

Protecting Lakes and Rivers: Who is in charge?





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In her free time, she enjoys singing, competing in triathlons, and exploring the prairies, woods and waterways of the St. Croix Valley.

She is also mom to an exceedingly active eight-year old boy.

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Read the weekly blog articles! eastmetrowater.org

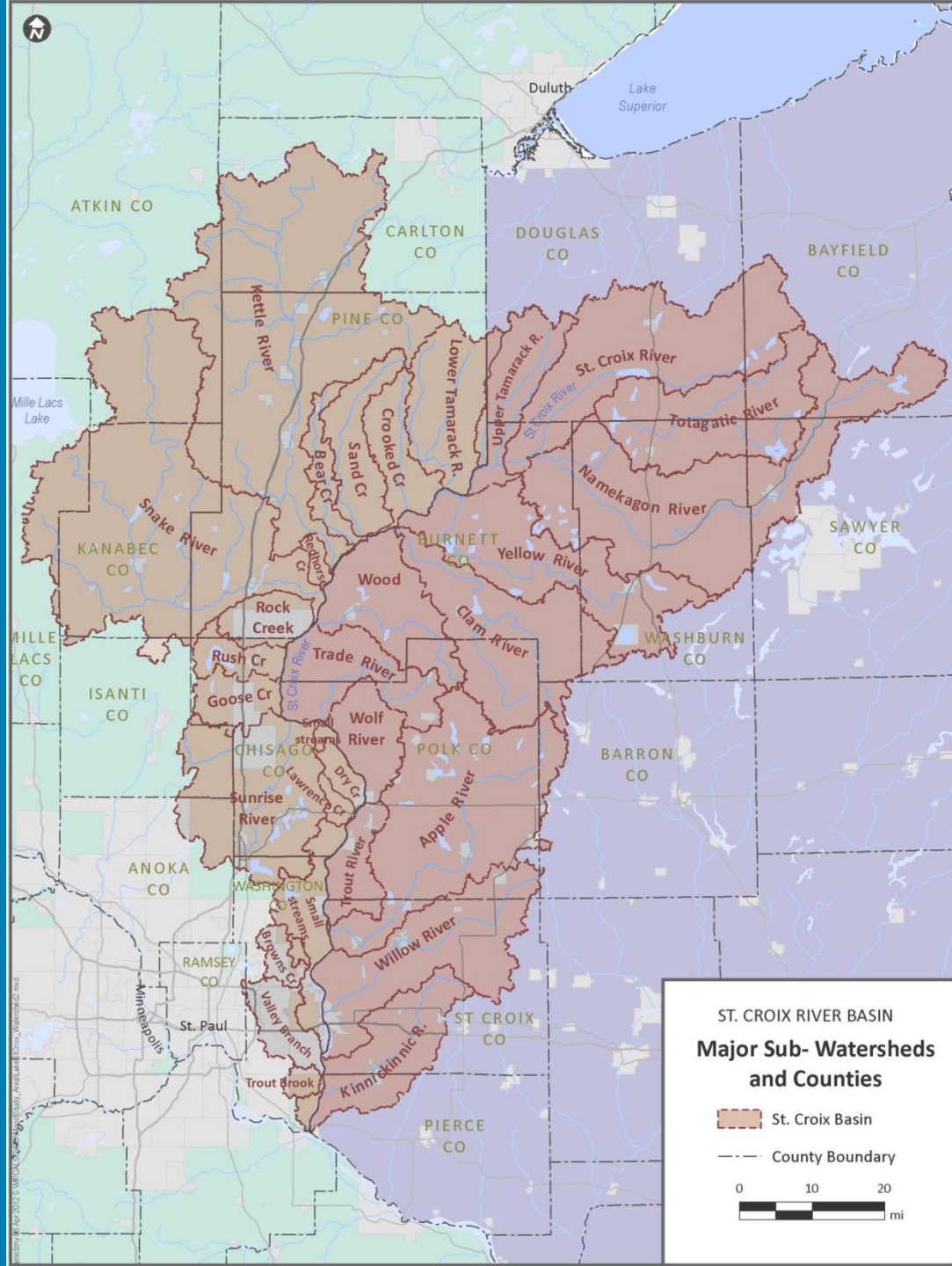


40% 56% of MN lakes, rivers & streams are impaired



To bring the St. Croix River back to full health, we need to reduce phosphorus loading to the river by 122 metric tons/yr.

We need 27 percent less P!





copyright GEOSPACE

Water Governance in Minnesota



Water Governance in Minnesota

Federal

Clean Water Act 1972

Set a goal to restore and maintain the chemical, physical and biological integrity of the nation's waters.

Safe Drinking Water Act 1974

Authorizes EPA to establish and enforce health-based standards for drinking water.

U.S. Army Corps of Engineers

Oversees flood prevention and construction activities within U.S. waters, including wetlands

Anishinaabe & Dakota Tribes

Tribes have their own natural resource management programs and strive to maintain healthy ecosystems that allow their members to practice traditional hunting, fishing, and gathering.

Environmental Protection Agency (EPA)

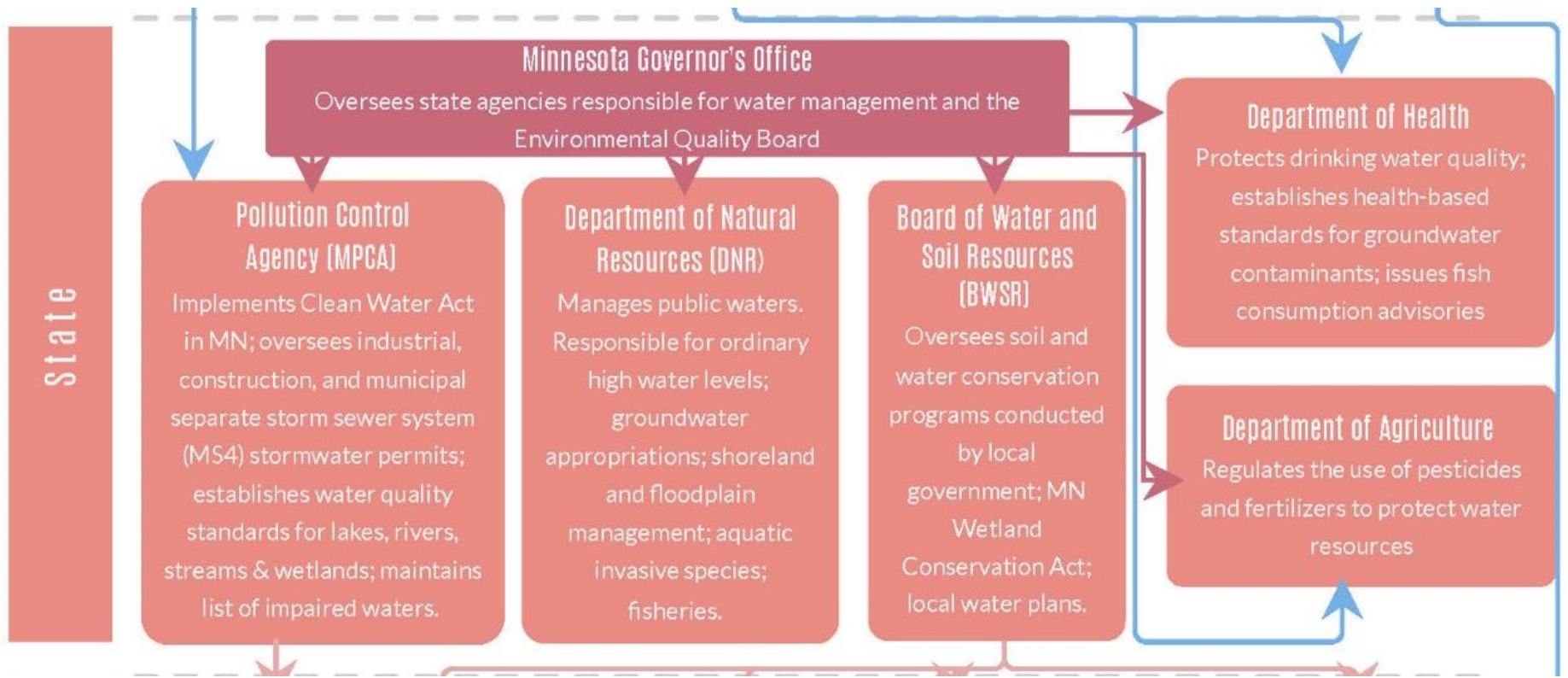
Oversees Clean Water Act and Drinking Water Act

