

# **City of White Bear Lake MS4 General Permit & Storm Water Pollution Prevention Program**

**April 25, 2023  
Annual Meeting  
Reporting on 2022 Activities**



# MS4 General Permit

Municipal Separate Storm Sewer System (MS4):

- System of stormwater conveyance (streets, curb & gutter, ditches, storm sewer).
- Owned or operated by a state, city, town, county, district, association, or other public entity.

MS4s in Minnesota must satisfy the requirements of the MS4 General Permit, issued by the Minnesota Pollution Control Agency (MPCA).



# MS4 General Permit

Purpose:

*Reduce the amount of sediment and other pollutants entering state waters from stormwater systems (MS4s).*

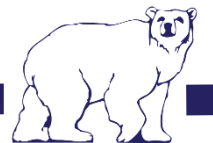


# MS4 General Permit

Accomplished through development and implementation of a stormwater pollution prevention program (SWPPP), which has six components (called Minimum Control Measures, or MCM's):

1. Public education and outreach
2. Public participation and involvement
3. Illicit discharge detection and elimination
4. Construction site stormwater runoff control
5. Post construction stormwater management
6. Pollution prevention/good housekeeping

Plus: Total Maximum Daily Load (TMDL) requirements for MS4s that discharge to an impaired waterbody.





# I. Public Education and Outreach

## Summary of Program

- Distribute educational materials that informs the public of the impacts of stormwater discharges
  - Website
  - Newsletter
  - White Bear Press
  - Social media
- Participate in outreach activities
  - Host water related events
  - Conduct workshops
- Partner with watershed management organizations & others



**Raingarden Palooza!**  
Taking care of clean water gardens together.

A 3-part series on how to take care of raingardens and tackle weeds.  
**Work, learn, and meet fellow garden enthusiasts.**  
*Each event is an entry for prizes!*

**June 9:** Lake Josephine  
**July 21:** Lakeaires Elementary  
**Sept 22:** Downtown White Bear Lake  
*Snacks included all days*

Details on locations, times, and RSVP:  
[vlawmo.org/events](http://vlawmo.org/events)

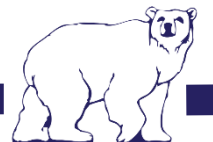
A partnership between:

