Wisconsin's Nutrient Reduction Strategy for Water Quality

Wisconsin Crop Management Conference
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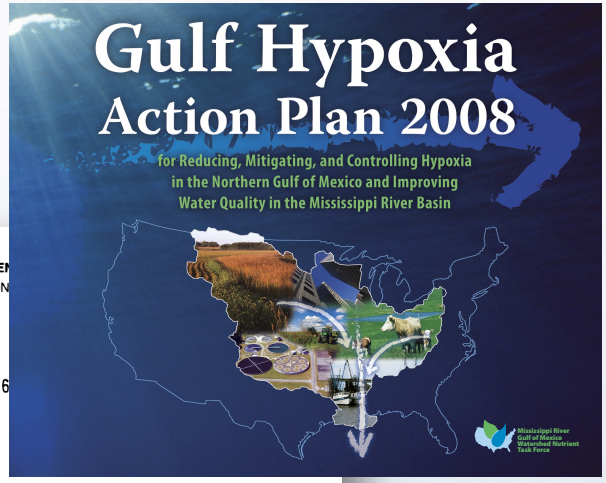
[thanks to staff at WDNR and UWEX for slides and images used in this presentation]

Developed in response to:

- EPA's March 2011 memo from Nancy Stoner
- Gulf Hypoxia Action Plan 2008
- Great Lakes Water Quality Agreement of 2012
- Nutrient related water quality problems in Wisconsin's lakes, streams and groundwater



UNITED STATES ENVIRONMEN
WASHINGTON

MAR 1 6

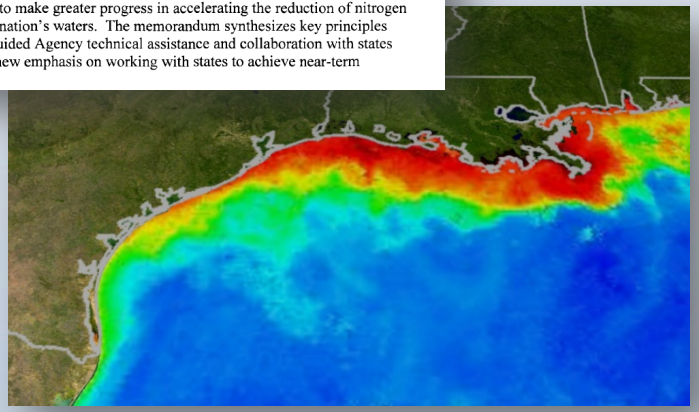
MEMORANDUM

SUBJECT: Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions

FROM: Nancy K. Stoner
Acting Assistant Administrator

TO: Regional Administrators, Regions 1-10

This memorandum reaffirms EPA's commitment to partnering with states and collaborating with stakeholders to make greater progress in accelerating the reduction of nitrogen and phosphorus loadings to our nation's waters. The memorandum synthesizes key principles that are guiding and that have guided Agency technical assistance and collaboration with states and urges the Regions to place new emphasis on working with states to achieve near-term reductions in nutrient loadings.



Effective Nutrient Reduction

- "…the best approaches will entail States, federal agencies, conservation districts, private landowners and other stakeholders **working collaboratively** to develop **watershed-scale** plans **that target** the most effective practices to the acres that need it most."

- "The key elements to success in BMP implementation continue to be sound watershed and on-farm conservation planning, sound technical assistance, **appropriate and targeted** financial assistance and effective monitoring."

USEPA Memorandum, March 2011, "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions."

Wisconsin's Strategy

Build on existing federal, state and local programs

- new phosphorus rules and regulations adopted in 2010;
- point source phosphorus discharge limits in place since 1993 or earlier; and
- programs on-going for 30 years

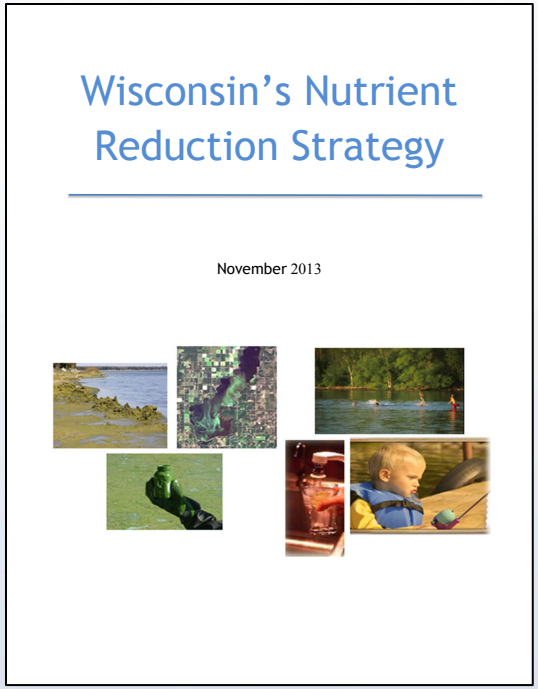
Identify and fill program gaps

Enhance coordination

Not proposing new rules or regulations

Schedule

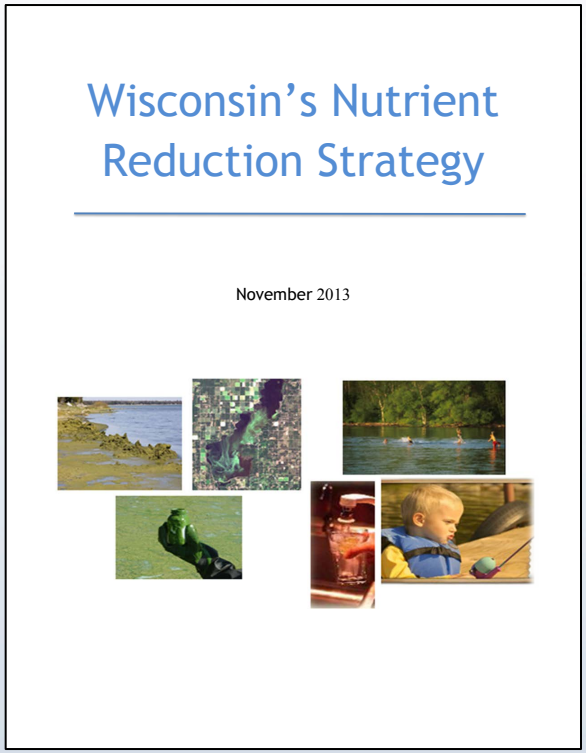
- Sept 2012 – Multi-agency kick-off and stakeholder meetings
- Sept 2012 to March 2013 – multi-agency work groups and periodic stakeholder webinars
- May 2013 – Multi-agency review meeting
- August 2013 – release of draft for public review
- Sept 2013 – Stakeholder meeting and presentations to ATCP and NR Boards
- Nov 2013 – submitted to EPA