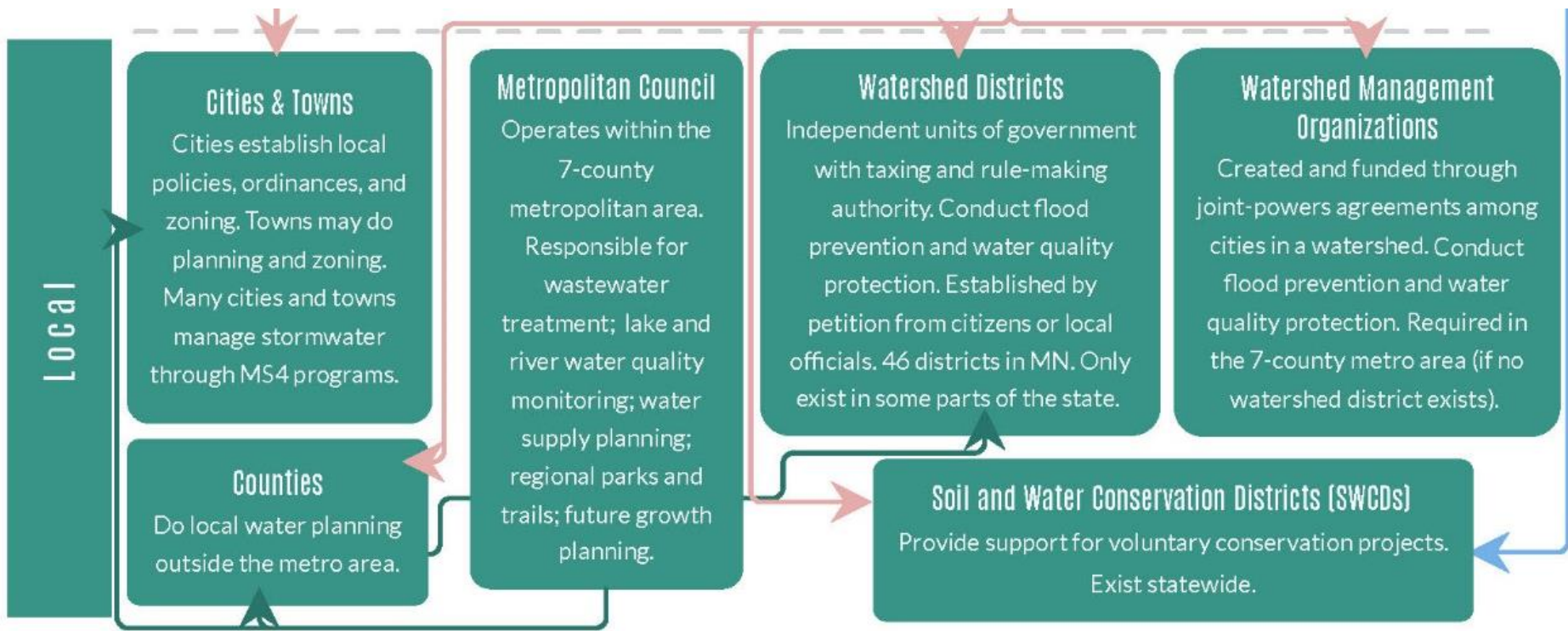
U.S. Fish and Wildlife Service

Administers Endangered Species Act for freshwater and terrestrial species

Natural Resources Conservation Service (NRCS)

A division of the U.S. Department of Agriculture that provides farmers and ranchers with assistance for voluntary conservation projects





Minnesota's Shoreland Management Program

State Shoreland Management Program:
http://dnr.state.mn.us/waters/watermgmt_section/shoreland/index.html

- MN Rules 6120.2500 – 3900
- Provides the statewide standards that local governments must adopt into their ordinances to provide for orderly development and protection of shorelands
- Local governments regulate and enforce shoreland district activities through their local shoreland ordinance
 - Variance process for requests not meeting the standards

The screenshot shows the Minnesota Department of Natural Resources website. The header includes the logo and navigation links: RECREATION, DESTINATIONS, NATURE, EDUCATION & SAFETY, LICENSES, PERMITS & REGULATIONS, EVENTS CALENDAR, and ABOUT DNR. A search bar is located in the top right. The main content area is titled "Shoreland Management Programs" and includes a "Program Mission Statement" and a section for "Shoreland Management Program (Minnesota Rules 6120.2500 - 3900)".

Home > Ecological and Water Resources (Waters) > Water Management >

Shoreland Management Program

- Program Overview
- Shoreland Management Lake Classifications
- Guide for Buying and Managing Shoreland
- Shoreland Management Reference Materials

Division of Ecological and Water Resources (Waters)

- Main page
- Contact us
- Permits
- Publications
- Water education (Project WET)
- Water Statutes and Rules
- External links
- LakeFinder
- Recreation Compass
- Groundwater

Shoreland Management Programs

Program Mission Statement

Make Minnesota's shoreland management options more understandable and responsive to citizens by coordinating DNR shoreland-related programs with other DNR disciplines, agencies, boards, committees, associations and public groups involved in comprehensive shoreland management/watershed efforts.

Shoreland Management Program (Minnesota Rules 6120.2500 - 3900)

This program provides the backbone of statewide standards that local governmental units must adopt into their own land use controls to provide for the orderly development and protection of Minnesota's shorelands (both rivers and lakes). The DNR provides technical assistance to local governmental units in the adoption and administration of their shoreland controls. This involves planning and zoning assistance to local governmental units by DNR Area Hydrologists and Shoreland Management staff.

This document provides good background information about the State's Shoreland Management Program. [Shoreland Management: How did it all get started?](#) PDF

See [Alternative Shoreland Management Standards](#) for enhanced standards developed by North Central Lakes Pilot Project.

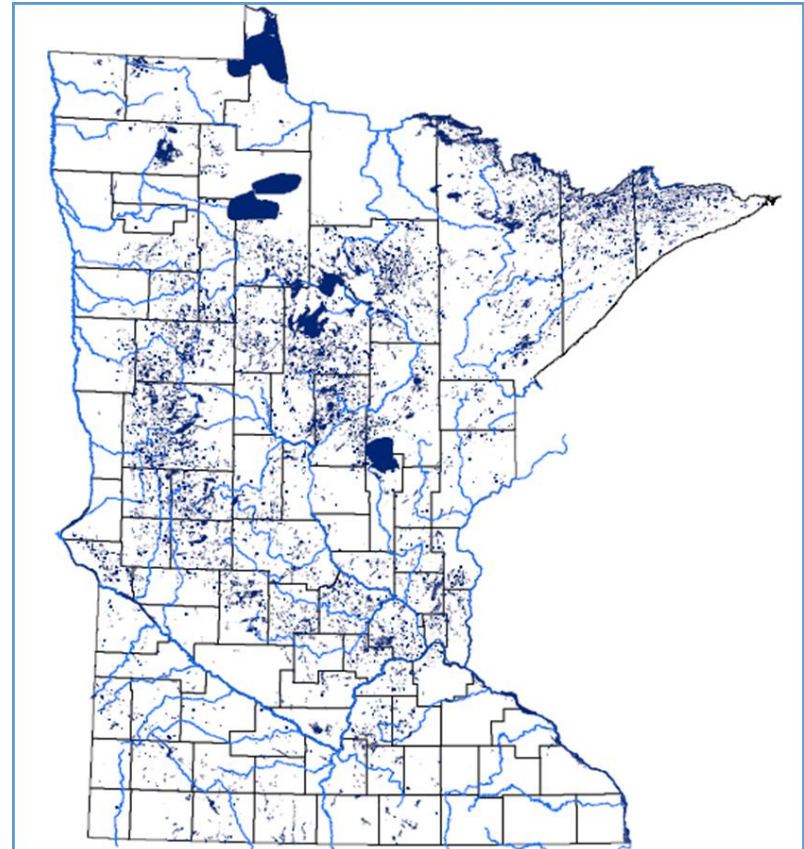
In January 2017, the DNR updated their [Shoreland Model Ordinance](#). The model is intended to be used by local units of government as a reference when developing new shoreland ordinances or amending existing ordinances.

