

Minnesota Association of County Planning and Zoning Administrators

MPCA Update

John Linc Stine
Commissioner

Our Mission:

Protect and improve the environment and enhance human health



Minnesota Pollution Control Agency

October 4, 2013

GOAL:
Environment and
Public Health
Protection

*Assess, Evaluate
Adjust*

*Science
Research
Public Input*

**Life Cycle of MPCA
Environment &
Health Protection
Activities**

Permits, Guidance
Voluntary Action,
Education

Set Standards to
Achieve Outcomes

Implement



MPCA's organization

- ❑ We are 900+ employees
- ❑ Average age = 47 years
- ❑ 53% are males; 47% are females
- ❑ We are 70% scientists: Biologists, Chemists, Engineers, Hydrologists, Pollution Control Specialists, Soil Scientists
- ❑ We have offices in Detroit Lakes, Duluth, Mankato, Marshall, Rochester, St. Paul & Willmar



Our strategic plan

The **vision** and **goals** that underlie the work of our agency | **2013–2017 five-year plan**



Mission — Our mission is to protect and improve the environment and enhance human health.

Water

Vision: Minnesota's clean water supports aquatic ecosystems, healthy communities and a strong economy



Goal

Lake, stream, wetland, and groundwater conditions are evaluated and communicated.

- Monitor conditions of surface and groundwater and analyze data in a timely manner.
- Develop monitoring reports and provide information for decision-making.
- Communicate monitoring and assessment results.

Goal

Pollution from all Minnesota sources is reduced or prevented.

- Regulate point source discharges to protect uses and maintain consistency with major watershed strategies.
- Manage non-point source discharges to protect uses and maintain consistency with major watershed strategies.

Goal

Surface and groundwater management system is streamlined and effective.

- Continue to build a synchronized approach to water management across state agencies.
- Support local government capacity and capability to implement their role in the water management system.

Air

Vision: Minnesota's clean and clear air supports healthy communities and a strong economy



Goal

Minnesota's outdoor air is healthy for all to breathe.

- Ensure ambient air is better than air quality standards and health benchmarks, particularly for pollutants that represent key air quality indicators.
- Ensure emissions from non-point and non-permitted point sources do not create unacceptable exposures.

Goal

Minnesota reduces its contribution to regional, national and global air pollution.

- Reduce Minnesota's contribution to global mercury levels by meeting the TMDL air emission target.
- Reduce Minnesota's contribution to global GHG concentrations by meeting the GHG reduction goals in the Next Generation Energy Act of 2007.
- Reduce Minnesota's contribution to regional haze.

Land / waste

Vision: Minnesota's land supports healthy ecosystems and sustainable land uses



Goal

Solid waste is managed to conserve materials, resources and energy.

- Ensure waste is reduced, recycling and organic recovery is increased, resource recovery capacity is maintained, and landfilling is reduced.

Goal

Land is managed to prevent, minimize, or reduce the release of contaminants.

- Regulate aboveground and underground storage tank systems and solid and hazardous waste management facilities to ensure all federal program commitments are met.

Goal

Contaminated sites are managed to reduce risks to human health and the environment and allow continued use or reuse.

- Manage risks at remediation sites.
- Prepare sites for continued use or re-use.
- Address sites in a timely and efficient manner.
- Maintain agency preparedness procedures to ensure that environmental and health risks are mitigated in major incidents and disasters; acute risks are managed within hours or days.



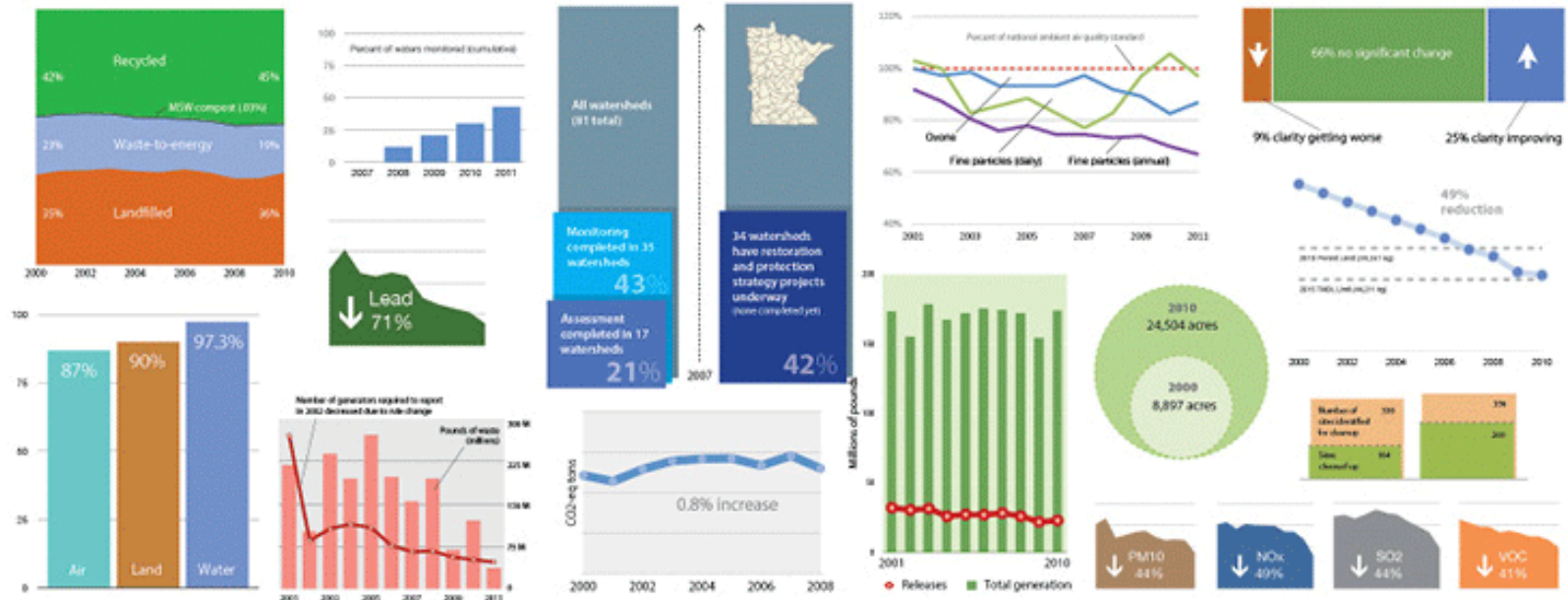
Metrics

Air quality

Water quality

Land and waste

Operations



WRAPS: Watershed Restoration and Protection Strategies

□ One watershed, one plan

- One plan in each of Minnesota's 81 watersheds +/-
- New template; 10-year rotation
 - Less text; shorter, implementation strategy table
 - More quantified/targeted approach to solutions
 - Addresses point and non-point sources
- Protection and restoration
 - Statewide, cost of restoration dwarfs cost of protection
 - Local governments to identify priorities for restoration and work to be sure they get fixed



Watershed Restoration and Protection Strategies (WRAPS)

WRAPS provide:



Local Watershed Management Plan use WRAPS to establish:

- ❑ **How much** pollutant reduction or protection is
- ❑ **Where** the water pollution problems are coming from
- ❑ Propose a **pace of progress**
- ❑ **TMDL** with WLA and LA that goes to EPA
- ❑ **How** to fix problems or threats (project and practice design)
- ❑ **Priority/Sequence** for fixing water problems or threats
- ❑ **Who** will have responsibility for fixes
- ❑ **Pursuit of \$** resources to accomplish fixes