Strategy document

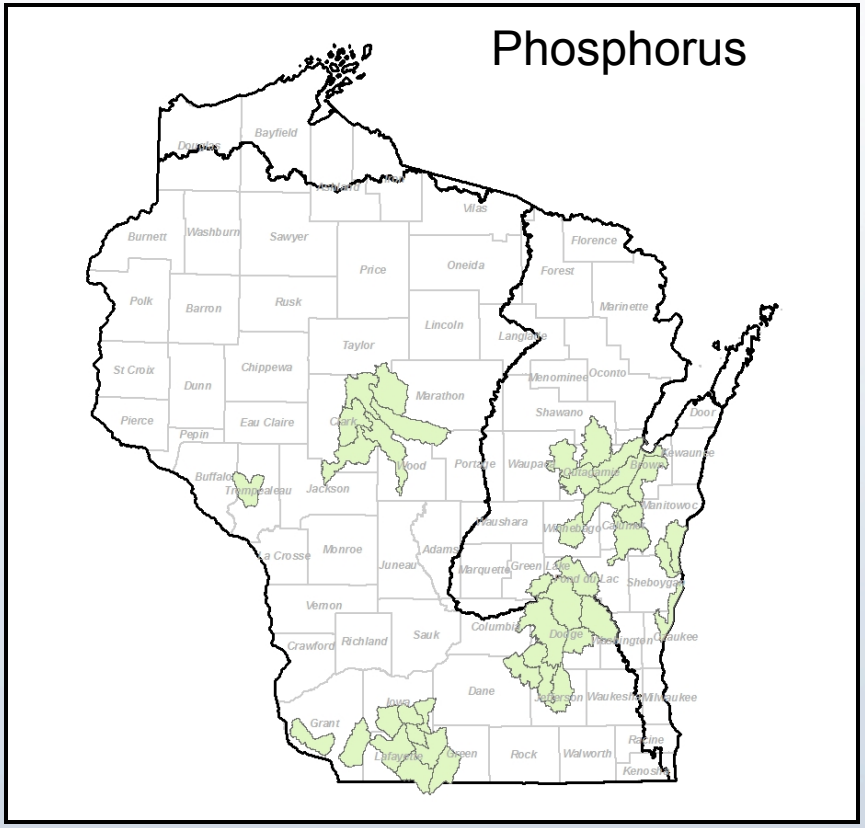
- Executive Summary – 14 pages
- Main Document
  1. Targeting/Priority Setting
  2. Nutrient Reduction Targets
  3. Point Source Permits
  4. Agricultural Nonpoint Nutrients
  5. Integrating Point and Nonpoint
  6. Storm Water, Septic Systems, other
  7. Accountability and Verification
  8. Water Quality Monitoring
  9. Reporting
  10. Numeric Water Quality Criteria

