

MS4 partnerships:

Teamwork for efficient
and effective outreach

March 12, 2020

Nick Voss, VLAWMO

Connie Tailon, City of White Bear Lake





Adopt-a-Drain

Goose Lake example

Projects as Teaching Moments

Project Examples

Messaging

Resources

Customized Outreach

Brochures

Flyers

OUTLINE

ADOPT @ STORM DRAIN



104,050 lbs
debris collected

4,472
hours spent

4,026
adopters

Map Satellite

Adopted Drain Un-Adopted Drain

A Grate Place is already adopted by Searle Drain.

SPONSORED BY:
Vadnais Lake Area Water Management Organization watershed

Report Inappropriate Content

Edgerton St Searle Ct Koehler Rd Centerville Rd Co Rd E East

Vadnais Heights Elementary Christ the Servant Lutheran

Enter
800 County Road E E

Map data ©2019 Google Terms of Use Report a map error



We protect
Goose Lake

Sweep up! Rake up! Pick up!

adopt-a-drain.org

**ADOPT
a STORM
DRAIN**



Adopt-a-drain.org

Door hangers: 400 for \$400
Info packets: 100 for \$620
Yard signs: 100 for \$1,400



**ADOPT
a STORM
DRAIN**



Adopt-a-drain.org

www.cleanwatermn.org/partners/become-a-partner/

Reporting Data

24 White Bear Lake participants reported cleanings, which represents 52.2% of all White Bear Lake participants.

White Bear Lake participants collected 1,118.2 lbs of debris from their adopted storm drains in 2019.

Debris Type	Amount (lbs)
Brown leaves	490.3
Grass and green leaves	141.6
Sediment and dirt	466.4
Trash	19.6
Salt	0.2



LAKE CARE Weekend

Clean stormdrains = cleaner lakes





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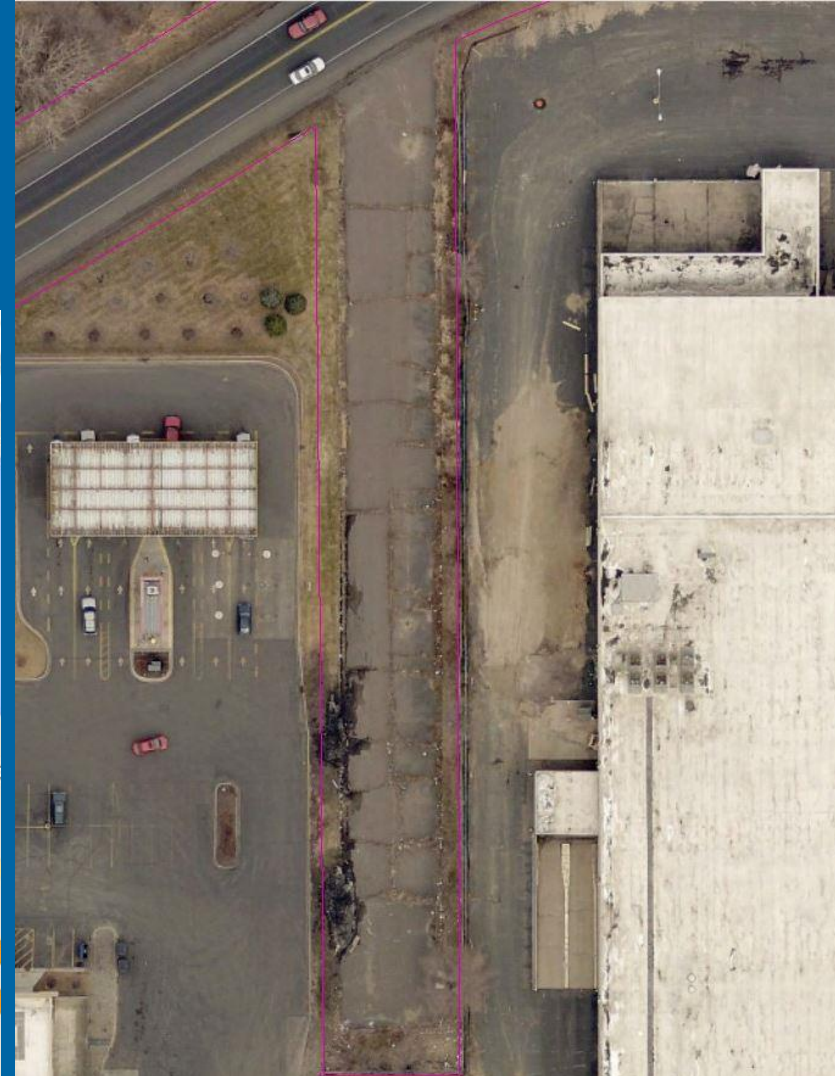
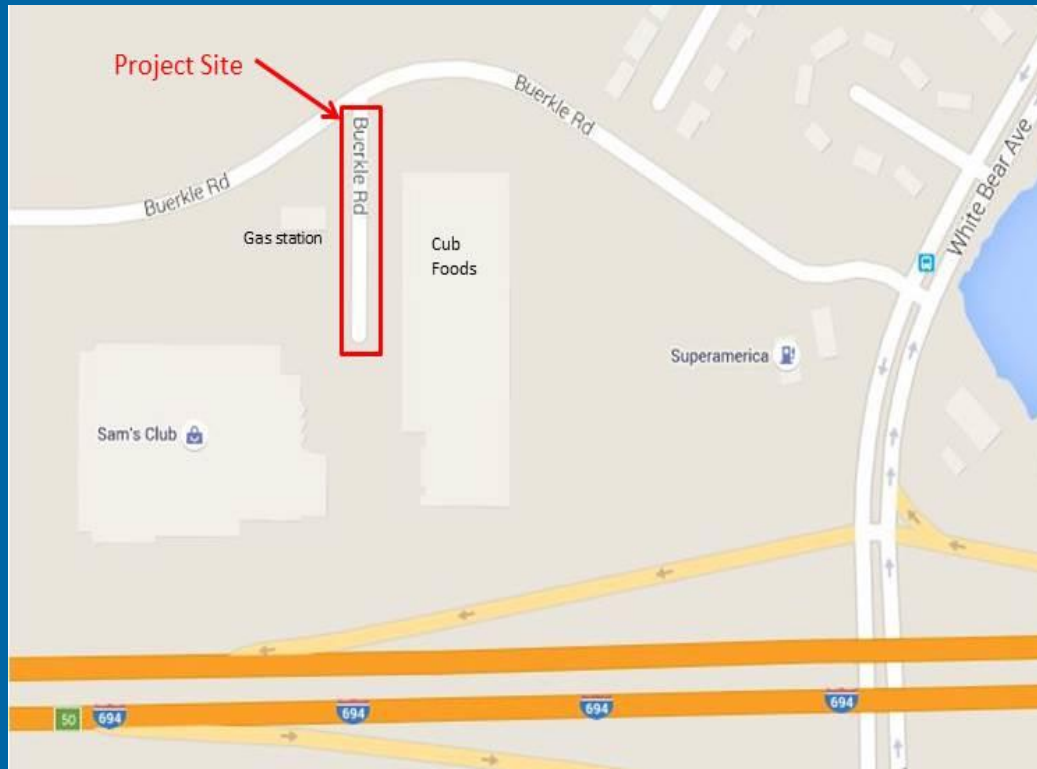
Flyers