*Applies to inland lakes and rivers, not along the St. Croix Riverway

Waters Regulated under Minnesota's Shoreland Program

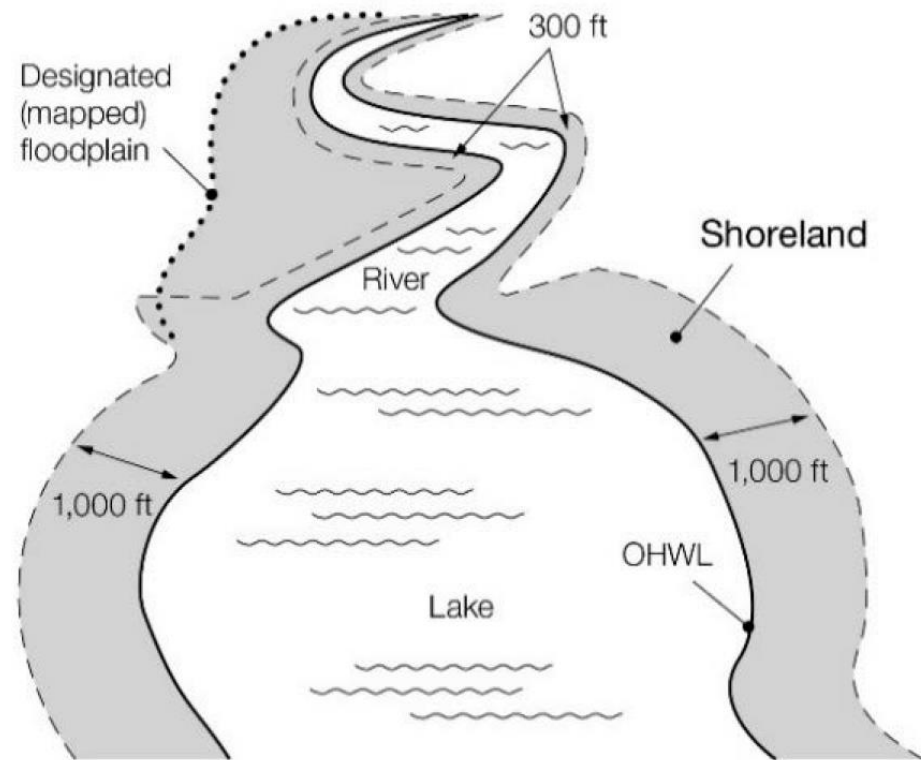
Includes all public waters statewide that meet the following criteria:

- Those lakes that are:
 - > 10 acres in cities
 - > 25 acres in counties
- Wetlands:
 - Type 3 (shallow marsh)
 - Type 4 (deep marsh)
 - Type 5 (open water wetland)
- Lakes/wetlands assigned a shoreland classification:
 - General Development (GD)
 - Recreational Development (RD)
 - Natural Environment (NE)
- Rivers and streams with drainage area of 2 mi² or greater



The Shoreland District

- Shoreland regulations apply within the shoreland district (overlay district)
- Shoreland district boundary is:
 - 1,000 feet from the OHW for lakes and wetlands
 - 300 feet from the OHW for rivers/streams or the 100-year floodplain boundary, whichever is greater

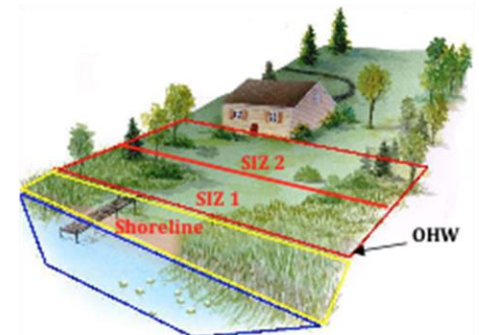


Why Shoreland Standards are Important

- Shoreland standards help preserve water quality:
 - Standards help minimize the movement of sediment and phosphorus to lakes and rivers – preserving both their environmental and economic values
- Most important standards for preserving water quality:
 - Lot size
 - Structure and septic setback standards
 - Impervious surface limits
 - Shoreline vegetation management