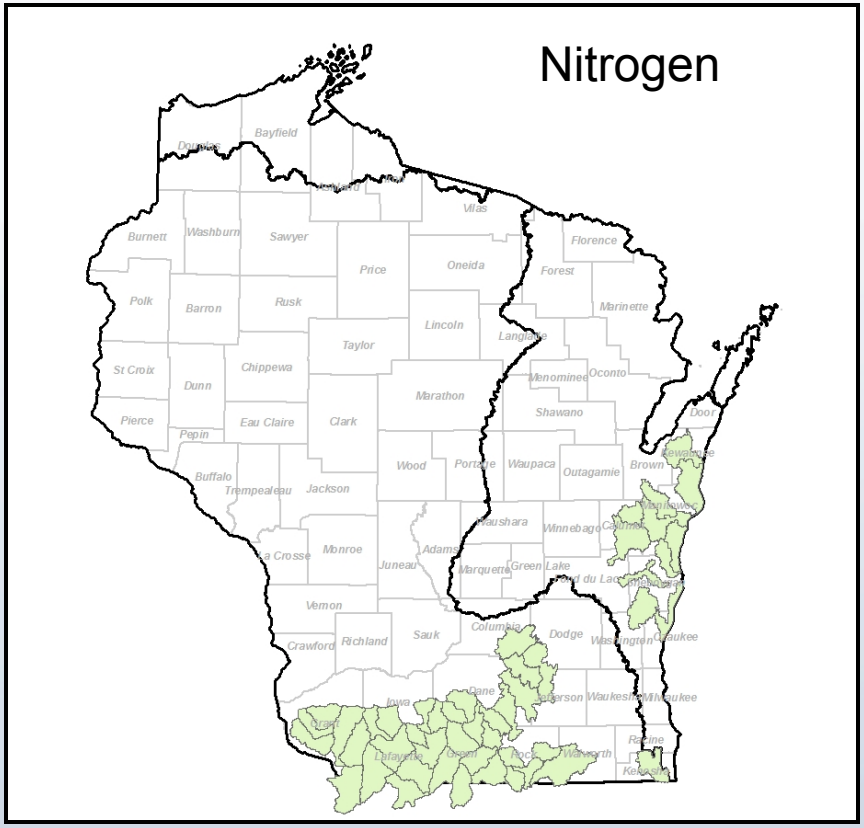
  Appendices



Available: http://dnr.wi.gov/topic/SurfaceWater/nutrientstrategy.html

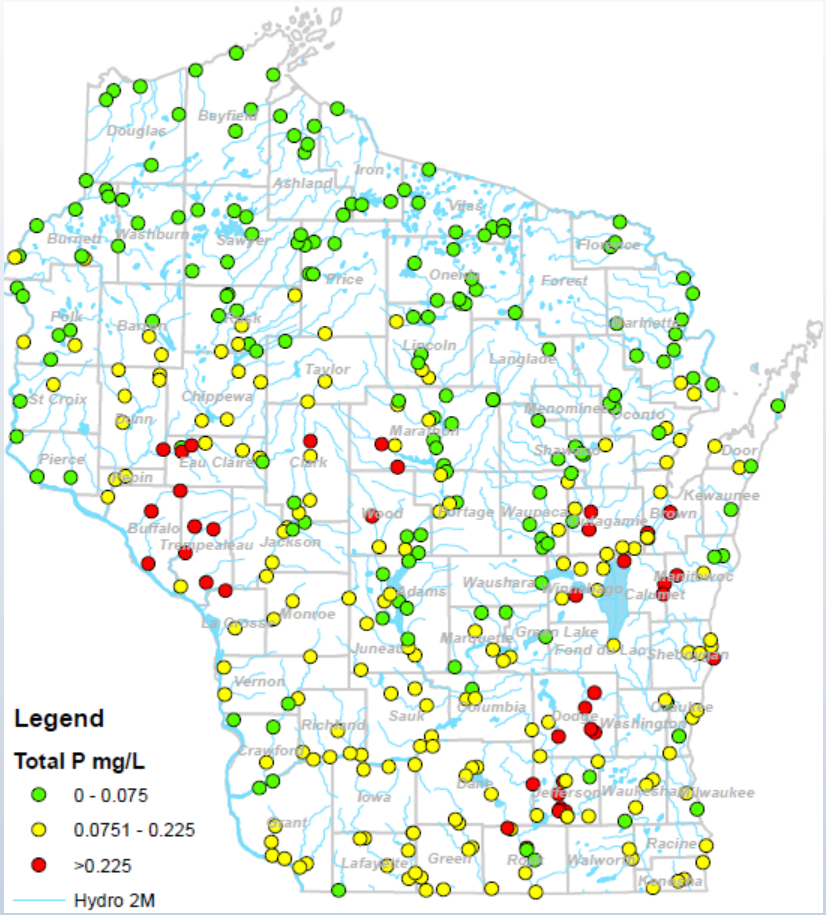
Priority Setting/Targeting: Top Group Watersheds