OUTLINE

Edgewater ROW Prairie Planting, WBL

Project Summary

- 0.60 acre road right-of-way
- Bituminous roadway and most of the road base was removed in 2015



2016



Goals

- Low maintenance
- Blend the site with adjacent landscaping
- Provide color throughout the growing season

- Pollinator habitat (Pollinator Friendly Resolution adopted April 12, 2016)
- Plantings that won't require fertilizer, supplemental watering
- Education

Partners

- RWMWD: cost share grant
 - Priority subwatershed area
 - MS4 benefits: TMDL and education reporting
- Minnesota Native Landscapes: contractor for initial installation and three years of maintenance



Project takeaways

- Partnerships are key
- Maintenance is critical



Soil ripping 5/19/16



Herbicide application 6/21/16



Seeding 9/19/16



Hydromulch 9/19/16

2017





2018



**NATIVE
PRAIRIE
PLANTING**

**PLEASE DO NOT
SPRAY OR MOW**

This area has been planted with
native wildflowers and grasses,
providing food and habitat
for pollinators,
birds and
other wildlife.

RWMWD

2019

Signage

10 signs installed along the perimeter of the project

- Defines the project area
- Protects the plantings from damage due to unintentional mowing or spraying
- Educates the public

RWMWD covered the cost to print the signs

City created the signs, purchased the posts & post bases, and installed the signs



Signage

From a single sign to ongoing participation



I am a Picture Post

A citizen science project to monitor phenology

Changes in the environment over time.

To better understand our watershed, this post helps us study:

- Shoreline changes
- Algae blooms
- Ice in/out
- Water levels and more

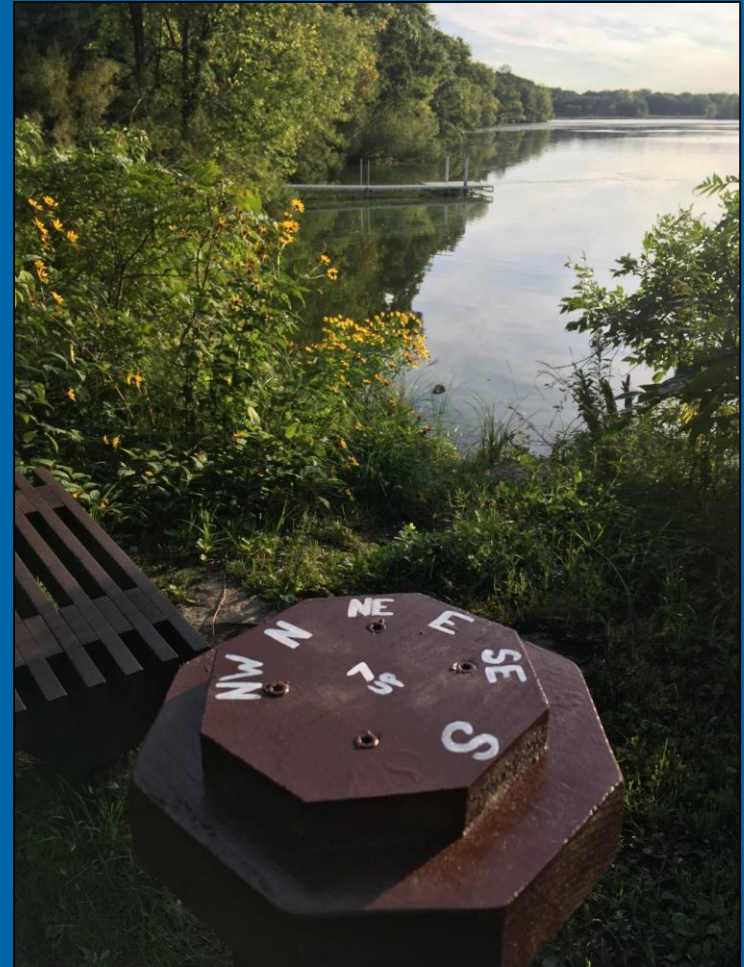
How to participate:

1. **Shoot:** Set your digital camera or phone on the post platform and take a series of photos from positions North ('N') to Northwest ('NW'). Exclude 'S' and 'SW'. Take a final photo of the sky with the camera flat on top of the post.
2. **Upload:** Visit the Picture Post website; create an account and upload your photos starting with North through Northwest, ending with upward photo.
 - Digital camera or non-iPhone: upload photos to <https://picturepost.unh.edu>
 - iPhone: download the app by searching 'Picture Post'
 - To find this post, enter 'Charley Lake Channel' in the search bar.
3. **Add notes:** Enter the date and field notes (birds, fish, plant stages, reptiles, insects, air temperature, water flow in the channel, etc.). You're the scientist!
4. **Complete:** Upload, check back later to monitor changes, and repeat process.
5. **Questions:** Contact NOHOA @651-792-7765, or VLAWMO @651-204-6070

In honor of NOHOA member Jerry Hinderman

Visit VLAWMO.org for more information on local lake health.

