



2014



# ANNUAL REPORT



Vadnais Lake Area  
Water Management  
Organization



## Vadnais Lake Area Water Management Organization (VLAWMO)

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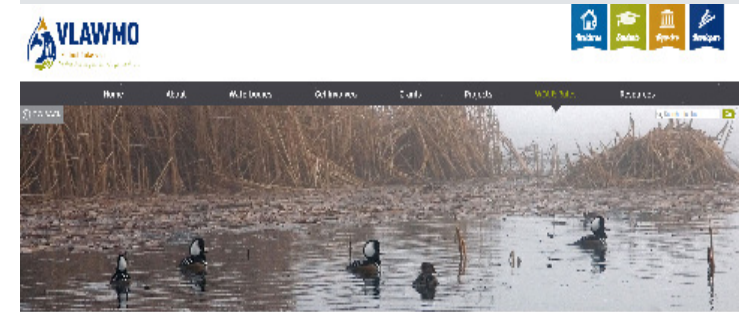
## LETTER FROM THE ADMINISTRATOR

We hope you enjoy the new format of the Annual Report for the Vadnais Lake Area Water Management Organization (VLAWMO). Please let us know if it was easy to follow, you found information you were looking for and maybe something you didn't know you were looking for. Your feedback can make next year's Annual Report even better.

The 31st year of VLAWMO saw long running efforts wrap up, and new innovations and enhancements to some important programs. Working with the MN Pollution Control Agency (MPCA) and local stakeholders the TMDL (Total Maximum Daily Load) report on five impaired lakes and Lambert Creek was completed and approved by the MPCA and the US Environmental Protection Agency. This report is a solid foundation for the TMDL Implementation Plan which was also completed and approved by the MPCA during the summer of 2014. The Implementation Plan provides a blueprint for action for all the MS4 agencies (who hold stormwater permits) as well as VLAWMO to work toward improving water quality in these impaired waters.

One very exciting initiative that kicked off this year is the bacteria molecular monitoring program on Lambert Creek. What kind of bacteria and where it's coming from are questions we hope to answer through this unique and adaptive monitoring. VLAWMO worked with an experienced consultant from California to develop the monitoring process. The St. Paul Regional Water Service (SPRWS) and Ramsey County lab provided essential help. Early results reflect only dry weather flow conditions but are suggestive of an avian bacteria source. Much more information is needed. The monitoring focus will move upstream in 2015 to the Whitaker and Goose Lake headwaters.

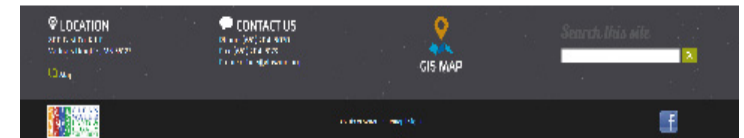
**-Stephanie McNamara**  
Administrator



### WCA, Water Standards, and Rules

WETLAND CONSERVATION ACT (WCA)

Wetland Conservation Act (WCA) Overview  
The WCA is a federal law that requires the U.S. Army Corps of Engineers to protect wetlands and waterways. It also provides for the restoration of degraded wetlands and waterways.



## Improving Services

VLAWMO launched its new website in April, 2014. The website had not been updated since 2008. It was beginning to create significant frustration for residents and agencies unable to find information. The new website focused on increasing access to our services and programs through a pleasurable, more visual, web experience. The updated logo and branding colors can be seen throughout the site and publications. The website features pages to spotlight lake information, project information and a process to easily apply for grant programs. The website is packed with even more information than before. Annual water monitoring reports, Sustainable Lake Management Plans for several lakes, meeting records and a great interactive GIS (mapping) tool are all on the site. Go take a look!



## 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

The watershed approach to protecting 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

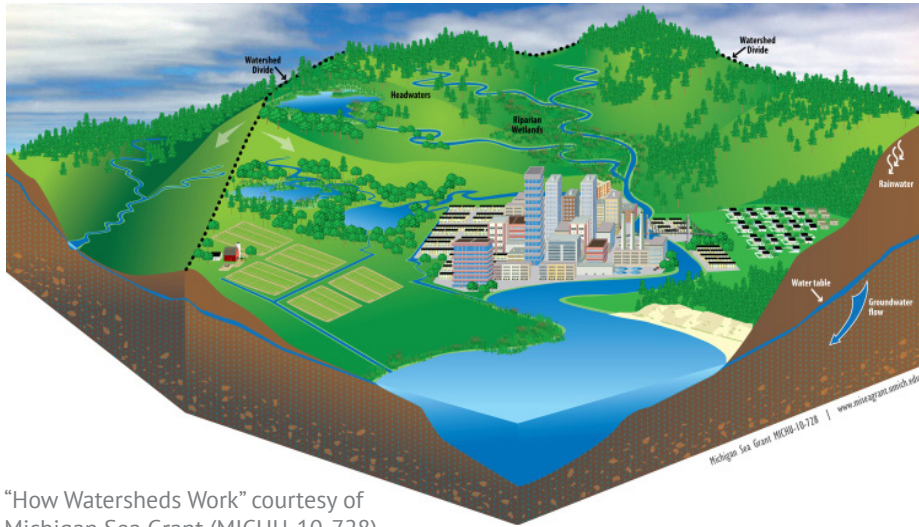


Ice Fishing on Vadnais Lake 1910 - courtesy of MN Historical Society

## *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 17 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.

### LAMBERT CREEK

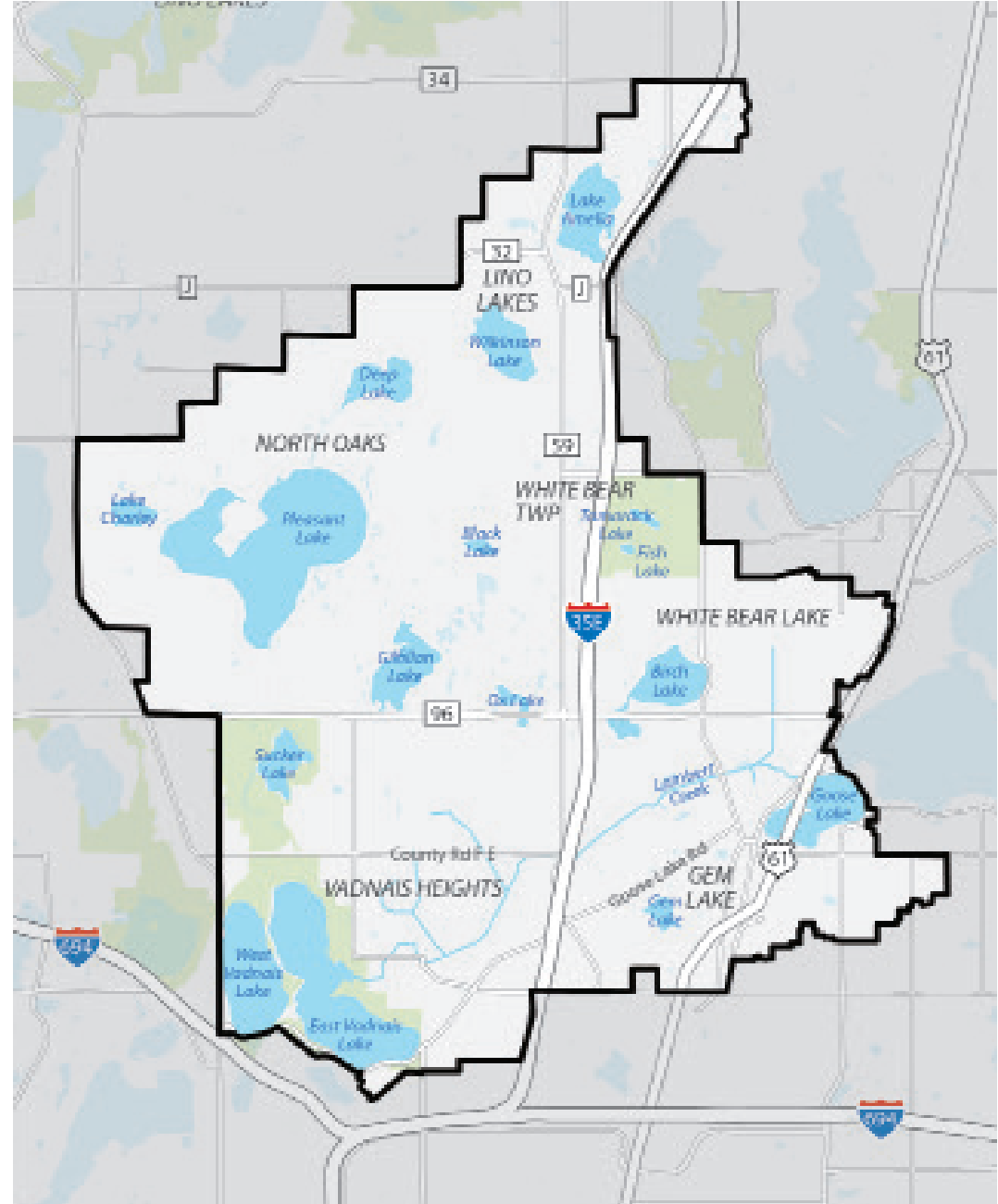
VLAWMO has jurisdiction over Lambert Creek, 4.5 miles of creek and wetland that runs from West Goose Lake and eventually empties into East Vadnais Lake.