 **RCWD**  
RICE CREEK WATERSHED DISTRICT

 **VLAWMO**  
Vednais Lake Area  
Water Management Organization

 **RWMWD**

2022 Activity

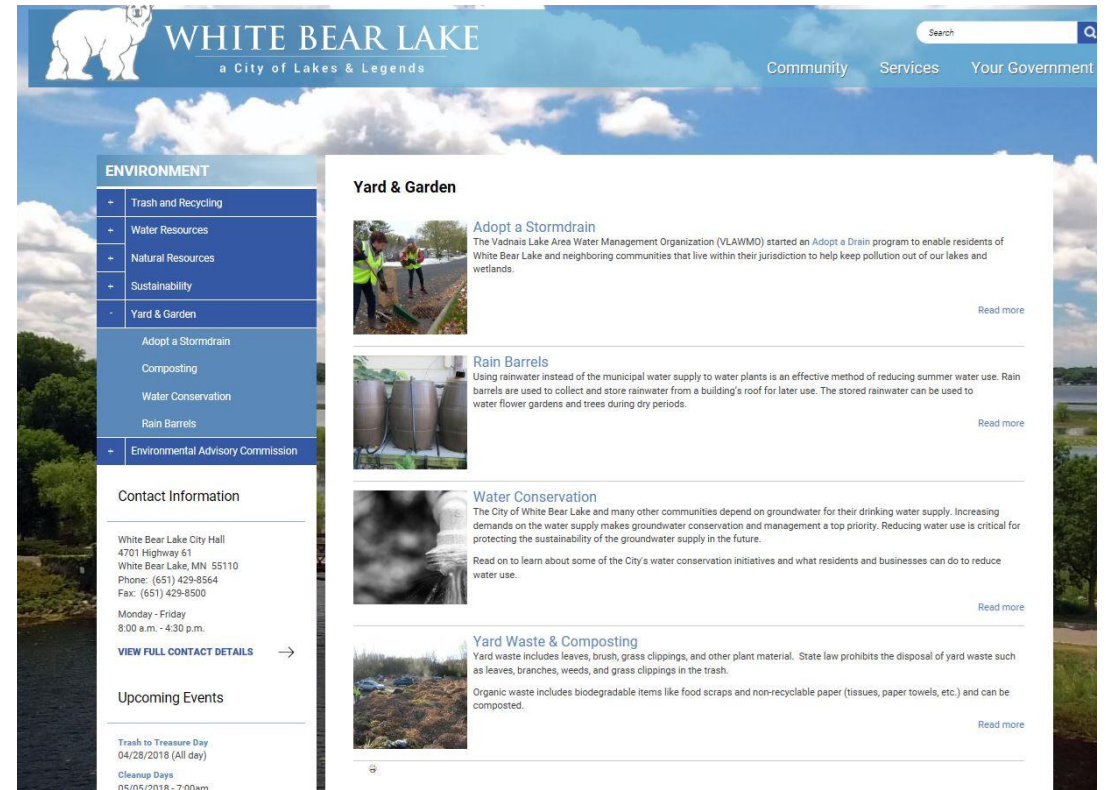
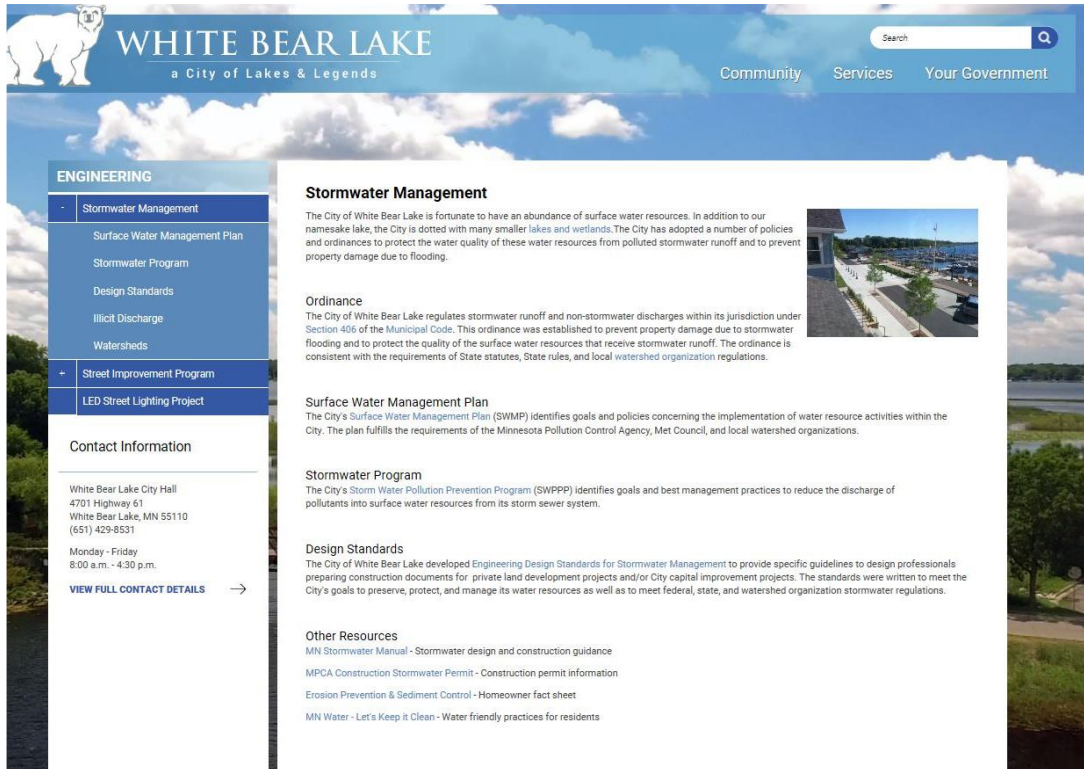


# I. Public Education and Outreach

## 2022 Activities

### City Website (whitebearlake.org)

- Stormwater management
- Yard and garden

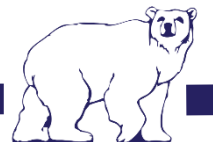


## Yard and Garden

- Services
- Environment

## Stormwater Management

- Your Government
- Engineering





# I. Public Education and Outreach

## 2022 Activities

### Spring and fall newsletters

**Spotlight on Sustainability**





Spring is officially here and as residents begin to swap snow blowers for lawn mowers, some may want to consider switching from gas to electric-powered equipment. There is an array of electric tools available to the amateur landscaper, including leaf blowers, weed whips, and tree trimmers. In particular, recent advances in battery technology have made electric lawn mowers and snow blowers increasingly popular and readily available products. White Bear Lake resident, Gary Schroeder, who owns both, described some of the benefits to investing in electric equipment.

First, they are quieter than traditional equipment, which cuts down on noise pollution and allows those early morning risers to perform their lawn care routine without fear of disturbing the neighborhood. Second, they are lighter and more user-friendly due to push start buttons and fewer moving parts. They are also reliable – Schroeder has owned his lawn mower for almost five years.