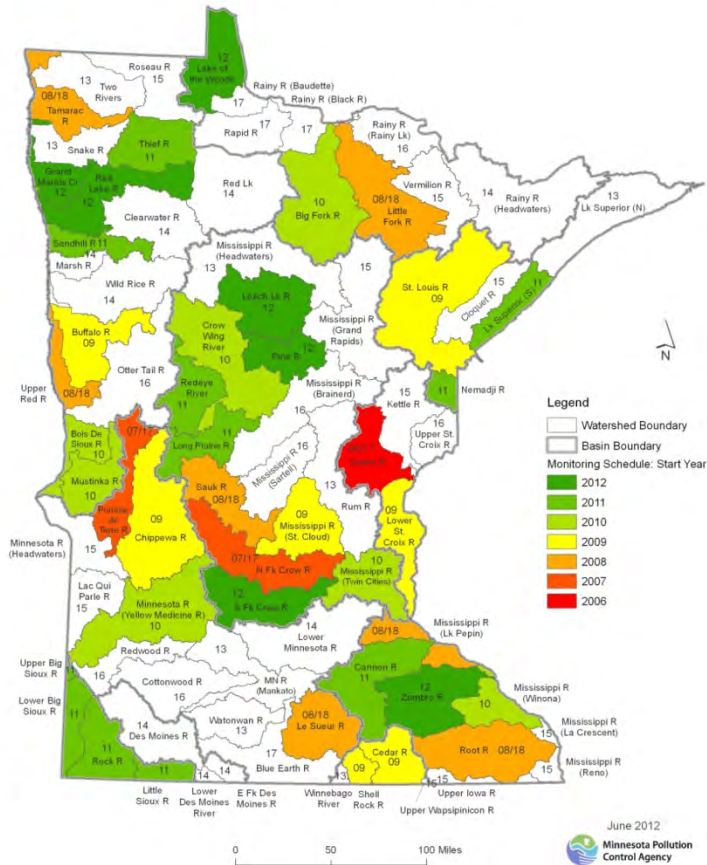
What a WRAPS document looks like:

- ❑ Clean Water Accountability Act - 2013
- ❑ Standardized Template for all 81 watersheds
- ❑ Pomme de Terre River Watershed Report - example



Watershed monitoring

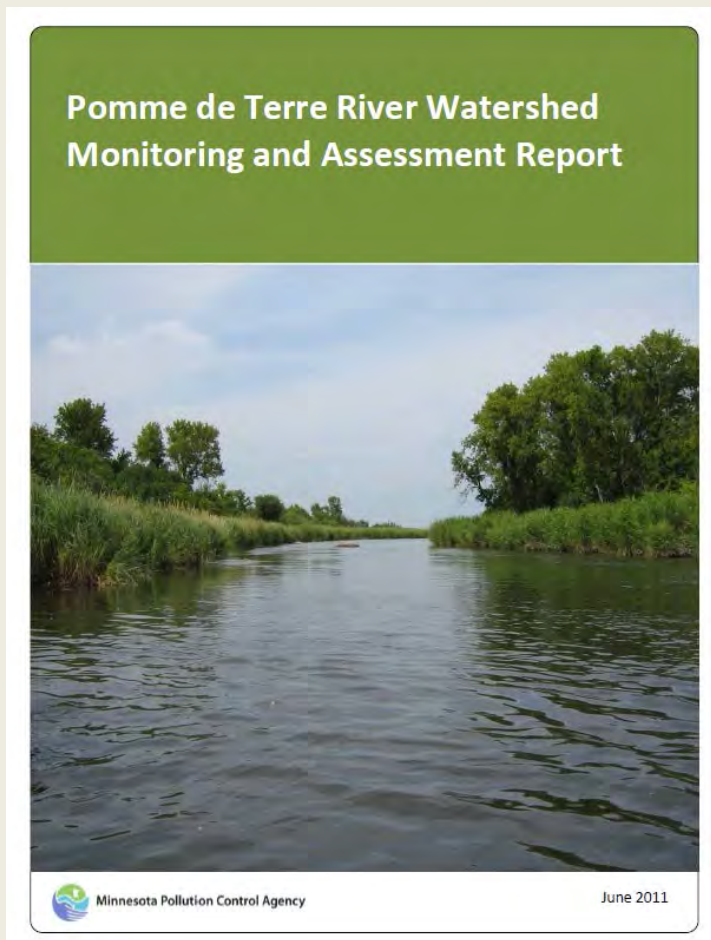
Intensive Watershed Monitoring



- Intensive Watershed Monitoring
 - Biological/Physical monitoring
 - Lake monitoring
 - Flow/chemical/load monitoring – ongoing
- On track to complete state in 10 years



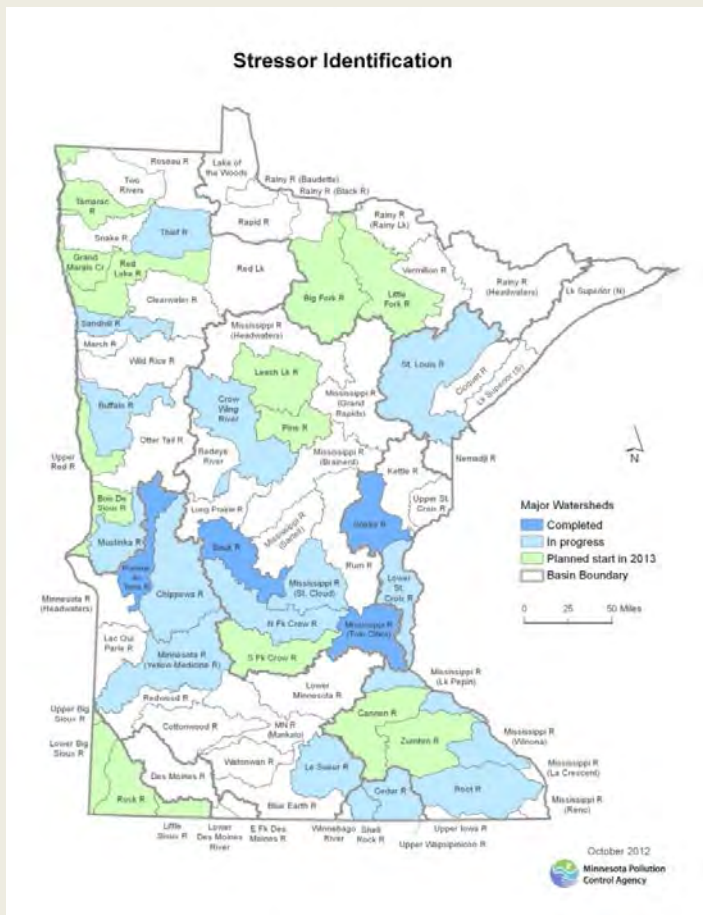
Monitoring and Assessment Reports



- ❑ A comparison of water quality conditions to standards to determine if water is achieving designated uses
- ❑ Identify impairments
- ❑ Identify waters that should be protected



Biotic stressor identification (ID)



- A study of local stressors limiting the fish and invertebrate communities
- Stressors investigated by evaluating:
 - Hydrology
 - Water Quality
 - Geomorphology
 - Biology
 - Connectivity



Stressor Identification Report

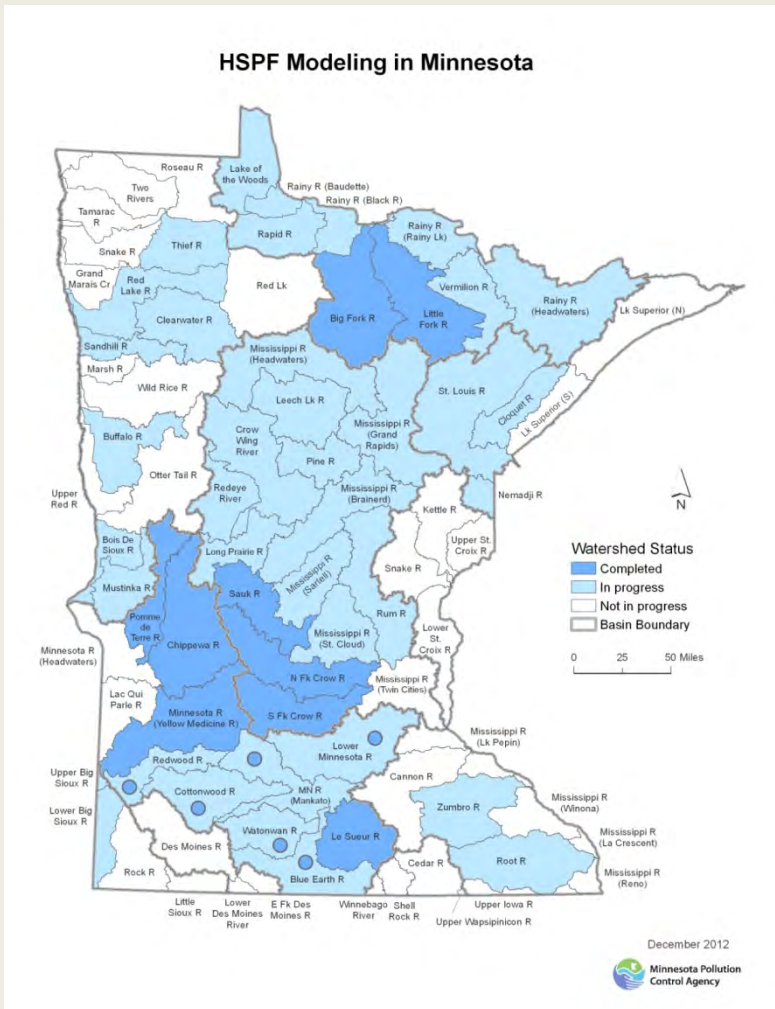


de Terre River

Biotic Impairments	Primary stressors to the biological community						
	Dissolved Oxygen	Nitrate	Phosphorus	Turbidity	Fish Passage (dams)	Altered Hydrology	Habitat
Fish	X				X	X	X
Fish						X	X
Fish & Invertebrates		X				X	X
Fish		X				X	
Fish & Invertebrates	X	X	X	X		X	X