Lot Size



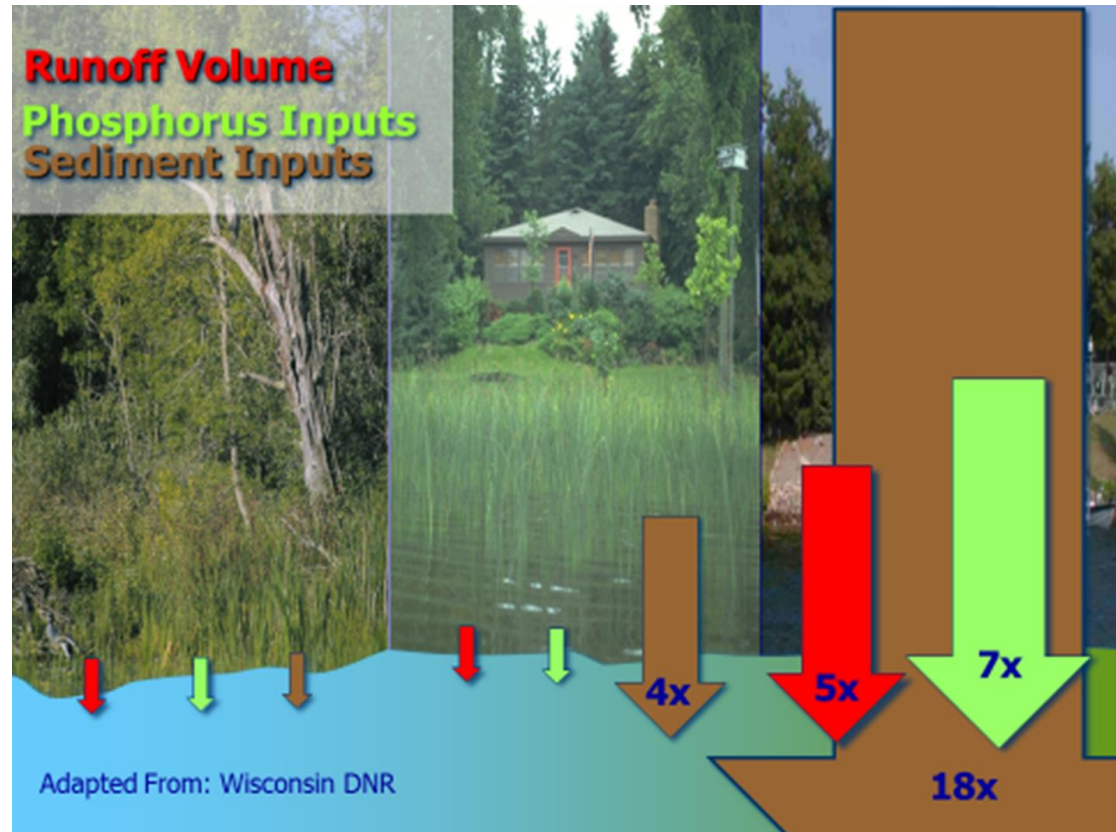
Structure Setbacks



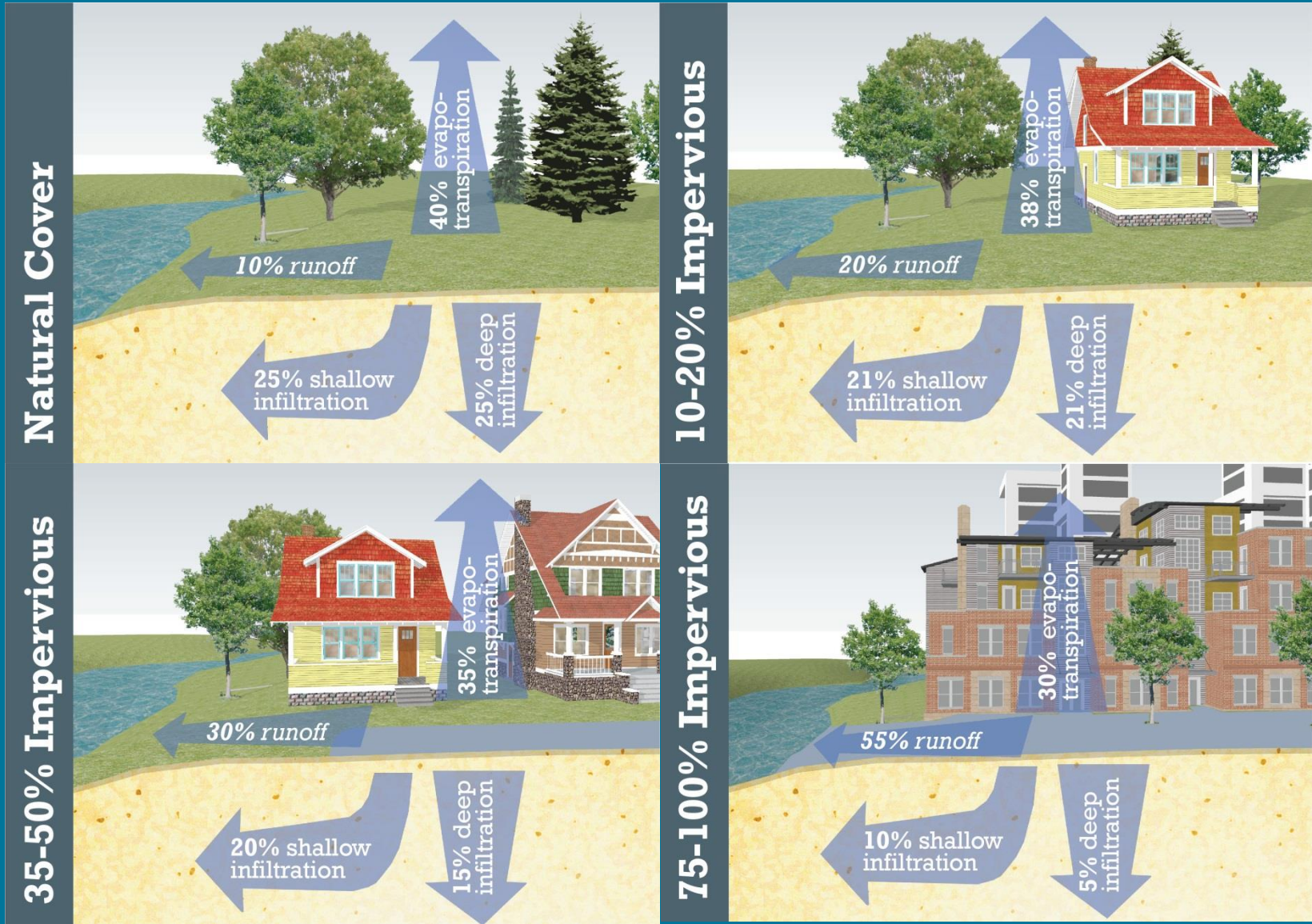
Vegetation Management

Impacts of Development on Sediment in Runoff

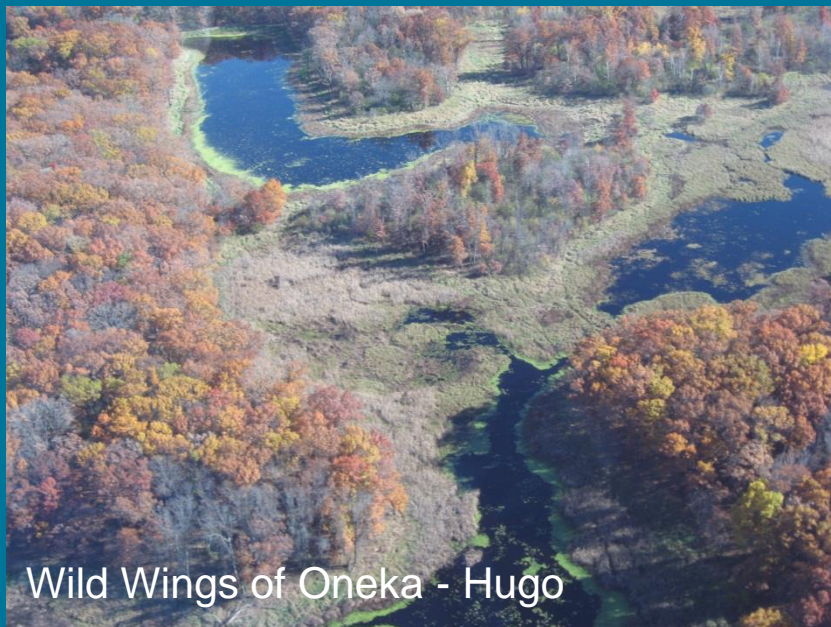
- Undeveloped lakeshore lot
 - Baseline levels of runoff, P, and sediment
- Small cabin on lot with most vegetation intact
 - Baseline levels of runoff and P
 - Sediment to lake increases by 4X
- Intensely developed lot:
 - Runoff increases 5X
 - P increases 7X
 - Sediment to lakes increases by 18X