Most importantly, with no gas or oil to burn, electric mowers and blowers are more environmentally friendly. Schroeder explained that typical gas powered equipment does not have pollution reducing systems like vehicles do, so they emit a staggering amount of pollutants. According to the Minnesota Pollution Control Agency (MPCA), the average gas powered lawn mower produces 14 pounds of air pollution per hour of use, so switching to electric greatly reduces the amount of greenhouse gases released into the atmosphere every summer.

Overall, electric lawn mowers and snow blowers are just as effective as their gas-powered counterparts. They need to charge before use, which is as simple as placing the battery on a charger that plugs into a standard electrical outlet. The batteries for Schroeder's lawn mower are about the size of a small loaf of bread, take about an hour to fully charge and last an hour or more; long enough to mow his whole lawn in one charge. Residents with larger yards may opt for a riding lawn mower, which can last for two or more hours on one charge and can cover up to four acres of land. Schroeder's snow blower has two batteries, so has the capacity to last several hours, important in Minnesota winters. There are a number of different electric mowers and blowers available on the market, making it easy to find one that fits one's needs while reducing one's environmental impact.

#### Submit Your Sustainable Project

With each newsletter, the City spotlights a different business or residential sustainability project, which could include projects that conserve energy, use renewable energy, provide alternative transportation, treat stormwater, conserve drinking water, increase pollinator and wildlife habitat, or reduce waste. If you would like to see your project featured in an upcoming newsletter, please email Ashton Miller at [amiller@whitebearlake.org](mailto:amiller@whitebearlake.org) or 651-429-8561.



**Protect local waterways**

Sign up!  
[adopt-a-drain.org](http://adopt-a-drain.org)




#### Adopt a Storm Drain

The Adopt-a-Drain program gives residents the opportunity to improve water quality by adopting a storm drain in their neighborhood and keeping it clear of leaves, trash, and other debris to prevent this material from washing down storm drains and into nearby waterbodies. By the end of 2022, a total of 119 drains had been adopted within the City. Sign up to adopt a storm drain at: [adopt-a-drain.org](http://adopt-a-drain.org). A map of known drain locations will be displayed. Not all drains are shown on the map, but missing drains can be added.

#### Adopt-a-Drain Challenge

The White Bear Lake Conservation District challenges its five member communities to more than double the number adopted drains by the end of October 2022. No prizes will be given, but our shared reward will be cleaner water and improved drainage on our streets. Results of the challenge will be announced at the WBLCD board meeting on November 15, 2022.

[whitebearlake.org](http://whitebearlake.org) | 7
 


For Phase 2, invasive Amur maples will be removed along the Rotary Nature Preserve paved trail this fall and native trees, shrubs, grasses and flowers planted in 2023. Expect this area to look very open and bare until the new native plantings have had time to grow.

### Restoration Projects Planned For Rotary Nature Preserve

Rotary Nature Preserve is a 40-acre city park located north of Birch Lake, between Birch Lake Boulevard North and White Bear Parkway. For the past 30 years, the City and Rotary Club of White Bear Lake have partnered to make improvements to the park for public enjoyment, including a picnic shelter, restroom facility, trails and a boardwalk across the wetland. Each year, Rotary Club hosts a park cleanup day and tree planting event.

Over the years, invasive plants have taken over areas of the park and have displaced native plants. The City and Rotary Club are partnering on a multi-year restoration project to remove the invasive plants and restore the area with native plants. The restoration will occur over numerous phases. The location of the first three phases of restoration is highlighted on the map.

**Phase 1: 2022**  
Phase 1 of the restoration is located just south of the parking lot adjacent to the paved trail. This phase is currently underway and will be planted with a diverse mix of native prairie plant species this fall


that will support pollinators and other wildlife. The plantings may take two to three years to fully mature. The City and Rotary Club were awarded a cost-share grant from the Vadnais Lake Area Water Management Organization for this phase of the project.

**Phase 2: Late Fall 2022 through 2023**  
Phase 2 of the restoration will begin late this fall with invasive plant removal on both sides of the paved trail, followed by a native plant restoration starting in 2023. The City will be removing the invasive Amur maple along the trail, which will make this area look open and bare until the native grasses, flowers, trees and shrubs that will be planted in 2023 have time to grow.

**Phase 3: Late Fall 2023 through 2024**  
Phase 3 is a continuation of Phase 2, with a tentative timeline of invasive plant removal in late fall 2023, and native plant restoration starting in 2024.