HSPF modeling



- ❑ Conventional Parameter TMDLs
- ❑ Dissolved Oxygen TMDLs
- ❑ River Nutrient TMDLs
- ❑ Support of Stressor ID development
- ❑ Priority Management Zone Support



TMDL Report

Pomme de Terre River
Watershed TMDL-DRAFT



 Minnesota Pollution Control Agency

November 2012

- ❑ Complete all TMDLs for 8 digit HUCs
- ❑ Define reduction goals for restoring water quality and desired uses
- ❑ Submit to EPA for approval



Minnesota Pollution Control Agency

WRAPS - summary

The goal is clean water. To get there we are:

- ❑ Monitoring all MN's 81 watersheds by 2017
- ❑ Monitoring not just chemical, also physical and biological
- ❑ Protection as well as restoration of impaired waters
- ❑ Taking a comprehensive, focused and targeted approach
- ❑ Integrating point and non point sources; actions
- ❑ Adapting – revisit and build off what's been done and also see if it's working
- ❑ Reducing costs of doing assessment and TMDLs



Reduce nutrients to ensure healthy waters

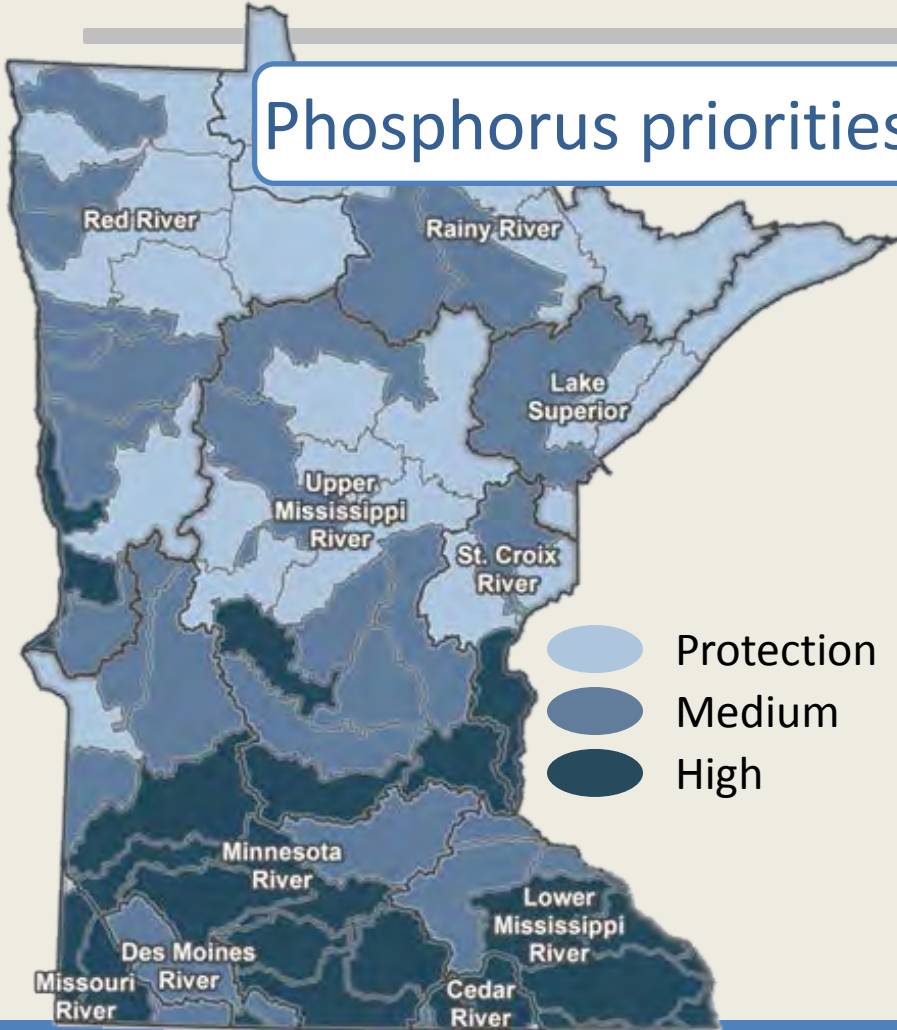


Nutrient Reduction Strategy



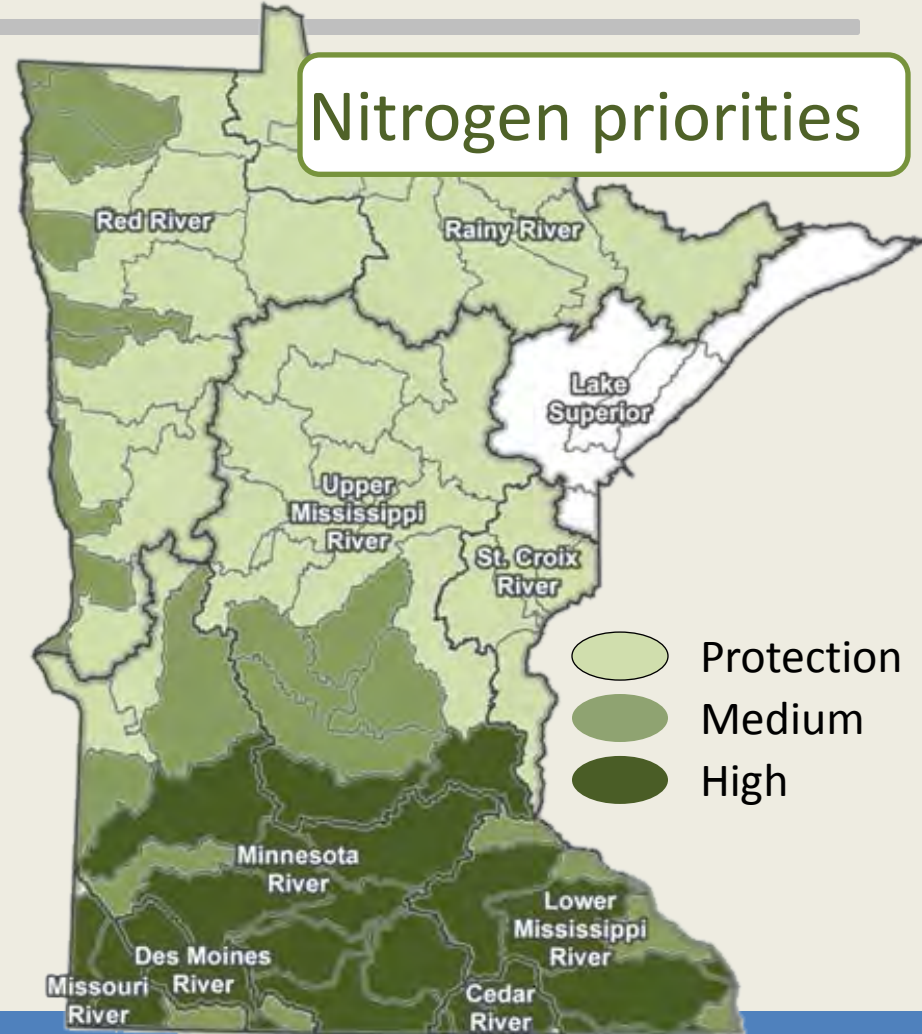
Setting priorities

Phosphorus priorities



- Protection
- Medium
- High

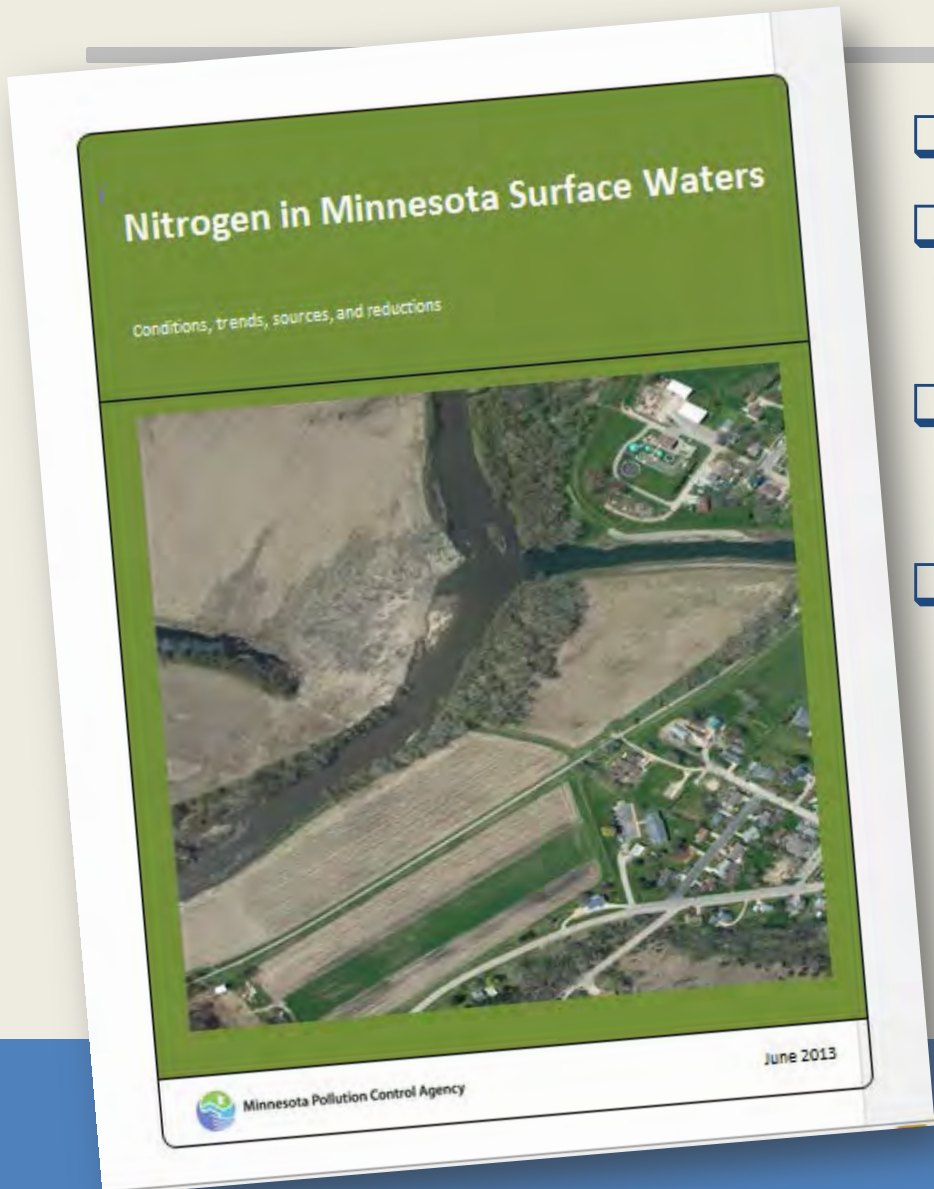
Nitrogen priorities



- Protection
- Medium
- High



Nitrogen Study (July 2013)



- ❑ 15 authors and coauthors
- ❑ 70+ others acknowledged
- ❑ 250+ maps, graphs, diagrams
- ❑ 20-page Executive Summary

Nitrogen Study drivers

Minnesota waters



- ❑ Aquatic life toxicity
 - MPCA developing standards (2015)
- ❑ Drinking water in streams
 - 15 streams exceed cold water standard