Contact the North Oaks Natural Resources Commission (NRC) or NOHOA's Natural Environment Stewardship Team (NEST) for more on how to protect the watershed.



**Slow down
upstream runoff ...**



**...to reduce storm
surges downstream**



**Slow down
upstream runoff...**



**...to reduce b
surges downstream**



Reduce runoff volume upstream...

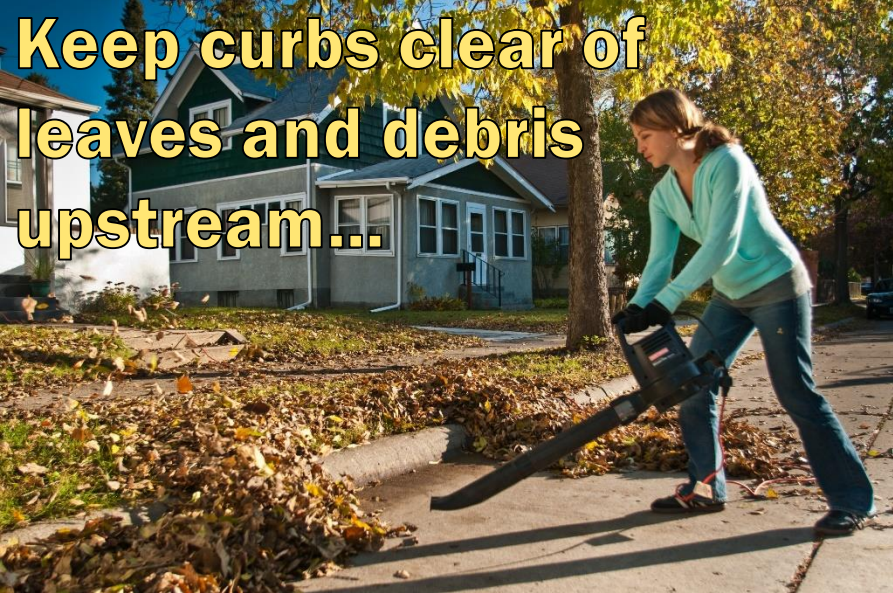


...To reduce costly damage downstream.

Reduce runoff volume upstream...



...To reduce costly damage downstream.