### WETLANDS

There are over 500 wetlands within VLAWMO. Tamarack, Grass, 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:

2014 activities, projects, and improvements

### IN THIS SECTION

- » Projects
- » Education Programs
- » Grant Programs
- » Monitoring Program
- » 2014 Work Plan Assessment

## PROJECTS

### E. COLI SOURCING

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 is currently working with a consultant to do 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. The 3 other sub-watersheds on the creek (Whitaker, Goose and Koehler) will be addressed next summer.

### THE PROCESS

The Bacteria Sourcing study uses an integrated approach to identifying and reducing bacteria loads to meet regulatory requirements, in this case the TMDL MS4 wasteload allocations. This year *E. coli* culture samples were taken 4 days a week during the summer. Samples were taken during dry conditions so at least 72 hrs from a significant rainfall for a minimum of 12 samples at each sample site in order to get a significant data set to run the statistics on the results.

For the molecular sampling samples were taken during dry conditions twice weekly for two to three weeks at Oakmede and 3 molecular samples twice weekly for two to three weeks at Cty Rd. F.



Intern Josh Lekson lifting manhole covers to take bacteria samples.

### RESULTS

VLAWMO completed the Oakmede and County Road F sub-drainages this summer for dry conditions. *E. coli* concentrations were monitored at a primary site and also possible source sites at both locations which were identified during a creek recon this spring. These sites were also tested for the human and bird genetic markers.

Results at both sites showed below state chronic standard levels of *E. coli* (less than 126cfu/100ml) which indicates the impairment is not dry 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 bird marker suggesting waterfowl have an influence on the bacteria levels in the creek.

VLAWMO will continue the dry weather monitoring of the remaining three sub-drainages next year and then start the wet weather monitoring for all sites.



## COMMUNITY BLUE

VLAWMO was awarded a Community Partnership grant from the Board of Water & Soil Resources in 2011 in hopes of reaching out to citizen-driven efforts to improve our troubled ecosystems. The State grant provided \$105,200. VLAWMO provided a local match of \$39,700 to install these seven projects and foster the community relationships.

### BACKGROUND

This was a unique and innovative program with a focus on engaging citizens, and building community partnerships through highly visible, publically accessible restoration projects that beautified community spaces and improved water quality. Installed projects will be utilized in future years for hands on environmental education and community outreach programs. Grants covered 100% of the cost for materials, design, and installation up to \$20,000. A financial match was not required, but it did increase chances of receiving a Community Blue grant.

#### Who was Eligible?

The grant reached out to those who normally would not have access to such funds, or would not be able to install these restoration projects without considerable financial assistance. Groups eligible for the Community Blue program included: schools, non-profits, community and service groups, faith organizations, and certain small businesses. Local government agencies also qualified.

#### Why Did We This?

In addition to providing an entirely new type of community grant funding, improving water quality was a key goal of the Community Blue program. Specifically, Lambert Creek is a small creek that originates near Goose Lake and eventually discharges into Vadnais Lake. Vadnais Lake is the drinking water reservoir for the City of Saint Paul and surrounding communities. While not a highly visible water resource, Lambert Creek plays a vital role in channeling and directing storm water throughout the Watershed. Lambert Creek also runs through many wetland habitats that are home to a high diversity of wildlife species. Currently the creek is receiving far too much pollution from storm water containing high amounts of phosphorus, and E. coli.

### TOTALS FOR THE ENTIRE COMMUNITY BLUE PROGRAM

**Total Phosphorus (TP) reduction** (lbs/year) = 3.30

**Total Sediment reduction (TSS)** (lbs/year) = 1,642

**Volume reduction** (cu-ft/year) = 170,252



## WHITE BEAR MONTESSORI

**Size:** 800 sq ft

**Volume Reduction:** 31,811 cu ft/yr

**Total Phosphorus Reduction:** .59 lbs/yr

**Sediment Reduction:** 329.10 lbs/yr

**Amount Awarded:** \$17,500

### PROJECT DETAILS

White Bear Montessori School utilizes a wide variety of learning techniques and encourages their students and community {guides, staff, parents, family) to benefit from natural observations, group interaction and learning. Environmental education and habitat preservation are a focus of the school and its principles. The school occupies several acres with a variety of plantings and landscaping, however, this landscaping has not been designed for specific environmental or natural objectives. Their goal was to use a raingarden as focal point for student/community education, curriculum enrichment, and class projects. Students, parents, and staff learned about watersheds and raingardens before going outside to assist with planting.

The school continues to measure the success of the project by continued engagement of the students and families through the life of the project and beyond. There are considerations for incorporating an ongoing phenological project with this raingarden into the curriculum which could be shared or presented to the community through parent/student educational events and newsletter articles.



### VADNAIS ELEMENTARY

**Size:** 1,000 sq ft

**Volume Reduction:** 18,929 cu ft/yr

**Total Phosphorus Reduction:** .35 lbs/yr

**Sediment Reduction:** 198.79 lbs/yr

**Amount Awarded:** \$15,000

#### ABOUT THE PROJECT

For the past several years the school has been focused on becoming a role model for environmental education. The grant transformed a widely used public space into a place where the entire community can learn about the impacts to our water systems and environment. This opportunity provided students with valuable hands on activities and increases the rigor of the current science curriculum. It created tremendous pride in their school and community. The grant included a full day of outdoor education. Over 375 K-5th grade students participated in multiple learning and activity stations that included all students having the opportunity to plant a flower or native grass in the raingarden. It also included a tailored professional development training for teachers and staff to learn about VLAWMO.



### CHILDRENS DISCOVERY

**Size:** 750 sq ft

**Volume Reduction:** 12,849 cu ft/yr

**Total Phosphorus Reduction:** 0.1741 lbs/yr

**Sediment Reduction:** 75.80 lbs/yr

**Amount Awarded:** \$16,000

#### ABOUT THE PROJECT

Children's Discovery Academy, a daycare center located in Vadnais Heights was approached for the Community Blue program because their other facility in Little Canada had installed a raingarden and it was quite successful. The Vadnais Heights location was also interested in incorporating a raingarden at their site as well. There was an area within the parking lot where stormwater naturally flowed which provided a great spot for a raingarden. As part of the project, Children's Discovery has written an article about the raingarden for their newsletter and took over 45 students to an environmental education day at Vadnais Elementary (another Community Blue site) to learn about the importance of clean water and native plants.



### VADNAIS ROTARY

**Size:** 1,200 sq ft

**Volume Reduction:** 25,593 cu ft/yr

**Total Phosphorus Reduction:** .35 lbs/yr

**Sediment Reduction:** 207.83 lbs/yr

**Amount Awarded:** \$16,500

#### ABOUT THE PROJECT

The rotary wanted to engage the public by planting a highly visible raingarden at City Hall. The raingarden is filled with beautiful Minnesota native plants and grasses. The colorful flowers and habitat provide a welcoming space for the community to enjoy from the adjoining walking path and shopping area. Many members of the Rotary Club volunteered their time to help plant the raingarden and have committed to weeding and taking care of the plants so that the garden will flourish. The rotary also highlighted the raingarden and the importance of reducing stormwater pollution as part of a community outreach video. The raingarden captures 96% of the stormwater from the parking lot area and allows the water, which picks up pollutants from the parking lot, to seep back into the ground naturally rather than runoff into our nearby lakes and streams.





## FOX MEADOW PARK

**Size:** 1,850 sq ft

**Volume Reduction:** 18,367 cu ft/yr

**Total Phosphorus Reduction:** 0.49 lbs/yr

**Sediment Reduction:** 182.97 lbs/yr

**Amount Awarded:** \$15,000

### ABOUT THE PROJECT

White Bear Township approached VLAWMO when they were in the planning phases of redoing an existing parking lot at Fox Meadow Park. The park and the parking lot are adjacent to Lambert Creek and they were interested in pursuing parking lot options that would provide protection and possibly benefit water quality for the creek. The Township and their engineering firm worked with Metro Blooms on a design that would incorporate a rain garden and would move the parking lot surface further away from the creek from where it originally laid. The rain garden was installed in October 2014 and a Conservation Corps of Iowa and Minnesota crew planted it with a Metro Blooms representative. The Township has promoted the project in their newsletter and has a VLAWMO information display at their Township Hall.