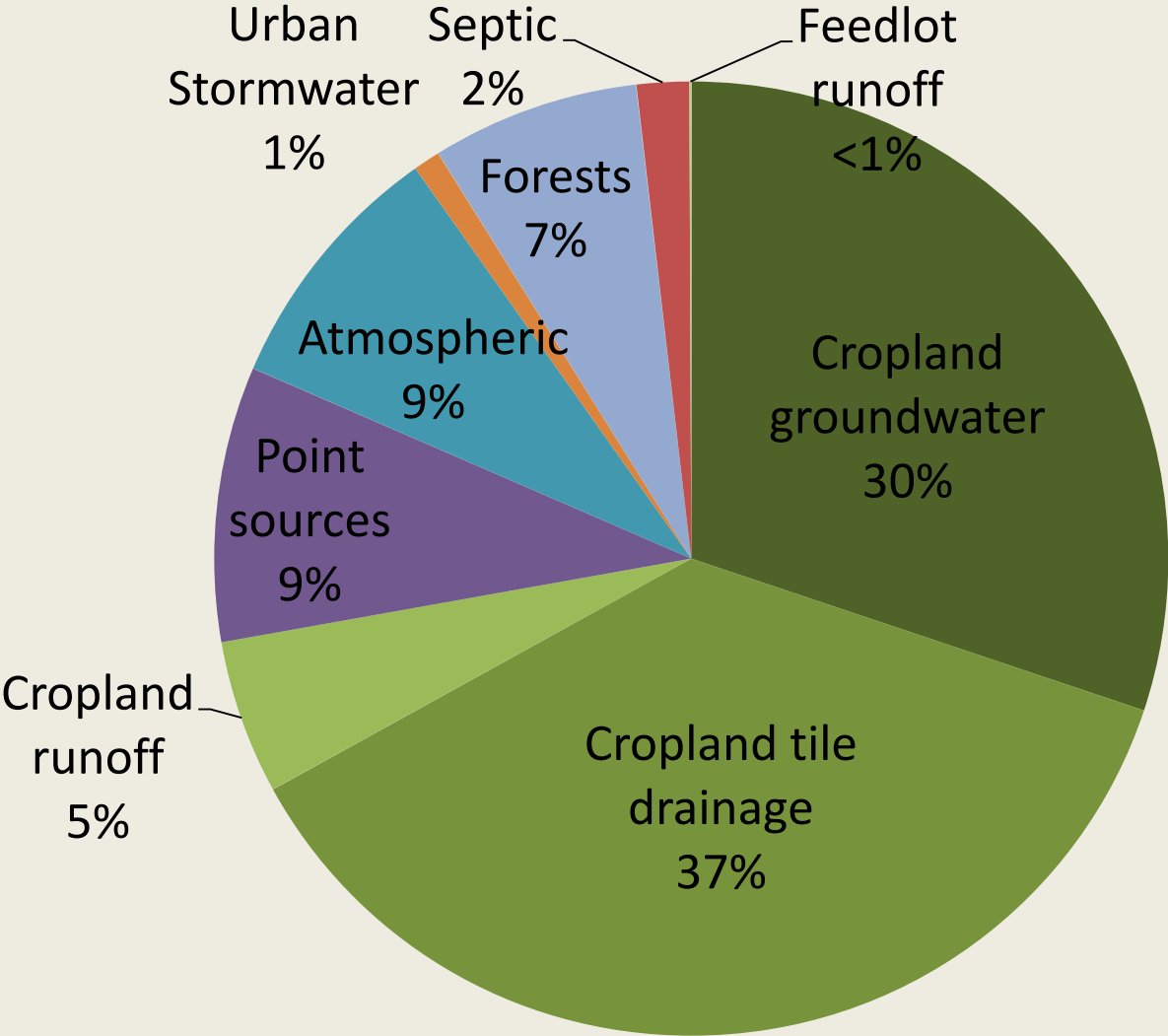
Downstream waters



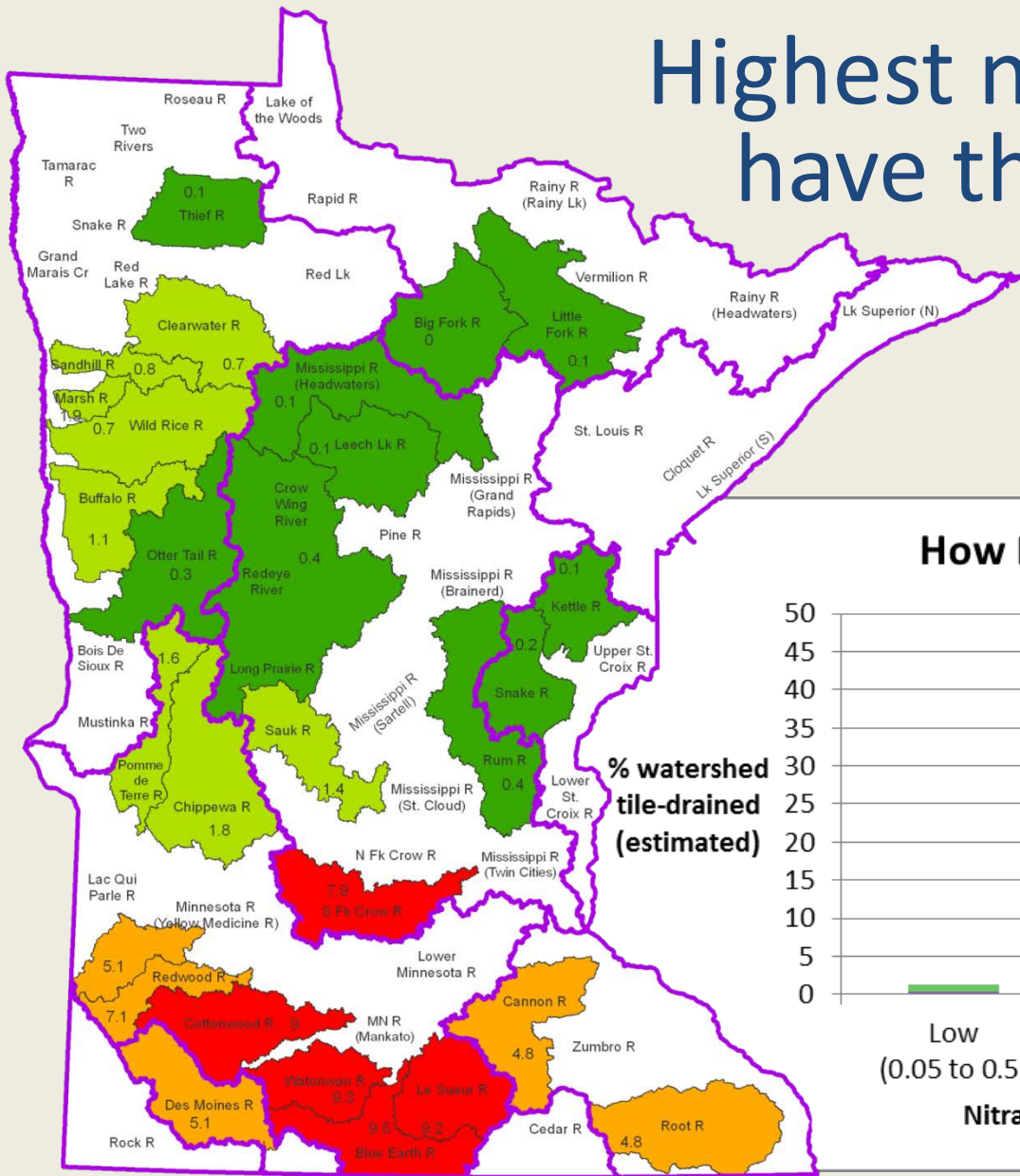
- ❑ Gulf of Mexico Hypoxia and Lake Winnipeg
 - Nutrient Reduction Strategy (2013)
- ❑ Iowa Rivers