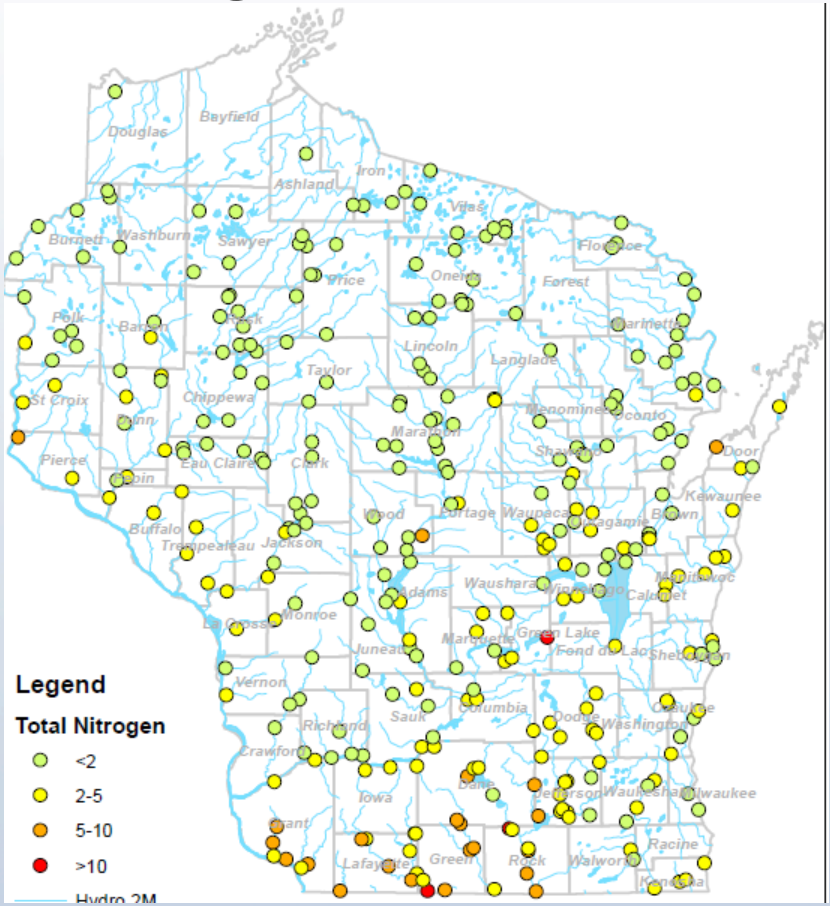


Status

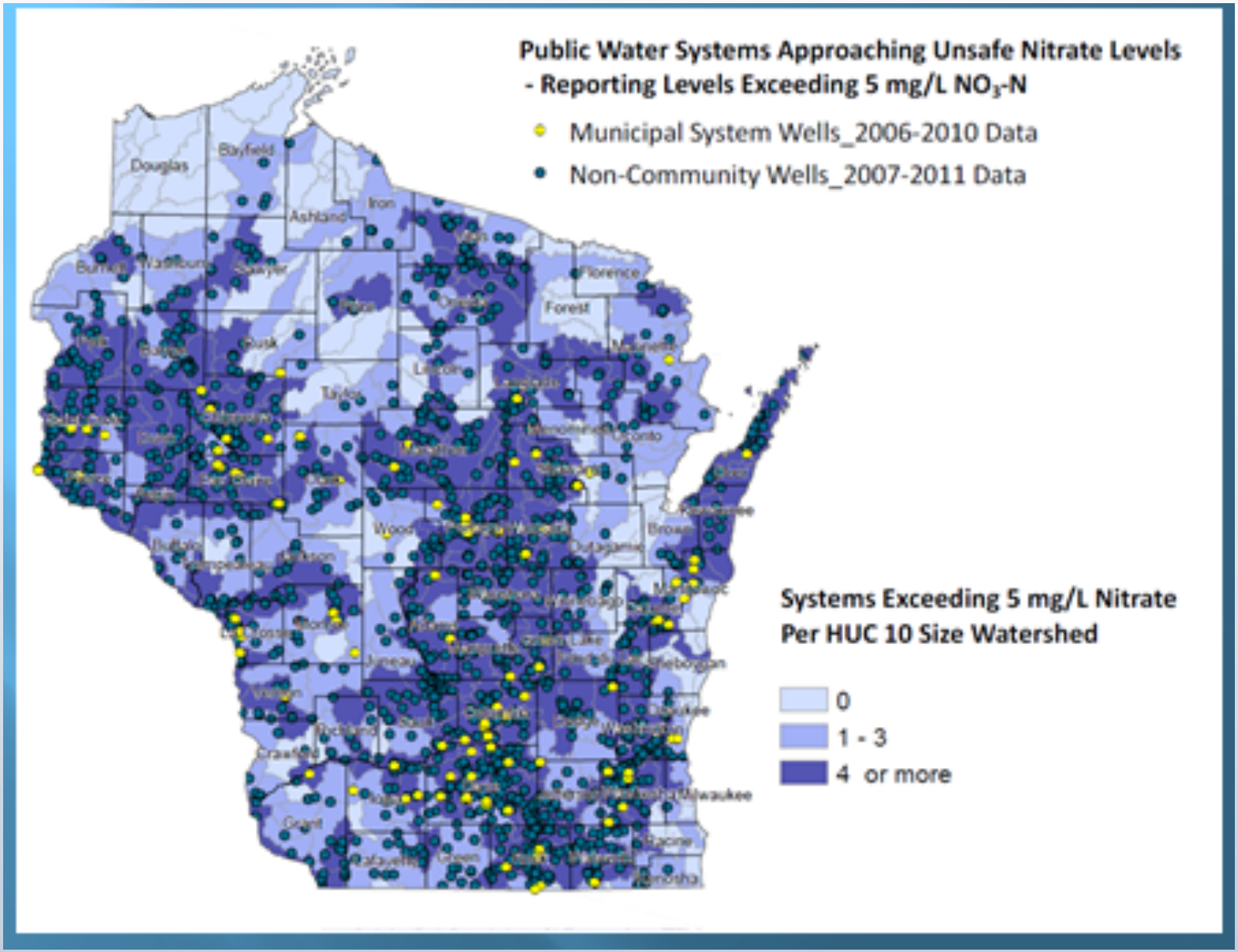
Phosphorus in streams



Nitrogen in streams

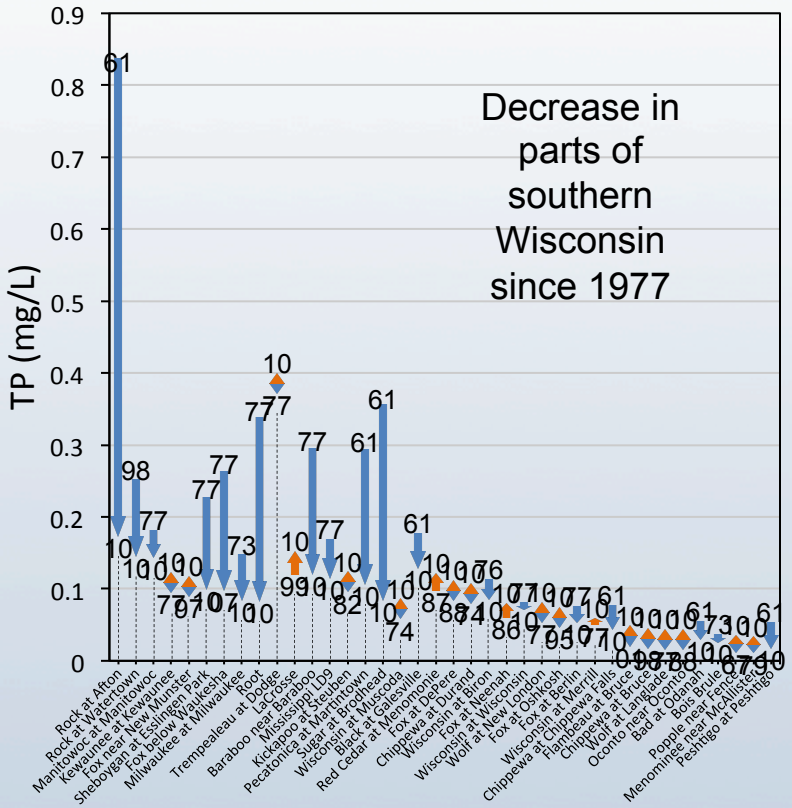


Status

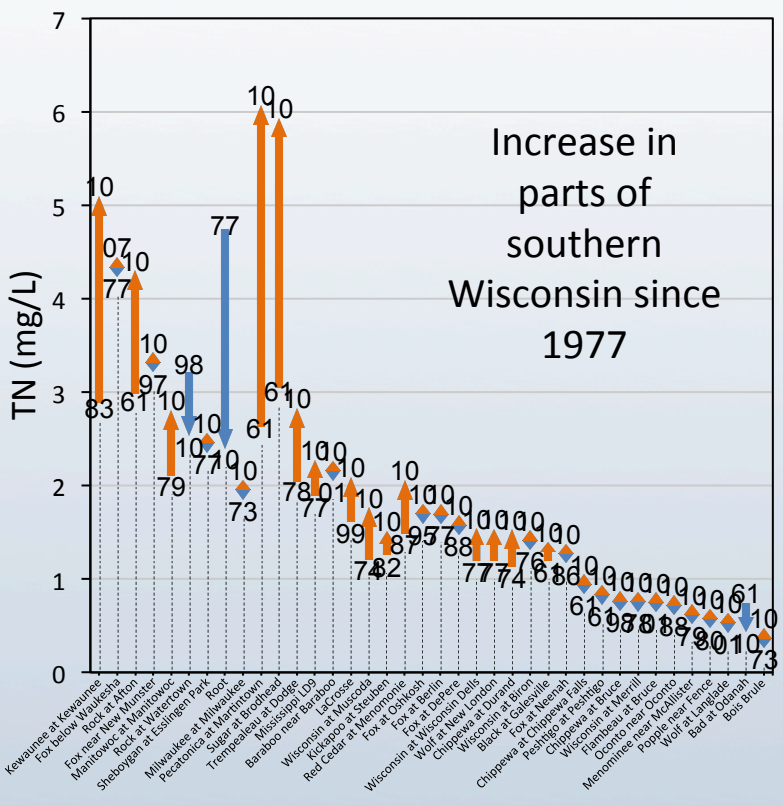

Public Water Systems Approaching Unsafe Nitrate Levels
- Reporting Levels Exceeding 5 mg/L NO_3-N
Municipal System Wells_2006-2010 Data
Non-Community Wells_2007-2011 Data
Systems Exceeding 5 mg/L Nitrate
Per HUC 10 Size Watershed
0
1 - 3
4 or more
Douglas
Bayfield
Ashland
Iron
Florence
Forest
Oneida
Vilas
Price
Taylor
Lincoln
Marathon
Wood
Portage
Waupaca
Outagamie
Brown
Door
Kewaunee
Manitowoc
Sheboygan
Ozaukee
Washington
Milwaukee
Racine
Kenosha
Walworth
Rock
Green
Grant
Crawford
Vernon
Monroe
Juneau
Adams
Waushara
Green Lake
Fond du Lac
Dodge
Jefferson
Columbia
Dane
Iowa
Richland
Sauk
Lafayette
Buffalo
Pepin
Pierce
Polk
Burnett
Washburn
Sawyer
Rusk
Barron
Chippewa
Eau Claire
Dunn
St. Croix