## HERITAGE ESTATES

**Size:** 800 sq ft

**Volume Reduction:** 62,337 cu ft/yr

**Total Phosphorus Reduction:** 1.34 lbs/yr

**Sediment Reduction:** 642 lbs/yr

**Amount Awarded:** \$14,500

### ABOUT THE PROJECT

The residents of Heritage Estates Townhomes were looking for a way to become part of a larger movement to take care of our natural resources. They knew that big changes start with small steps and believed a neighborhood rain garden would become an educational opportunity for the community. It would beautify their neighborhood landscape, and serve as an example to educate the surrounding area on the importance of land and water stewardship. Their outdoor classroom and rain garden are improving environmental impact on our water supply, and educating future generations in the importance of water conservation and demonstrating what a small group can do to help. Volunteers from Heritage Estates attended 12 different workshops. Many residents also participated in a wide variety of educational activities, really reaching out to the community.



## LAKEAIRES ELEMENTARY

**Size:** 1,150 sq ft

**Volume Reduction:** 386 cu ft/yr

**Total Phosphorus Reduction:** 0.0098 lbs/yr

**Sediment Reduction:** 2.94 lbs/yr

**Amount Awarded:** \$19,000

### ABOUT THE PROJECT

Lakeaires Elementary was planning to add on to their school and redesign their existing parking lot. The school was interested in incorporating a rain garden as part of their overall project. In October 2014, a 1,150 square foot rain garden was installed to collect stormwater runoff from school grounds and the parking lot. This site has very poor soils and therefore an impermeable liner and underdrain were required to help the rain garden function properly. The school will use this project as part of their education programs and has published information about the project in the School District newsletter.

## *in the community*



MPCA training for MS4's in partnership with MECA



Marketfest in White Bear Lake



Taste of Vadnais

## EDUCATION PROGRAMS

VLA WMO continued developing new education and outreach opportunities, and refining existing programs for students and adults in 2014. VLA WMO staff and volunteers connected with more watershed residents than ever before through workshops and trainings, community events, presentations, three different volunteer programs, and an innovative communications and media program.

## WORKSHOPS & TRAININGS

Providing effective and relevant workshops and training opportunities are a cornerstone of the public education and stakeholder engagement programs for local government agencies. VLA WMO hosted and partnered in seven different types of workshops in 2014. Each event supported projects and activities currently being carried out by VLA WMO staff and partners, and correlated Water Plan goals and priorities for 2014.

**SHALLOW LAKES FORUM - 101 PARTICIPANTS**

**TMDL IMPLEMENTATION PLAN WORKSHOPS - 55 PARTICIPANTS**

**MS4 TRAINING - IN PARTNERSHIP WITH MECA AND MPCA - 60 PARTICIPANTS**

**SOGGY YARD SOLUTIONS - NORTH OAKS - 13 PARTICIPANTS**

**COST SHARE PROGRAM - RAINGARDENS AND BMP'S - 62 PARTICIPANTS**

**DRAGONFLY IDENTIFICATION AND MONITORING - 139 VOLUNTEERS**

**TEACHER TRAINING - VADNAIS HEIGHTS ELEMENTARY SCHOOL - 27 TEACHERS**

## COMMUNITY EVENTS

VLA WMO has always placed a high priority in reaching out to watershed residents by annually staffing a VLA WMO booth at many of the largest or most innovative events in the community. There is no substitute for interacting with residents face to face in a fun and relaxed environment. By participating in these heavily attended community events VLA WMO has the opportunity to provide brochures, booklets, and handouts about our current projects and programs. Staff and volunteers also have the chance to talk to residents about the work we do and opportunities for the public to get involved. In 2014 VLA WMO staff hosted a booth at the following events:



- » Marketfest - Environmental Resource Fair
- » North Oaks Community Fair
- » Taste of Vadnais

Displays and informational handouts were also provided for smaller events in North Oaks and White Bear Township.

## VOLUNTEER ACTIVITIES

Our volunteer community represents a diverse group of citizens. They include teachers, business executives, parents, retirees, students...you name it. But the one thing all our volunteers have in common is their dedication to change. And the more volunteers we have, the bigger impact we can all make. Together. More about what it means to belong to one of VLAWMO's volunteer programs is found below.

### CITIZEN LAKE MONITORING PROGRAM (CLMP)

These volunteers collect water samples and summarized lake conditions bi-weekly from May through September.

VLAWMO would like to thank the following volunteers for their vital role in the Citizens Lake Monitoring Program. The volunteers for 2014 were: Ron Auger & Jim Grisim (Birch Lake), Paul Peterson (Amelia Lake), Sue Fox (Gilfillan Lake), Kurt Carpenter (Goose Lake West & East) and Shannon Stewart (Tamarack Lake).

### WATERSHED ACTION VOLUNTEERS (WAV)

Each year Vadnais Lake Area Water Management Organization utilizes individuals to serve on its Watershed Action Volunteers (WAV) committee. Serving as a WAV member is a great way to help protect and preserve the lakes and wetlands within your community. In 2014, 13 WAV members participated in a variety of watershed projects including:

- » organizing an annual photo contest
- » selecting handouts and promotional items
- » staffing VLAWMO booths at community events
- » providing input and feedback for projects and programs



Using field guides to identify dragonfly species

## Science and Service

Dragonfly camps for kids are designed to teach children of all ages that science and service learning can be exciting and rewarding.

Camps usually last 2 to 3 hours and start right in the field. Children receive a brief anatomy and biology lesson highlighting the important connection dragonflies have to clean water, followed by proper techniques for catching and handling dragonflies. The bulk of the camp is spent surveying as many specimens as possible. Each child has their own net, field guide, and survey sheet. Pond dipping for nymphs (immature dragonflies and damselflies)

is also included if there is a suitable pond available nearby. At the end of the camp children contribute their survey data to a master survey sheet.

Children are able to take home their survey sheet, an anatomy and activity worksheet, and the ability to catch and identify many of the most common dragonfly species in Minnesota. Tamarack Nature Center has been a significant partner in developing this opportunity.

### 2014 Kids Camps Included:

- » A Bug's Life  
1st & 2nd graders
- » Backyard BioBlitz  
3rd & 4th graders

## WATERSHED ACTION VOLUNTEERS (WAV)

Marsha Anderson, Arden Hills	Ruth Kirkevold, Vadnais Heights
Larry Breimhurst, Vadnais Heights	Sue Lundquist, White Bear Lake
Cindy Chua, North Oaks	Kimberly Murray, North Oaks
Anne Conroy, North Oaks	Ken Richter, White Bear Lake
Tom Falk, Vadnais Heights	Ryan Strong, Vadnais Heights
Victoria Johnson, Vadnais Heights	Jessica Collin-Pilarski, Vadnais Heights
Gary Karger, North Oaks	

## DRAGONFLY MONITORING

VLAWMO has been partnering with the Minnesota Dragonfly Society, and Tamarack Nature Center for the past 3 years to better understand the variety and distribution of dragonflies and damselflies in the Watershed. By monitoring the populations of wildlife, such as dragonflies, we hope to have a better understanding of how local water quality, and pollution affects the ecosystem over time. They are also beautiful and exciting beneficial insects that people of all ages connect with and appreciate. After all, who doesn't love something that spends its whole life eating mosquitoes?!

Everyone gets up close hands on experience catching and handling dragonflies from a local expert, while learning about their fascinating biology, and the important connection dragonflies have to clean water and our local lakes, streams, and wetlands. Students and kids camps also learn how to fill out their own survey data sheet, and practice pond dipping to identify dragonfly and damselfly nymphs.



Our Backyard BioBlitz taught these 4th and 5th graders proper dragonfly handling

## PROGRAM SUMMARY FOR 2014

It was a fun filled day as over 60 families and volunteers showed up at Tamarack Nature Center on Saturday, June 28th to help catch and survey dragonflies!

Thanks to the enthusiasm and efforts of all who attended 23 species of dragonflies and damselflies were collected by volunteers, and 4 new species were added to VLAWMO's specimen collection this year.

## COMMUNICATIONS

VLAWMO has a very active communication and marketing program for an organization of its size. Realizing that in today's society you must utilize a variety of communication and media strategies to provide information and connect to an increasingly diverse community. There is no longer a single strategy that can effectively reach a broad audience. Often times multiple communication methods must be coordinated during a project or program in order to ensure goals and objectives are met.

In 2014 staff continued to work on identifying the most efficient, and effective communication strategies that could get the job done.

## PUBLICATIONS AND SOCIAL MEDIA

VLAWMO utilized a wide variety of communication and media formats in 2014 including:

- » Publishing regular columns in the local paper Press Publications
- » Multiple enewsletters
- » Regular posts on social media platforms such as Facebook
- » Producing brochures, and informational handouts
- » Developing interpretive signs for current and past installation projects
- » Branding efforts that created a cohesive look and message in order to increase agency recognition and awareness in the community

## WEBSITE REDEVELOPMENT

VLAWMO's website was last updated in 2008. Visitors to VLAWMO's website often left frustrated and unable to find the information they were looking for. VLAWMO's Communications Manager contracted with HDR to overhaul the website to be more functional and user friendly. Stakeholders, staff, Board, and information design specialist all provided input into the new website. Significantly more content was added to the site, including interactive maps, lake pages, and a resource library. Finally, most of the technical issues from the previous site were addressed including:

- » Ease of Use
- » Data Access
- » Productivity and Time Commitment
- » Technical Support



### *1st Annual Photo Contest*

VLAWMO held a very successful photo competition in 2014 as a way to create awareness and artistic community involvement in the watershed. The photo contest was developed and organized by the WAV committee. Photos were received throughout the year in a variety of categories from "Nature and Landscapes" to "People." A total of 47 photos were submitted. Winners from each category and honorable mentions were chosen by the Watershed Action Volunteer (WAV) committee. VLAWMO expects to use the photos for a variety of purposes including website and calendars.