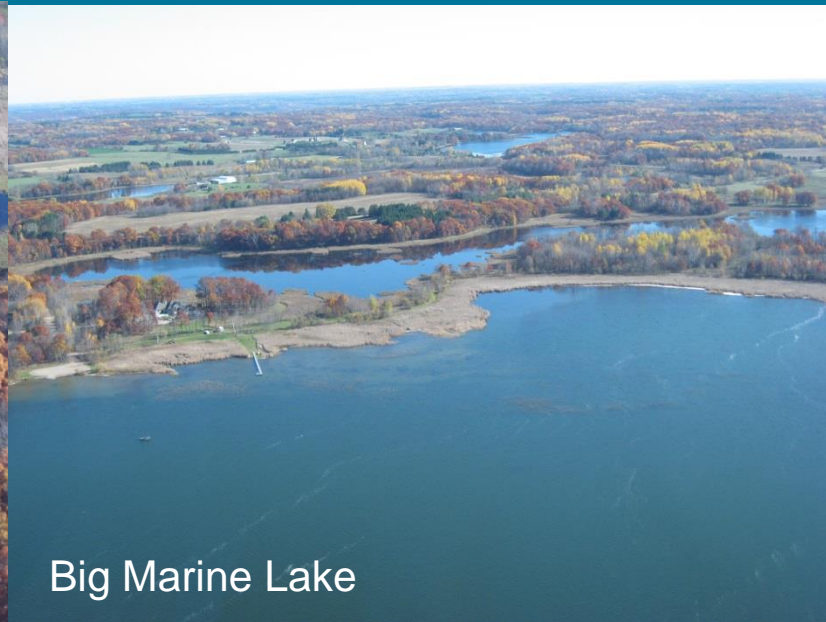
Impacts of changes in land cover



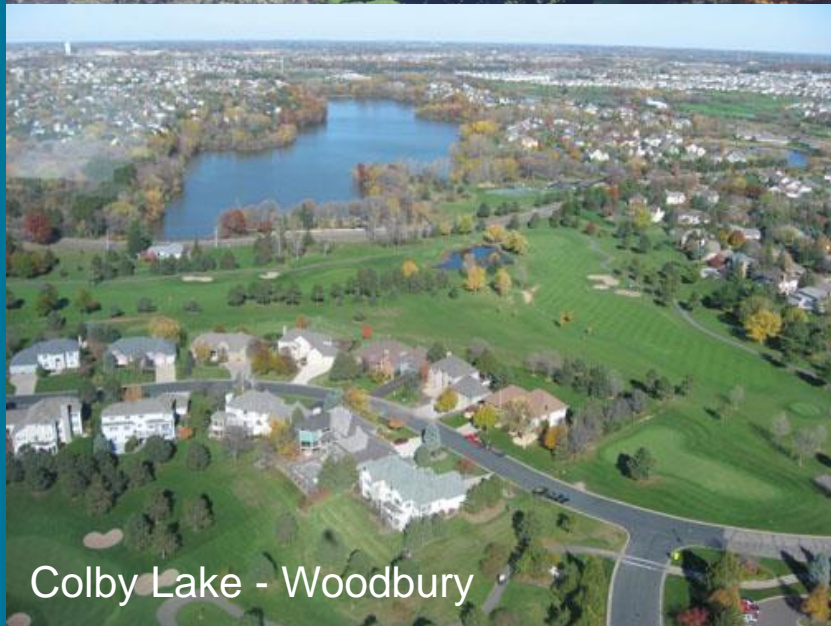
Land cover in Washington County



Wild Wings of Oneka - Hugo



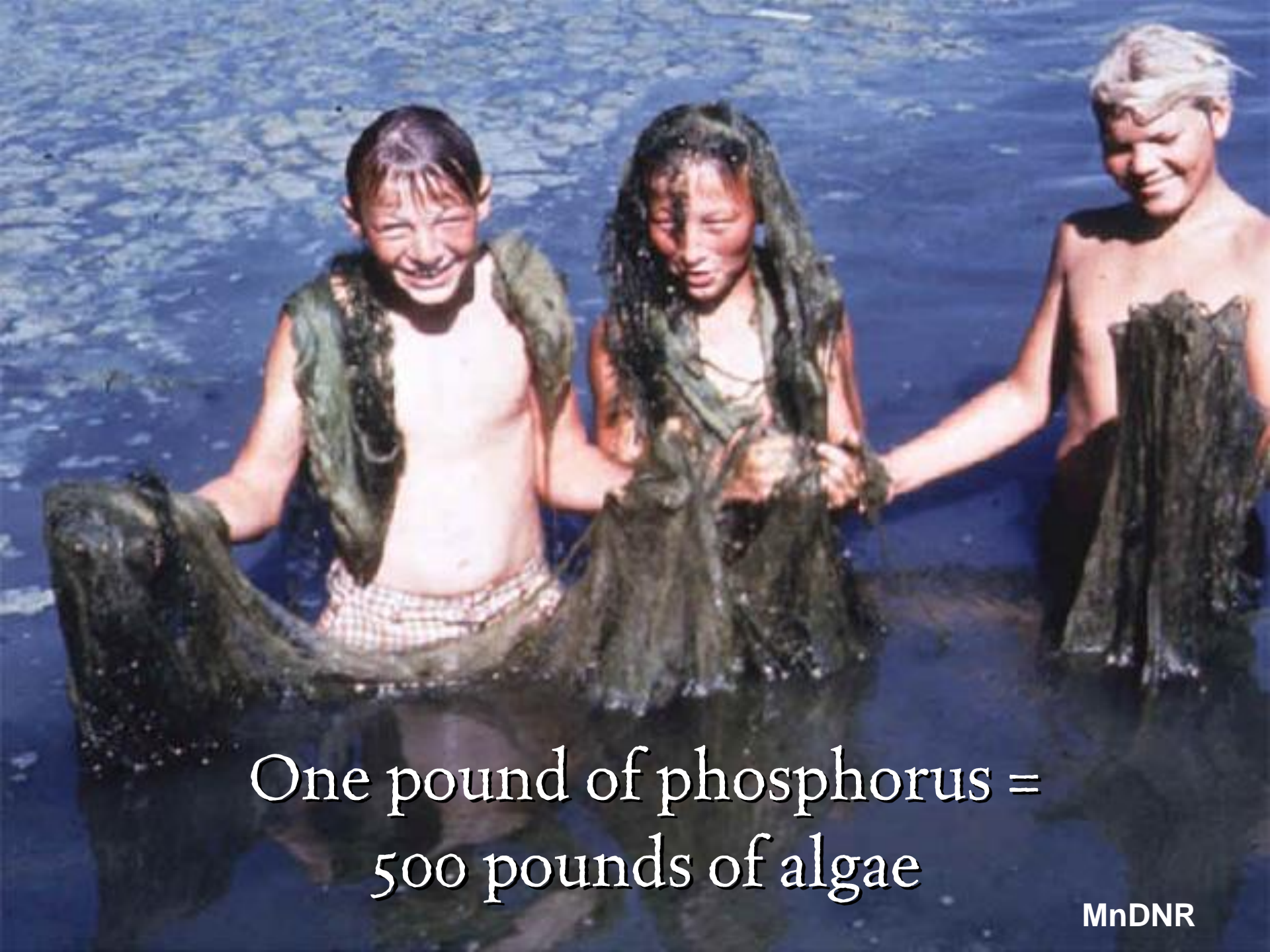
Big Marine Lake



Colby Lake - Woodbury



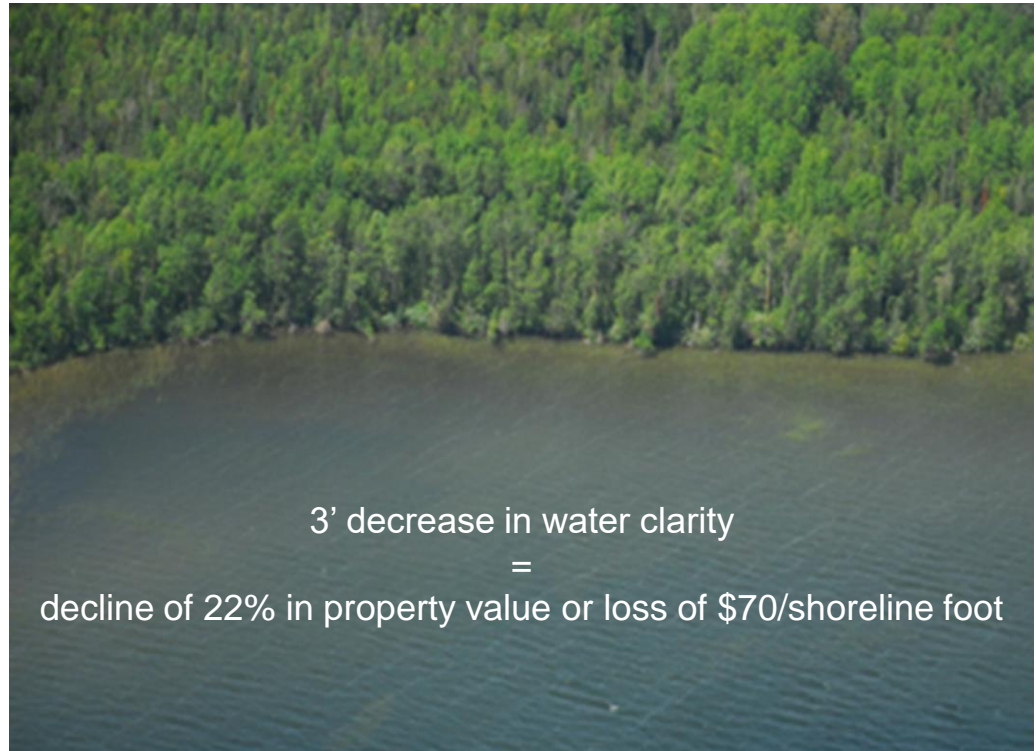
Cedar and Hwy 42 - Apple Valley



One pound of phosphorus =
500 pounds of algae

Water Quality Can Affect Property Values

- A study by Bemidji State University (one of many studies that show similar results) shows that a 3 foot decrease in water clarity leads to a 22% decline in property value in rural areas.