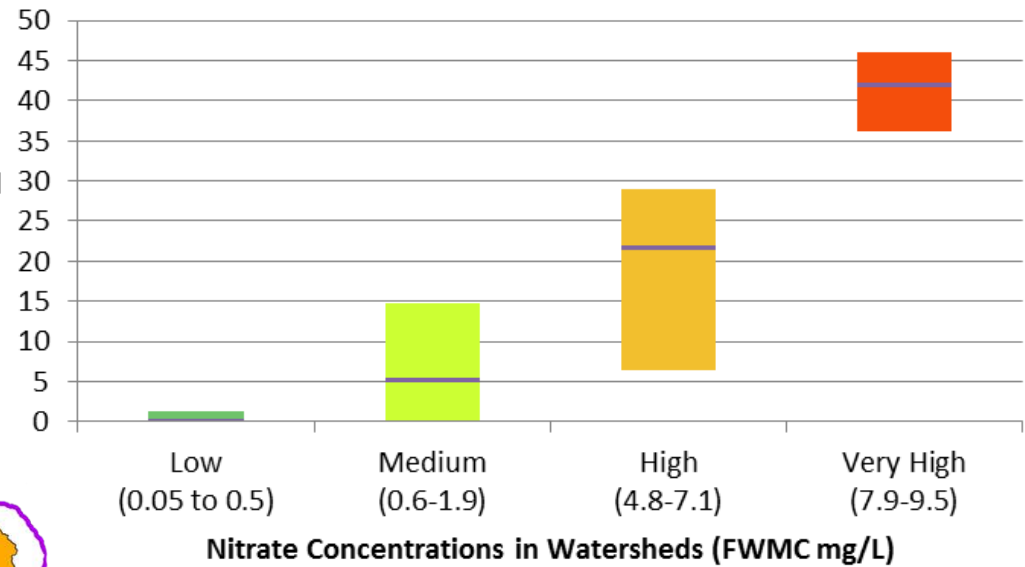
Sources of nitrogen in MN surface waters



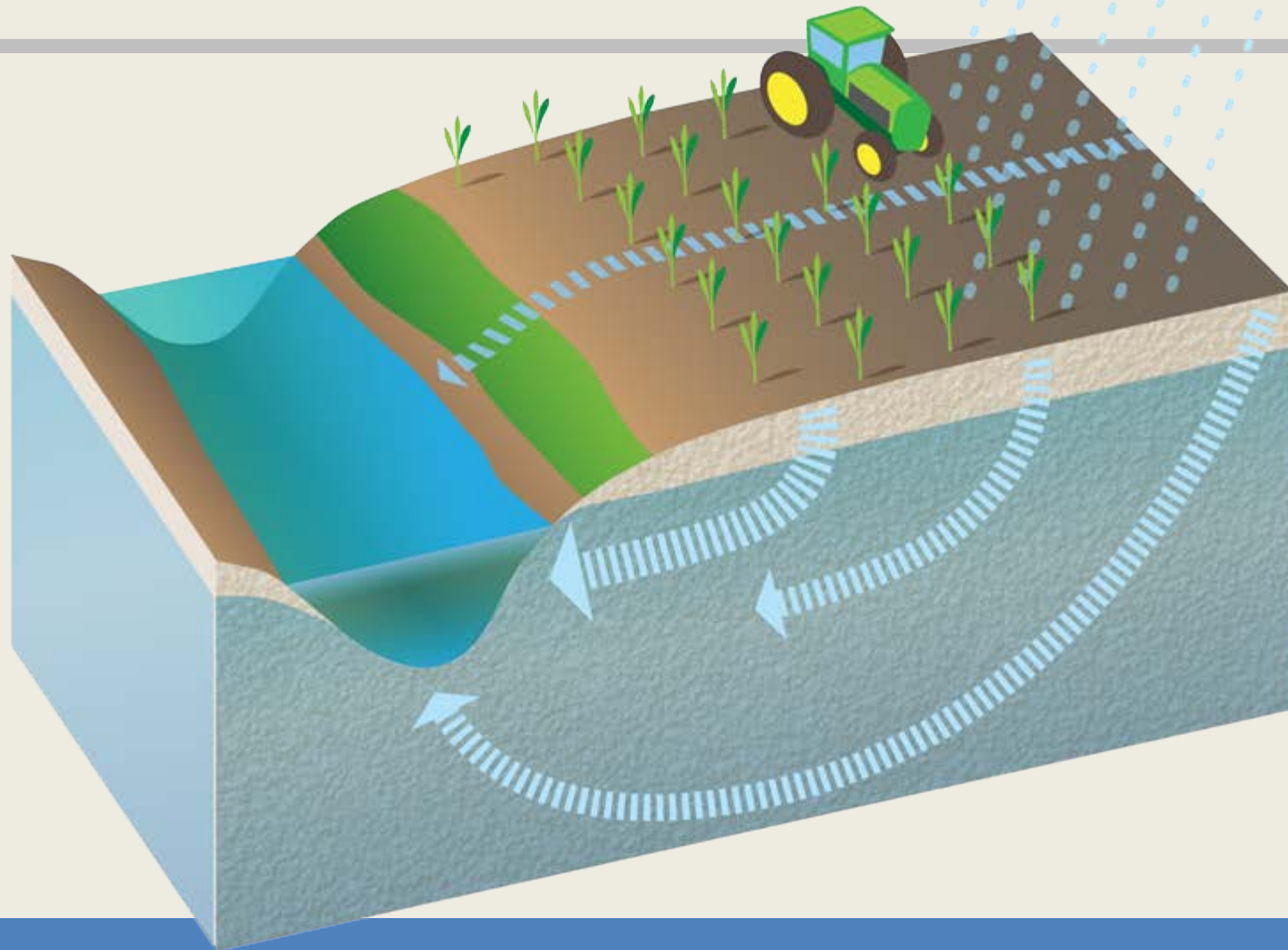
Highest nitrate watersheds have the most row crops and tiling