For additional information on this project, visit the City's website at [whitebearlake.org](http://whitebearlake.org).

### Rotary Nature Preserve Restoration Project Map



Phase 1

Phase 2

Phase 3

6 | White Bear Lake Fall & Winter 2022





# I. Public Education and Outreach

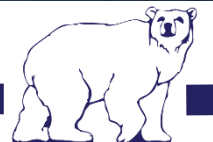
## 2022 Activities

### Environmental Resources Expo – July 28, 2022

- Hosted by the WBL Environmental Advisory Commission
- 12 exhibitors



2023 Expo: July 27th





# 2. Public Participation and Involvement

## Summary of Program

- Provide at least one opportunity annually for the public to provide input on the SWPPP
  - SWPPP public hearing
  - Website
- Provide other opportunities for public participation and involvement



## 2. Public Participation and Involvement

### 2022 Activities

#### Adopt-a-Drain

- Program by Watershed Partners coalition
- Member since 2019
- 265 drains adopted
- Up from 119 in 2021 thanks in large part to 2022 WBLCD Adopt-a-Drain Challenge



Participants sweep leaves, grass clippings, fertilizer, sediment and other debris to keep these pollutants out of the storm sewer.

*[adopt-a-drain.org](http://adopt-a-drain.org)*





# 2. Public Participation and Involvement

## 2022 Activities

### Rotary Nature Preserve

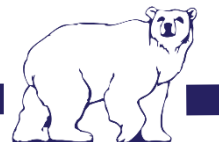
#### Phase 1 native planting

- Partnership with Rotary Club
- \$750 VLAWMO grant



## **2023: Phase 2 Restoration**

- Invasive tree removal /buffer planting
- Funding Partners: Rotary Club, VLAWMO, Greater White Bear Lake Community Foundation, BLID, City
- Field day: Birch Lake Elementary students



# 3. Illicit Discharge Detection and Elimination

## Summary of Program

- Develop, implement, and enforce a program to detect and eliminate illicit discharges.
  - Illicit discharge ordinance
  - Train staff to identify and report illicit discharges
  - Encourage residents to report suspicious activities
  - Identify priority areas
  - Procedure for locating and eliminating sources
  - Procedures for responding to spills

*Illicit Discharge*  
*any discharge (accidental or on purpose) into a storm sewer system, river, stream, wetland, or lake, that is not composed entirely of stormwater*



*Ex: dumping gas, oil, paints, cleaners*





# 3. Illicit Discharge Detection and Elimination


Examples of illicit discharges





# 3. Illicit Discharge Detection and Elimination

Examples of illicit discharges




**PET  
GOTTA GO?**  
If it's in our streets,  
it's in our streams.

CleanWaterMN.org

MINNESOTA WATER  
LET'S KEEP IT CLEAN

Images courtesy of the Washington State Department of Ecology; King County, Washington; and the cities of Seattle, Tacoma and Bellevue.

*Pet Waste*



**USING  
FERTILIZER?**  
If it's in our streets,  
it's in our streams.

CleanWaterMN.org

MINNESOTA WATER  
LET'S KEEP IT CLEAN

Images courtesy of the Washington State Department of Ecology; King County, Washington; and the cities of Seattle, Tacoma and Bellevue.

*Fertilizers, pesticides*





# 3. Illicit Discharge Detection and Elimination

2022 Activities

Website

Illicit discharge page

11 reports of illicit discharge

- Lawn clippings (2)
- White substance (2)
- Oil (2)
- Sediment
- Grease
- Pool water
- Chicken droppings
- Cushion and shopping cart

whitebearlake.org

- Departments
- Engineering
- Stormwater

whitebearlake.org

- Services
- Report a Problem

To report an illicit discharge:

- Non-emergency:
  - Online form
  - 651-429-8531 (Eng Dept.)
- Emergency: 911

The screenshot shows the White Bear Lake City website. The header includes the city name and logo, a search bar, and navigation links for Community, Services, and Your City. The main content area is titled 'ENGINEERING' and lists various services: Stormwater Management, Surface Water Management Plan, Stormwater Program, Design Standards, Illicit Discharge, Watersheds, Street Improvement Program, and LED Street Lighting Project. Below this is contact information for White Bear Lake City Hall. The 'Illicit Discharge Detection and Elimination' section defines what an illicit discharge is, lists common types (fertilizer, gas, oil, concrete, restaurant, commercial carwash), and provides instructions on how to report one, including an online webform and a phone number. It also lists how to help prevent discharges and the city's role in enforcement.



# 4. Construction Site Runoff Control

## Summary of Program

Implement and enforce a construction site stormwater runoff control program that reduces pollutants in stormwater from construction activity.

