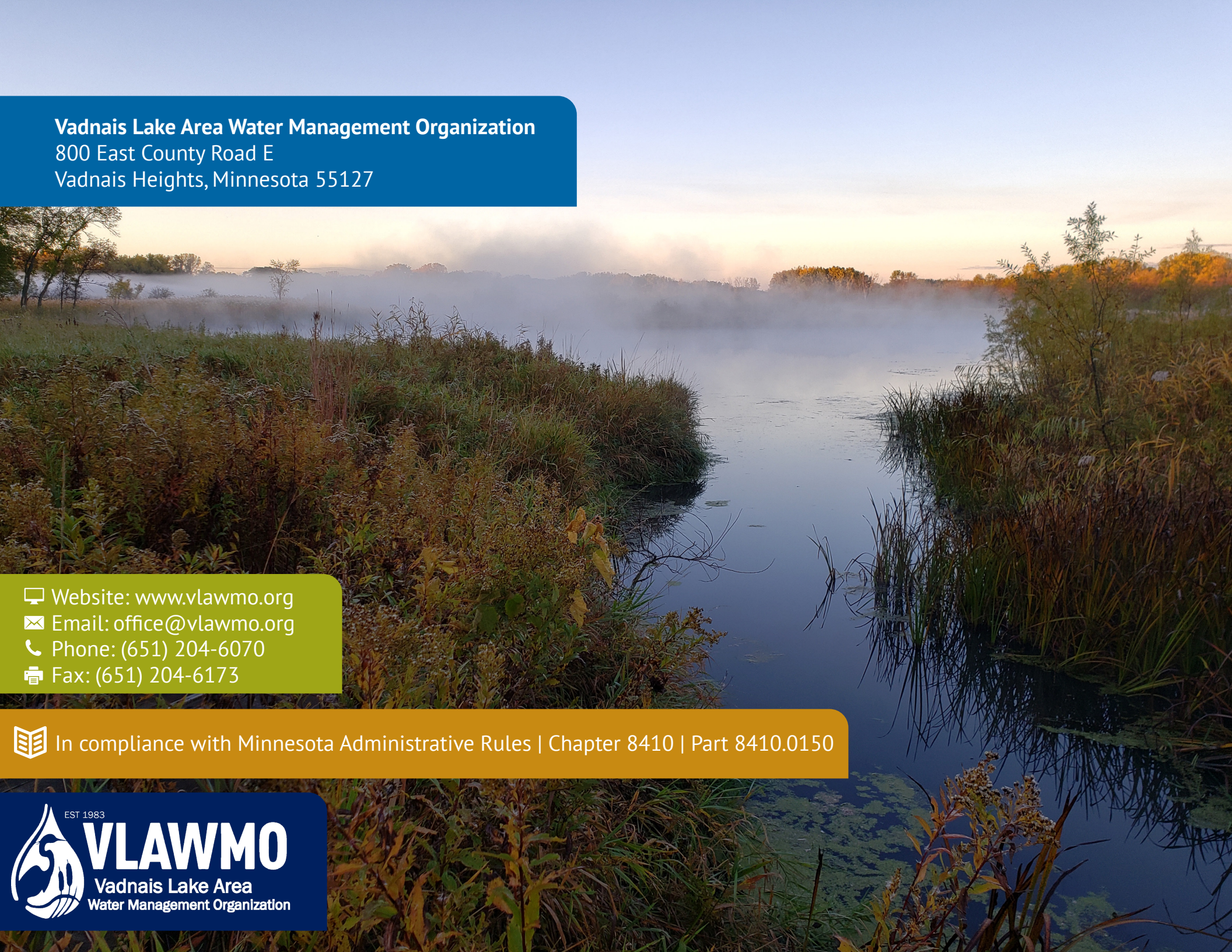
VLAWMO

Vadnais Lake Area
Water Management Organization

2021 ANNUAL REPORT



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Water Management Organization

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Introduction and background

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Letter from the Administrator

Greetings!

2021 was again a very active year for the Vadnais Lake Area Water Management Organization (VLAWMO). This Annual Report will give you some highlights, and we'd welcome your feedback.

In 2021, VLAWMO implemented two regional partnership-based projects identified in the 2017-2026 Watershed Management Plan:

• Lambert Lake Pond and Meander. This Project was constructed and finished in 2021 and provides important water quality benefits including nutrient and sediment reductions, ecosystem restoration, flood-plain reconnection, flood control, and innovative public drainage work. The Project provided critical regional water quality treatment before water discharges to East Vadnais Lake, which provides drinking water to more than 450,000 residents. The Project brought together a diverse network of partners including the City of Vadnais Heights, SEH Engineering, St. Paul Regional Water Services, MPCA, MN DNR, USACE, UMN, local residents, and included biological research for indicator wildlife species. We were honored that this project was considered as one of three statewide finalist for the Minnesota Association of Watershed District Project of the Year Award.

• Lambert Creek Dredging Project- VLAWMO, in partnership with the City of Vadnais Heights, completed this public ditch maintenance project on a stretch of apx. 2400 linear feet of Ramsey County Ditch 14 from Edgerton Street upstream to the end point of the Lambert Lake Meander project. This Project improves drainage flow on this important section of this regional water system.

2021 also saw several important plans and studies that will help prepare for future management actions. One example is a best management practice (BMP) planning effort connected to State grant funding in the Wilkinson Subwatershed. Others include carp studies on Pleasant as well as West Vadnais Lakes. The VLAWMO cost share program was also busy with construction of several neighborhood curb-cut raingardens. One of these is found in Bridgewood Park in the City of Vadnais Heights, one in White Bear Township near Rice Lake, and the other in the Goose Lake subwatershed in the City of White Bear Lake. See the cost-share summary on pg. 15 for a photo.

Partnerships were again critical to the work in the watershed. A key collaboration with the City of White Bear Lake was to complete the East Goose adaptive lake management public engagement process. This process included a public open house meeting, multiple surveys and presentations, and a final community-engagement report to bring it all together.

As a Joint Powers Association (JPA), VLAWMO plays an important role in helping Cities and Townships complete surface water management plans. This year, the VLAWMO board approved the City of White Bear Lake's 2021-2030 surface water management plan. Staff also provided local regulatory assistance by conducting staff reviews of several Wetland Conservation Act (WCA) applications.

In other important news, 2021 also marked the third annual VLAWMO Watershed Awards. The partner award was presented to Vadnais Heights City engineer Jesse Farrell, while the steward award was presented to Vadnais Heights resident and VLAWMO volunteer Katherine Doll Kanne. We're tremendously grateful for their leadership and the watershed is in a better place thanks to their partnership.

Lastly, it is an honor to work with an outstanding VLAWMO Board of Directors, Technical Commission, and staff. I'm so privileged every day to work with Brian, Tyler, Nick and Dawn who are the best team of any watershed in the metro area. 2021 has been a very busy year at VLAWMO and the team looks forward to even more exciting work in 2022 and beyond.

Phil Belfiori

- Phil Belfiori, Administrator

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 Services (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:

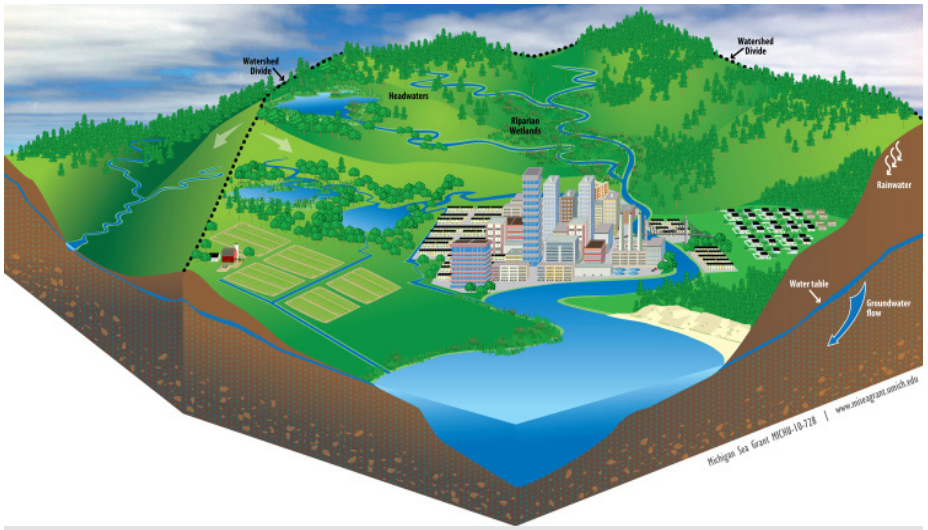
- Protect surface water quality
- Protect groundwater quality and recharge areas
- Provide public education to promote good stewardship of water resources
- Protect and manage wetlands through the Wetland Conservation Act
- Collaborate with other public and private organizations
- Manage stormwater and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

Goose Lake aerial image circa 1960.
Photo courtesy of White Bear Lake 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 (ex. 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 an 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