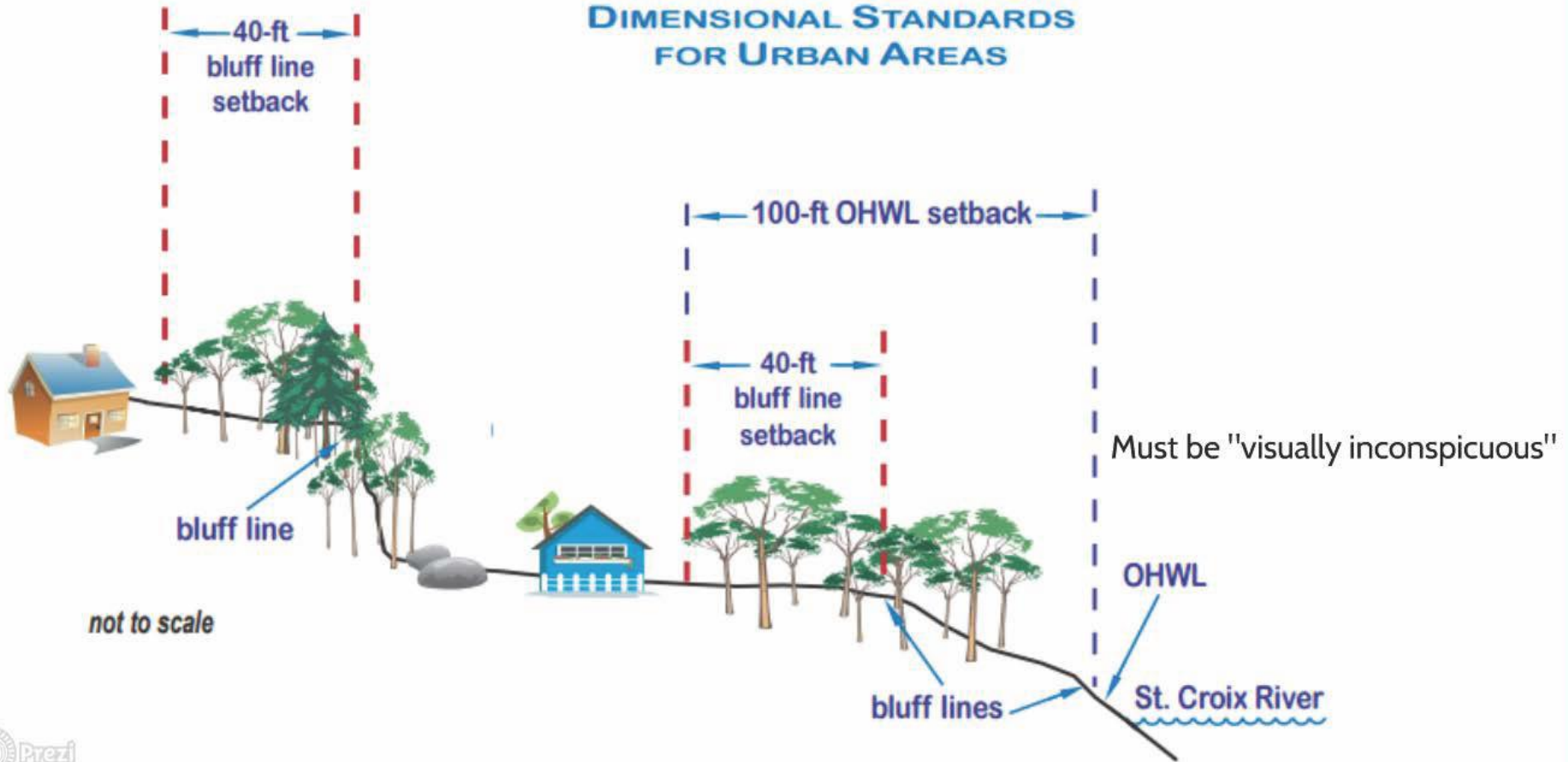


St. Croix Riverway



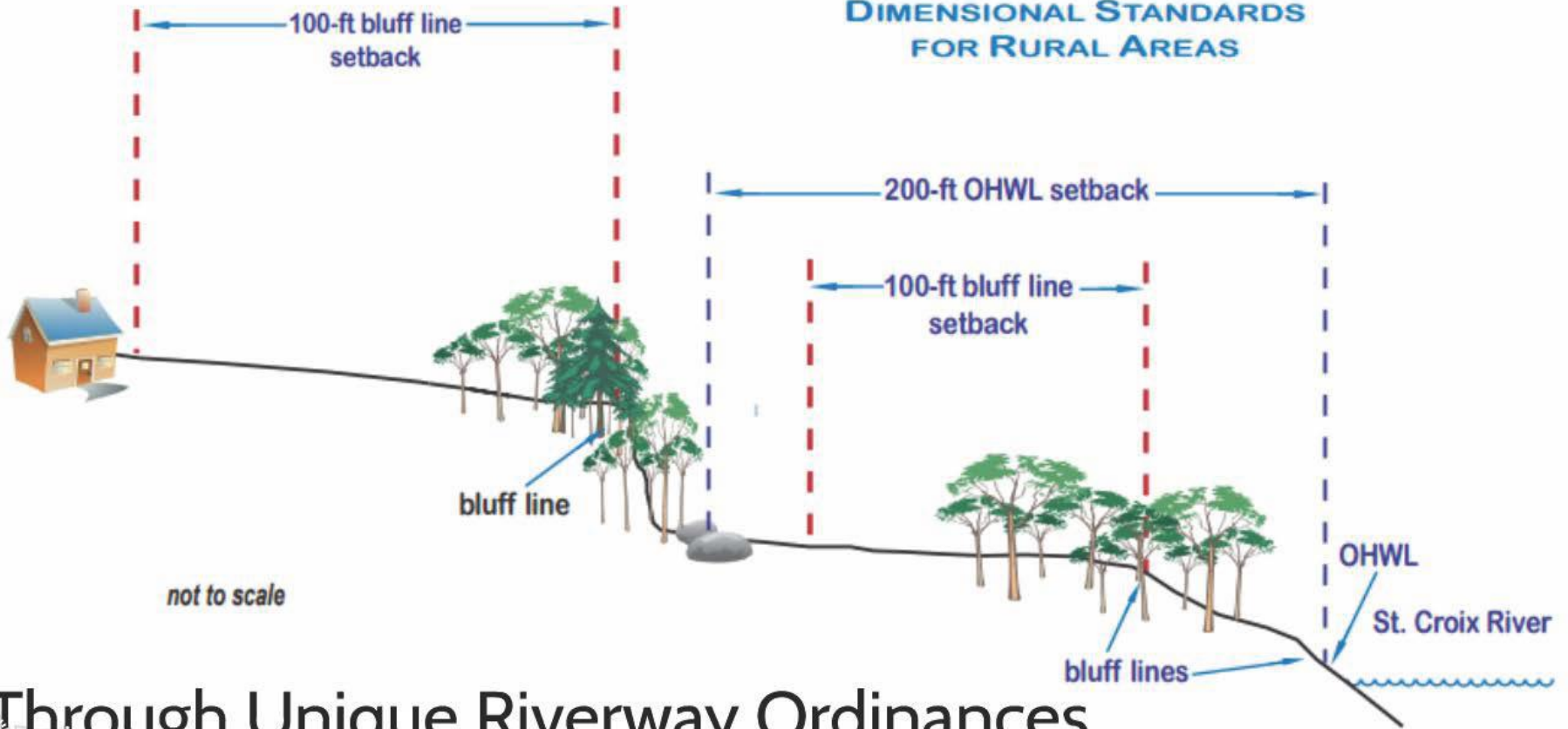
- Federally designated Wild and Scenic River
- Regulations are created and enforced at the local level, with the exception of NPS easements
- June 17 presentation will discuss St. Croix Riverway regulations in more detail

DIMENSIONAL STANDARDS FOR URBAN AREAS



- DNR permits are only required for activities below the ordinary high water level:
- rip rap, docks, beach blankets, etc.

DIMENSIONAL STANDARDS FOR RURAL AREAS



Through Unique Riverway Ordinances





Other dimensional standards

Minimum lot size

Minimum water frontage

Minimum lot width at building line

Maximum structure height

Maximum area of impervious surface

Minimum setback, vegetation cutting area

Minimum setback, sewage system

Rural district

2.5 acres

200 feet

200 feet

35 feet

20 percent

200 ft from OHWL

40 ft from bluff line

200 ft from OHWL

40 ft from bluff line

Urban district

1 acre (20,000 sq ft if sewer)

150 feet (100 feet if sewer)

150 feet (100 feet if sewer)