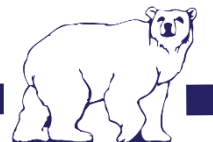
- Erosion and sediment control ordinance
- Site plan review
- Site inspections
- Procedures for reports of non-compliance



*Biologs*



*Silt fence*





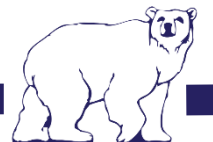
# 4. Construction Site Runoff Control

## 2022 Activities



## Inspections

- Building Department inspects commercial and residential construction sites (20 sites in 2022)
- Building inspectors are certified for erosion and sediment control inspections.





# 5. Post Construction Runoff Management

## Summary of Program

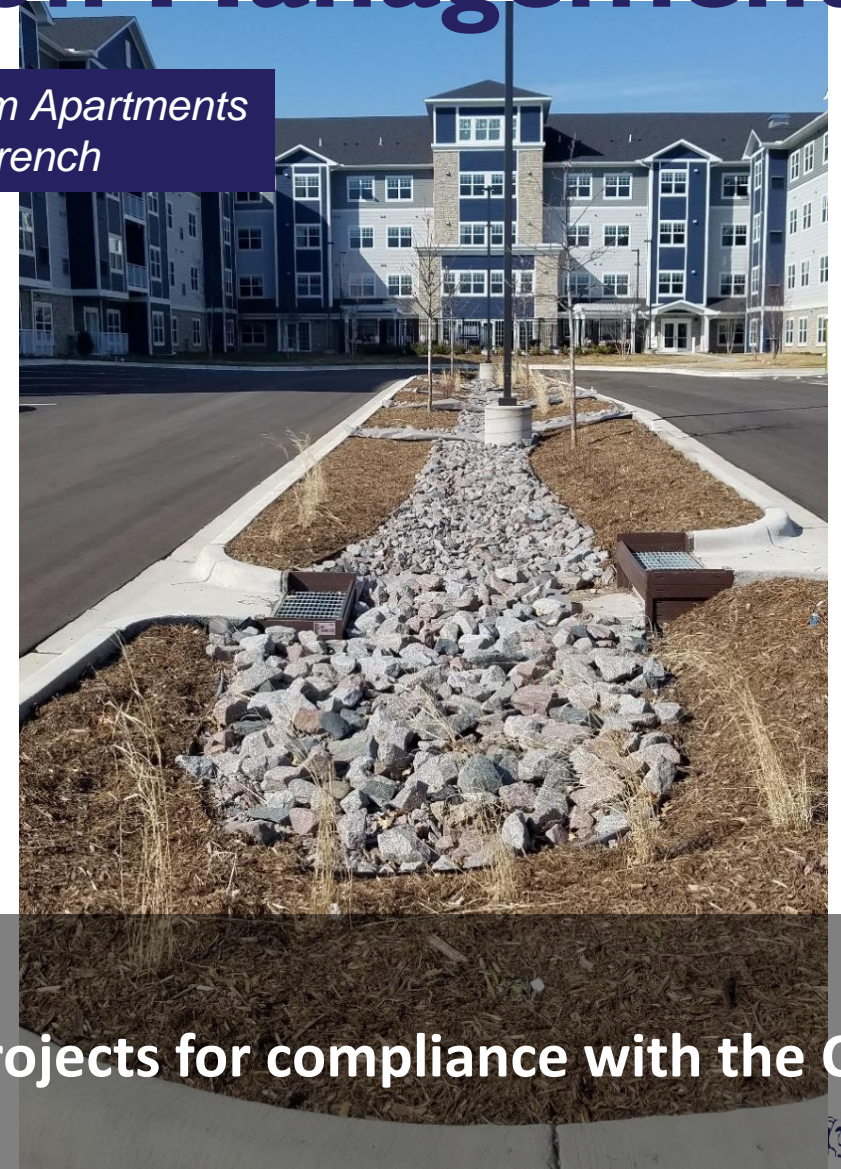
Require permanent stormwater treatment facilities for new construction and reconstruction projects

- Stormwater management ordinance and stormwater design standards
- Site plan review
- Long-term maintenance agreement

## Development Reviews

- Engineering Department reviews private development projects for compliance with the City's stormwater design standards

*Barnum Apartments  
Tree Trench*



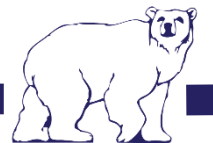


# 6. Pollution Prevention/Good Housekeeping

## Summary of Program

Implement an operations and maintenance program that prevents or reduces the discharge of pollutants from City facilities.