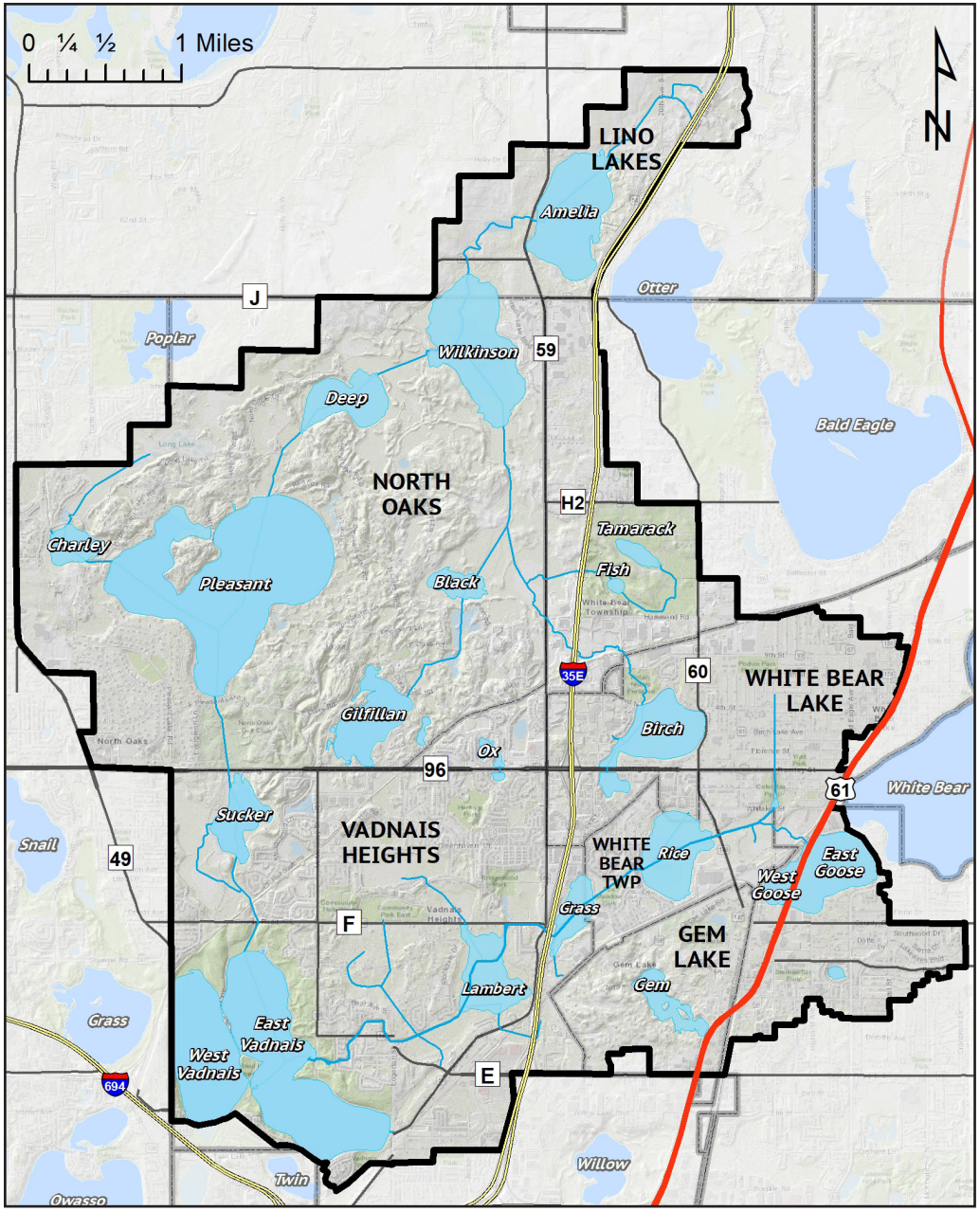
VLAWMO has jurisdiction over Lambert Creek, 4.5 miles of creek and wetland that runs from West Goose Lake and eventually empties into East Vadnais Lake.

WETLANDS

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

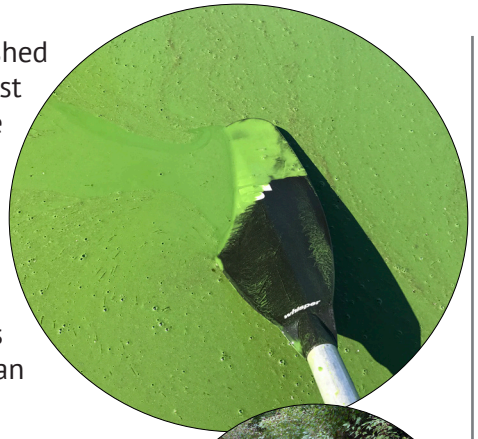


THE YEAR IN REVIEW:
Activities, projects, and highlights

IN THIS SECTION

What problems does the watershed face?

IMPAIRED WATERS:



Several lakes in the watershed are on the State Impaired List for high nutrients. These include Wilkinson, Goose, West Vadnais, and Gilfillan Lakes. Lambert Creek has an impairment of high E. coli bacteria levels. Studies show that the E. coli is coming from canine and avian sources.

Improving these waterbodies requires cooperation between cities, land owners, businesses, and the watershed organization. Each home, park, and property connects to a waterbody through stormwater runoff and is part of the puzzle.

RISING CHLORIDE LEVELS:

Road salt has a permanent impact on fresh water, with no economical way to remove it once it's in the water. When it is washed into lakes and wetlands, the chlorides in salt interrupt the natural nutrient cycling that fish depend on.

While some water bodies flush salt downstream to another watershed, some lakes in VLAWMO are accumulating salt. All of VLAWMO's lakes are currently below state standards, but VLAWMO is monitoring this closely to track changes and guide management.

SEDIMENTATION:

Erosion and sedimentation is a natural process that can be accelerated with human activity. Bare soil, degraded slopes, and poorly protected drainage routes are common sources of excess sediment.

Small amounts of sediment accumulate in stormwater runoff to create a big issue for lakes and streams. Sediment clogs wetlands, culverts, and drainage ditches, suffocates aquatic plants that stabilize lake beds, and carries excess nutrients with it.

DEGRADED WETLANDS:

Many shorelines on lakes and ponds contain turf grass up to the water's edge. This causes problems for water quality and degrades nature's ability to protect water resources.

Sometimes wetlands are altered or filled in illegally. Even small infringements on wetland boundaries contribute to a state-wide struggle in preventing the gradual loss and degradation of wetlands. Preventing this loss supports clean and secure surface and groundwater for the future.

Be part of the solution:

How to help improve the watershed from home.

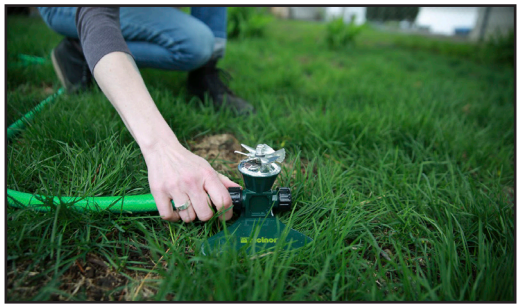
WINTER:

Practice Smart Salting:

- Shovel and scrape early after a snowfall.
- Spread salt with 2-3" between crystals.
- Don't over-salt: 1/2 - 2/3 of a coffee mug holds enough salt for one parking space.
- Practice spot-treatment, apply salt, sand, or grit in cold temps and as a salt alternative.
- Visit vlawmo.org/residents/water-stewardship/ for more info.
- Sweep up extra salt and sand when pavement is dry.
- Select your product according to the temperature.

SPRING & SUMMER:

- Adopt a stormdrain to promote local water quality.



Water with care:

- Water lawn in the morning and evening to reduce evaporation.
- Use sprinklers that keep water low to the ground.
- Direct sprinklers away from pavement.

Mow with care:

- Mow grass at 3" to hold moisture on the lawn and reduce runoff.
- Keep grass clippings out of the street.
- Leave grass clippings on lawn for free fertilizer, or fertilize sparingly.

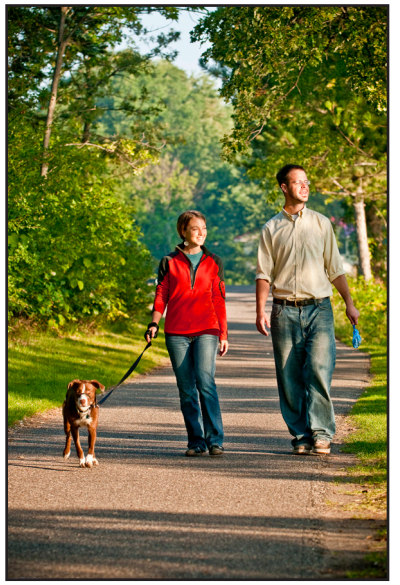
Plant a raingarden or maintain a community raingarden to keep it functioning.

FALL:

- Core aerate the lawn to increase root depth, durability, and water absorption.
- Continue adopt-a-drain efforts, cleaning out leaves and debris from stormdrains and the curb.
- Mulch leaves into lawn with a mower for free fertilizer.
- If you must use weed killer, do so now to make a bigger impact and use less compared to Spring/Summer.
- Dispose of leaves and grass clippings responsibily at a compost site or through a hauler service- never in a ditch, wetland.

ALL YEAR LONG:

- Prevent illegal dumping into ditches and stormdrains: "only rain down the drain".
- Build a native planting or raingarden. Plan with VLAWMO to make planting and installation easy and effective.
- Restore shorelines with deep-rooted native vegetation.
- If you're involved with contractors, seek contractors certified in smart salting or turf maintenance best practices.
- Respect wetland boundaries. Each wetland plays a role in the watershed no matter how small.
- Always pick up pet waste.



Photos: Clean Water MN

In the Community

PROGRAMS AND EVENTS

Due to COVID-19, VLAWMO's community outreach adapted with the necessary changes of the time. With on line engagement and emphasizing outdoor socially-distant activities, we're thrilled that VLAWMO was able to retain a sense of community and participation in such a difficult year. This year's programming included the following.

NORTH OAKS BIOSWALE

Minnesota Water Steward Sierra Weirens led a collaborative effort to renovate a bioswale in North Oaks. Sierra conducted a VLAWMO Community Blue Grant with oversight from the property owners of the bioswale, the North Oaks Home Owner's Association (NOHOA).

The bioswale pre-renovation was experiencing poor infiltration due to underlying clay soil which was further clogged from incoming sediment. The swale was excavated with new inlet structures to catch incoming sediment at the swale entrances.

RAINBARREL WEBINAR

Minnesota Water Steward Katherine Doll Kanne held an on line rainbarrel install and use workshop in August, 2021. The workshop was a success in that it provided an entry-level project for new folks who are curious about water conservation and water-minded landscaping.

UPSTREAM

Despite being canceled in 2020 due to COVID-19, the Upstream project adapted and re-grouped to run in 2021. This project was initiated by the White Bear Center for the Arts (WBCA) through a Community Blue Grant. Working with Upstream artist Anna Metcalfe, the WBCA facilitated a series of tea and storytelling ceremonies in various locations in the watershed. Guest stories were compiled and printed onto hand-made ceramic mugs, made by Anna Metcalfe. Each participant who shared a story took home a mug with someone else's water story. The series accumulated with a guest presentation by Ojibwa elder and M'dewin Sharon Day, as well as a presentation on ceramics in human history by Anna Metcalfe. VLAWMO provided local water education and presentations throughout the project from May to October, 2021.

Visit vlawmo.org/news/blog for a synopsis of the event and a summary video.

Watershed Action Volunteers

Volunteers bring VLAWMO's work into the community. In addition to the volunteer programs outlined on this page, volunteers help present booths at public events, conduct wetland surveys, and photograph wildlife in the watershed.