**Keep curbs clear of
leaves and debris
upstream...**

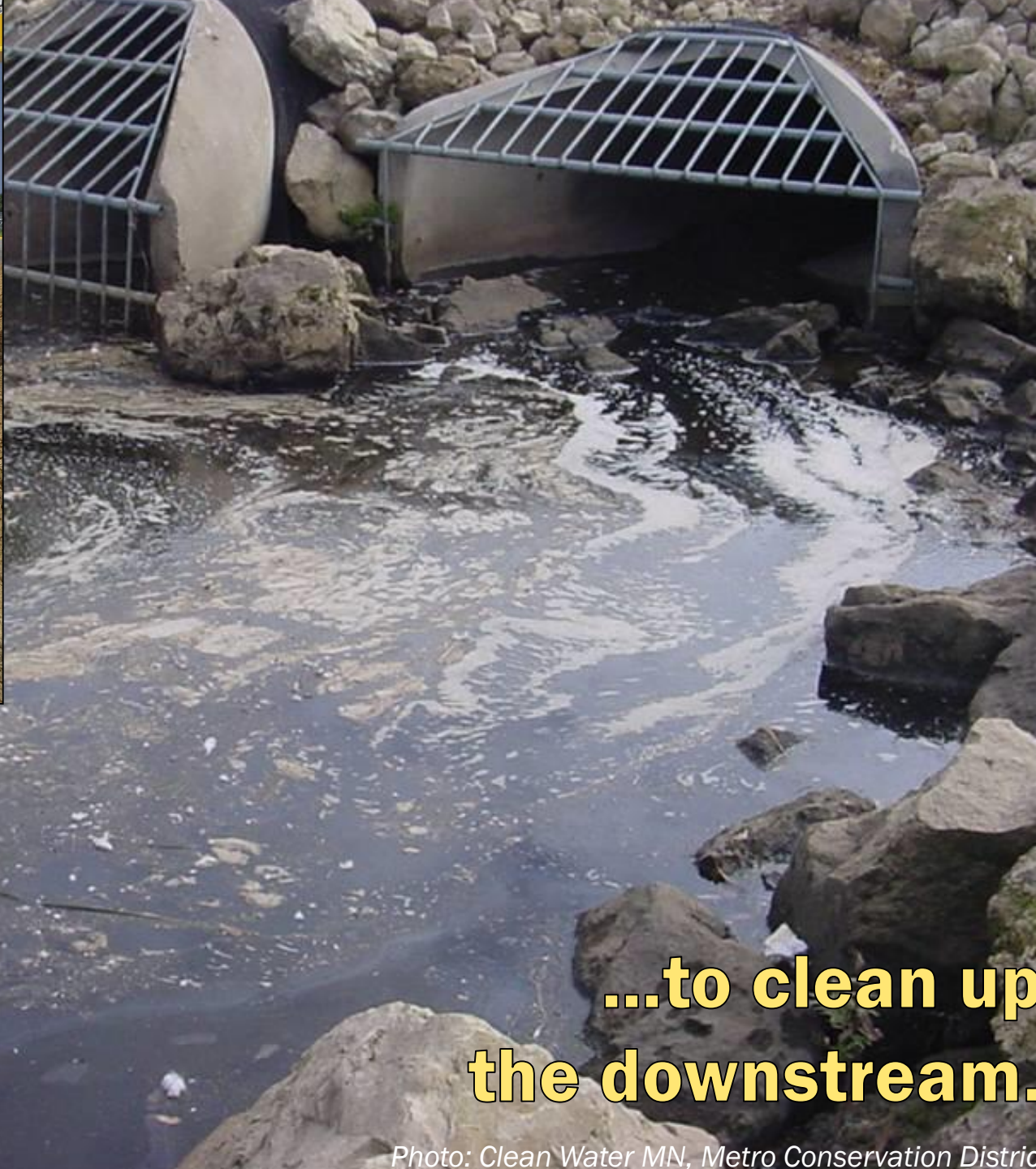


**...to reduce excess
nutrients downstream.**

Photo: Clean Water MN, Metro Conservation District

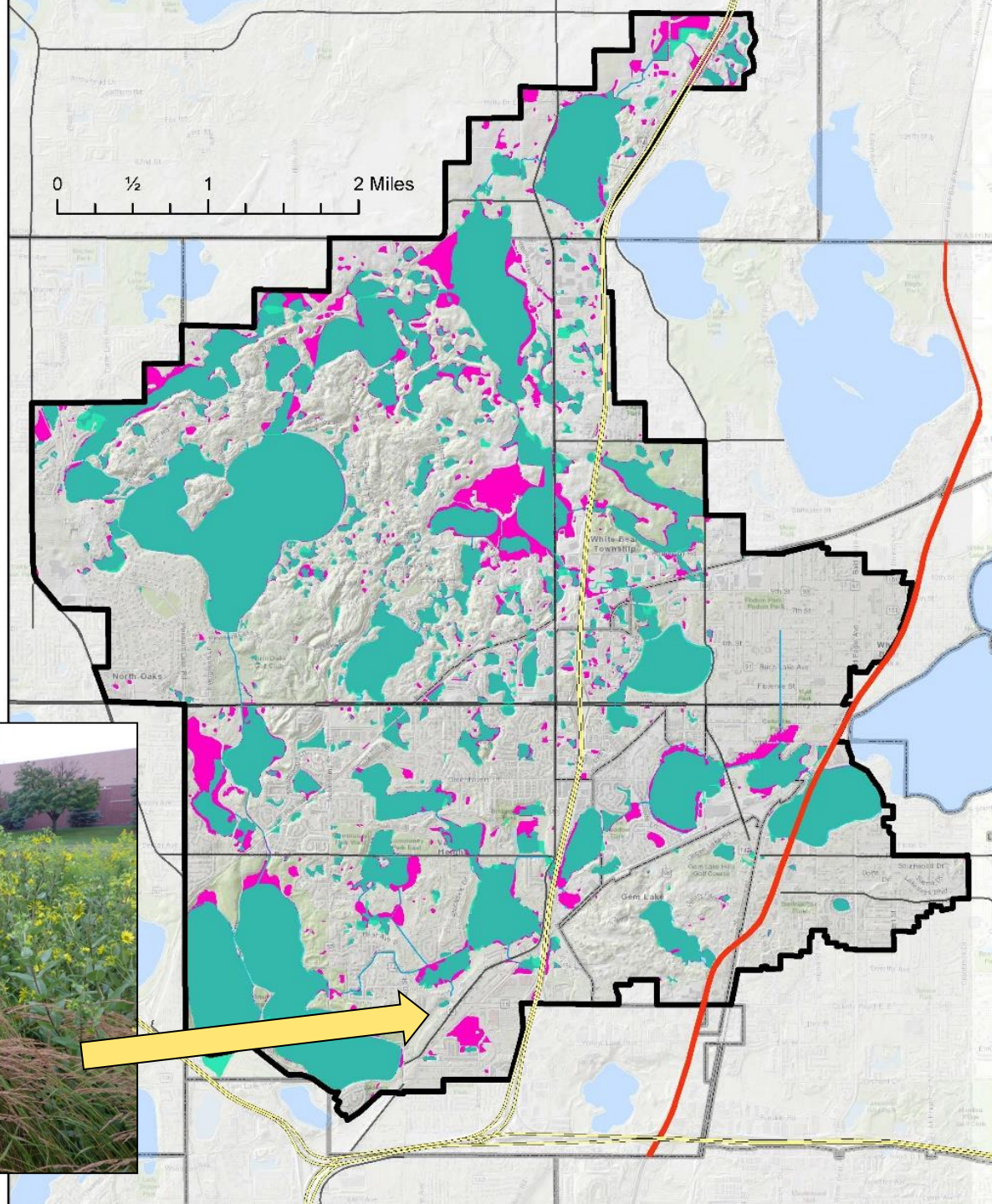


**Store more water
upstream...**



**...to clean up
the downstream.**

Water Storage



Water Storage: “Optimize”