- City facilities (waste disposal, fleet maintenance, stockpiles)
- Landscape maintenance
- Street sweeping
- Winter street maintenance
- Stormwater treatment facilities inspection and maintenance
- Employee training



# 6. Pollution Prevention/Good Housekeeping

## 2022 Activities

*The City's vacuum sweeper removes fine particles as well as leaves and larger debris to protect water resources.*



### Street sweeping

- Street Department swept all streets in the spring and fall
- Weekly sweeping in the Downtown area and around lake





# 6. Pollution Prevention/Good Housekeeping

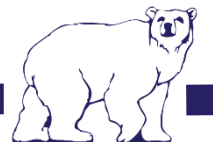
## 2022 Activities



Calibrating spreaders

### Winter street maintenance

- Spreaders are calibrated annually
- Public Works staff attends annual smart salt training



# 6. Pollution Prevention/Good Housekeeping

## 2022 Activities

### Storm system maintenance (Sewer Department)

- Inspect all pond inlets and outlets before and after major rain events.
- Inspect swirl separators (13 total) once per year and remove sediment as needed.
- Inspected underground infiltration systems and clean as needed.





# 6. Pollution Prevention/Good Housekeeping

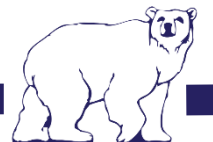
2022 Activities



*Matoska Park  
Raingardens*

## Storm system maintenance

- Contract for City raingarden maintenance (6 total): weeding, mulching, inlet cleaning





# Impaired Waters

Purpose: restore lakes that are impaired for specific pollutants (nutrients, sediment, chloride, bacteria, etc.)

- MPCA creates a list of impaired waters that do not meet water quality standards (303d list).
- MS4s that discharge to impaired waters are assigned allowable pollutant loadings, called a waste load allocation (WLA)





# Impaired Waters

WLAs are assigned to the City for the following waterbodies

## Nutrient (phosphorus) impairment

- Bald Eagle Lake
- Goose Lake (East and West)
- Kohlman Lake
- Lake St. Croix
- Peltier/Centerville Lake
- Wilkinson Lake

## Bacteria Impairment

- Rice Creek
- Lambert Creek

## Chloride Impairment

- Kohlman Lake
- South Long Lake



# Impaired Waters

## Summary of Program for Nutrient Impairments

MS4s that are assigned a WLA for nutrients must report nutrient reduction progress in the MS4 annual report to the MPCA.