ADOPT-A-RAINGARDEN & ADOPT-A-DRAIN

Volunteers help maintain public raingardens throughout the watershed. VLAWMO would like to thank Christ the Servant Lutheran Church, Mick Jost, Susan Miller, and the Vadnais Heights City Hall staff for making raingarden maintenance a regular part of everyday life.

ADOPT A STORM DRAIN

CITIZEN SCIENCE: MACROINVERTEBRATES & PHENOLOGY

Citizen science allows nature enthusiasts of all kinds to participate in valuable watershed monitoring at their own pace. With the Leaf Pack Method, VLAWMO volunteers help monitor six locations along Lambert Creek and in North Oaks for aquatic macroinvertabrates. Several picture posts are also installed at key sites such as lake shores, wetland restorations, and channels. These posts guide users in taking a multi-photo panorama that gets saved in a gallery database. This database is useful for finding trends in vegetation, algae blooms, ice in/out, erosion, and more. Visit vlawmo.org/get-involved for more info.

Leaf Pack Network

picture post

CITIZEN ADVISORY COMMITTEE (CAC)

The CAC is a venue for residents to help advise and guide VLAWMO education and outreach efforts, help plan and gather public feedback (surveys, etc.), and convey public interests, concerns, and opportunities for networking to staff and the VLAWMO Board of Directors. VLAWMO's CAC is a subset of the primary volunteer group, the Watershed Action Volunteers (WAV).

AQUATIC INVASIVE SPECIES (AIS)

Partnering with Ramsey Soil and Water Conservation Division (RSWCD), VLAWMO gathers volunteers to serve as citizen AIS detectors. RSWCD provides training and records of aquatic invasives across the county. Together we're able to have eyes-on-the-water for quick detection and response should new infestations occur.

MINNESOTA WATER STEWARDS

VLAWMO joined the MN Water Stewards program in 2018. This program is coordinated through the nonprofit Freshwater, who trains and prepares volunteers to be citizen champions in watershed projects and outreach. As of December, 2021, VLAWMO's MN Water Steward team consists of six invaluable team members.

Photo: Clean Water MN

MINNESOTA WATER STEWARDS
Community Leadership for Clean Water

Project Highlights

LAMBERT LAKE POND AND MEANDER

The Lambert Lake Pond and Meander project finished off in June, 2021. The effort replaced 400 ft of sheet pile in Lambert Lake Pond and created a 2,020 ft meander just south of Lambert Lake Pond. The meander provides an alternate course apart from the former ditch channel, but meets up with the existing channel upon existing the Lambert Lake wetland area.

A history of ditching and draining along Lambert Creek has altered the natural hydrology of the area, causing stronger stormwater surges, increased sedimentation, and increased erosion due to the increased water volume.

Throughout the United States, a trend of channeling and ditching natural waterways has had an unfortunate consequence on water resources and built infrastructure. While straight channels are effective at transporting water quickly, they sacrifice the storage space and natural sediment dispersal that floodplains offer.

The project results in enhanced water storage at Lambert Pond, and improved floodplain access in the segment of Lambert Creek just south of Lambert Pond. The effort also removes excess bacteria, improves vegetation and wildlife habitat, and slows down water, which serves to reduce erosion.

Visit vlawmo.org/projects for more info, photos, videos, and the story of the project from 2020 to 2021.

Top: Steel sheetpile replacement being installed at Lambert Lake Pond. The previous sheetpile (installed 2005) had reached the end of its expected life cycle.

Middle right: The meander was dug out as a new channel for this specific segment of Lambert Creek. Frozen wetland soil was essential to complete the work with the heavy digging equipment.

Left: Drone footage from SEH, inc. shows the newly renovated Lambert Lake Pond and meander from above. Native shrubs were planted along the new meander banks in June, 2021.

Lambert Creek/Ditch 14 Updates

LAMBERT CREEK DREDGING

VLAWMO worked with the City of Vadnais Heights to conduct maintenance on approximately 2,400 ft of Lambert Creek/Ditch 14 and 70 ft of Branch Ditch #5. This effort improved drainage and removed accumulated sediment. The location of this maintenance was from Edgerton Street to the end of Pennington Place where Lambert Creek exits the Lambert Lake wetland area. Results included:

- Removal of 1-2 ft of sediment in the creek channel
- Removal of fallen trees within the banks
- Tree clearing along the north and south side-slopes of the ditch to remove existing dead-fall and reduce future obstructions from falling trees
- Installation of bank stabilization practices to mitigate failing banks
- Cleared trees and dredged material placed on-site and leveled
- Disturbed areas and channel banks seeded and covered with straw

Visit vlawmo.org/projects to find the Lambert Creek/Ditch 14 maintenance page including photos, maps, and a video of the project.

Right: Lambert Creek dredging at Pennington Place, between the Lambert Lake wetland area and Edgerton Street.

Cost-share Programs

VLAWMO's Cost-share Program provides assistance to public and private landowners for implementing stormwater improvement projects. Qualifying projects support one or more of the following:

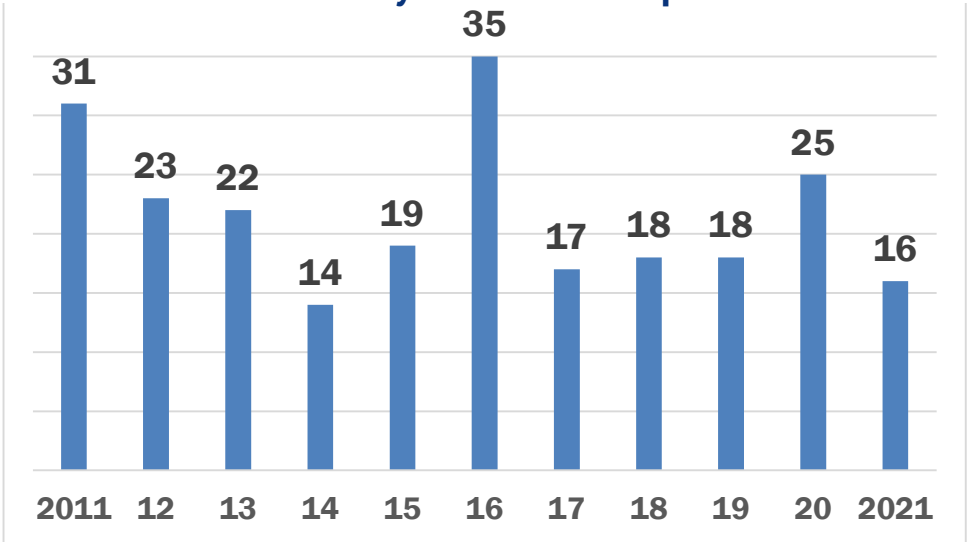
- Prevention of flooding or mitigation of drought
- Water quality improvement or increase in watershed storage capacity
- Preservation, protection, and restoration of native plant and wildlife communities, especially along lakes, streams, and wetlands
- Protection and preservation of groundwater quality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

Funds vary by year and are granted on a first come first serve basis. Once the annual amount is depleted, applicants are advised to re-apply the following year. New for 2021, the Soil Health grant program was created to fund smaller residential projects such as native restorations, downspout raingardens, turf replacements, and other small best management practices.

There were 3 cost-share programs in 2021:

- Rainbarrel: 5 grants, 6 rainbarrels implemented.
- Soil Health Grant: 6 grants
- Landscape Level 1: 3 grants
- Landscape Level 2: 2 grants

Cost-share Grants by Year: Landscape & Rainbarrel



LANDSCAPE COST-SHARE PROGRAMS

Landscape Level 1: Reimburses property owners for 50-75% of the costs associated with implementing approved water quality projects. The maximum reimbursement is $5,000-$7,000, depending on project type. Examples include raingardens, shoreline or streambank restorations, or pervious pavers. A target volume reduction zone was introduced to this program in 2021 to increase stormwater volume reductions in key areas.

Landscape Level 2: Projects with a larger total cost (minimum $5,000). Will reimburse 50-90% of the total project cost. The program was updated in 2021 to target partnerships with community groups and municipalities.

VLAWMO uses Minimal Impact Design Standards (MIDS) to measure the impact of landscape improvement projects. The impact of 2021's projects are estimated to improve water quality by:

- Reducing total phosphorus by **2.883 lbs** per year.
- Reducing suspended solids by **4,695lbs** per year.
- Infiltrating **384,374 gallons** of water into the ground annually.

2021 Neighborhood Spotlight: Hisdahl's Trophy

SOIL HEALTH & LANDSCAPE LEVEL 1 SUMMARY

6 Soil Health grants were awarded funding for a total of $4,500, utilizing all Soil Health grant funds allocated for 2021. 3 Landscape Level 1 grants were awarded for a total of $14,866. $1,135 in LL1 funds were unspent in 2021.

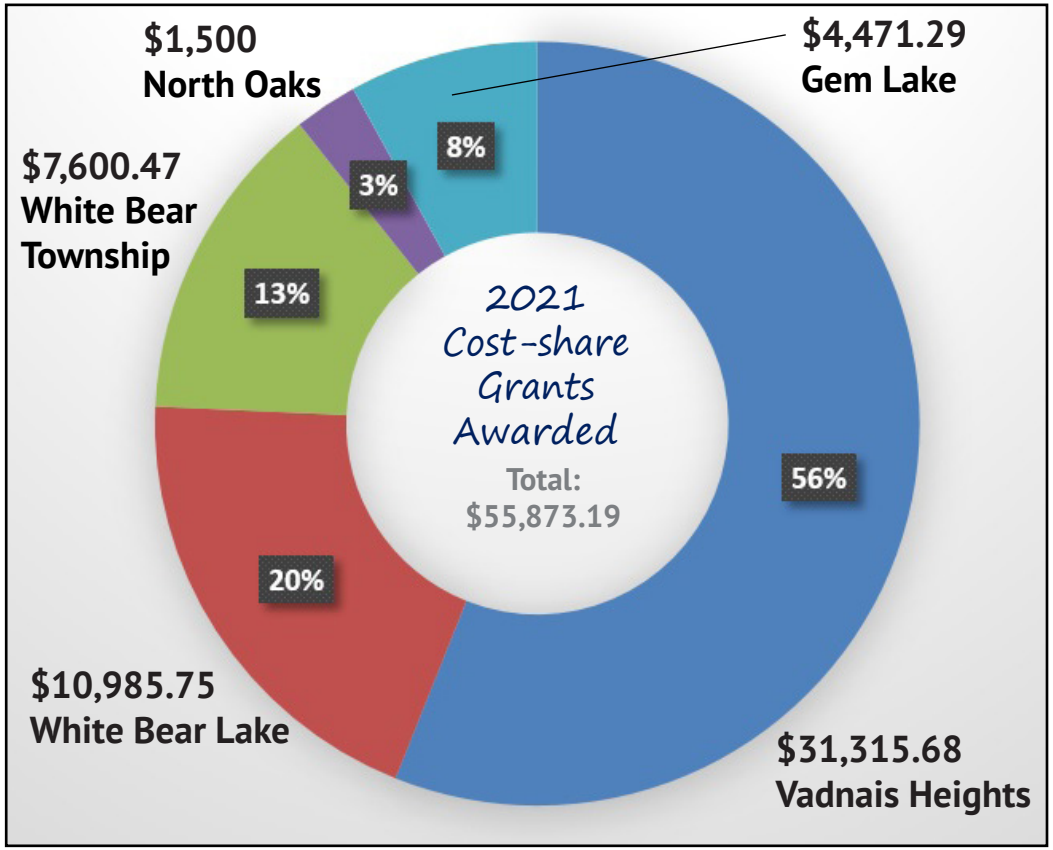
This new curb-cut raingarden in White Bear Township is a highlight in the cost-share program. Projects like this capture stormwater from the direct property plus other nearby properties, and are a tremendous asset to the watershed.