Trends

Phosphorus

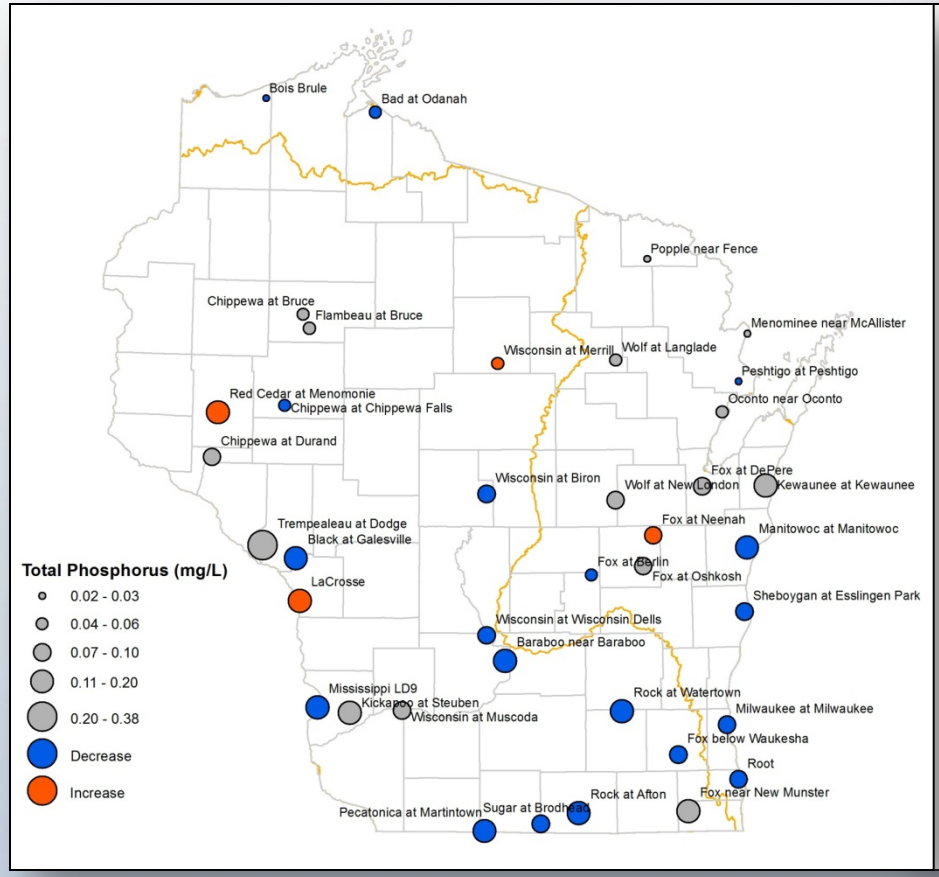


Nitrogen

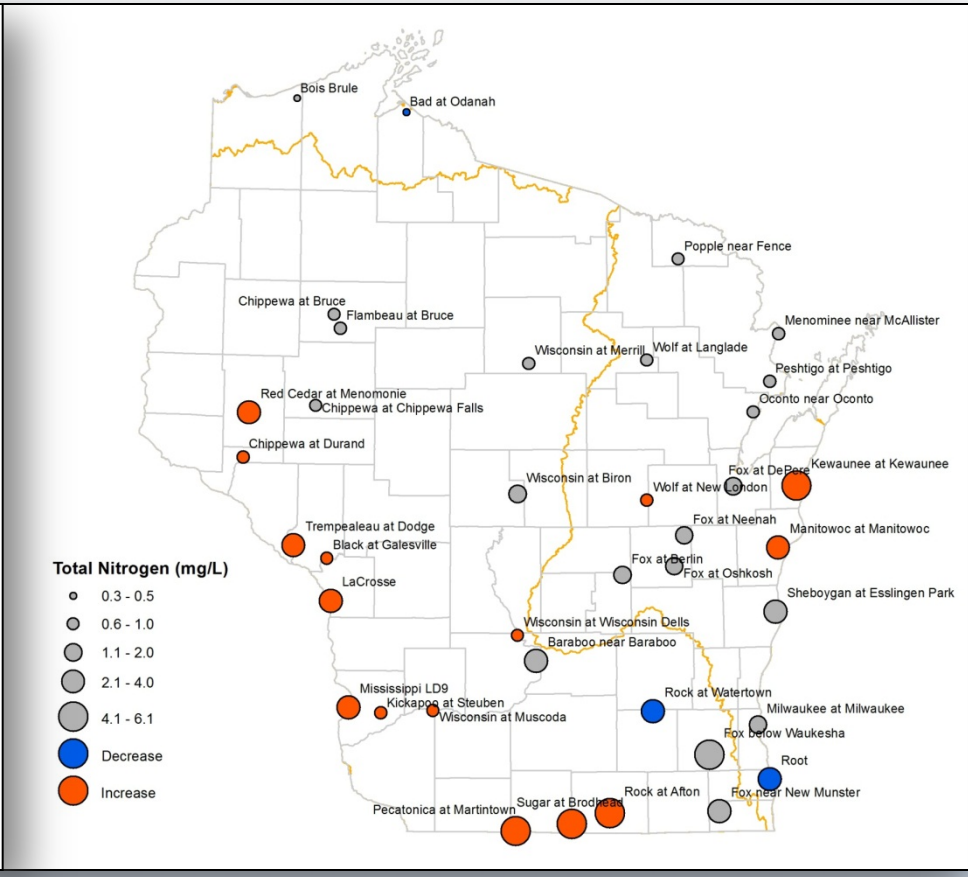


Trends

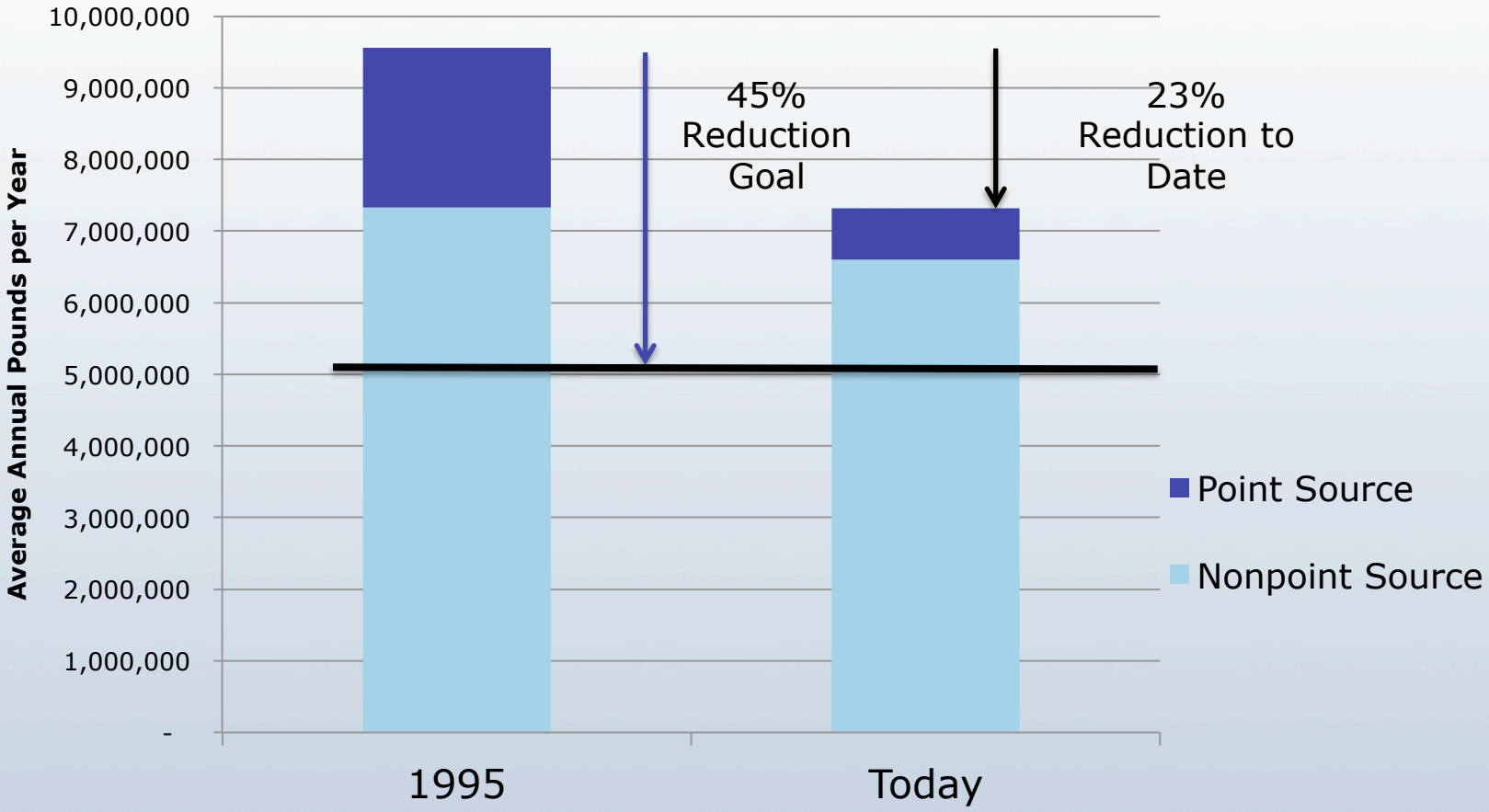
Phosphorus



Nitrogen

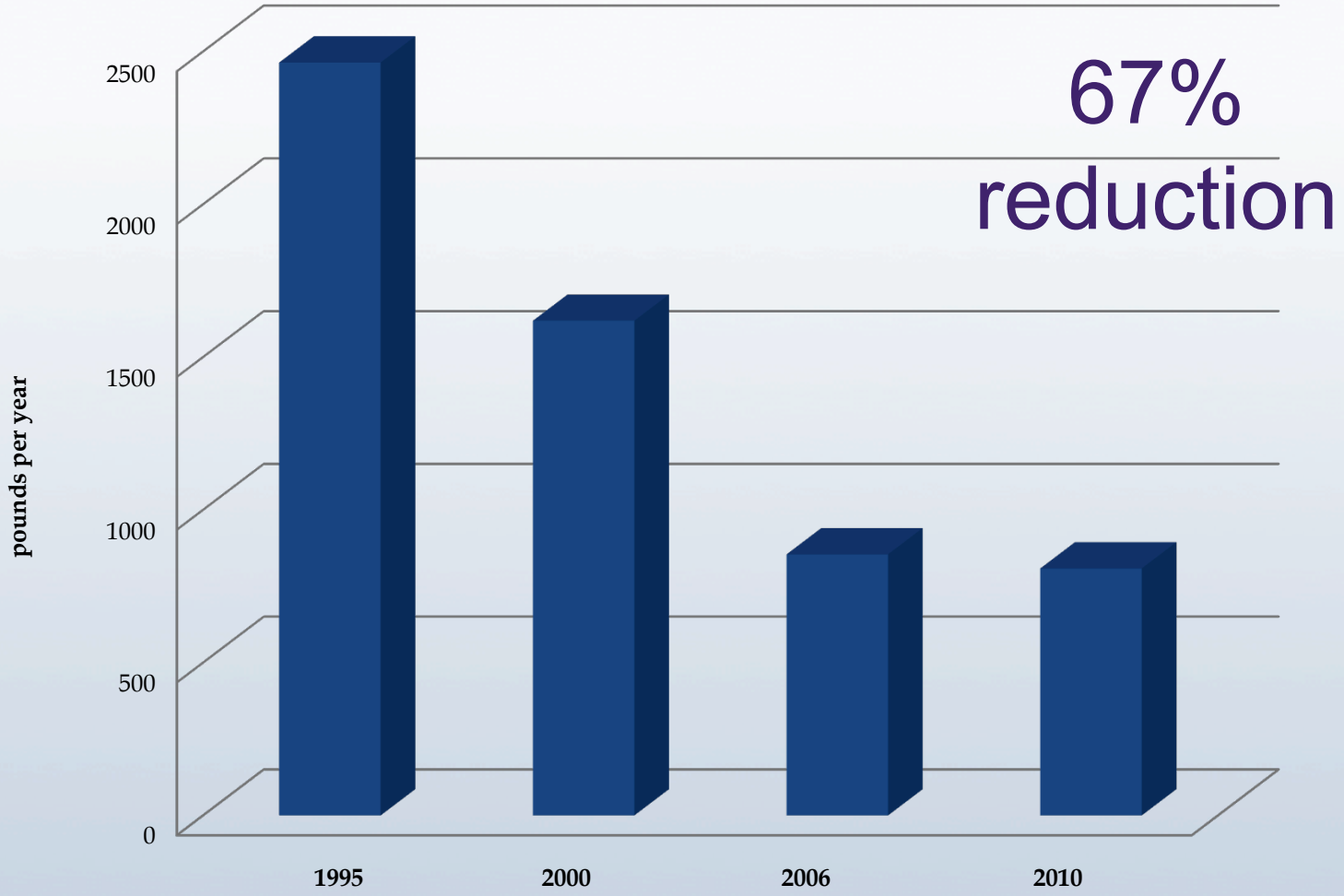


45% Reduction Phosphorus – Mississippi River Basin: Progress



45% Goal? → achievable with existing programs, continuing implementation

Point Source Phosphorus Discharges -- Mississippi River Basin



54% reduction in Lake Michigan Basin

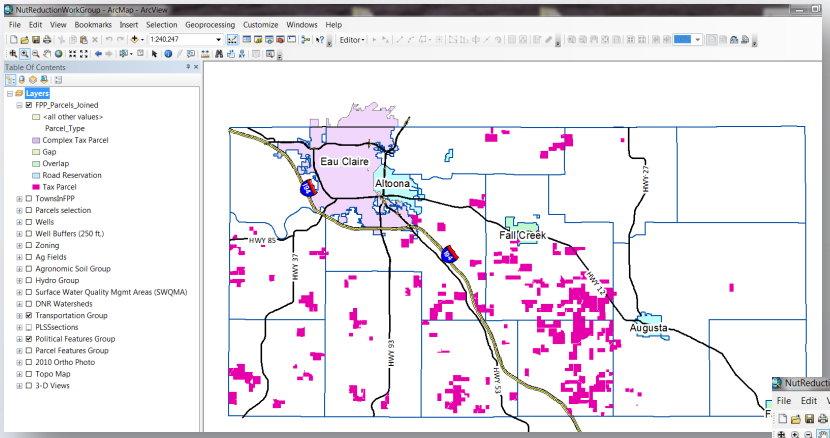
Agricultural Nonpoint Sources

- Federal, state and local programs
  - Natural Resources Conservation Service (NRCS)
  - Farm Service Agency (FSA)
  - Dept. Agr. Trade Cons. Protection (DATCP)
  - Dept. Natural Resources (DNR), (incl. EPA 319 grants)
  - University of Wisconsin (UW) and Extension (UWEX)
  - Counties
- Over $50 million available in 2013

Tracking/Accountability

- System in place to track wastewater discharge phosphorus contributions
- No statewide system in place to track agricultural nonpoint source phosphorus contributions
  - Lack baseline
  - Lack good system of best management practice installation/maintenance
  - Lack means to translate BMP installation to load reductions
- Working on options for agricultural nonpoint source tracking