*Goose Lake: nutrient impairment*



*Curb cut rain garden – 0.4 lb/yr phosphorus reduction*





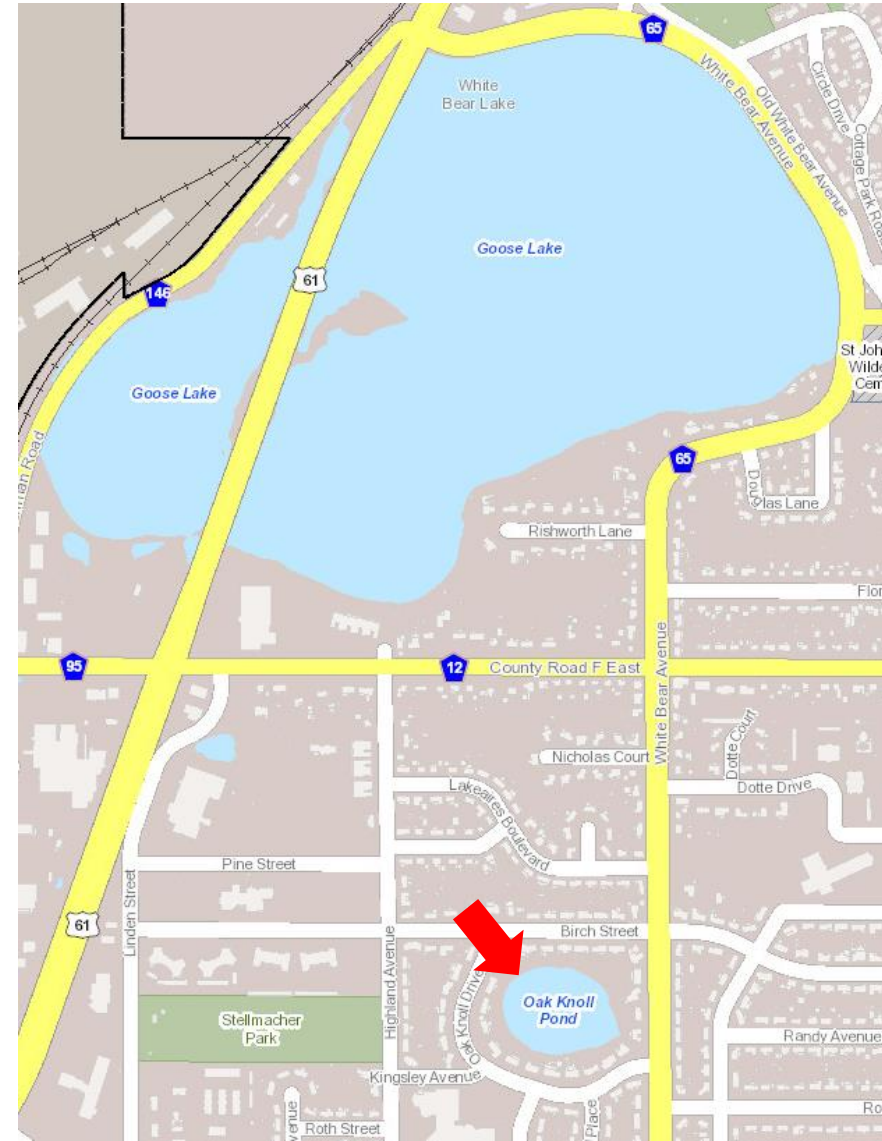
# Impaired Waters

2022 Activities

## Nutrient Impairments

Oak Knoll Pond Spent Lime  
Demonstration Feasibility Study

- Study to determine if Oak Knoll Pond is suitable for a possible spent lime project.
- Purpose: reduce nutrients in the pond to improve water quality.
- Also reduces nutrients to East Goose Lake.



# Impaired Waters

## 2022 Activities - Nutrient Impairments

### Oak Knoll Pond Spent Lime Demonstration Feasibility Study.

- Spent lime: by-product of lime softening at St Paul Regional Water Services (SPRWS) and the City of WBL Water Treatment Plant.
- Results: determined to be technically, socially, and economically feasible.

### **2023: Design and application**

- MOU to City Council on May 7<sup>th</sup>
- 50/50 cost split with VLAWMO (approved in 2023 budget)
- Anticipated application, summer 2023



WBL Spent Lime Slurry





## MS4s that are assigned a WLA for bacteria or chloride impairments have new MS4 General Permit requirements such as:

- Ordinance requiring pet owners to remove and properly dispose of pet waste on City owned land.
- Ordinance requiring proper salt storage at commercial, institutional, and industrial facilities.
- Distribute educational materials on pet waste and salt use at least once per year.