Of the Soil Health grants, 6 were native plant restorations totaling 20,120 ft^2. 2 were raingardens totaling 300 ft^2. There was 1 shoreline restoration totaling 3,228 ft^2.

2020 project square footage:	2021 project square footage:
213,967 ft^2	24,588 ft^2

LANDSCAPE LEVEL 2 SUMMARY

2 landscape level two grant were awarded for a total of $36,127, covering 940 ft^2. Both projects were curb-cut raingardens.



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 $100 maximum reimbursement per rainbarrel, plus 50% of installation hardware costs.

RAINBARREL SUMMARY

In 2021 VLAWMO awarded 5 grants for 6 rainbarrels, for a total of $ 379.33.
A total of 85 rainbarrel grants have been awarded since the program began in 2007. Each time a barrel is filled up, up to 55 gallons of rain water is available for reuse. If each rainbarrel gets filled 10 times throughout the year from various storm events, up to 46,750 gallons of water is available for reuse.

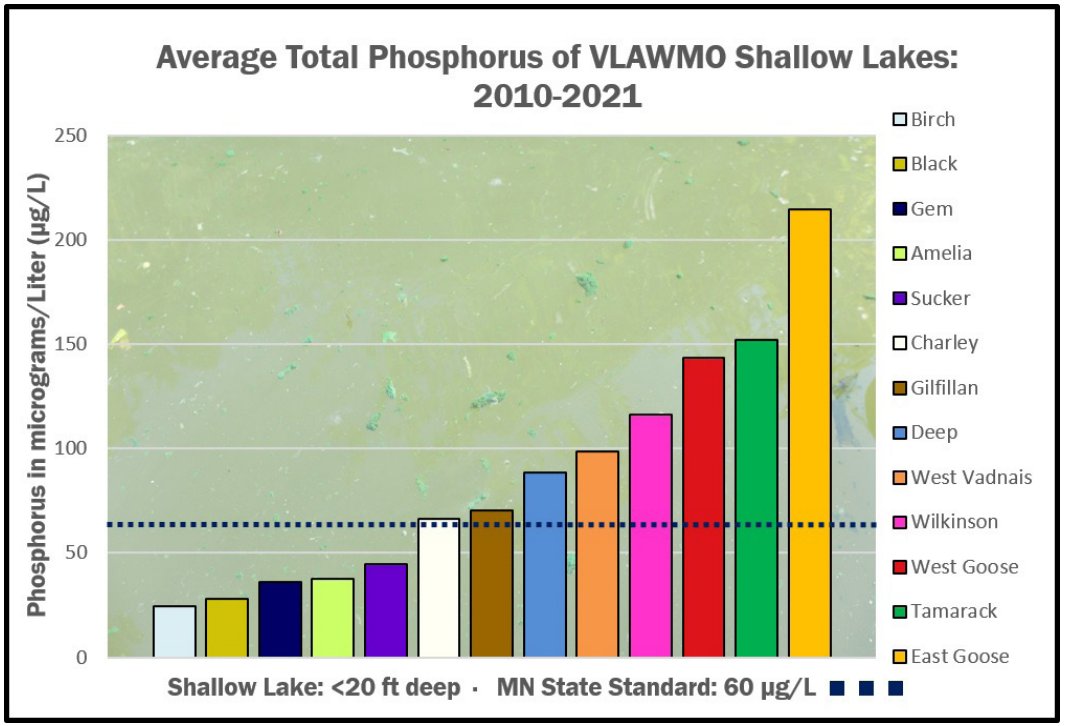
Water Monitoring

INTRODUCTION

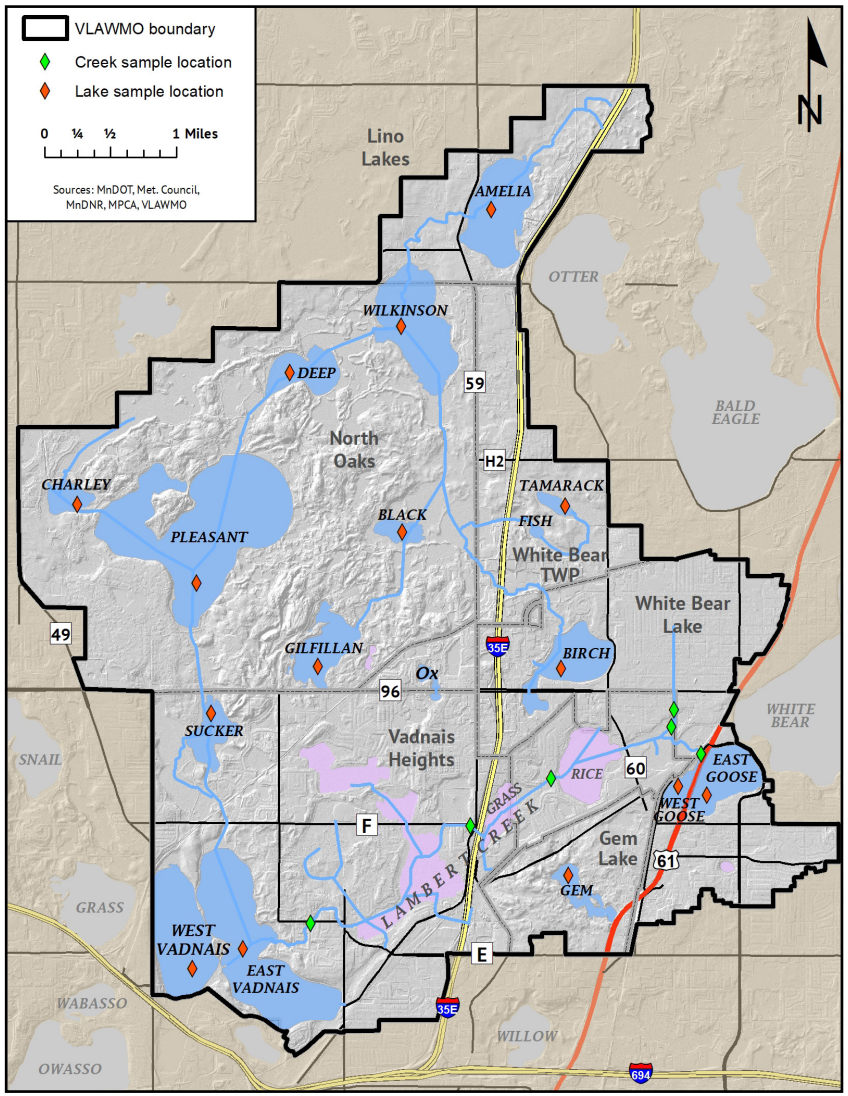
VLAWMO's regular water quality monitoring program includes nutrient sampling on 6 Lambert Creek sites, and nutrient sampling on 15 of the Vadnais Lake Area Watershed lakes. Nutrients and pollutants sampled for data include: total phosphorus, chlorophyll-A, soluble-reactive phosphorus, iron, total nitrogen, nitrate, total suspended solids, and chloride. VLAWMO's specialty monitoring programs, such as project BMP's and storm sampling, will continue. See the map of current monitoring locations to the right.

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.



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.

WATER MONITORING HIGHLIGHTS

Pleasant and East Vadnais Lakes: VLAWMO added Pleasant and East Vadnais lake to the sampling program in 2020. East Vadnais water quality continues to be high quality and below state standards. Pleasant lake nutrients showed an average increase from 2020.

Goose Lake: East Goose and West Goose have exceptionally high nutrient levels. VLAWMO is working with local partners and stakeholders to discuss plans for future management activities to help address the high nutrient levels.