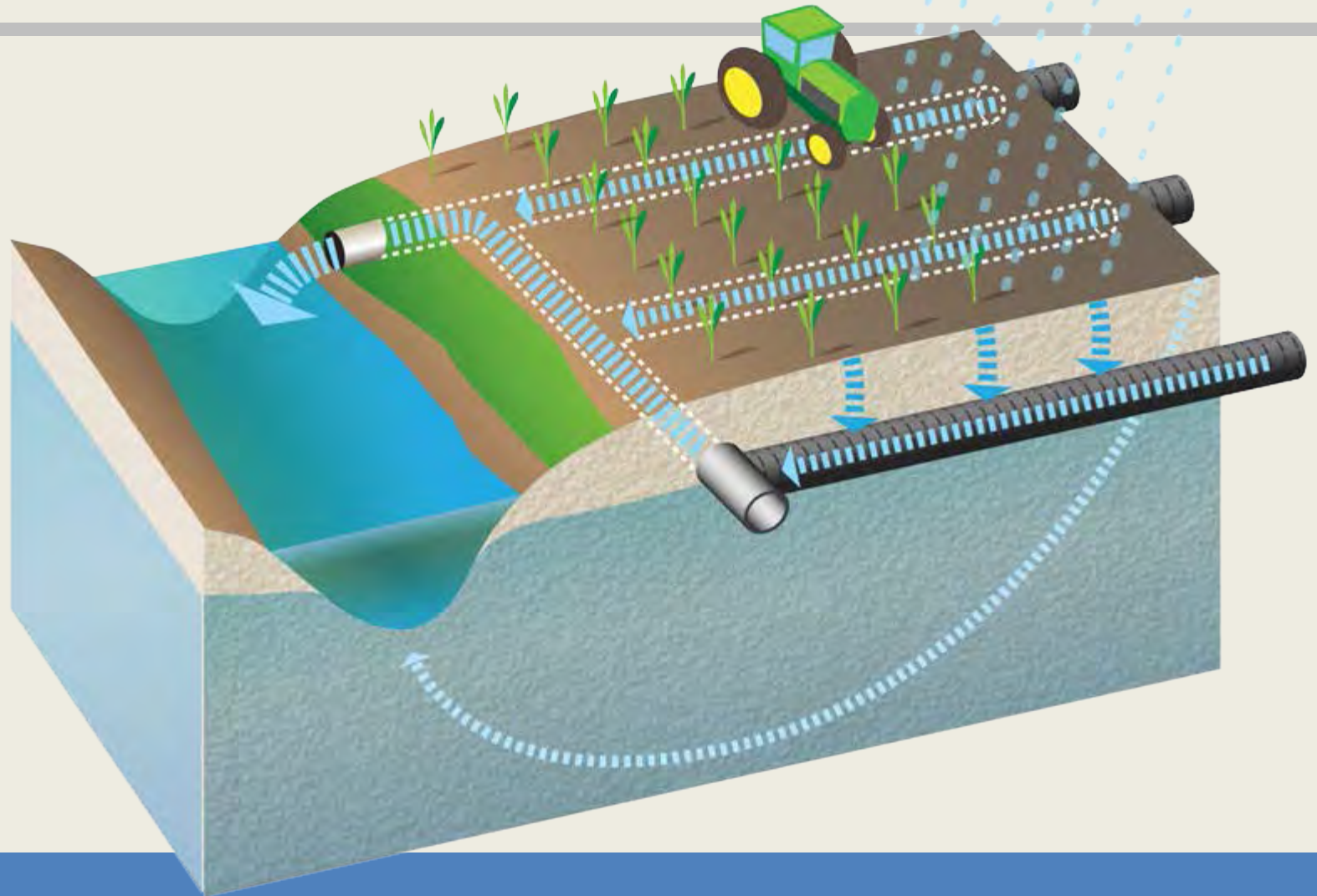
How Nitrate Varies with Tile Drainage



Cropland groundwater pathway



Cropland tile drainage pathway



Feedlot assessments: findings

- ❑ Assessments will help identify opportunities to improve the feedlot program
- ❑ 7 of 54 delegated counties assessed
 - Variations in size, locations and types of feedlots
 - Mainly administrative issues
 - A few missing environmental review and/or permitting documents



Feedlot assessments: next steps

- ❑ Additional training for County Feedlot Officers (CFOs) in delegated counties
- ❑ Improving descriptiveness and clarity of language in 2014-2015 Delegated County Work Plans
- ❑ Discussion of common assessment findings at the Minnesota Association of County Feedlot Officers (MACFO) Annual Conference