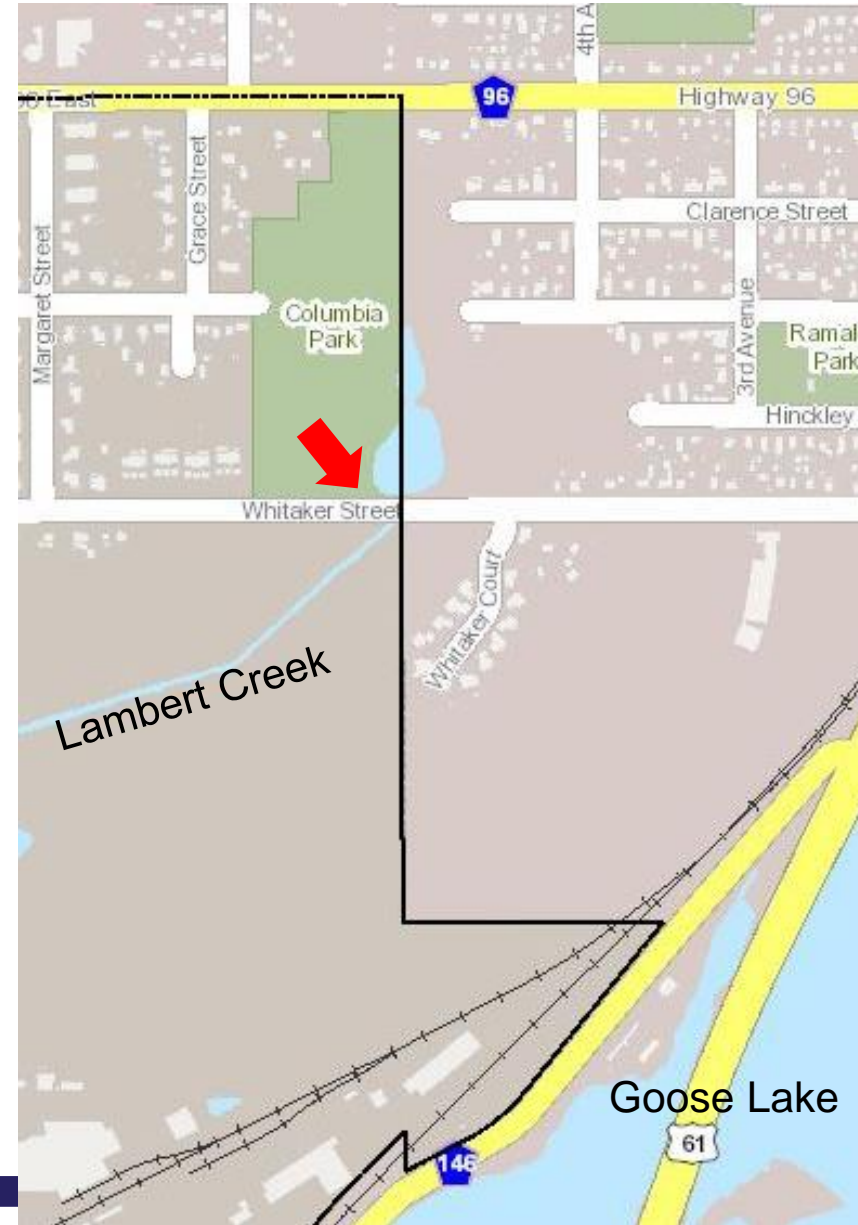
# Impaired Waters

2022 Activities

## Bacteria Impairments

### Whitaker Pond Biochar Project

- Lambert Creek impaired for high bacteria levels during storm events.
- Primarily avian and canine sources.



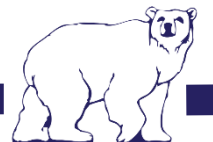
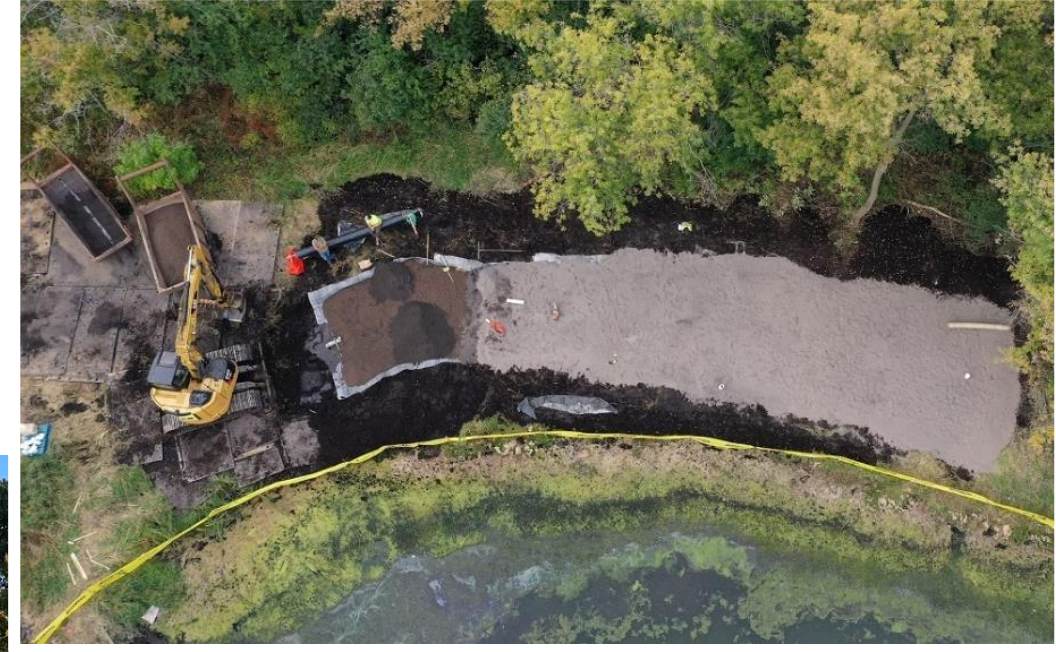


# Impaired Waters

## 2022 Activities - Bacteria Impairments

### Whitaker Pond Biochar Project

- Organic material similar to charcoal.
- Acts as a filter to reduce bacteria and nutrients to Lambert Creek during storm events.
- Completed fall 2022
- Funded by VLAWMO and 2 grants (BWSR & EPA)







Questions or comments?

Connie Taillon

Email: [ctailon@whitebearlake.org](mailto:ctailon@whitebearlake.org)

Phone: 651-429-8587

Website: [whitebearlake.org/contact](http://whitebearlake.org/contact)

*Rotary Nature Preserve  
Restoration – Phase 1*