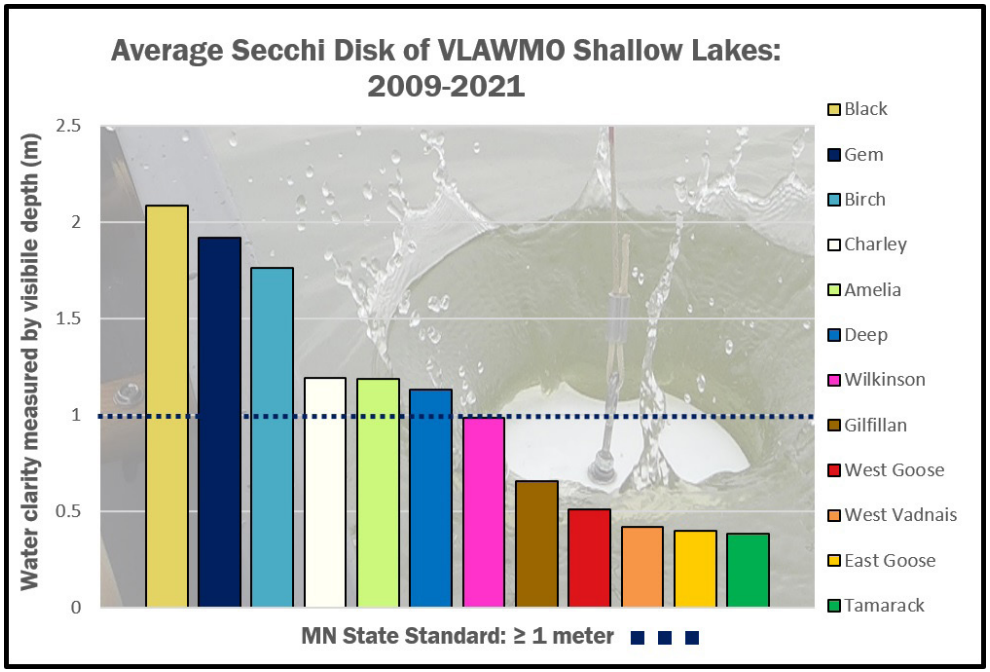
Remote Monitoring Devices: 2021 was the second full year of automated creek flow monitoring. Live information can be found here for the 4 sites monitored on the creek. http://monitormywatershed.org/

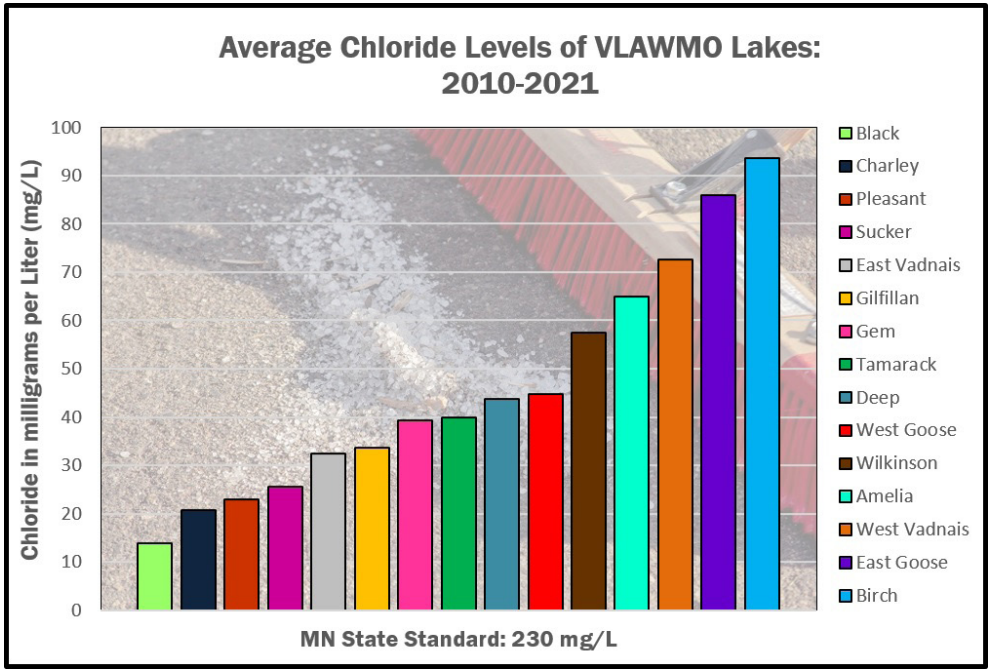
Lambert Creek: Creek flow was very low in 2021. Rainfall was 5.5 inches below average for the season. Nutrient levels were similar to 2020 data.

Ash Street Spent Lime Study: A spent lime study was done on Ash Street pond in Lino Lakes to investigate whether or not spent lime is a potential tool for reducing TP levels. Preliminary results showed some decrease in TP levels after the lime applications. Report coming 2022.

Chloride: VLAWMO has been sampling lake chloride for 12 years and while slight rises are documented, there have been no major changes within the lakes. Black Lake has the lowest levels. Birch Lake and East Goose are the highest, which coincides with their proximity to major roads and storm drainage. All of the lakes are below the current State standard of 230 mg/L.

Use of Monitoring Data: The VLAWMO monitoring data was used for multiple sub-shed studies and grant applications in 2021 to aid in possible water quality projects moving forward in 2022.



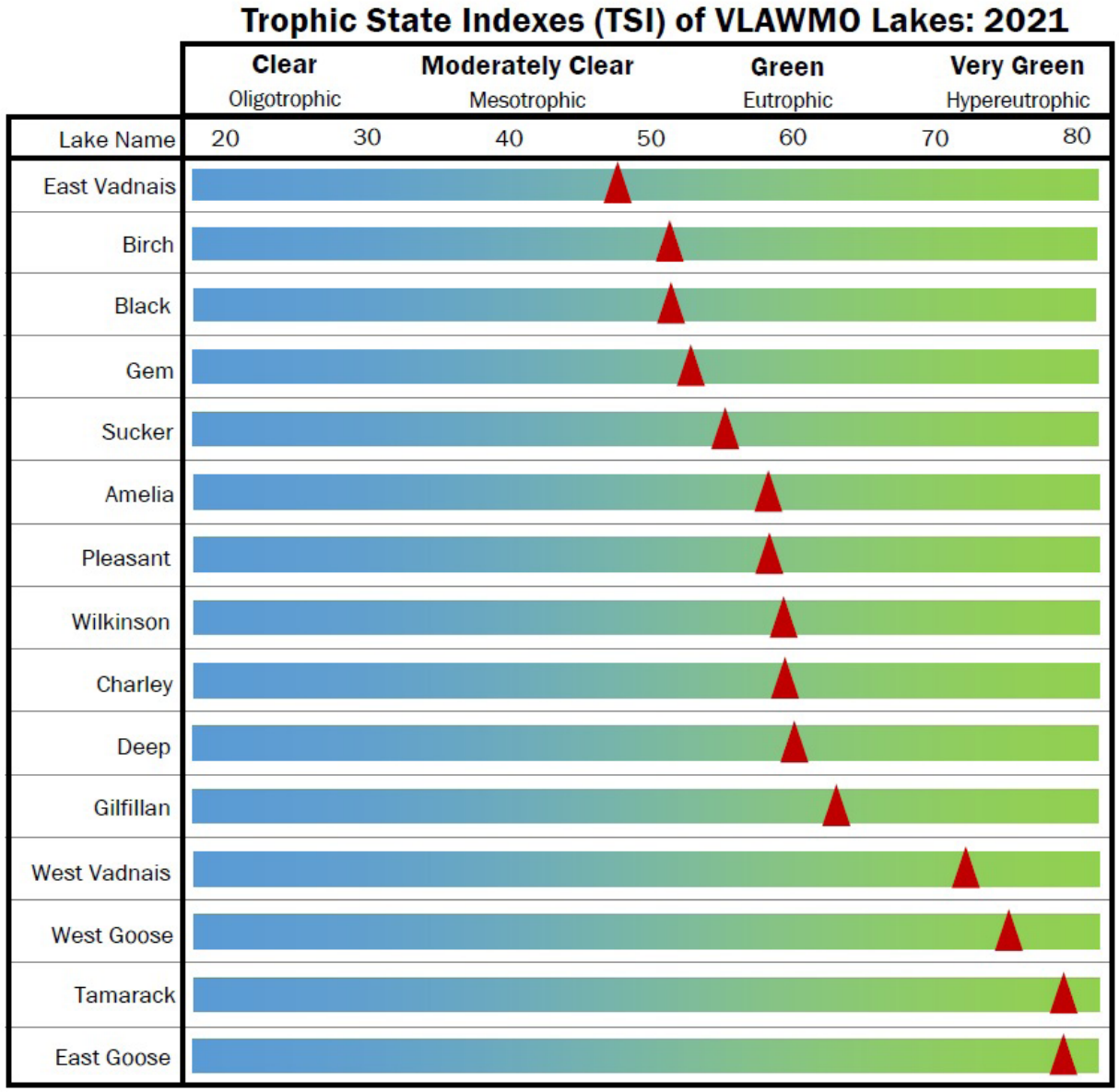


Find this year's complete Monitoring Report and a summary at VLAWMO.org/resources/reports

MONITORING SUMMARY: CONTINUED

STATE OF THE LAKES

VLAWMO uses the Trophic Status Indicator (TSI) to summarize lake health. TSI is calculated from annual monitoring data, combining phosphorus, chlorophyll-a, and transparency readings.



A water sample on the shore of East Goose Lake.

VLAWMO staff taking a monitoring sample at West Vadnais Lake

ADAPTIVE LAKE MANAGEMENT AT EAST GOOSE LAKE

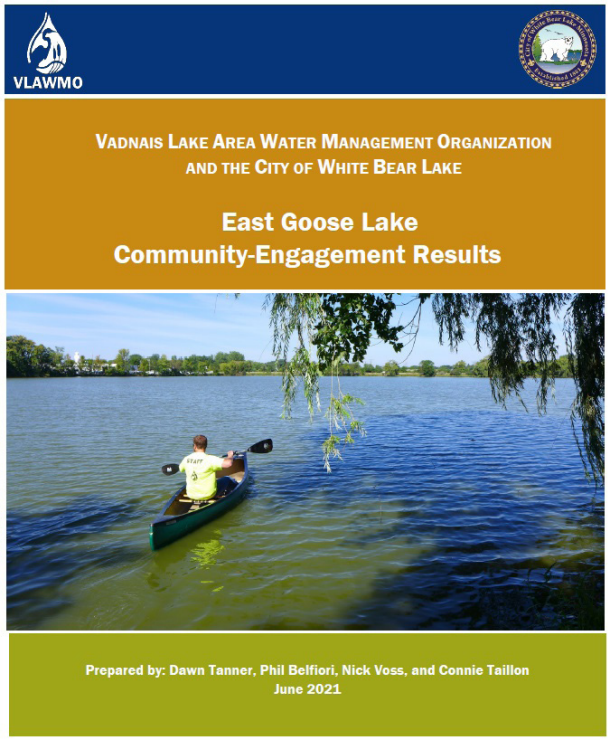
East Goose Lake is listed as impaired on the Minnesota State impaired waters list, and is therefore a high priority for both VLAWMO and the City of White Bear Lake to take steps to improve. Adaptive Lake Management (ALM) is a careful process of planning, analyzing, and setting goals together with project partners.

There are four main components in Adaptive Lake Management:
Fish management, aquatic vegetation management, external (subwatershed) Best Management Practices (BMPs), and internal loading management.