35 feet

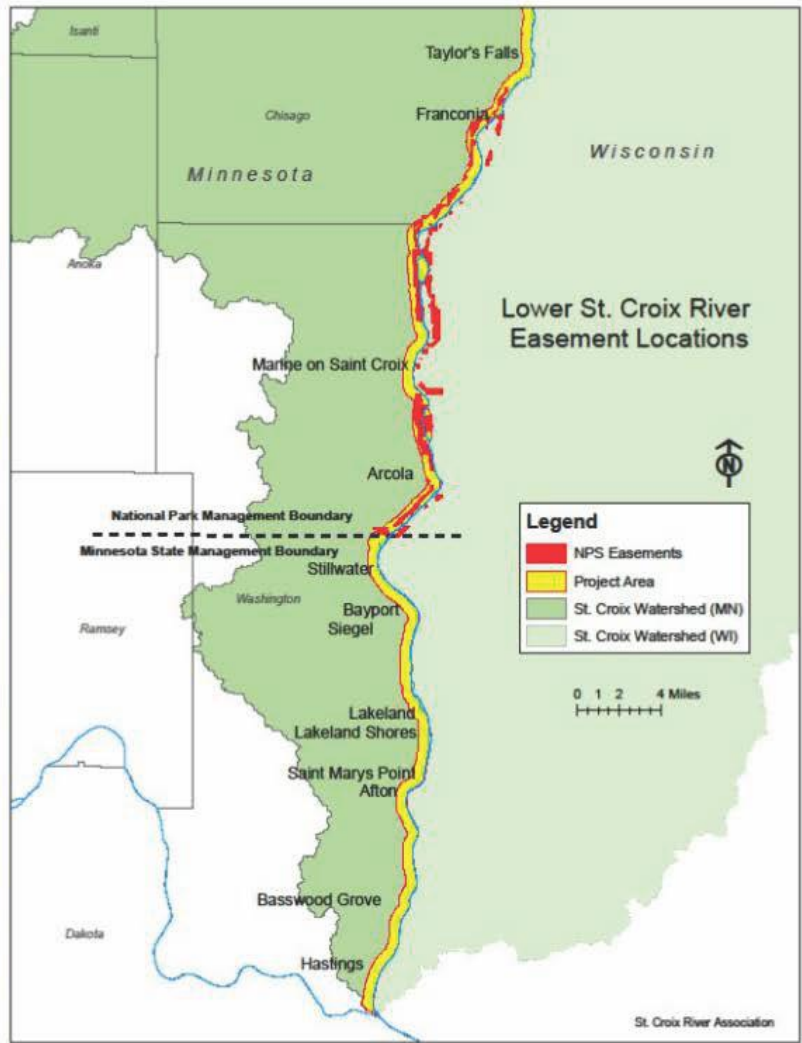
20 percent

100 ft from OHWL

40 ft from bluff line

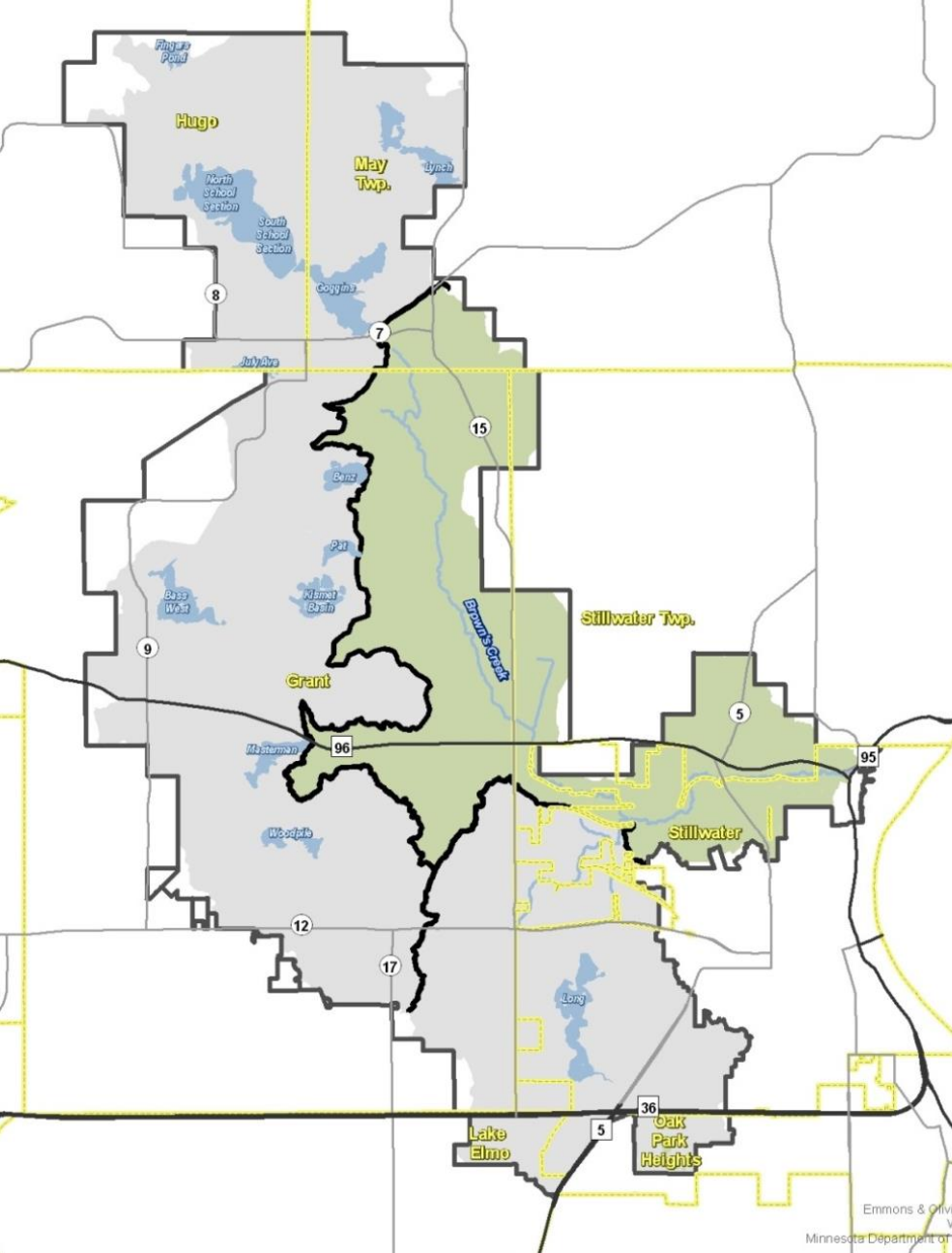
100 ft from OHWL

40 ft from bluff line



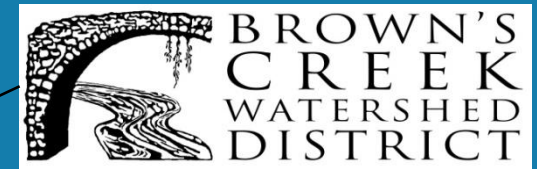
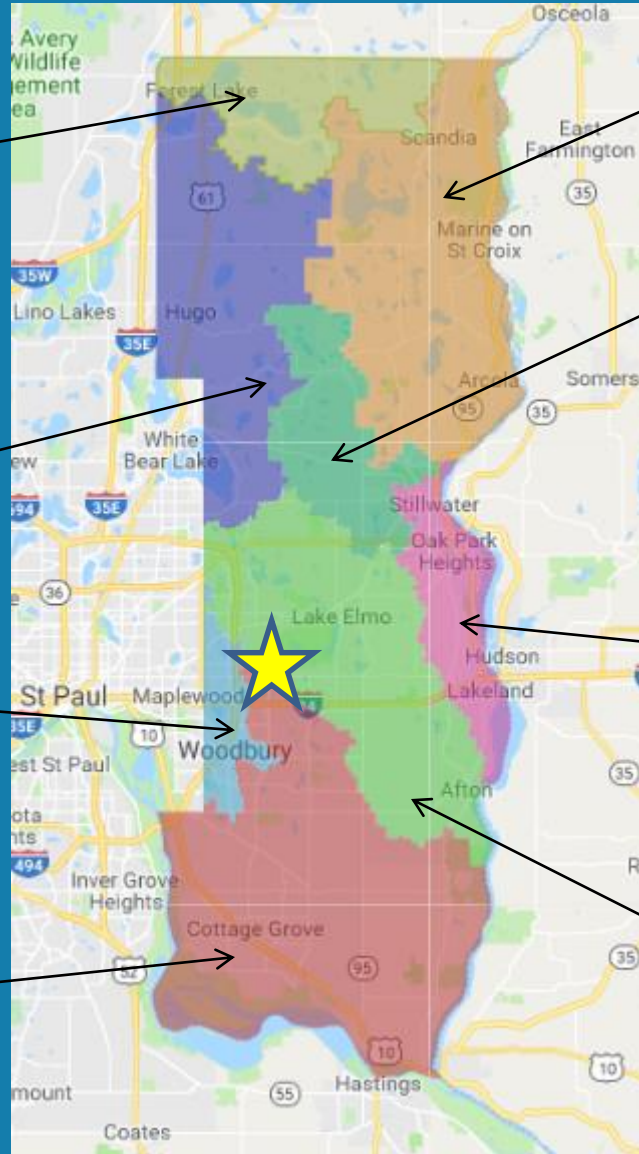
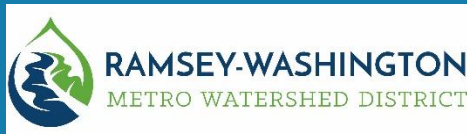
Watershed Districts

- Created by state law in 1955
- Address water issues by watershed (where the water flows) rather than by municipal or county boundaries
- Conserve natural resources by land use planning, flood control, and other conservation projects
- Protect public health & welfare



Watershed District/Watershed Management Organizations

Watershed Management Organizations Washington County





Protect & Restore Water Resources:

Capital Improvement Projects

Permitting/Existing Rules:

- *Stormwater Management*
- *Erosion Control*
- *Lake, Stream & Wetland Buffers*
- *Shoreline & Streambank Alterations*
- *Stream and Lake Crossings*
- *Floodplain and Drainage Alterations*



Stormwater Rules:

Contact your WD/WMO if a landowner or buyer is considering:

- *Subdividing 4+ lots*
- *Adding 5,000+ square FEET of new impervious if the area drains to a groundwater dependent resource (additions, driveways, outbuildings, pools, tennis courts, etc...)*



Erosion & Sediment Control

Or “KEEP YOUR DIRT ON YOUR SITE and out of the water resources!”

Contact your WD/WMO if landowner/buyer considering:

- *Disturbing 5,000+ sq ft*
- *50 cubic yards of material in or out (total)*



Lake, Stream & Wetland Buffers

May be a required buffer on the lake, stream or wetland...Contact the WD/WMO to see if a buffer requirement exists.

If buffer required, restrictions generally include vegetated areas:

- *no mow, no structures, no tree cutting, no driveways, etc...*
- *May need to improve the existing vegetation to native*



Shoreline or Streambank Alterations

Contact your WD/WMO if
landowner/buyer considering:

- *Rip rap*
- *Retaining walls*
- *Creating sand beach/sand blanket*

- *For example, BCWD will only permit alterations that address erosion issues...not to give a place to sit on rocks on the shoreline*



Water Crossings

Contact your WD/WMO if landowner/buyer considering:

- *New driveway crossing a stream or through a wetland*
- *Widening an existing driveway that crosses a stream or through a wetland*
- *New or replacement culverts*



Floodplain or Drainage Alterations

Contact your WD/WMO if landowner/buyer considering:

- *Filling in any “low spots”*
- *Changing drainage patterns*
 - *Grading*
 - *Drain tiles*
 - *Culverts*

**How to find your WD/WMO?
www.mnwatershed.org**



Watershed District/Watershed Management Organizations

Washington Conservation District

What We Monitor

- Monitor on behalf of watershed districts
- Streams & Stormwater – WQ, flow
- Lakes – WQ, elevation
- Groundwater – WQ, elevation
- Data Analysis
 - Long-term trends
 - BMP assessment
 - Pollution assessment
 - Model calibration
 - Subwatershed characterization





Common Scenarios

Can I do that with
my property?