Photo: Escaping Milweed Seeds - honorable mention



## COST SHARE

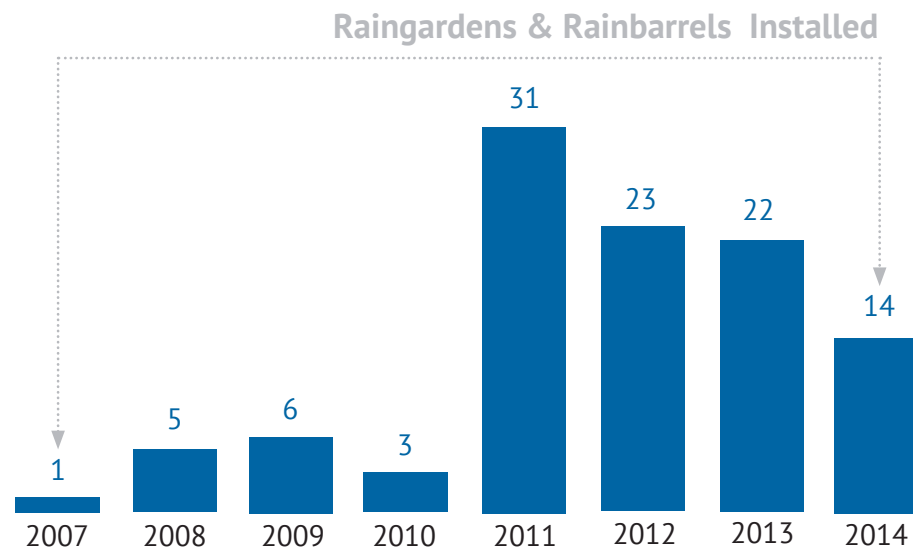
VLAWMO's Cost Share Program exists to provide assistance to public and private landowners for implementing programs and projects that support one or more of the following:

- » 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, rivers, 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 Cost Share Program
- » Landscape Level 1
- » Landscape Level 2



A new Landscape 1 raingarden in Vadnais Heights

## 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.

### RAINBARREL SUMMARY 2014

In 2014, VLAWMO awarded 8 rainbarrel grants for a total of \$740.98.

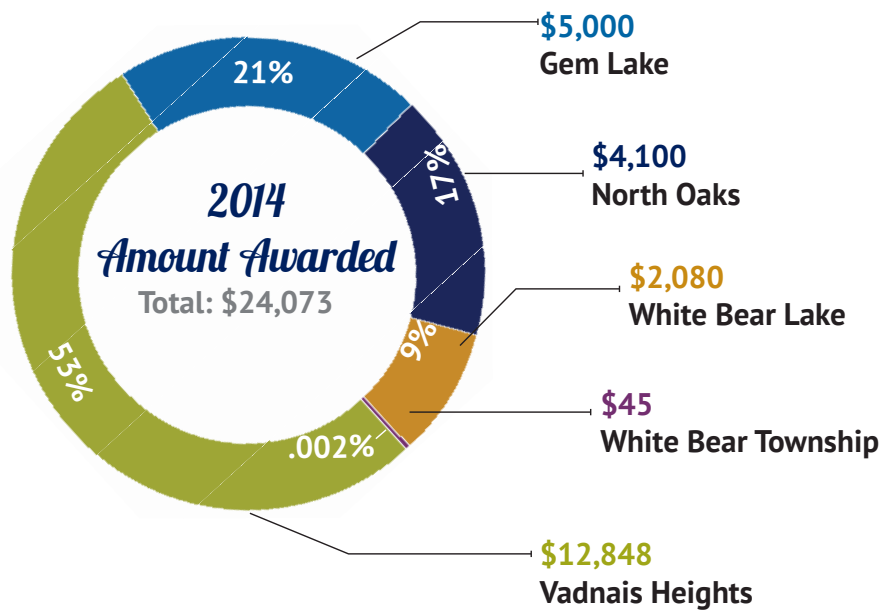
## LANDSCAPE COST SHARE PROGRAMS

The Landscape Level 1 Program 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.

The Landscape Level 2 Program is for projects with a larger total cost (minimum total cost of \$10,000) and will reimburse 50% of the costs, up to \$5,000. The program is being updated in 2015, so contact us for current guidance.



Level 1 and 2 Projects have one year from approval to be complete. There were 9 projects completed in 2014. Of those 9 projects, 3 of them were shoreline restoration equaling 310 linear feet. The projects occurred on Birch Lake, Charley Lake, and Lambert Creek. Three completed projects were raingardens totaling 900 square feet. Two projects were native habitat restoration equaling 0.60 acres. Lastly, one project was a 300 square foot pervious paver project.



#### LANDSCAPE LEVEL 1 SUMMARY 2014

For Landscape Level 1, ten grants were awarded funding in 2014 for a total of \$18,332.

#### LANDSCAPE LEVEL 2 SUMMARY 2014

There was one Landscape Level 2 grant awarded funding in 2014 for a total of \$5,000.

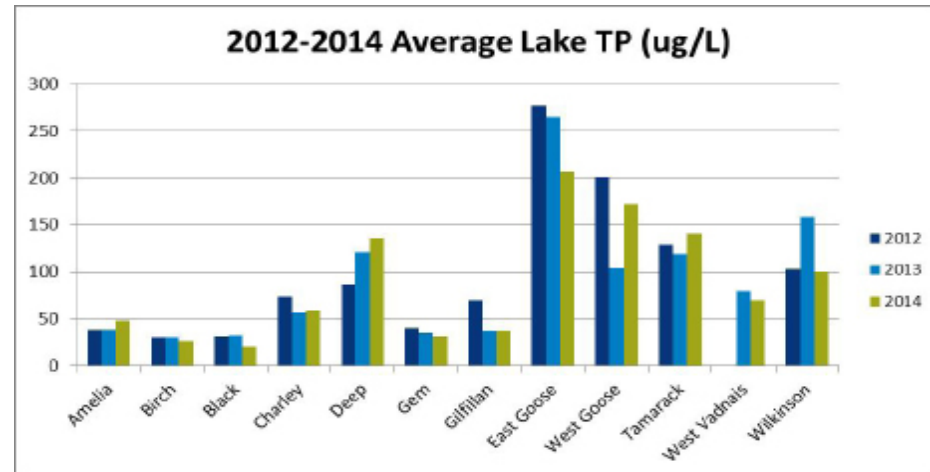


A pervious walkway installed in Vadnais Heights thanks to a Landscape 1 grant

## MONITORING SUMMARY

2014 Monitoring Highlights include:

- » Gem Lake's chemistry has improved over the last 3 years which may coincide with the work that was done on Highway 61 and the reconstructed grass swales flowing into the lake. There is the possibility the lake may be removed from the State Impaired Waters List. This is the first year in recent memory that there was no large algae bloom during the summer as well.
- » Gilfillan is another lake that has been on the Impaired List. Since the augmentation system went in 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 two years so it has been maintaining its level on its own.
- » East Goose has some improved trends the last couple of years but it is still way above State standards. VLAWMO removed the bullheads and the roads have recently been reconstructed which may help with water quality.
- » West Goose is still high as well. West Goose's phosphorus levels were almost identical to East Goose. Normally East Goose is much higher.
- » Wilkinson's phosphorus is over standards but this year the Chlorophyll A is below or at standard. Wilkinson acts more like a wetland and therefore what goes on in the watershed has a greater effect on the chemistry.
- » Tamarack's numbers are still high. The floating wetland has not shown any effect as of yet. This is the first full year of monitoring. There were samples 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 other lakes are doing well overall. The report will be completed and will be on the website the end of December.



- » Lambert Creek phosphorus numbers are still high but the samples at Whitaker were lower than they were in the past. The effect of rainfall can greatly affect results. We sample every 2 weeks with the hope that getting this many samples helps to create a defensible average.
- » The two cell system at Whitaker continues to export phosphorus. However the pond and forebay has shown a positive effect on suspended solids.
- » Chloride levels overall were slightly lower than last year. We have been sampling for 5 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. The sample at the White Bear Lake storm sewer, just above Whitaker Pond, was extremely high compared to last year's sample.
- » Overall precipitation wasn't that different from last year. The levels were pretty much the same, except that we got more rain in August this year as compared to 2013.
- » E. coli levels showed that the flow in the creek has a correlation to the amount of E. coli in the samples.