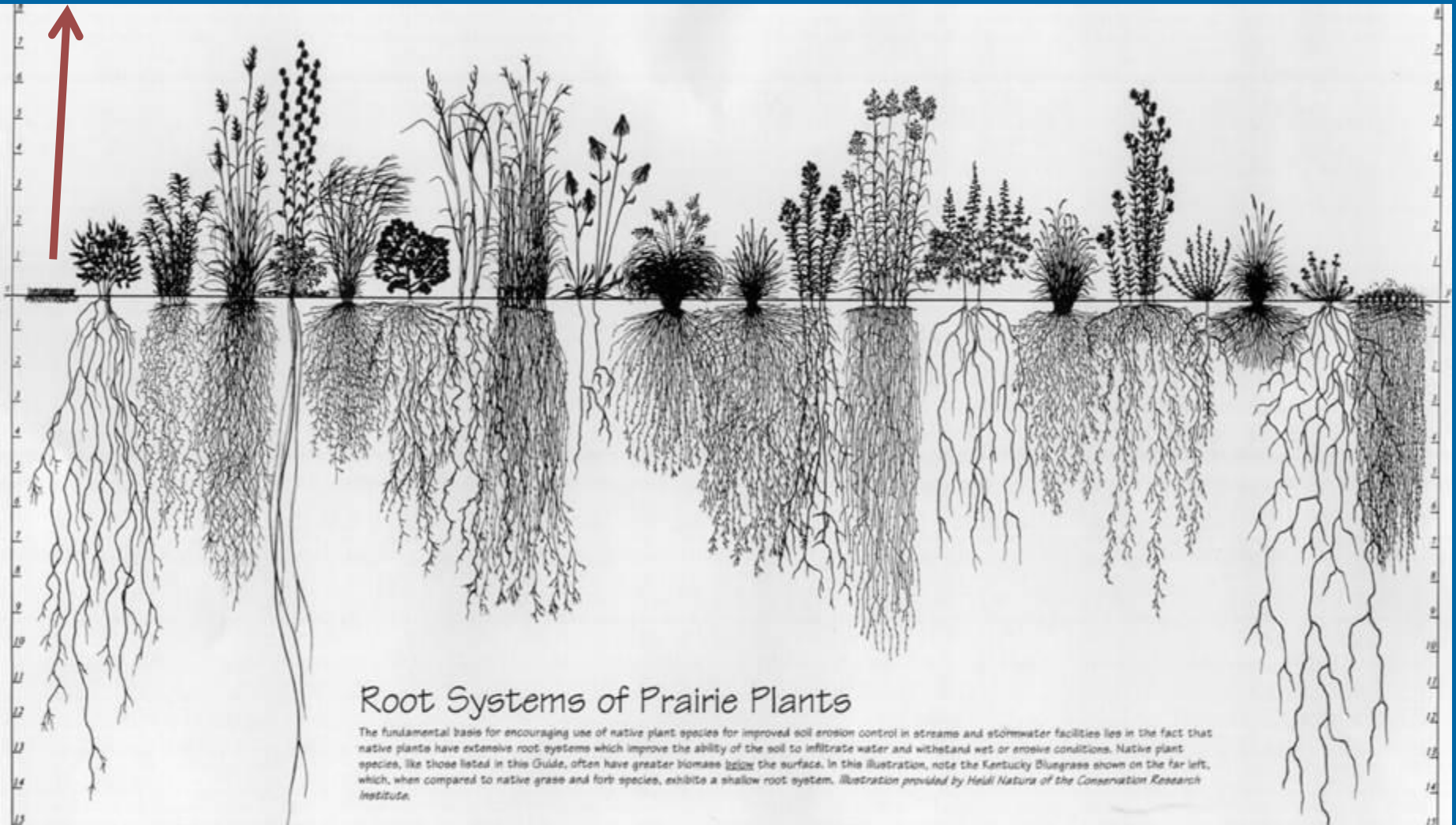


Photo:
Gregg
MASW



Native plants vs. bluegrass

Kentucky Bluegrass



Root Systems of Prairie Plants

The fundamental basis for encouraging use of native plant species for improved soil erosion control in streams and stormwater facilities lies in the fact that native plants have extensive root systems which improve the ability of the soil to infiltrate water and withstand wet or erosive conditions. Native plant species, like those listed in this Guide, often have greater biomass below the surface. In this illustration, note the Kentucky Bluegrass shown on the far left, which, when compared to native grass and forb species, exhibits a shallow root system. *Illustration provided by Heidi Natura of the Conservation Research Institute.*

- | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|---|--|---------------------------------------|---------------------------------------|---|---|--|--|--|--|---|--|---|--|---|-------------------------------------|--|---|
| Kentucky Blue Grass
<i>Poa pratensis</i> | Lead Plant
<i>Amorpha canescens</i> | Missouri Goldenrod
<i>Solidago missouriensis</i> | Indian Grass
<i>Sorghastrum nutans</i> | Common Plant
<i>Silphium laciniatum</i> | Portulaca Grass
<i>Sida sparsa</i> | Black Aster
<i>Aster ericoides</i> | Prairie Cord Grass
<i>Spartina pectinata</i> | Big Blue Stem
<i>Andropogon gerardii</i> | Pink Purple Coneflower
<i>Echinacea pallida</i> | Prairie Dropseed
<i>Sporobolus heterostachyus</i> | Side Oats Grass
<i>Bouteloua curtipendula</i> | Pink Bluestem
<i>Andropogon scoparius</i> | Switch Grass
<i>Panicum virgatum</i> | White Wild Indigo
<i>Baptisia leucantha</i> | Little Blue Stem
<i>Andropogon scoparius</i> | Blue Wood
<i>Silphium perfoliatum</i> | Purple Prairie Clover
<i>Psudorhus purpureum</i> | Joe Grass
<i>Elymus crinitus</i> | Cyathric Blazing Star
<i>Liatris cylindrica</i> | Buffalo Grass
<i>Buchloe dactyloides</i> |
|---|--|---|---|--|---------------------------------------|---------------------------------------|---|---|--|--|--|--|---|--|---|--|---|-------------------------------------|--|---|

Signage

Segue into residential setting



MIDS Reductions:

- 1,661 gallons/yr
- .11 lbs TP/yr
- 19 lbs TSS/yr

*“Water connections:
From the City to the Yard”*



<http://www.vlawmo.org/news/blog>



Photo: City of Maplewood, MN

Curb-cut



Curb-cut

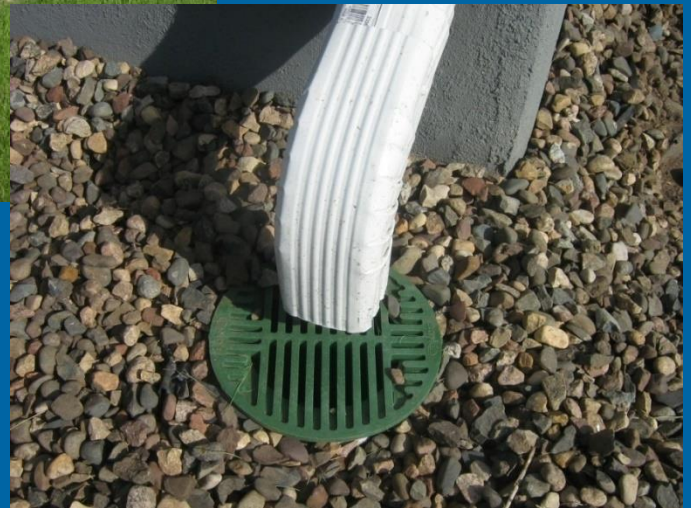


Driveway Diversion



Blaine, MN

Photo: Earth Wizards, Inc.





1 pound of

phosphorus

=

**500 pounds of
algae**



Government Tab

www.VLAWMO.org/agencies

You  Tube





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OUTLINE



FIND THE RIGHT RESOURCES FOR YOU



I am a...

Resident



I am a...

School



I am a...

Local Government



I am a...

Developer



Water Resources Center

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The Minnesota Stormwater Seminar Series brings exemplars of advanced stormwater innovation and knowledge to Minnesota to share what they've learned and how they've pushed the boundaries in the stormwater arena.

The Minnesota Stormwater Seminar Series



COST SHARE INFORMATION

VLAWMO's Landscape Cost Share Programs can help beautify your yard and protect water quality.

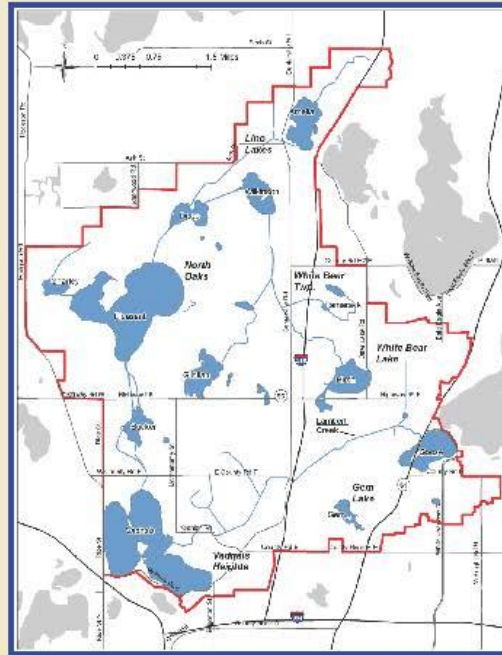
WHAT WILL THE COST SHARE PROVIDE?

Most residential projects fall under Level 1 of the cost share program.

- **Level 1:** VLAWMO will reimburse 75% of the cost of materials and approved labor, up to \$2,000. VLAWMO provides guidance and monitors the rain garden for 5 years following the installation.
- **Level 2:** For larger scale projects with public exposure, contact VLAWMO to assess funding options.

Additional programs include **rainbarrels, shoreline restorations, and permeable pavement** - contact VLAWMO for information.

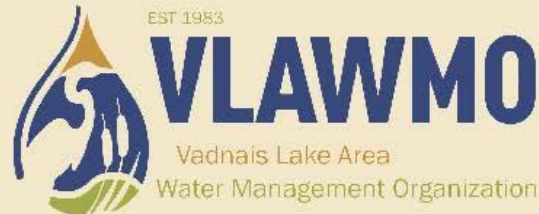
Cost share funding is renewed each January. Applications are accepted year-round until funding is depleted.



For more information, questions, or to apply to our rain garden cost share program:

Kristine Jensen, Program Manager
(651) 204-6070
kristine.jenson@vlawmo.org

www.VLAWMO.org



RAINGARDENS & STREET RENOVATIONS



A partnership between local communities, residents, & the Vadnais Lake Area Water Management Organization

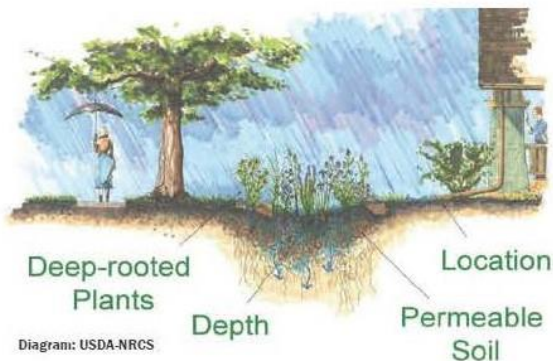


READ MORE...

YOU'RE RECEIVING THIS BROCHURE

because your street is scheduled for a renovation in the next 2 years. When a road is being renovated, it's also a convenient and cost-effective time to install a curb-cut raingarden - and your home is a good fit!

VLAWMO is your local watershed organization with the expertise and resources to turn this opportunity into a reality. Participation is voluntary - no previous experience necessary!

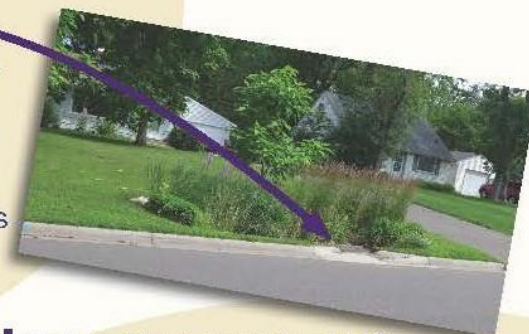


WHAT IS A RAINGARDEN?