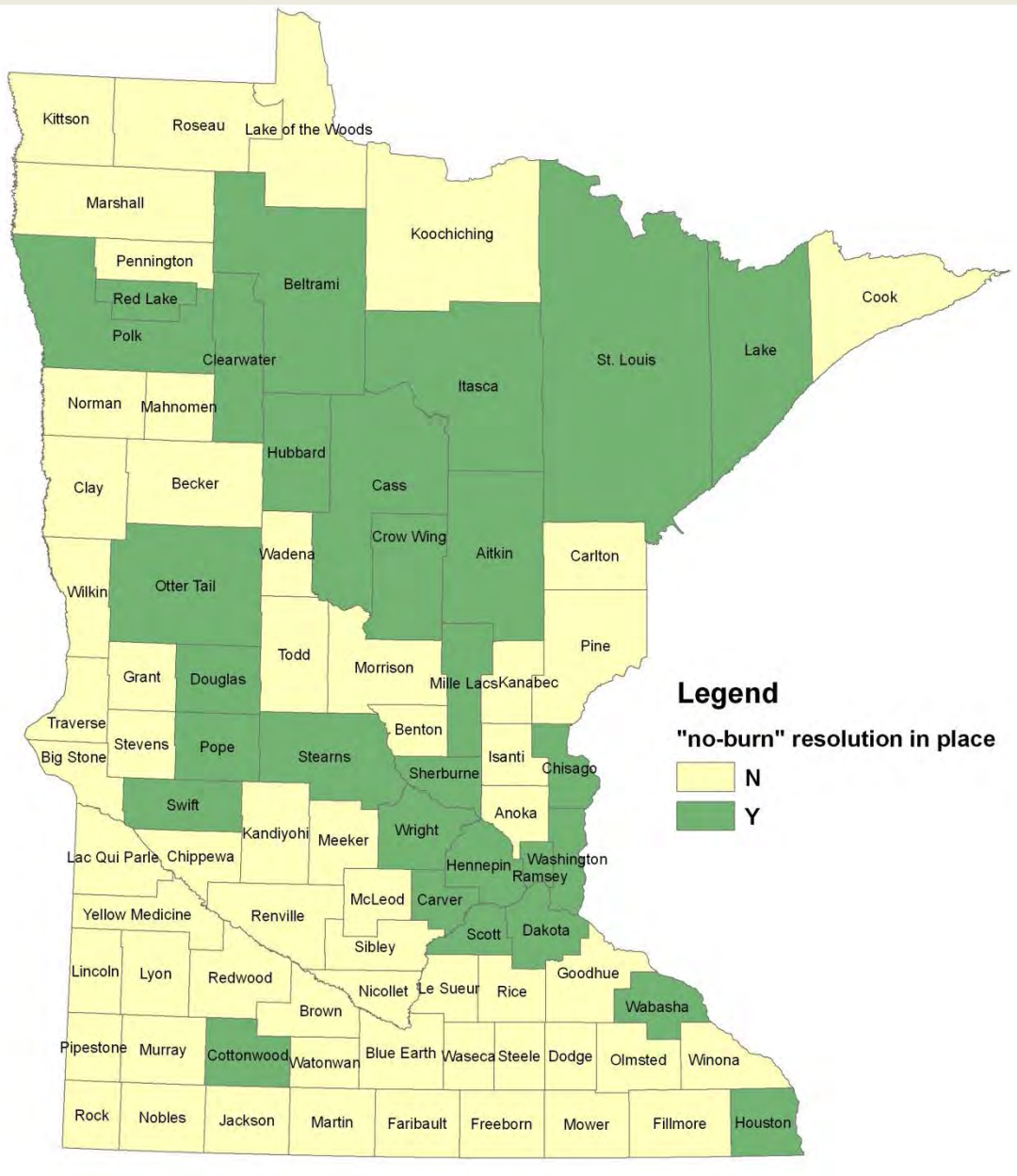


On-site burning

- ❑ Toxic emissions
 - Affect human health
 - Contaminate crops and livestock
- ❑ Nearly half of all wildfires in Minnesota



“No-burn” resolutions



- Currently:
29 counties
- Goal:
35 or more
by 2014



2013 Legislation: Multi-Agency Effort

- ❑ Minnesota Pollution Control Agency
 - *Protect and improve our environment and enhance human health*

- ❑ Minnesota Department of Natural Resources
 - *Work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.*

- ❑ Minnesota Department of Health
 - *Protecting, maintaining and improving the health of all Minnesotans.*

- ❑ Minnesota Department of Transportation
 - *Provide the highest quality, dependable multi-modal transportation system through ingenuity, integrity, alliance and accountability.*



2013 Legislation: Multi-Agency Effort

<http://silicasand.mn.gov/>



2013 Silica Sand Legislation

DNR

EQB

MPCA

MDH

SILICA SAND RULEMAKING

Reclamation of Silica Sand Minelands

MN Laws 2013, Ch 114, Art 4, Sec 105(b)

Amend EQB Rules for Silica Sand Projects

MN Laws 2013, Ch 114, Art 4, Sec 105(d)

Particulate Emissions

MN Laws 2013, Ch 114, Art 4, Sec 105(a)

Adopt Health Base Value

MN Laws 2013, Ch 114, Art 4, Sec 105 (c)
(COMPLETED)

RELATED

Trout Stream Setback Permit

M.S. 103G217

Effective: 4/30/2013 **(Finalized)**

Environmental Review

M.S. 116C.991

Effective: 7/1/2013

Due: 7/1/2015

Groundwater EAW

M.S. 116D.04

Inclusion of a hydrologic assessment for **ANY** proposed action requiring an EAW and a groundwater appropriation permit.

Ordinance Library

M.S. 116C.992

Due: 10/1/2013

Technical Assistance Team

M.S. 116C.99 Subd 3

Due: 10/1/2013

Model Standards and Criteria

M.S. 116C.99 Subd 2

Due 10/1/2013

DRAFT IS AVAILABLE FOR COMMENT

Summary of 2013 Silica Sand Legislation



Minnesota

MN Environmental Quality Board

- ❑ By October 1, 2013
 - Model Standards
 - Technical Assistance Panel
 - Draft ordinance library

- ❑ Consider amendments to rules governing environmental review of silica sand mining/processing facilities
 - Public Notice closed August 23



Mandatory Environmental Review: Temporary Thresholds (until July 1, 2015)

- ❑ 20 acres or more; mean depth 10 feet
 - Local government is RGU
- ❑ 7,500 tons storage or 200,000 ton annual throughput
 - MPCA is RGU



MN Department of Natural Resources

- ❑ Trout stream setback permit
 - Completed
 - Application available online

- ❑ Develop rules for reclaiming silica sand mines
 - Notice of intent to develop rules published in State Register July 22
 - Comment period remains open



MN Department of Health

- ❑ Adopt air quality health-based value (HBV) for respirable crystalline silica by January 1, 2014
 - 3 $\mu\text{g}/\text{m}^3$ is the HBV
 - Technical support documentation available online



MN Department of Transportation

- ❑ Supporting EQB's efforts
 - Technical Assistance Panel
- ❑ Monitoring the situation to assess any impacts to safety, mobility or road conditions



MN Pollution Control Agency

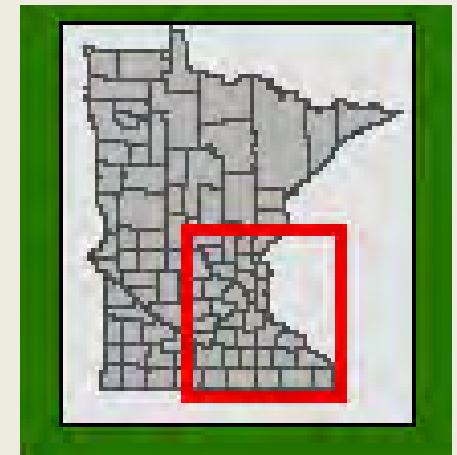
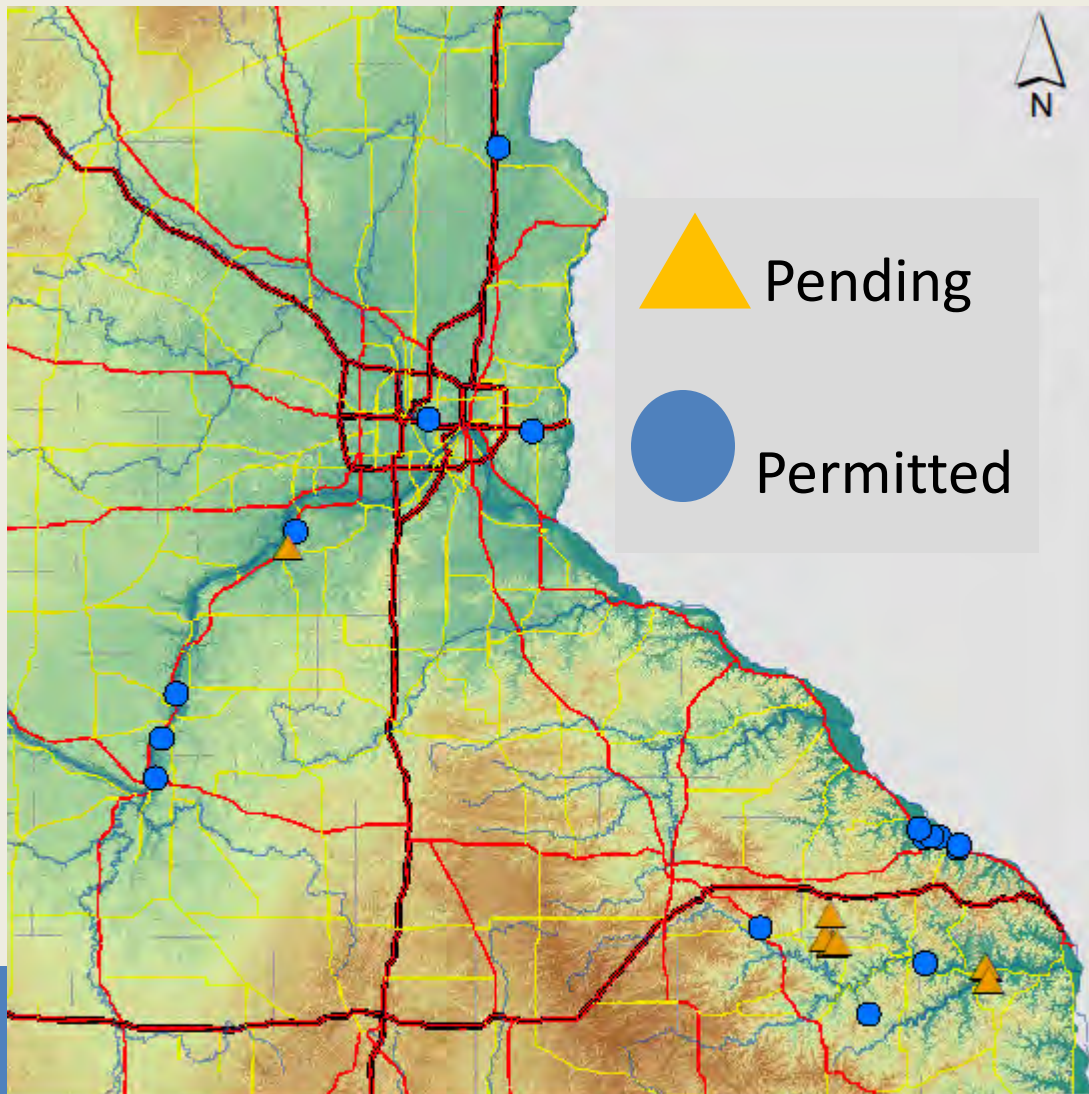
- ❑ Develop rules for particulate emissions
 - Notice of Intent to develop rules is on public notice until September 30