## 2014 MACROPHYTE SURVEYS GOOSE LAKE, BLACK LAKE, AND BIRCH LAKE

Information was collected on both Goose Lake in City of White Bear Lake and Black Lake in City of North Oaks. The reports detail the methods and findings of a point intercept survey of macrophyte vegetation, and the methods and results of an aquatic vegetation biovolume data survey. The data collected and prepared by Ramsey Conservation District along with VLAWMO staff. CI BioBase equipment was used for these surveys.

The Birch Lake Improvement District (BLID) also performed a vegetation survey for Birch Lake.

## BULLHEAD HARVEST ON GOOSE LAKE

Rough fish, such as carp, sucker and bullhead, forage in lake sediment while feeding. Large populations of these fish can cause a huge problem in lakes due to the amount of sediment and nutrients these fish stir up while feeding.

A commercial fisherman was hired to harvest the rough fish in 2013. 14,000 lbs of rough fish were removed from the lake which made a huge dent in the rough fish population and allow the game fish population to naturally control the remaining bullhead population. The harvest took place in two phases. Spring (end of April shortly after ice out) and in the fall (late October). The commercial fisherman ran the nets in the spring until the catch rate dropped below 1,000lbs per lift. Then ran the nets in the fall again until the catch dropped below 500lbs per lift. A max total of 16,000 lbs of bullhead were removed.

Spring of 2014 the fisherman set test nets to estimate the current population and the success of the work done in 2013. The test nets caught an additional 800lbs of bullheads. Due to this information the 2013 harvest was successful but the fisherman will be back in the spring of 2015 to do a final catch/clean-up.

## EAST GOOSE LAKE INTERNAL PHOSPHORUS LOADING ANALYSIS

The results of the Goose Lake sediment core study (done on both the east and west basins) was similar to other metro lakes in that there was not a large release of nutrients from the lake sediments into the water column during undisturbed conditions. This does not mean there is not a nutrient load problem, this is just telling us that the nutrients are locked in the sediments during undisturbed conditions. The Total Maximum Daily Load Report (TMDL) for impaired waters as well as the history of Goose Lake suggests that the majority of the loading is internal. Monitoring results have shown differences between nutrient concentrations from one basin to the other suggesting multiple sources of internal loading such as wind suspension, rough fish, a lack of rooted plants, or motor boat agitation of the sediments. We've done some rough fish management and have noticed some improvement in nutrient levels, more work needs to be done however.

To determine which of the available management strategies will most effectively reduce internal load, additional information is needed. Two tests that may increase the evidence to pinpoint the dominate source and provide VLAWMO direction identifying the most effective best management practices are:

- » Particle entrainment study: This simulates shear stresses at the lake bottom associated with various sources of perturbation (fish, wind, motorboat). Using Goose lake sediment, how much sediment is stirred up and for how long?
- » Equilibrium study: This measures the release/absorption of phosphorus from the disturbed sediment at various lake water concentrations. This helps to quantify the nutrient release from the suspended sediments.

These tests will be performed in 2015.



A Community Blue raingarden installed by Vadnais Heights Rotary

## REVIEW OF 2014 WORK PLAN

2014 was another busy year for VLAWMO. Monitoring, education, and communication programs continued to expand services. Mandatory reports regarding water pollution wrapped up on time. Working with the MN Pollution Control Agency (MPCA) and local stakeholders the TMDL (Total Maximum Daily Load) report on five impaired lakes and Lambert Creek was completed and approved by the MPCA and the US Environmental Protection Agency. This report is a solid foundation for the TMDL Implementation Plan which was also completed and approved by the MPCA during the summer of 2014. The Implementation Plan provides a blueprint for action for all the MS4 agencies (who hold stormwater permits) as well as VLAWMO to work toward improving water quality in these impaired waters.

The Community Blue Partnership grant program with community organizations produced great long-term results this year. New neighborhood connections were made, fostering a fresh sense of water stewardship in multi generations of local residents and students. Community involvement is a cornerstone to really taking care of our watershed.

VLAWMO's cost-share program for installing raingardens, shoreline restorations, etc. has also been popular since it started in 2007. In response to working with interested landowners, the VLAWMO Board doubled the grant funding available to each applicant. Several took advantage of this upgrade to the program.





## CAPITAL IMPROVEMENT PROJECTS

Project Name	Description	Goals
<b>Sucker Lake Channel Restoration</b>	Planning and coordination of partners for Sucker Lake Channel Restoration. Get the design worked out and work with the partners on agreements and logistics of managing the project. This project is on track for installation in 2016.	» Complete design, pursue funding sources, partnerships and develop project installation timeline. All goals have been met thus far.
<b>Deep Lake Channel Restoration</b>	Planning and coordination of partners for Deep Lake Channel restoration, work on design for project, and pursue funding options. This project is on track for installation in 2015.	» Have initial design complete, start discussions with partners to coordinate efforts, pursue a Conservation Corps grant to aid in labor costs. All goals have been met thus far.
<b>Community Blue</b>	Completion of remaining subgrant projects and programs. Wrap up BWSR grant requirements and reporting.	» An education and outreach focused grant program to install 7 -10 community best management practices in Lambert Creek Subwatershed. All goals were met for 2014.
<b>Birch Lake</b>	Work with stakeholders including Birch Lake Improvement District (BLID) and city of White Bear Lake to maintain the project shoreline restoration on the north shore of the lake	» Implement projects, programs, and goals identified in the Sustainable Lake Management Plan (SLMP). Additional shoreline restoration remains slow.
<b>Tamarack and Fish Lake</b>	Partner with education and study opportunities	» Implement projects, programs, and goals identified in the SLMP. Program goals met for 2014.
<b>Drainage Study - HWY 61 and Gem Lake</b>	Work with city of Gem Lake to scope and initiate a drainage study for the HWY 61 drainage into Gem Lake	» Address the nutrient impairment listed for Gem Lake with local stakeholders. Clarify whether or not a feasibility study is appropriate and desired for commercial area.



## CAPITAL IMPROVEMENT PROJECTS

Project Name	Description	Goals
<b>Cost Share Program - Level 1</b>	Provide funding and assistance to property owners within the watershed to install water quality protection/improvement projects. Manage the budget and associated paperwork necessary to the program, develop reports to reflect outcomes of the program.	» Spend all 2014 funding, develop successful relationships, perform all maintenance checks on past projects. All goals were met for 2014.
<b>Cost Share Program - Level 2</b>	Provide larger grants to property owners within the watershed to install water quality enhancement projects that can also provide education to the public.	» Provide 1-2 grants via this program. One grant was awarded and the project will be completed in 2015.



## ADMINISTRATION & OPERATIONS

Project Name	Description	Goals
<b>Data Practices Policies (PRAP)</b>	Update identified in PRAP was finalized with help of attorney.	» Adopt new policy compliant with 2014 Rules changes. Goals met.
<b>Personnel Policy Update</b>	Salary surveys were reviewed and brought to the Policy & Personnel committee (PPC). PPC recommended bringing staff salary to appropriate salary range. Market adjustments were approved by the Board effective 6/14	» Establish salary ranges consistent with comparable local jobs and enhance staff retention. Goals met for 2014.
<b>Stormwater Utility</b>	Storm sewer rates are based on the adopted budget and certified to the counties for collection.	» Provide necessary financing for watershed. All goals were met for 2014.
<b>Wetland Conservation Act (WCA)</b>	Boundary and type & other determinations in consultation with the TEP were completed with notice. Response were given to WCA questions	» Administer WCA Rules with VLAWMO as LGU. Goals met.



## EDUCATION PROGRAMS

Project Name	Description	Goals
<b>Workshops</b>	2014 workshops will include workshops on Raingardens, BMP Maintenance, Dragonfly Monitoring, and Professional Development for Staff at Vadnais Elementary	» Develop and host workshops throughout the year that 1) inspire stewardship of water resources 2) provide tools and training for citizens and professionals 3) that support VLAWMO's projects and programs. All goals met.
<b>Community Events</b>	Staff a VLAWMO booth at Taste of Vadnais, Marketfest, and North Oaks Community Fair	» Partner with the community through local events providing educational information on VLAWMO's projects, programs, and activities. All goals met.
<b>Citizen Lake Monitoring Program (CLMP)</b>	Sample 12 basins	» Monitor basic water quality metrics on 12 lakes while engaging local residents where possible. All goals were met for 2014.
<b>Watershed Action Volunteers (WAV)</b>	The WAV will continue to help with the dragonfly monitoring program and other outlets	» Provide input and support for VLAWMO's programs and community events. All goals were met for 2014.
<b>Website Update</b>	Update the website with the aid of new software and professional consulting	» Website is outdated, difficult for visitors to use, and very difficult for staff to maintain and manage. An update is needed to significantly improve function and effectiveness. Primary goals were achieved.
<b>Rebranding</b>	New logo. Begin to rebrand media to obtain a cohesive look	» Update VLAWMO's logo and media in honor of our 30th anniversary.