A raingarden is a garden with a depression that is designed to catch rainwater runoff - also known as "green infrastructure." It's planted with native species that don't mind getting flooded on occasion. Many of the plants are also excellent for attracting birds and pollinators.



Depending on the design and site, a pre-treatment catch basin can help capture debris before it gets to the garden.



Because curb-cut raingardens pull water from the street, they're more effective than non-curb-cuts at reducing runoff and promoting water quality. Sites are selected based on soil type and street drainage. Homeowners play a vital role in water quality by maintaining the raingarden and catch-basin as a part of their yard.



HOW DOES IT WORK?

Raingardens work by soaking water into the ground that would otherwise go directly into storm drains. Different planting designs can increase or decrease garden maintenance.

Raingardens help our community by:

- Filtering debris and oil that would otherwise mix into runoff and go straight to a lake or wetland
- Easing pressure on storm systems during large rainfalls
- Replenishing groundwater
- Promoting a healthy, outdoor lifestyle



Wetlands & Yard Waste:

How responsible yard care benefits Vadnais Heights



What's the problem?

Yard waste such as leaves, grass clippings, and other brush seems natural, but causes issues when dumped into ponds and wetlands. This includes:

- **Clogged waterways** including ditches and culverts. When debris fills waterways and slowly travels downstream, it increases the risk of flooding. Not only is dumping into wetlands and waterways irresponsible to neighbors, it is illegal under state law.
- **Pollution** in the form of excessive nutrients. Phosphorus in leaves and grass clippings produces excessive algae, which harms water quality and aquatic life.
- **Sedimentation** covers wetlands in a thick layer of mud. This chokes out native vegetation and wildlife. Dense stands of cattails, reed canary grass, and phragmites take advantage of the mud and reduce the wetland's ability to take in and store water.



Wetlands and ditches in Vadnais Heights drain to East Vadnais Lake, the reservoir for the Saint Paul Regional Water Services. Responsible actions upstream help protect this drinking water resource.

What is responsible disposal?

- **Mulch** leaves into the yard or keep grass clippings on the lawn for natural fertilizer.
- **Bag** leaves and/or grass clippings and either a) bring them to a Ramsey County yard waste facility or b) contract a yard waste hauler for curbside pick-up.
- **Compost** yard waste at home. Keep compost piles in designated bins at least 40' away from ponds, shorelines, and wetlands. To help absorb nutrients, surround compost with native vegetation.

Distance requirements can vary depending on wetland size. Contact the City or VLAWMO for details on specific wetlands, storing fill, or construction material. City: (651) 204-6050 VLAWMO: (651) 204-6070

Thank you for your support!

Your leadership promotes clean water, cost savings for the City, neighborhood beautification, and groundwater recharge.



POND & WETLAND BUFFERS



A buffer is an area surrounding a wetland, pond, stream, or lake where plants are allowed to grow. When turf grass or rock surround a water body, water from storms, snowmelt, and sprinklers carry pollution and sediment into them. Buffers help replenish groundwater, and trap sediments and nutrients before they can get to the waterbody. This benefit circles back around to people in the form of clean, secure water resources and clean, efficient streets. If you live next to a water body, you're the best protector of that resource. So what can you do? Let a buffer grow naturally, or contact VLAWMO for help designing an aesthetically pleasing buffer. Ponds and wetlands have official classifications and buffer requirements. Descriptions and buffer charts are available from VLAWMO staff, vlawmo.org/agencies, or from your local city or township.

Why keep a buffer around your pond or wetland?

- Provide clean water by filtering and storing pollutants such as phosphorus.
- Keep streets clean and save money. Buffers keep drainage systems functioning, reducing sediment build-up and the need for dredging.
- Prevent flood damage by storing water during large rain events.
- Promote groundwater recharge instead of increasing surface runoff.
- Enhance aesthetics and property value.
- Provide places for wildlife to eat, sleep, hide, and nest.

EXAMPLE:

Wetlands have different classifications depending on vegetative diversity and health. A "manage 3" is generally a low-quality wetland with high human impact.

MANAGE 3:

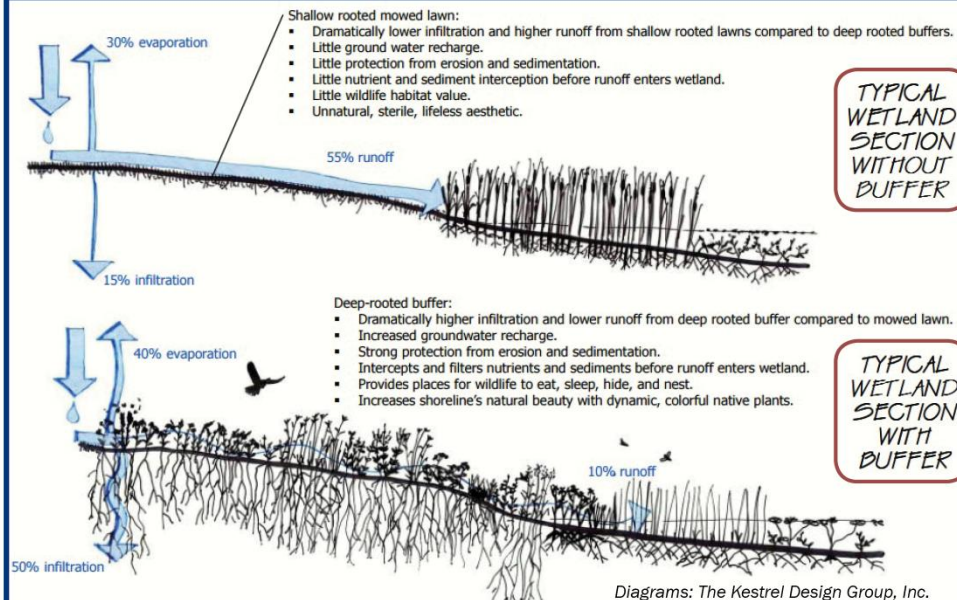
average 20' width
minimum 16'



Buffers and shoreline restorations are great ways to protect water quality.