The ALM process will utilize studies and lake data to determine which components are needed and appropriate and when. It also draws from stakeholder and partner input to assess needs and interests, and prioritize one or more management projects. Each project will include careful planning to determine how the projects are customized and carried out. An evaluation process will follow each project to determine the adaptations for the next steps.

In 2021 VLAWMO finished a community-engagement report consisting of survey and questionnaire feedback that was initiated in 2020. This document and its findings serves as an essential reference for future partnerships and decision making around East Goose Lake.

The 2021 Community-Engagement Results, more information on the ALM process, and past meeting recordings are posted at the East Goose ALM web hub:
VLAWMO.org/eastgoosealm



CHARTING IT OUT:

Review of this year's goals, next year's projections

IN THIS SECTION

VLAWMO CORE ACTIVITIES

WATER PLAN STRUCTURE

2022 WORK PLAN PROJECTION

VLAWMO continues to 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 tables for the previous year review and the upcoming year work plan are 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 Separate Storm Sewer System
NEMO: Northland
SWPPP: Storm Water Pollution Prevention Program
STEM: Science, Technology, Engineering, Mathematics
BMP's: Best Management Practices
CIPs: Capital Improvement Project
LGU: Local Governing Unit
LCCMR: Legislative Citizen Commission on Minnesota Resources
AIS: Aquatic Invasive Species
TMDL: Total Maximum Daily Load
TEP: Technical Evaluation Panel
BOD: Board of Directors
BMP: Best Management Practice (pertaining to stormwater treatment)
RFP: Request for Proposal
TEC: Technical Commission

CAPITAL PROJECTS & PROGRAMS

Review of 2021 Work Plan

Project Name	Description	Goal: Going into 2021	Goal: 2021 Result
East Goose Lake Adaptive Lake Management (ALM)	Continuing work on the East Goose Lake ALM public engagement process including completion of community survey and presentation to the City Council and VLAWMO Board.	Residential and business survey. Engagement report. Determine next steps in proposed Lake management according to report findings.	Community-engagement report published. Presentations and workshop completed with City Council. Vegetation mgmt policy with VLAWMO Board into 2022.
Ditch Maintenance	Maintenance of the main stem of County Ditch 14 according to MN Public Drainage Permit 103D and the 2018 Hydrologic & Hydrology study contracted by VLAWMO with Houston Engineering Inc. (available at vlawmo.org/waterbodies/lambert-creek).	Initiate planning with the City of Vadnais Heights for possible maintenance work downstream of Lambert Lake. Begin design and permitting, funding, site access.	Design, permitting, access, and maintenance complete.
Pleasant Lake Carp Removal	Working with WSB, Carp Solutions and NOHOA, this project will establish carp biomass in Pleasant Lake and determine movement patterns/identify spawning and nursery areas so effective control can be conducted.	Carp removal. Telemetry surgical implants, monitoring, and biomass results.	Monitoring, biomass report posted. Telemetry monitoring into 2022. Carp removal with WSB and commercial fisher into 2022.
West Vadnais Lake Carp Removal	Working with Carp Solutions and Ramsey Washington Metro Watershed District (RWMWD), VLAWMO seeks to control carp biomass in West Vadnais Lake and prevent movement from West Vadnais Lake into the Phalen Chain.	Reduce biomass of carp in West Vadnais Lake. Prevent movement from West Vadnais Lake into the Phalen Chain.	Partnership with RWMWD active, biomass report posted. Barrier installed by RWMWD. Survey and monitoring into 2022.
Lambert Lake Pond and Meander	Replace sheetpile at Lambert Lake, meander a portion of ditch, add bio-char treatment cells for bacteria and nutrient removal.	Replace sheetpile, build meander. Incorporate bio char treatment conduct monitoring.	Sheetpile and meander complete. Biochar filter planning into 2022.
Vadnais-Sucker Lake Regional Park Restoration	45 acres of restoration in Vadnais-Sucker Lake Regional Park. Removal and treatment of invasive buckthorn and reseeding/planting with natives with ongoing maintenance. Partnerships with Ramsey County Parks and Ramsey Washington Metro Watershed District (RWMWD).	Landowner contracts and site visits. Prep and planning for buckthorn removal. First phase of buckthorn removal	Landowner agreement approved. JPA for maintenance into 2022. First phase of removal into 2022.

CAPITAL PROJECTS & PROGRAMS - GRANTS

Review of 2021 Work Plan

Project Name	Description	Goal: Going into 2021	Goal: 2021 Result
Landscape Level 1	Establish relationships and provide grants to property owners within the watershed to install rainbarrels and water quality enhancement projects.	Fund and install 2 LL1 infiltration projects with a combined annual phosphorus reduction of 1 lb.	3 projects funded (2 infiltration, 1 shoreline restoration), with combined annual phosphorus reduction of 2.883 lbs.
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.	Fund 4 LL2 projects and achieve 2 lbs of annual phosphorus removal (TP) with project implementation.	2 projects funded (curb-cut raingardens) with a combined reduction of .672 lbs of TP/ year.
Soil Health Grant	Small projects focused on habitat and shoreline restoration, utilizing native vegetation to promote soil and watershed health.	Fund 4 SHG projects and achieve 10,000 ft^2 of restored area with project implementations.	6 projects funded, restoration area 17,470 ft^2.
Community Blue Grant	A communication and outreach grant program for creative efforts related to water quality. Available to MN Water Stewards, volunteers, and community partners.	Support 2 MN Water Stewards capstone projects with grants and 1 community or volunteer grant.	1 capstone grant complete 1 CB grant: White Bear Center for the Arts "Upstream".

EDUCATION AND OUTREACH

Project Name	Description	Goal: Going into 2021	Goal: 2021 result
Watershed Action Volunteers (WAV)	The WAV consists of Minnesota Water Stewards (Freshwater), Citizen Advisory Commission (CAC), and volunteers with individual job descriptions. Community Engaged Learning (CEL) Partnership with the U of M, citizen science initiatives.	Complete 2 MN Water Stewards capstone projects. Hold spring and fall WAV/CAC meetings. Facilitate 10 service learning and citizen science efforts.	1 capstone complete, 1 into 2022. Spring/Fall meetings complete. 19 service learning, citizen science efforts.
Workshops	Educate residents on watershed processes, raingarden and native plant function, and project installation. Education and familiarity on VLAWMO's cost-share grant programs.	Host 2 workshops independently, 2 workshops in partnership.	Complete.

EDUCATION AND OUTREACH

Review of 2021 Work Plan

Project Name	Description	Goal: Going into 2021	Goal: 2021 Result
Community Events	Staff a VLAWMO booth, develop watershed information, brochures, and resources for community events.	Conduct 2 watershed education tours either in-person or remotely.	Canceled: Low attendance.
Commun-ications	Create and update material and publications for social media, website, seasonal E news, 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.	Facilitate East Goose Lake stakeholder engagement, summarize to Board.	East Goose Lake stakeholder engagement complete, posted, presented to Board.
K-12	Develop youth involvement opportunities and programs that improve/benefit VLAWMO's goals and activities. Reach multiple age demographics through school involvement. Assist schools in establishing and maintaining stormwater best management practices (BMP's).	Complete two volunteer raingarden maintenance events at each school.	Complete: Vadnais Heights Elementary, Lakeaires Elementary.
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 1 lake for the 2021 lake monitoring season.	Newest picture post: Tamarack Nature Center displayed on website. Complete.

MONITORING PROGRAM

Review of 2021 Work Plan

Project Name	Description	Goals: Going into 2021	Goals: 2021 Result
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 Pond.	Document and evaluate the water quality of the creek.	Data collection complete, see monitoring report.
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.
Stormwater Monitoring	Automated and manual sampling at the iron-enhanced sand filter at Birch Lake.	Document effectiveness of iron-enhanced sand filter.	Data collection complete.
Lake Monitoring Program	Monitor chemistry of 15 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.	Data collection complete, see monitoring report.
Chloride Measurements	Sample lakes and Lambert Creek. Partner with Birch Lake Improvement District (BLID) for summer monitoring of Birch Lake.	Check monthly measurement.	Complete.
Biological Monitoring	Volunteer-based macroinvertebrate Leaf Pack monitoring in Lambert Creek, Lambert Lake, and Deep and Charley Lake channels. Remote camera monitoring, otter telemetry project, frog and toad call surveys for baseline information on wetland health and function, long-term implementation initiatives.	Complete 5 Leaf Pack monitoring sessions on Lambert Creek/Lake. Begin monitoring Deep and Charley channels. Complete remote camera monitoring, telemetry, and frog and toad surveys.	2 Leaf Pack monitoring sessions complete. Monitoring initiated on Deep, Charley channels. Frog and toad call surveys and remote-camera monitoring complete. Otter Spotter citizen science tool developed and active.

Review of 2021 Work Plan

ADMINISTRATION & REGULATION

Project Name	Description	Goals: Going into 2021	Goals: 2021 Results
Budget & Stormwater Utility	Storm sewer rates are based on the adopted budget and certified to the counties for collection.	Continued county participation and budgeting for future years.	Complete.
Wetland Conservation Act (WCA)	Complete boundary and type & other determinations in consultation with the TEP. Respond to WCA questions.	Continued administration of WCA.	Complete.

SUSTAINABLE LAKE MANAGEMENT REPORTS (SLMRs) AND STUDIES

Project Name	Description	Goals: Going into 2021	Goals: 2021 Results
Wilkinson 319	Develop a Nine Key Element Plan (NKE) with the MN Pollution Control Agency to participate in a first round of project application submission.	Complete NKE, EPA approval, submit first round of projects for funding.	NKE approved. First-round submission pending for 2022.
West Vadnais, East Vadnais, and Sucker Lake SLMPs	Surveys and research to be completed to support sustainable lake management plans.	Complete plans, stormwater samples documenting 25% TP reduction.	West Vadnais SLMR complete. Sucker/E Vadnais SLMR into 2022.
Ash Street Pond Spent Lime Study	Partner with Barr Engineering for a spent lime treatment and monitoring study on Ash Street Pond. This study strives for phosphorus (TP) reductions in water quality.	Complete treatment with Barr. Take pond samples for final report.	Treatment and samples complete. Report into 2022.