## MONITORING PROGRAM

Project Name	Description	Goals
<b>E. coli Sourcing</b>	Phase 1 addressed 2 of 5 monitoring stations mid creek during dry-flow conditions.(Dry flow= no rain prior 72 hours.) Enumeration testing was done by SPRWS. Molecular tests were staff collected, filtered by Ramsey Co labs and sent to Weston Solutions, CA lab for DNA tests.	» Address bacteria impairment on Lambert creek through source and transport mechanism identification. All goals were met for 2014.
<b>Chloride Measurements</b>	Sample lakes and Lambert Creek	» Check monthly measurements May - September. All goals were met.
<b>Lambert Creek monitoring program</b>	Basic phosphorus,nitrogen and sediment levels are monitored at 6 sites along with pH, conductivity and DO at the 3 flumes. Automated flow meter & and precipitation gauge are maintained at Whitaker.	» Document and evaluate the general health of the creek. All goals were met for 2014.
<b>Lake Level Program</b>	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. All goals were met.
<b>Zebra Mussels</b>	PCV pipe monitoring is being done in targeted lakes	» As zebra mussels are in the main chain of lake, other targeted lakes are being monitored for spread. All goals were met.





## PLANNING & REPORTS

Project Name	Description	Goals
<b>Total Maximum Daily Load (TMDL) Report for impaired waters</b>	Final edits and response to comments were completed and the report submitted and approved. Final grant reporting was done and payment received	» Complete all updates & receive approval from EPA & MPCA. All goals met.
<b>TMDL Implementation Plan</b>	Work with stakeholder groups to identify and prioritize projects and assign Waste Load Allocations	» Complete an approved TMDL Implementation Plan. All goals met.
<b>Strategic Planning</b>	A consultant was hired to work with staff, TEC & Board to list priority projects and assess resources need to accomplish them before 2016.	» Identify & prioritize projects for 2014 - 2016 and incorporate them into the Water Plan. Goals met.
<b>Sustainable Lake Management Plan (SLMP) - Goose Lakes</b>	Complete SLMP report for East and West Goose Lakes.	» Complete SLMP report. All goals were met for 2014.
<b>Sustainable Lake Management Plan (SLMP) - Black Lake</b>	Complete SLMP report for Black Lake	» Complete SLMP report. Draft of report was complete in November 2014, final revisions being completed as of 2/9/15.
<b>Sustainable Lake Management Plan (SLMP) - Gem Lake</b>	Complete SLMP report for Gem Lake	» Complete SLMP report. All goals were met for 2014.

## LOOKING AHEAD:

2015 goals, plans,  
and projections

### IN THIS SECTION

» 2015 Work Plan



Students at Vadnais Elementary help plant their Community Blue raingarden

## 2015 WORK PLAN PROJECTION

Planning doesn't put projects in the ground by itself, but it can make the projects, programs and activities that watershed pursues the most effective they can be. VLAWMO started 2014 wrapping up the Impaired waters (TMDL) study and completing the implementation plan in addition to a strategic planning effort to identify and prioritize projects. VLAWMO will revisit its grant programs in 2015 to better foster water resource stewardship. We have learned from the Community Blue program and will continue the most effective elements of that work.

In 2015 VLAWMO will start work on updating its next 10 year water plan. We need all our communities, landowners, residents, students and local agencies to have a voice that will reflect in this new Water Plan. This is your first invitation and there will be others. The new Water Management Plan and Joint Powers update will need to be done by the end of 2016. Which projects and when? What programs are really helping manage our waters and foster stewardship? How will it be paid for? Who is helping? VLAWMO will tackle those questions as we look forward: Water Management 2017 - 2026. Join us.



## CAPITAL IMPROVEMENT PROJECTS

Project Name	Description	Goals	Timeline
<b>Sucker Lake Channel Restoration</b>	This project is a joint effort in partnership with Ramsey Count Parks 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.	» Secure partner agreements and funding. Finalize design & cost estimates. Prepare contractor RFP	Installation in 2016
<b>Deep Lake Channel Restoration</b>	This project will restore approximately 125 linear feet of shoreline that has eroded. VLAWMO is the lead on the project and working with the City of North Oaks and their homeowners association to implement the project.	» Installtion complete by the end of 2015	Installtion complete by the end of 2015
<b>Lambert Creek - Lower Kohler Channel Restoration</b>	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 stablize the banks.	» Installtion complete by the end of 2015	Installtion complete by the end of 2015
<b>Goose Lakes Shoreline Stabilization</b>	Begin installation of projects identified in the 2014 TMDL Implementation Plan for East and West Goose Lakes.	» Reduce the phosphorus impairment in Goose Lakes » Assist MS4s in achieving their WLA	Summer 2015 - Fall 2016



## GRANT PROGRAMS

Project Name	Description	Goals	Timeline
<b>Landscape Level 1</b>	Establish relationships and provide grants to property owners within the watershed to install water quality enhancement projects.	» Spend all 2015 funding, install at least 8 projects	ongoing



## GRANT PROGRAMS

Project Name	Description	Goals	Timeline
<b>Landscape Level 2</b>	Establish a new policy that better supports the direction of the program, meet with City Planners/Engineers to educate them about the program and help spread the word on projects they may be working on	<ul style="list-style-type: none"> <li>» Provide larger grants to property owners to install BMPs</li> <li>» Complete 2014 grants</li> </ul>	Ongoing
<b>Community Blue</b>	Redevelop program to fit new goals and objectives. Meet with prospective applicants and identify new groups of grantees. Develop program guidance based on community input. Implement promotion and outreach for new program	<ul style="list-style-type: none"> <li>» Provide grants to support community service initiatives, and citizen engagement efforts. Promote stewardship and behavior change in watershed protection.</li> </ul>	February - December



## PUBLIC EDUCATION AND OUTREACH

Project Name	Description	Goals	Timeline
<b>Watershed Action Volunteers (WAV)</b>	Continue to help with community events, education grants, photo contests, and outreach materials. There will be increased involvement with contributing input for the Watershed Plan Update	<ul style="list-style-type: none"> <li>» Maintain active citizen involvement and support for VLAWMO's programs and community events.</li> </ul>	Ongoing
<b>Citizen Lake Monitoring Program (CLMP)</b>	Sample 12 different lakes using citizen volunteers	<ul style="list-style-type: none"> <li>» Monitor water quality on 12 lakes while engaging local residents</li> </ul>	April - September
<b>Communications</b>	Continue website updates. Resource development as needed to expand information resources. Press Publication – deliver articles as assigned. Social Media - Explore other platforms to determine if there is benefit to vlawmo (pinterest, instagram etc). Enews – 3 publications.	<ul style="list-style-type: none"> <li>» Create and maintain communications to promote public awareness for responsible use management of natural resources.</li> </ul>	Ongoing





## PUBLIC EDUCATION AND OUTREACH

Project Name	Description	Goals	Timeline
<b>Community Events</b>	Staff a VLAWMO booth at Taste of Vadnais, Marketfest, North Oaks Community Fair, and others. Develop information and engagement components for community events including interchangeable display for non-staffed events	» Partner with the community through local events providing educational information on VLAWMO's projects, programs, and activities.	May - September
<b>Workshops</b>	Continue popular workshops for raingardens, raingarden maintenance, dragonfly monitoring, and shallow lakes. Add workshops for Watershed Plan Update stakeholders.	» Develop and host workshops throughout the year that 1) inspire stewardship of water resources 2) provide tools and training for citizens and professionals 3) that support VLAWMO projects & programs	Ongoing
<b>Dragonfly Citizen Science</b>	Hold one training/workshop and 3 biological surveys for citizens. Lead 1 or 2 youth surveys during the day. Develop new survey tools as needed. Maximize partnership with Minnesota Dragonfly Society and Tamarack Nature Center.	» Create strong adult and youth watershed advocates through citizen science » Collect population data	May - September
<b>Partnerships</b>	Continue support of existing partners and partner activities: NEMO, Watershed partners, Blue Thumb etc. Complete student version of Watershed game with NEMO team.	» Defray costs and enhance reach and impact through strong partnerships	Ongoing
<b>K-12 and MS4s</b>	Develop youth involvement opportunities that improves/benefits VLAWMO's goals and activities. Utilize partnerships whenever possible. Partner in at least one school activity. Provide MS4 education summary for SWPPP. Improve stormwater guidance and information	» Materials and programs for target audiences that promote understanding and personal action for responsible use and management of water resources	Ongoing



## MONITORING PROGRAM

Project Name	Description	Goals	Timeline
<b>E. coli Sourcing</b>	Continue the dry weather monitoring of the remaining three sub-drainages (dry weather= no rain prior 72 hours.)	» Address bacteria impairment on Lambert creek through source and transport mechanism identification.	April - September
<b>Lambert Creek monitoring program</b>	Monitor basic phosphorus, nitrogen 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
<b>Lake Level Program</b>	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
<b>Chloride Measurements</b>	Sample lakes and Lambert Creek. Partner with Birch Lake Improvement District (BLID)	» Check monthly measurement	May - September
<b>Bullhead Management</b>	Survey and monitor populations of bullheads in Goose Lakes. Remove bullheads as needed to control populations to a size manageable by game fish	» Reduce the internal load impairment in Goose Lakes	March - September