Adding a new deck



Adding a new deck

- Contact city/county zoning admin.
- You will likely need a building permit
- You will need to meet minimum set back requirements (St. Croix Riverway bluff and OHWL setbacks, city/county/watershed shoreline setbacks)
- There may be buffer rules that prohibit you from removing trees or other vegetation to build the deck

Adding an addition to the house



Adding an addition to the house

- Contact city/county zoning admin.
- You will likely need a building permit
- You will need to meet minimum set back requirements (St. Croix Riverway bluff and OHWL setbacks, city/county/watershed shoreline setbacks)
- There may be buffer rules that prohibit you from removing trees or other vegetation to build the addition
- You cannot exceed impervious surface percentage limits (ie. 20% for St. Croix Riverway)
- You may be required to include raingardens or other features to mitigate increased runoff

Building a boat house



Building a boat house

- MN and WI do not allow new boat houses to be built below the OHWL
- DNR permit required for repair of existing boat houses
- Contact city/county zoning admin. if you wish to construct or reconstruct a boat house above the OHWL

Clearing trees to see the water better



Clearing trees to see the water better

- St. Croix Riverway: No vegetation removal or tree-limb removal within OHWL and bluff setback zone
- Within MN shoreland management districts, you may remove 10-20% of trees and shrubs without a DNR permit
- Contact city/county zoning admin to determine if the property is within a special management district and if other local rules apply (ie. watershed buffer rules)

Creating a beach



Creating a beach

- Contact local city/county and watershed district (at least 7 days in advance)
- DNR permit required to cover emergent vegetation, unless already authorized by an Aquatic Plant Management permit from DNR Fisheries, and to create a beach in a posted fish spawning area.
- Beach guidelines:
 - Clean, inorganic sand or gravel, free of pollutants and nutrients.
 - No more than 6 inches thick, 50 feet wide along the shore, or one-half the width of the lot (whichever is less), and no more than 10 feet waterward of the ordinary high water level (OHWL).
 - Installation of sand or gravel may only be repeated once at same location, not exceeding same amount and dimensions of the original sand blanket.

Creating a fire ring



Creating a fire ring

- Contact city/county and watershed district if the fire ring will create new impervious surface near shoreline or require extensive vegetation clearing

Stairs, lifts and docks



Stairs, lifts and docks

Docks:

- Should not obstruct navigation or create a safety hazard
- Should not harm fish and wildlife habitat
- Must allow water to flow freely beneath
- Cannot be a boat house or human habitation masquerading as a dock
- DNR permit required if:
 - The dock is within posted fish spawning areas.
 - The dock will be wider than 8ft
 - If you will be removing aquatic vegetation during installation of the dock
- Contact city/county to check on local zoning regulations





Vegetation and Land Alteration Standards in Near Shore Areas



The “Ideal” shoreline



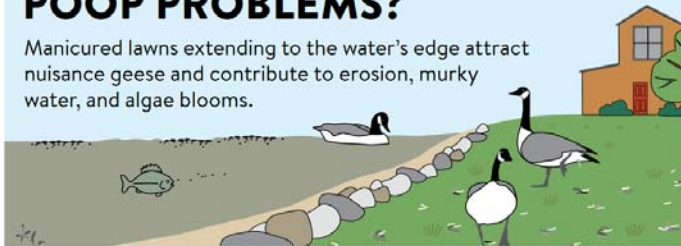
Permanent “fix,” right???



Know your Audience. Does this messaging work?

POOP PROBLEMS?

Manicured lawns extending to the water's edge attract nuisance geese and contribute to erosion, murky water, and algae blooms.



Natural vegetation provides habitat, filters runoff, and protects against wave action.



Ad from 2020 Fishing Regulation book

Regulations around Bluffs and Steep Slopes



Promote Natural Shorelines - Before and After



Source: Stearns Co SWCD

Vegetation Removal in Shoreland Areas

Shoreland Vegetation Removal

- Intensive vegetation removal in the shore and bluff impact zones and on steep slopes is prohibited.
- Limited clearing and trimming of trees and shrubs in the shore and bluff impact zones and on steep slopes, is allowed to provide a view, for access, stairways, beaches, or water-oriented accessory structures.
- Activities on steep slopes (SSTS, roads, driveways, structures) require an evaluation. LGUs shall attach conditions to permits to prevent erosion and to preserve existing vegetation screening

7

Land Alterations in Shoreland Areas

- Shoreland rules require a permit for dirt moving >10 CY, and prohibits intensive vegetation clearing.
- Communities are required to tie conditions to their permit
 - Riprap
 - Revegetation
 - Ensure activities don't impact neighboring property



Vegetation Removal in the LSCR

Permit Required:

- Rural Districts – Within 200' of OHW
- Urban Districts – within 100' of OHW
- Bluffs – slopes >12% and 40' landward of any bluffline

Applicable standards:

- Cutting of trees restricted to those <6" diameter at breast height
- Diseased trees/shrubs may be removed
- Essential character, quality, density, canopy cover is maintained
- Vegetation that is screening structures shall not be cut or topped

*No separate permit required for clearing to accommodate for properly permitted development or right of way maintenance

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HIGHER STANDARDS for Vegetation and Land Alterations

How does your ordinance regulate these activities?

- When would restoration be appropriate?
- What common issues do you see? How could your ordinance be amended to deal with it?
- For which types of permits that are issued can you apply mitigating conditions? Are you doing so? Are your conditions specific?

How are clearing violations monitored and documented?

- by complaint only?
- Aerial photos?
- Shoreline pics?

10

HIGHER STANDARDS for all Shoreland Ordinances

Innovative Shoreland Standards Showcase

Communities around Minnesota are taking their shoreland ordinances beyond the statewide minimum standards to tackle tough issues affecting lakes and rivers. The current shoreland rules were updated in 1989. They do not address emerging problems with declining water quality and habitat loss due to contemporary shoreland development, or the effects of climate change. Communities can do more!

Examples of Innovative Standards

The following examples highlight what communities across the state are doing to protect water quality and shoreline habitat, reduce lake crowding, and streamline administration of their shoreland ordinances. Determining what innovative standards are right for each community depends on a range of considerations.

Bluff Standards

Standards for features that rise 30% or more above the ordinary high water level.

Examples of Bluff Standards @ PDF

- Protects investment in structures from bluff failure
- Provides greater space to allow vegetation and habitat in bluff areas
- Protects slopes from erosion and failure
- Reduces visual impact of structures from the water

Vegetation Management Innovative Standards

Part of a series highlighting innovative local government standards intended to help encourage adoption of more protective shoreland standards.

Benefits

- Slows runoff into waterbody and allows ground water recharge
- Infiltrates runoff and filters out nutrients and pollution
- Provides habitat
- Enhances natural lake shore character
- Reduces erosion by anchoring the soil

Types of Approaches

1. Required Riparian Buffer	2
2. Shore Recreation Area	3
3. Specifications for Vegetation Removal	3
4. Vegetation Evaluation and Restoration	4
5. Phosphorus Fertilizers	5
6. Vegetation Permit	5
7. Vegetation Mitigation	6

The ordinance language used in these examples varies significantly depending on complexity of the issue and

Resources for Vegetation Restoration

- **Local SWCD, WMO, WD** – Type of assistance varies by community. Cost shares often available
- **DNR State Forest Nursery** – affordable source for bare root seedlings
- **BWSR**
 - Establishment guidelines
 - Recommended seed mixes
 - Other great stuff!

Vegetation Establishment and Management

Effective plant selection, establishment and management plays an essential role to the success of conservation projects. BWSR has developed several guidance documents to help ensure the success of projects.

Native Vegetation Establishment and Enhancement Guidelines (pdf) (January 2019) is a comprehensive guidebook designed to assist resource professionals and landowners across Minnesota in meeting state vegetation policies and standards, and to guide the successful planting and management of restoration and other conservation projects. The guidelines are also designed to:

- Develop consistency among state programs;
- Avoid the use or introduction of invasive species; and
- Ensure that plantings function at a high level and meet project goals.

The guidelines are updated periodically as new research and field experience become available.

These guidelines apply to all BWSR programs that have vegetation restoration components, as well as other state programs that have adopted the guidelines. Environmentally suitable native annual, biennial and perennial plant species (following the source selection criteria included in the guidelines) are required for projects to meet legislative requirements and provide multiple landscape benefits.

The guidelines include topics such as seed and plant source requirements, planting dates, diversity levels, and planting guidance by project type.

Additional information on plant selection for specific purposes can be found on the following pages:

- [Buffer Establishment and Management Toolbox](#)
- [Landscape Resiliency Toolbox](#)
- [Pollinator Toolbox](#)
- [Guidance Documents, Tools and Other Resources](#)
- [What's Working for Conservation](#)
- [Streambanks and Shorelines](#)

Featured Plants: Each month, BWSR highlights a plant native to Minnesota. These articles provide information on the featured plant's identification, uses and planting recommendations, range, and similar species.

- [Featured Plant Archive](#)

INTER-SEEDING TO RESTORE OR ENHANCE NATIVE SPECIES DIVERSITY

MAINTAINING ROADSIDE PLANT DIVERSITY: GUIDING PRINCIPLES FOR INTEGRATED ROADSIDE MANAGEMENT



Questions?

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