2022 Work Plan

CAPITAL IMPROVEMENT AND MAINTENANCE PROJECTS

Project Name	Description	Goals	Timeline
East Goose Lake Adaptive Lake Management (ALM)	Continuing work on East Goose Lake ALM public engagement and possible lake treatment options.	Aquatic vegetation management policy created. Pursue development of ALM plan with partners.	Winter, 2022 Ongoing
Ditch Maintenance	Maintenance of the main stem of County Ditch 14 according to MN Public Drainage Permit 103D and the 2018 Hydrologic & Hydrology study contracted by VLAWMO with Houston Engineering Inc. (available at vlawmo.org/waterbodies/lambert-creek).	Continued branch ditch planning with City of Vadnais Heights. Re-survey of completed maintenance projects: Dec, 2020 and Dec, 2021.	Ongoing
Pleasant Lake Carp Removal	Working with WSB, Carp Solutions and NOHOA, establish carp biomass and movement patterns in Pleasant Lake for carp control measures. Removals will be conducted and surveys continued to document results and water-quality improvements.	Carp removal harvest. Stream harvest and biomass monitoring - harvest dependent.	Winter, 2022
West Vadnais Lake Carp Removal	Working with Carp Solutions and Ramsey Washington Metro Watershed District (RWMWD), control carp biomass in West Vadnais Lake and prevent movement from West Vadnais Lake into the Phalen Chain, which has been a focus of management efforts for RWMWD. Initial surveys and biomass estimates were conducted by RWMWD. VLAWMO is partnering on removals, surveys, and electric barriers.	Fish survey. Carp monitoring.	Fish survey (summer) and electric barrier (ongoing)

2022 Work Plan

CAPITAL IMPROVEMENT AND MAINTENANCE PROJECTS

Project Name	Description	Goals	Timeline
Vadnais-Sucker Lake Regional Park Restoration	45 acres of restoration in Vadnais-Sucker Lakes Regional Park. Removal and treatment of invasive buckthorn and reseeding/ planting with natives with ongoing maintenance. Partners in this project include Great River Greening, Ramsey County Parks/ SWCD, and St. Paul Regional Water Services. Funds provided by the Outdoor Heritage grant program administered by the MN DNR. The grant time frame for this project is 5 years.	Buckthorn removal.	Fall, 2022

GRANT PROGRAMS

Project Name	Description	Goals	Timeline
Landscape Level 1	Establish relationships and provide grants to property owners within the watershed to install water quality enhancement projects.	Fund and install 1 LL1 infiltration projects. Combined annual phosphorus reduction: 1 lb.	Ongoing
Landscape Level 2	Assist landowners with implementing larger BMP projects focused on stormwater capture and treatment within the watershed.	Fund 4 LL2 projects with annual phosphorus removal: 2 lbs.	Ongoing
Soil Health Grant	Small projects focused on habitat and shoreline restoration, utilizing native vegetation to promote soil and watershed health.	Fund 4 SHG projects with restored project area: 10,000 ft^2.	Ongoing
Community Blue Grant	A communication and outreach grant program for projects that relate to water quality. Available to MN Water Stewards, volunteers, and community partners.	1 public education initiative 1 raingarden renovation or service project.	Ongoing

PUBLIC EDUCATION AND OUTREACH

2022 Work Plan

Project Name	Description	Goals	Timeline
Watershed Action Volunteers (WAV)	The WAV consists of Minnesota Water Stewards (Freshwater), Citizen Advisory Commission (CAC), and volunteers with individual job descriptions.	Complete a "Good Neighbor Guide" for Cities/Twnshp Hold spring and fall WAV/CAC meetings Facilitate public booths (3+).	June March-Oct April-Sept
Community Engaged Learners (CEL)	The Community Engaged Learning (CEL) Partnership with the U of M includes habitat improvement projects such as buckthorn removal, prairie and native woodland establishment, wooded wetland restoration, and various wildlife and macroinvertabrates monitoring.	Complete 8 or more field work days in habitat management and site maintenance.	Ongoing
Workshops	Educate residents on watershed processes, raingarden and native plant function, smart salting, and VLAWMO's cost-share grant programs.	4 residential workshops (raingardens, etc.). 2 municipal staff workshops (smart salting, etc.).	Spring-Fall
Community Events	Staff a VLAWMO booth, develop watershed information, brochures, and resources for community events.	5 community events. 1 watershed/BMP tour.	Spring-Summer
Communications	Create and update material and publications for social media, website, seasonal E-news, and local publications. Create and maintain communications on VLAWMO projects and to promote responsible use of water resources.	10+ E-newsletters. Project map and project page facilitation. Yardcare and raingarden care "to-do" calendar. 3 communications items provided to member Cities/Township.	Winter-Fall
K-12	Provide watershed activities and resources for schools. Assist schools in establishing and maintaining stormwater best management practices (BMP's).	3 school collaborations/yr. 2 school raingarden maintenance activities.	Ongoing

2022 Work Plan

Project Name	Description	Goals	Timeline
Citizen Science	Facilitate LeafPack macroinvertebrate monitoring. Facilitate 5 Picture Post photo-monitoring sites with volunteer photo-taking. Pilot Wetland Health Evaluation Program (WHEP) with Tamarack Nature Center partnership.	4+ completed macroinvertebrate LeafPack studies submitted to the Monitor My Watershed Wiki. 3+ photo entries at each picture post. Complete pilot WHEP program and assess results.	April-November

MONITORING PROGRAM

Project Name	Description	Goals	Timeline
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. Four remote sensors installed along creek, live updated volume and water levels displayed on line.	Document and evaluate creek water quality.	Monitoring May-Sept
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.	Monitoring May-Sept
Chloride measurements	Sample lakes and Lambert Creek. Partner with Birch Lake Improvement District (BLID) for additional winter monitoring of Birch Lake.	Check monthly measurement.	Ongoing
Lake monitoring program	Monitor chemistry of 15 of VLAWMO's lakes for nutrients, turbidity, pH, conductivity, and dissolved oxygen (DO).	Keep water quality record of watershed's lakes. Utilize water quality data for future projects and CIPs.	Monitoring May-Sept

2022 Work Plan

ADMINISTRATION & REGULATION

Project Name	Description	Goals	Time line
Budget & Stormwater Utility	Storm sewer rates are based on the adopted budget and certified to the counties for collection.	Continued county participation and budgeting for future years.	Ongoing
Wetland Conservation Act (WCA)	Complete boundary and type & other determinations in consultation with the TEP. Respond to WCA questions.	Continued administration of WCA.	Ongoing

STUDIES AND PLANS

Project Name	Description	Goals	Time line
Amelia Lake SLMR Surveys	A Sustainable Lake Management Report (SLMR) is being written according to the 10-year Watershed Plan.	Flowering rush follow-up surveys. Complete Amelia SLMR.	2022-2023 Ongoing
Wilkinson 319	Wilkinson is the focus of an upcoming round of small watershed priority funding with the MPCA. A Nine Key Element (NKE) Plan. Upon approval of the Nine Key Element plan, project applications get submitted to receive funding and pursue work.	NKE project application. Design and plan for upcoming construction for Wilkinson BMP project.	2022-2023 Spring-Summer ongoing

MS4 Summary

VLAWMO has worked with its member communities throughout 2020 and 2021 to prepare tools and resources for the 2020 General MS4 Permit.

The (Municipal Separate Storm Sewer System (MS4) Permit is a program administered by the Minnesota Pollution Control Agency (MS4). It organizes tasks and responsibilities for communities that generate stormwater runoff to protect and improve their local water resources. The permit is organized into 6 categories called Minimum Control Measures (MCMs). The MCMs cover topics such as public education, public participation, illegal dumping (illicit discharge), construction and development protocols, as well as general house keeping such as staff training. As a Joint Powers Association (JPA) VLAWMO offers its expertise in water resources and public communications to help expand and streamline its member community's permits.

The 2020 resources that member communities utilized in their MS4 Permit (annual SWPPP report) include:

Minimum Control Measure #1:
- Info-graphic and mailing slip: Pet waste
- Info-graphic and mailing slip: Smart salting
- Article templates: Pet waste and smart salting
- Downloads and videos available at the VLAWMO Local Government web page (vlawmo.org/agencies)

Minimum Control Measure #2:
- A stormdrain stenciling and outreach kit for volunteer service projects (if rented and used)
- Adopt-a-Raingarden (if municipality has a public raingarden)
- Trash pick-up supplies (if utilized by volunteers)

Minimum Control Measure #3:
- Info-graphic, mailing slip, and full page flier: Illicit Discharge Detection and Elimination (IDDE)

Minimum Control Measure #6:
- Promotion of free smart salting and turf maintenance best practices (if staff attended training and obtained certification)

Other:
- Customized maps depicting stormwater Best Management Practices (BMPs) and their locations in the municipality.

LOGISTICS:
Financial statement and budget

IN THIS SECTION

Wetland Conservation Act (WCA)

VLAWMO administers the Wetland Conservation Act with review. There were 35 landowner contacts in which wetland related technical assistance were provided this year. There were 10 potential WCA violation sites investigated, 9 of 10 were resolved.

WCA SUMMARY

Type of Application	Approved	Denied	Withdrawn
Boundary and Type	11	0	0
No-Loss	3	0	0
Exemption	1	0	0
Sequencing	2	0	0
Replacement Plan	2	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	2018
Lino Lakes	2018
North Oaks	2008
Vadnais Heights	2018
White Bear Lake	2021
White Bear Township	2019

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 County Soil and Water Conservation Division 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 were solicited in 2020. Legal and Engineering in 2021.