## ADMINISTRATION & OPERATIONS

Project Name	Description	Goals	Timeline
<b>Joint Powers Agreement Update</b>	The JPA language will be reviewed for any recommended updates. Any changed language will be sent to municipal partners for review and approval. Policy & Personnel will propose updates that will be sent to the VLAWMO attorney for review.	» Language changes will be considered by the Board before distribution to the JPA members for approval.	April 2015 - December 2016
<b>Budget &amp; Stormwater Utility</b>	Storm sewer rates are based on the adopted budget and certified to the counties for collection.	» Provide necessary financing for watershed.	April - July
<b>Wetland Conservation Act (WCA)</b>	Complete boundry and type & other determinations in consulltion with the TEP. Respond to WCA questions	» Administer WCA Rules with VLAWMO as LGU.	Ongoing



## PLANNING & REPORTS

Project Name	Description	Goals	Timeline
<b>Watershed Management Plan Update (Plan)</b>	An update of the Plan is required by December 31st, 2016. The Plan will meet all existing and proposed requirements of Minnesota Rules Chapter 8410, 8420 and 4720.5100 – 4720.5590, Minnesota Statutes 103B, 103D and 471.59. The plan will clearly identify goals, policies, priority concerns, and a strong focus on implementation activities for the Watershed for 2017-2027.	» Complete primary process of public input and identification of priority issues	March - December
<b>Redesign Annual Report</b>	Redesign report to better serve needs and goals of watershed and staff	» New template » New visual summary	January - April

## DUCKS IN A ROW:

Administration and operation

### IN THIS SECTION

- » Plans and Reports
- » WCA Summary
- » Local Plan Adoption
- » Biennial Solicitations
- » Partnerships

## PLANNING & REPORTS

VLAWMO produced a handful of critical plans and reports in 2014. Some of them were required, such as the Total Maximum Daily Load (TMDL) Report, and TMDL Implementation Plan, others were suggested by higher agencies (Strategic Plan), and a few were initiated by staff and partners. Regardless of their origin each of VLAWMO's plans were necessary to guide its staff towards the most efficient and successful method to accomplish our goals and objectives.

### TOTAL MAXIMUM DAILY LOAD (TMDL) REPORT

The TMDL addressed 303(d) impairments for aquatic recreation based on high bacteria concentrations in Lambert Creek and high nutrient concentrations in five lakes within VLAWMO. The TMDL Report, which determined the sources and quantities of pollution for each of the impaired water bodies began in 2009 was completed by Wenck Associates and approved by the US EPA on April 3, 2014.

### TMDL IMPLEMENTATION PLAN

The TMDL Implementation Plan assigned pollution reduction amounts, or Waste Load Allocations (WLAs) to the responsible entities (MS4 stormwater permit holders), and developed the plans, practices, and policies to assist the responsible entities (MS4s) with achieving State water quality standards over the next 10 years. The TMDL Implementation Plan was written by VLAWMO staff and integrated input from the MS4s, community groups, MPCA, and Wenck. It was approved by the MPCA on August 4, 2014.

This project was developed in close coordination with VLAWMO staff, the MPCA Project Managers, over 200 area stakeholders, and Wenck Associates. It reflects an

intensive collaborative effort between the local and state units of government and Wenck Associates. The MPCA has designated a page on their website summarizing the project and posted both the TMDL Report, and TMDL Implementation Plan.

## STRATEGIC PLAN

In summer 2013, VLAWMO went through the Board of Water and Soil Resources (BWSR) Performance Review and assessment Program (PRAP) evaluation. Overall, VLAWMO received several commendations for its hard work implementing the Plan and protecting and preserving water resources. The PRAP evaluation also made a recommendation, which was to “use short-term strategic planning to explore project and program expansion, and to consider how to strategically use partnerships to accomplish even more” (BWSR, 2013). For these reasons, VLAWMO undertook a strategic planning effort to identify a priority list of new projects to accomplish through 2016. These projects were incorporated into the Water Plan through a minor plan amendment.

## SUSTAINABLE LAKE MANAGEMENT PLANS (SLMP)

Sustainable Lake Management Plans (SLMP) look at the overall conditions of the lake and drainage area and tie in the findings from other studies and reports to serve as a tool towards future projects and programs to help protect and enhance the water quality of the lake. VLAWMO completed 3 SLMP's in 2014.

### GEM LAKE SLMP

There are numerous studies and reports done for the Gem Lake Subwatershed which provide recommended projects and programs to protect the health of the



lake including; continued lake monitoring, enhanced monitoring, swale feasibility/installation, and water quality improvement projects. Partnership is vital to achieving our goals in this watershed. VLAWMO will continue to work with the City of Gem Lake, Ramsey County and State agencies to move forward with the action items listed in this SLMP with the goal of protecting and enhancing Gem Lake's water quality.

### GOOSE LAKES SLMP

Goose Lake is very eutrophic as indicated by table on page 13. It is on the states impaired list for nutrients and is part of a TMDL study completed winter of 2014. Goose is above state standards for both phosphorus (TP) and chlorophyll (ChlA). Water quality data has been collected since 1997 and is shown below. Also included are the water quality comparisons of each basin. Overall, phosphorus and chlorophyll levels are very high for a shallow lake in this ecoregion. Water transparency is very poor. The high nutrients in the lake are a bit of a mystery considering the flushing it receives from the Morning Star Plant ground water, but it is a large

urbanized watershed with a lot of runoff entering the lake. Runoff and internal loading most likely are causing the high nutrient levels.

### BLACK LAKE SLMP

Black Lake is an overall healthy shallow lake. It is surrounded by nature and does not have any direct runoff from roads or commercial and industrial areas. The lake should continue to be monitored for TP and Chl A and if levels start to rise, we will be able to implement other action items. Action items for Black Lake include:

- » **Continued Lake Monitoring.** Continue current monitoring program of twice monthly lake sampling to measure nutrient levels, dissolved oxygen and temperature levels.
- » **Enhanced Monitoring.** Collect storm samples within the Black Lake Subwatershed to determine areas of concern.
- » **Fish Survey.** Conduct a fish survey to determine abundance and type of fish found in Black Lake.

Surveying vegetation on Black Lake



## WETLAND CONSERVATION ACT (WCA)

VLAWMO is a non-permitting agency, however, there were 15 landowner contacts in which wetland related technical assistance was provided during 2014. There were 4 potential WCA violation sites investigated, 2 were resolved informally, 2 turned out to be non-violations. There were a total of 9 applications.

### WCA SUMMARY

Type of Application	Approved	Denied	Withdrawn
<b>Bounday and Type</b>	7	0	0
<b>No-Loss</b>	0	0	0
<b>Exemption</b>	0	0	0
<b>Sequencing</b>	0	0	0
<b>Replacement Plan</b>	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.

## BIENNIAL SOLICITATION FOR PROPOSALS

Proposals for professional auditing services were solicited in 2014 with only one firm providing a proposal again. Proposals for legal services will be solicited in 2015. Engineering services are provided by multiple firms with larger projects going through a bidding process. This was done for both the TMDL Report assistance, competed in 2014 and for the 2014 Strategic planning effort.

## FORMING NEW PARTNERSHIPS

One of VLAWMO's greatest successes is working together with partners to use resources wisely and maximize our effectiveness and existing capacity.

In 2014 VLAWMO became a member of Metro WaterShed Partners (WSP), a coalition of more than 75 organizations working to educate Minnesotans about protecting water. WSP promotes clean water practices and aims to inspire people to act to protect water, and to create educational programs and tools to help cities meet the requirements of the MS4 permit. In 2014, WSP raised more than \$54,000 for media outreach and made 5,560,507 clean water impressions on residents in the metro area through:

- » Ads on radio and TV that reached 4,883,970 people in the Twin Cities with messages that encouraged them to protect water by keeping streets clean.
- » Connecting with approximately 676,537 Minnesota fairgoers at the State Fair's DNR and Eco Experience buildings, letting people know through interactive display, a clean water game and print materials how they can protect water.
- » Launching a Facebook campaign called StormDrain Goalie to reach a targeted audience of local people who have expressed interest in protecting water. <https://www.facebook.com/StormDrainGoalie>

WaterShed Partners also provided services to members including:

- » Professional training on best practices in using social media, a field trip on the river with speakers on managing stormwater for a changing climate, and a talk on using Plain Language in communications.
- » Monthly meetings with presentations about timely issues such as invasive species, the new Nitrogen study and movement in the legislature.
- » A listserv for ongoing sharing of information and resources.
- » Cleanwatermn.org, a site with electronic resources and an image gallery to help water educators with outreach to their service areas.