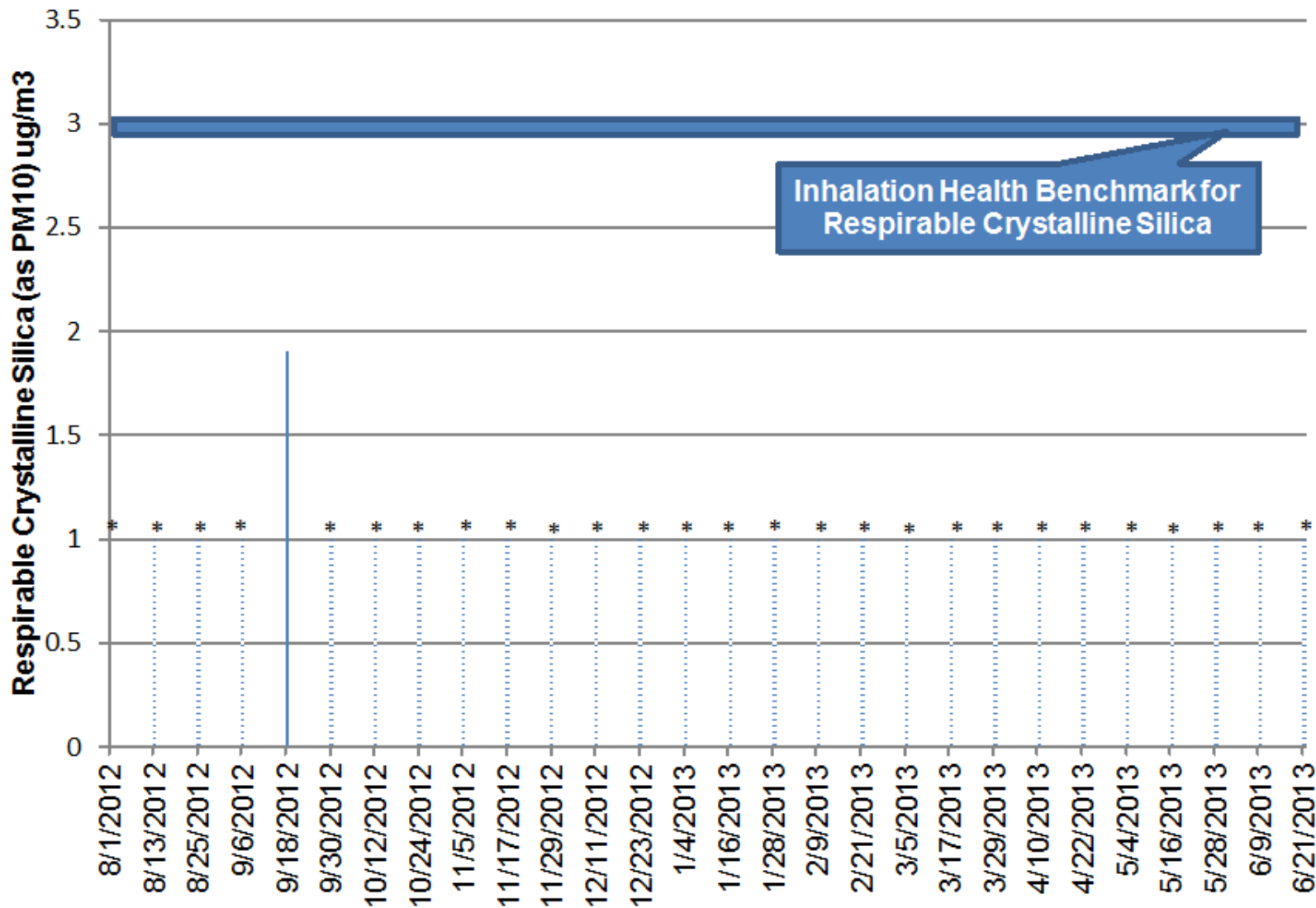
- ❑ Also supporting EQB's efforts
 - Environmental Review rule-making
 - Technical Assistance Panel

Minnesota Pollution
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Silica Sand Facilities in Minnesota





*Below Detection Limit of 1ug/m³



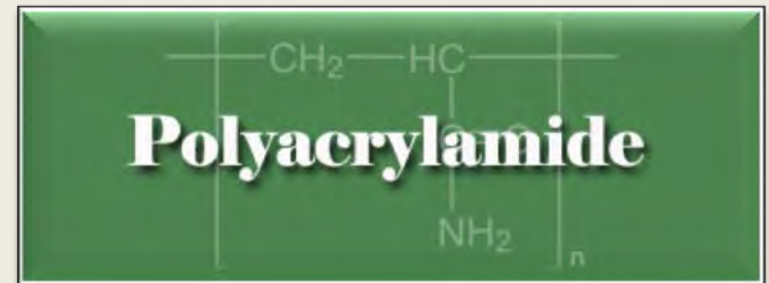
Fugitive Dust

- ❑ Model Ordinances
- ❑ Local controls
- ❑ Monitoring



Wastewater and Flocculants

- ❑ Concern over potential acrylamide release to environment
- ❑ All permittees required to gain MPCA authorization before using chemical additives for wastewater
- ❑ Ongoing review



Pollutants of Concern

Pollutant Based

- Algal toxins, Blue-green
- Alkylphenols and alkylphenol ethoxylates
- Antibacterials and Disinfectants
- Antibiotic resistant bacteria
- Biomass combustion
- Black carbon in air and sediments
- Chiral compounds
- Cumulative impacts of chemical exposure /total body burden
- Endocrine disrupting compounds
- Epigenetic agents
- Feedlot emissions to air and water
- Flame retardants
- Food industry additives and preservatives
- Food web specific bioaccumulation
- Gulf Coast hypoxia – Minnesota contribution
High production volume chemicals (HPVs)
- Land application of biosolids
- Sulfate link to methylation
- Microbial pathogens in surface water
- Mercury (new aspects):
 - New emissions
 - Nanotechnology/nanoparticles
- PAHs in streams: Coal tar-based sealcoats used on parking lots and driveways
- Perfluorochemicals (e.g., PFOS, PFOA, PFBA, fluorotelomer fire-fighting foams)
- Personal care products
- Pesticides degradates and inerts
- Pharmaceuticals
- Plasticizers and other chemicals in plastics: bisphenol A and phthalates
- Pyrethroid pesticides in sediments
- Siloxanes
- Traffic emissions – human health impacts
- Triclosan**
- Ultrafine particles



I ask you to consider...

- ❑ To improve the environment and reduce public health risks/vulnerabilities:
 - Reduce waste generation; increase energy efficiency; reduce GHG emissions
 - Increase recycling/composting; reduce landfilling
 - Reduce mobile source air pollution
 - Prevent non-point water pollution
 - Improve soil health
 - Strengthen local ordinances and enforcement