2021 Partners

Each year our fabulous partners provide leadership, guidance, and resources to support our goals. This year saw the completion of some efforts and the continued investment of others. VLAWMO would like to thank:

Municipal Partners:

- **Cities of Gem Lake, Lino Lakes, North Oaks, Vadnais Heights, White Bear Lake, and White Bear Township**

Other partners:

- **Ramsey County Soil and Water Conservation Division**
- **SEH, WSB engineering**
- **Get the Lead Out MN**
- **Vadnais Heights Lions**
- **White Bear Center for the Arts**
- **Vadnais Heights and Lakeaires Elementary Schools**
- **Christ the Servant Lutheran Church**
- **White Bear Lake Environmental Advisory Commission**
- **Metro Watershed Partners, BlueThumb**
- **Ramsey County GIS User Group**
- **Freshwater Society**
- **Natural Shores Technologies**
- **City of Vadnais Heights Parks Commission**
- **Ramsey Washington Metro Watershed District**
- **Carp Solutions**
- **Birch Lake Improvement District (BLID)**
- **The North Oaks Company, North Oaks Home Owner's Assc (NOHOA), North Oaks Natural Resources Commission**
- **Vadnais Heights Economic Development Corp/ Partners for Good**
- **Tamarack Nature Center**
- **UMN Community-engaged Learning Program**

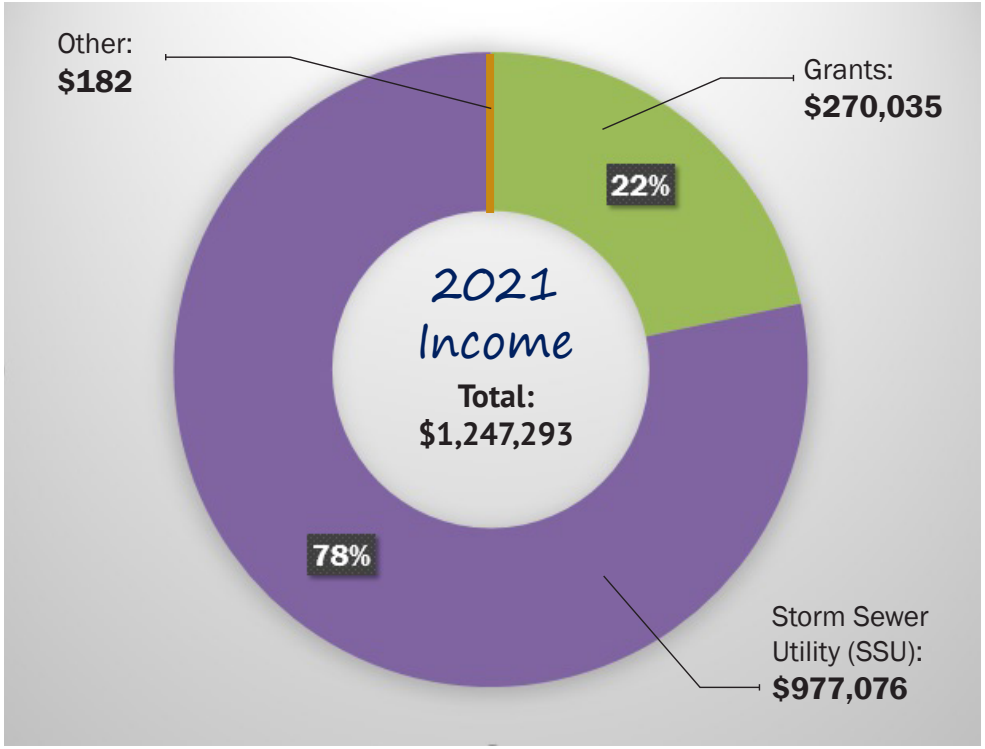
Finance and Budget

The 2021 budget was established by the Board of Directors in June with designated project and program funds carried over in December, 2020. The Finance and Policy Subcommittee with a representative from the Technical Commission and the Board reviewed and made recommendations on the 2021 budget to the Board in June, 2020. The Board-approved budget included funds to address a capital improvement project associated with the construction of the Lambert Creek Meander and Pond Sheet Pile Maintenance Project. This important project focused on addressing water quality protection within a high priority waterbody in VLAWMO which is Lambert Creek. The other programmatic focus in 2021 was on East Goose Lake and partnering with the City of White Bear Lake to transitioning towards an adaptive lake management approach for planning possible future Lake management.

Approved budget for 2021:
$1,134,380

Actual income from 2021:
$1,247,293

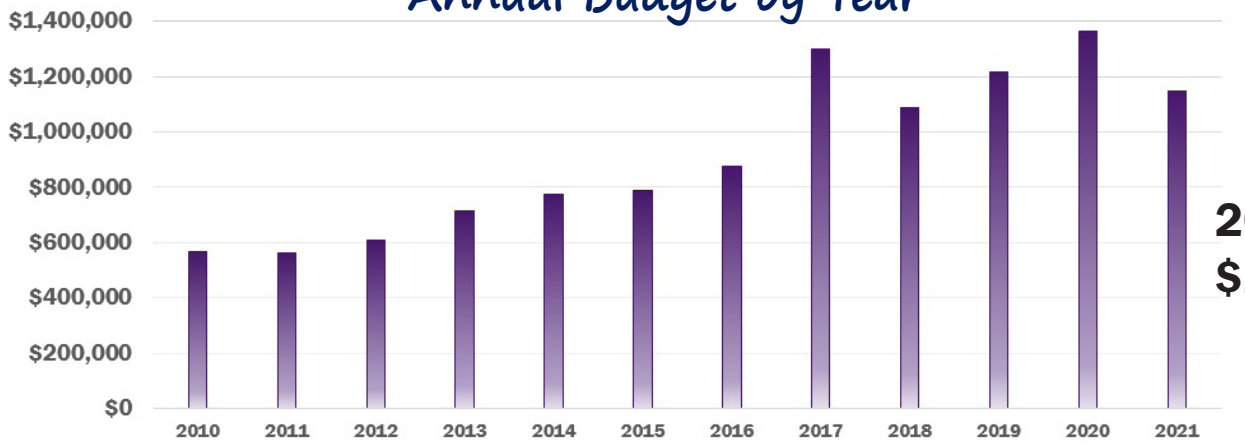
Money spent in 2021:
$1,072,836



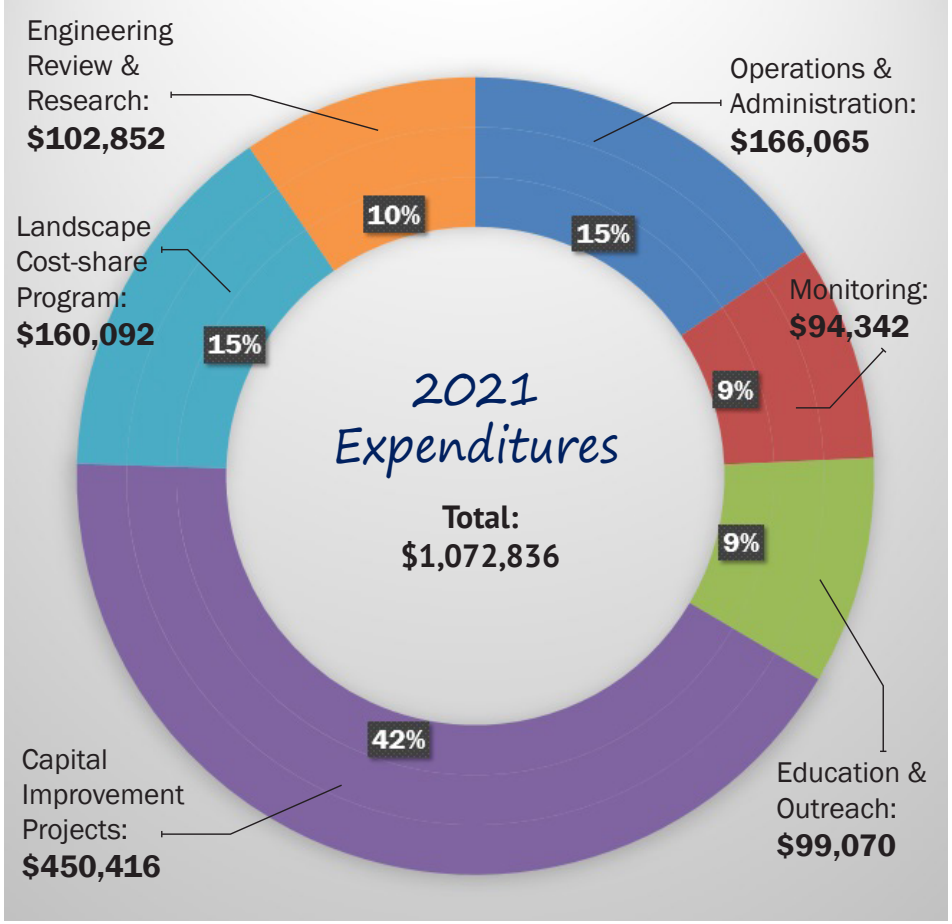
GRANTS AND PARTNERSHIPS

Grant funds received in 2021 totaled $270,035 The majority of grant revenue was from the MPCA 319 grant supporting the final construction of the Lambert Creek Meander Project.

Annual Budget by Year



2021:
$1,134,380



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. $ 997,076 in SSU was certified to Ramsey and Anoka Counties in 2021 for 11, 518 parcels. The average single-family homeowner paid $53.16 per year to support all of the projects and programs conducted by the watershed. That's about $4.43 per month. The 5% increase in storm sewer utility fees allowed VLAWMO's budget to sustainably support the key priority programs and projects of the Water Plan. Some grant/loan income was utilized to cover expenses from the Lambert Creek Meander Project (MPCA 319 grant), and the Lambert Pond Sheetpile repair project (MPCA clean water loan fund).

EXPENSES

Total cash expenses for 2021 were $1,072,836 which was less than budgeted by $61,544 . Work in the Lambert Creek, Goose Lake and Wilkinson/Gilfillan/Black/Tamarack Subwatersheds will be carried over into 2022 with engineering and or planning funds expended in 2021 to prepare for proposed implementation activities in these subwatershed areas in the future.

CAPITAL IMPROVEMENT PROJECTS

The major CIP construction project in 2021 was the Lambert Creek Meander Project and Lambert Pond Sheetpile Repair Project .

VLAWMO partnered with the City of Vadnais Heights to maintain a portion of Ramsey Ditch 14 downstream of the Lambert Creek Menander Project and upstream of Edgerton Street. This maintenance was to address a priority area as identified in the 2018 approved ditch inspection report.

There were significant cost-share projects installed in 2021 including partial construction of the Bridgewood Park raingarden in the City of Vadnias Heights. All combined the overall reduction from all cost share projects in 2021 resulted in a 23% volume and pollutant load reduction, respectively.

Volunteers help with aingarden brush-up at Vadnais Heights Elementary

WHO WE ARE:
The people who make 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)

Directors

Jim Lindner, Chair
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City of North Oaks
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Ed Prudhon
White Bear Township
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Rob Rafferty
City of Lino Lakes
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2020 TECHNICAL COMMISSION (TEC)

Commissioners can be reached by contacting VLAWMO

Primary

Gloria Tessier, Chair
Gem Lake

Jesse Farrell, Vice Chair
Vadnais Heights

Bob Larson, Treasurer
North Oaks

Terry Huntrods
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