## 2014 PARTNERS

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- » Blue Thumb
- » Metro Watershed Partners
- » Ramsey County GIS User Group
- » Ramsey County League of Local Governments
- » Minnesota Dragonfly Society
- » Northland NEMO
- » Birch Lake Improvement District (BLID)
- » SEEK
- » Tamarack Nature Center
- » Minnesota Pollution Control Agency
- » Metro Blooms
- » MN Erosion Control Association
- » North Oaks Home Owners Association

Shallow Lakes Forum 2014



## DOLLARS AND CENTS:

Financial statement and budget

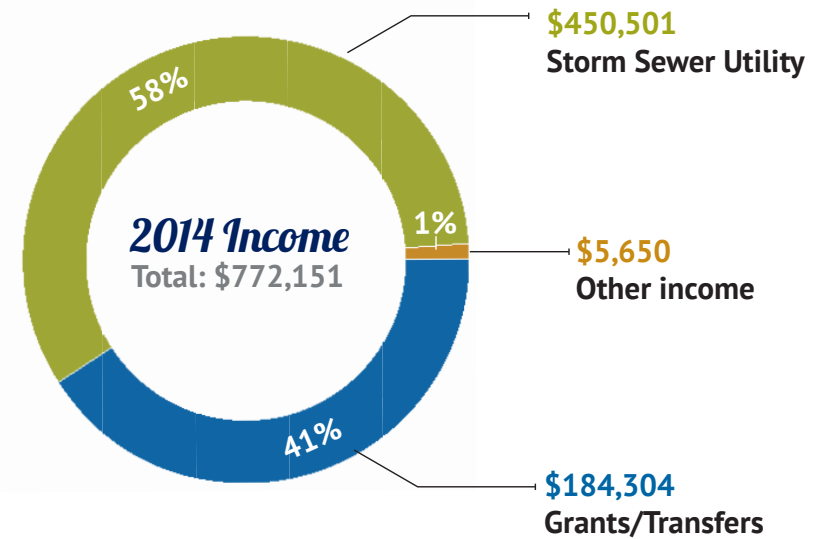
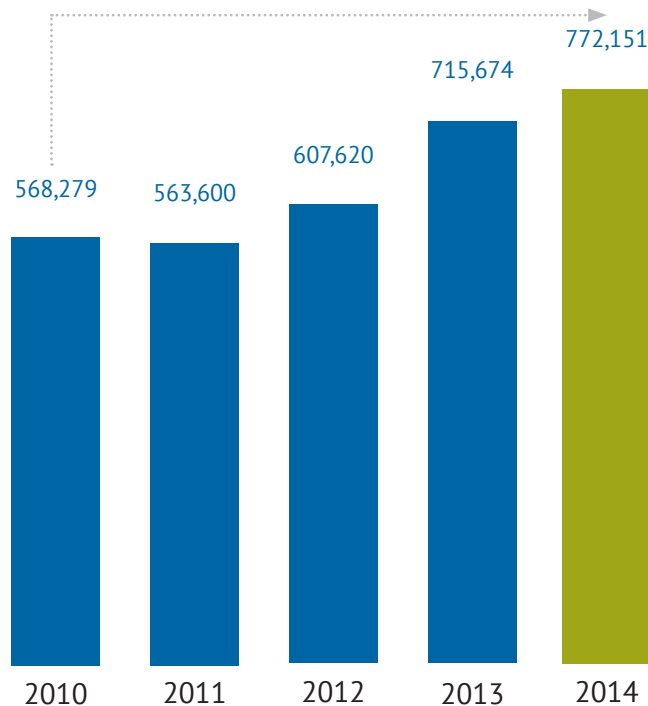
### IN THIS SECTION

» Finance and Budget

## FINANCE AND BUDGET

The 2014 budget was established by the Board of Directors at the regular June 2013 meeting with carry over project and program funds added in December 2014. The Budget and Finance Committee with members from the Technical Commission and the Board reviews and makes recommendation on the budget to the Board. The working budget total for 2014 was \$772,151.

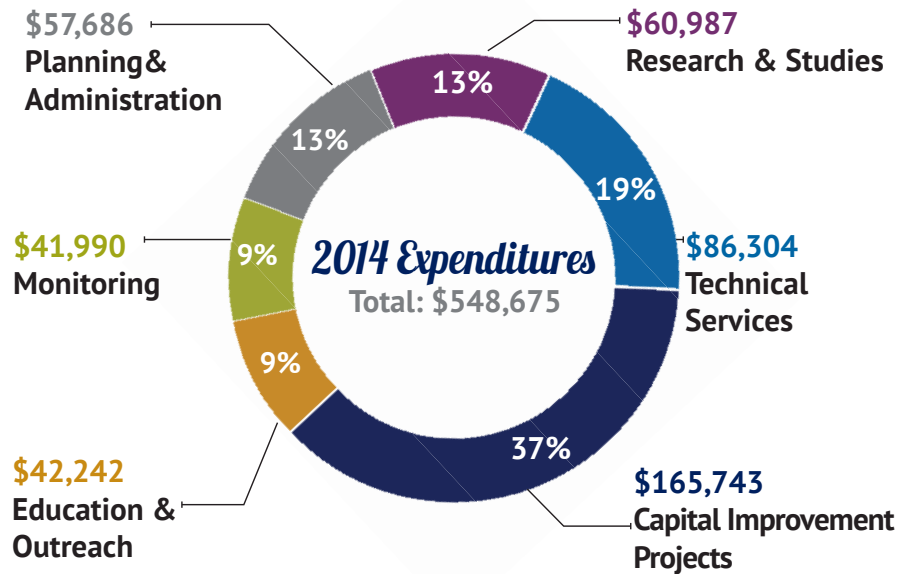
Budget with fund balance



## INCOME

Of this the greatest source of revenue for VLAWMO is Storm Sewer Utility (SU) fees. Fees were based on the average amount of impervious surface in different land use classifications. \$450,501 in SSU were certified to Ramsey and Anoka Counties. The average single family homeowner paid \$26.28 per year to support all of the projects and programs conducted by the watershed. That's about \$2.19 per month. Grant funding accounted for another significant revenue stream again this year, \$184,304. Multiple projects benefited from the grant funds leveraged by local dollars leveraged. There was also very minor income from interest, service fees and other miscellaneous sources.





A Female Monarch Butterfly - 2014 photo contest honorable mention

## EXPENSES

Total cash expenses for 2014 were less than budgeted at \$548,675. This was a decrease from 2013 and reflects funding that will be carried over for planned projects identified in Water Plan amendment approved by the Board during the summer of 2014. Further detail is available in the annual audit attached as an Appendix to this Report.

## GRANTS RECEIVED

Grants received included additional funding for Community Blue (\$35,812), the final payment for the TMDL Report (\$7,199), a Performance Review and Planning (PRAP) grant for the strategic planning (\$3,081) and the annual Wetland Conservation Act support (\$3,937). Of these grants, only the PRAP grant was a new grant. The rest were ongoing or installments of existing grants.

## BWSR AUDIT

The Board of Water & Soil Resources (BWSR) started a new grant audit

program and among those targeted for the initial year were Clean Water grants in Ramsey County. VLAWMO had both the Central Middle School swale project and the Community Blue Partnership grants audited. All reporting and documentation was organized and submitted as requested. BWSR found VLAWMO to be doing a very good job with its grants management and reporting. Kristine Jenson was asked to join a panel to discuss the audit process at a state-wide training in the fall.

## IT TAKES A VILLAGE:

The people behind VLAWMO

### IN THIS SECTION

- » Staff
- » Consultants
- » Board of Directors
- » Technical Commission (TEC)

## IT TAKES A VILLAGE: THE PEOPLE BEHIND VLAWMO

VLAWMO Employs four full-time staff, and one summer intern. 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.

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**BOARD OF DIRECTORS**

## Primary Directors

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**Dan Jones, Vice Chair**

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**John Schaaf, Treasurer**

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**William Mample**

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## Alternate Directors

Joe Murphy  
Vadnais Heights

Kevin Edberg  
White Bear Lake

Marty Long  
North Oaks

Bob Kermes  
White Bear Township

Rick Bosak  
Gem Lake

Dave Roeser  
Lino Lakes

**TECHNICAL COMMISSION (TEC)****Commissioners can be reached  
by contacting VLAWMO**

## Primary

**Paul Peterson, Chair**

White Bear Township

## Alternate

*No Alternate Available*  
White Bear Township

**Mark Graham, Vice Chair**

Vadnais Heights

Kevin Watson  
Vadnais Heights

**Jim Grisim, Finance Officer**

White Bear Lake

Brent Thompson  
White Bear Lake

**Chris Mann**

North Oaks

Bob Larson  
North Oaks

**Jim Lindner**

Gem Lake

Gretchen Artig-Swomley  
Gem Lake

**Marty Asleson**

Lino Lakes

*No Alternate Available*  
Lino Lakes