With a clear view and easy access to water, Geese can become a nuisance when no buffer exists.



Pet Waste & Water Quality

Why woof-woof waste is harmful to our lakes, streams, and wetlands.



What's the problem?

Pet waste is unlike wildlife scat. Due to immunizations, pet waste contains a bundle of hookworms, salmonella, E. coli, and more. It is an official non-point pollutant according to the Environmental Protection Agency.

This means that rain washes it off the land's surface and delivers bacteria and excess nutrients to water bodies. Canine-sourced E.coli has been detected in Lambert Creek, which drains into Vadnais Lake.

100 average-sized dogs can produce up to 27,375 lbs. of waste annually. An estimated 40% of pet waste in the US is not picked-up!*

What can you do?

- Always pick-up pet waste and dispose in trash.
- Be ready for surprise pick-up duty. Create good habits to have baggies on hand.
- Spread the word – “It’ll just break down” or “my dog is small” are not excuses.



**Thank
you!**



*doodycalls.com

*petbutler.com

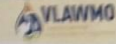
Photos: CleanWaterMN

Free Salt Cups

Help yourself to a salt-dispersal cup for winter de-icing. These cups are provided by VLAWMO to support local water quality.

Winter salt is important for safety. It also pollutes water permanently. For an average driveway, allow for 2 cups or less.

What are the conditions of the salt? Environmental, cultural, local, or the salt cup quality? How do you take care of the salt? Salt.



For more on the salt and water-friendly salt practices, visit www.vlawmo.org



Clean Water Winter Practices

WHY DOES IT MATTER?

One teaspoon of salt permanently pollutes 5 gallons of water. There is no such thing as "environmentally safe" de-icer. Proper application and attentiveness is the best way to keep our surfaces safe while keeping our lakes on a "low-salt" diet.

SHOVEL AND SCRAPE

Clear sidewalks and other areas before the snow turns to ice. Salt is not an effective strategy for fresh snow. A salt-reprieve method instead includes a variety of shovels and scrapers. Snow tools are increasingly available, including propane ice torches.



TEMPERATURE

When temperatures are below 15 degrees, salt does much of its job. At colder temperatures, consider using a brine spray or a mix of sand for traction. Buy the right product for your needs. Check labels for specific ingredients and temperature ratings.

Approximate Temp., °F	Best Salt (MGY) Salt Usage
32 - 40	1 cup
20 - 32	1/2 cup
10 - 20	1/4 cup
0 - 10	1/2 cup
-10 - 0	1/2 cup
-20 - -10	1/2 cup
-30 - -20	1/2 cup
-40 - -30	1/2 cup
-50 - -40	1/2 cup
-60 - -50	1/2 cup
-70 - -60	1/2 cup
-80 - -70	1/2 cup
-90 - -80	1/2 cup
-100 - -90	1/2 cup

BEAN UP

Consider an extra cup of salt when temperatures are below 15 degrees. At colder temperatures, consider using a brine spray or a mix of sand for traction. Buy the right product for your needs. Check labels for specific ingredients and temperature ratings.

APPLYING DE-ICER

- More salt doesn't make a surface safer - the chemical reaction is the same when properly applied.
- 1 pound of salt fits in a 12 ounce coffee mug, and is enough to cover 60-70 ft of sidewalk.
- Spot-treat in critical areas, and use the least amount necessary.
- Use less than 4 pounds of salt per 1,000 square feet.

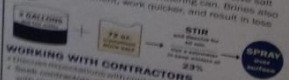
An average parking space is about 150 square feet - an Airtel over two cups should cover an average driveway, but with spot-treatment, less may be needed.



Disperse salt evenly without piles.

PRE-TREATMENT

Applying a pre-treatment before a storm has prevents ice from building up. To pre-treat with a brine, dissolve salt in hot water and apply it with a watering can. Brines also work as post-treatment, work quicker, and result in less waste.



WORKING WITH CONTRACTORS

- Seek out contractors who are certified in winter maintenance with the IAWQ. www.iawq.org
- If your contractor doesn't have this certification, encourage them to obtain it.
- Encourage them to have the certification.
- Encourage them to have the certification.
- Encourage them to have the certification.

Thank you for protecting our water!



Sweep up! Rake up! Pick up!

Rain and melting snow wash anything that's on streets and paved surfaces down storm drains and into lakes, rivers and wetlands.

Help keep our water clean!



Salt is almost impossible to remove from waterways. Just one teaspoon pollutes five gallons of water forever. Use it sparingly. Sweep up and reuse extra. Use sand when temperatures fall below 15 degrees.



Leaves, grass and dirt contain phosphorous, which feeds the algae that turns lakes green. Keep them off streets and sidewalks.

Dog poop carries harmful bacteria, parasites and phosphorus. Pick up after your pet!



Trash clogs drains and pipes causing flooding. Put it in the garbage.

Smart Salting training

<https://www.pca.state.mn.us/water/smart-salting-training>

March 2020

Prev Next

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
					Parking Lots and Sidewalks Plymouth	
8	9	10	11	12	13	14
				Smart Salting for Property Management Chanassen		
15	16	17	18	19	20	21
				Smart Salting for Property Management Apple Valley		
22	23	24	25	26	27	28
		Roads Willmar - Full				
29	30	31	1	2	3	4

Stay informed on smart salting with email updates from the program:

Email:



Thank you!