Examples



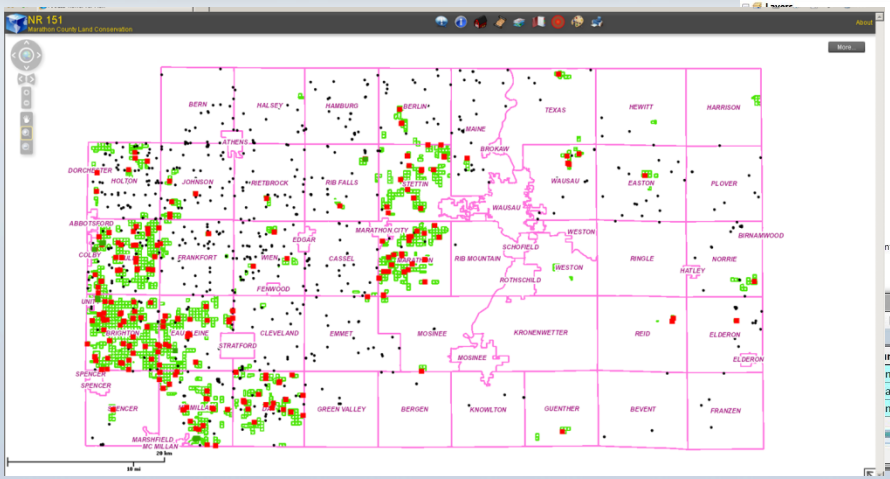
Reporting Tables for *LEVEL A*

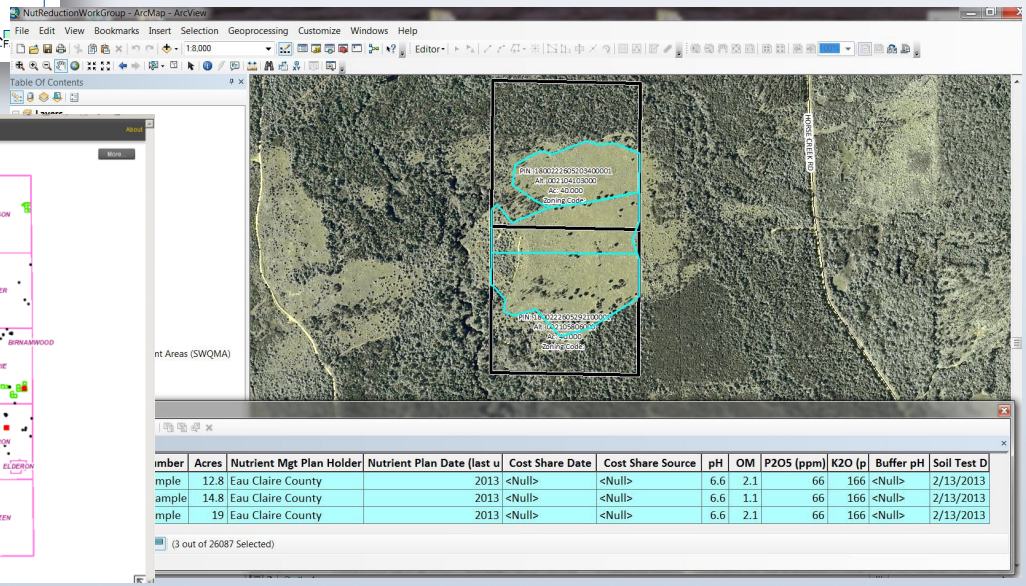
Table 1. County Farm Compliance Status Summary: Cropland Standards*

County Name: Marathon | County Code: 73

Cumulative Compliance Reporting Through 2/25/2013

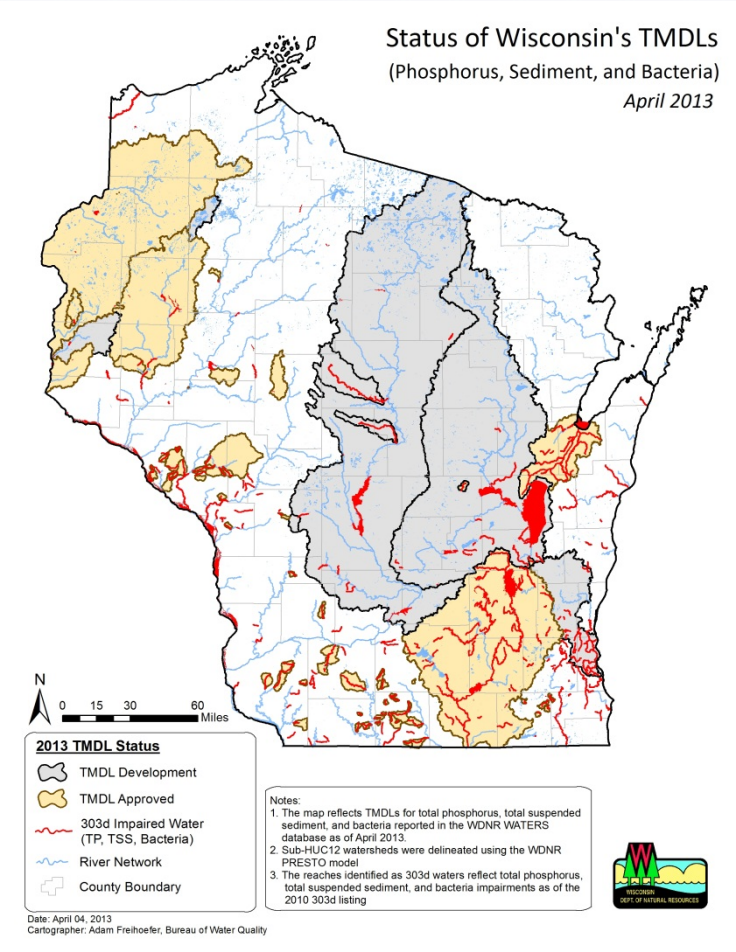
Watershed Code	Full Compliance (Parcels)	No Compliance(Parcels)	Total (Parcels)
040302021001	14	0	14
070700020602	7	0	7
070700020805	2	0	2
070700020901	18	2	20
070700020902	64	23	87
070700021001	19	0	19
070700021002	6	4	10
070700021003	105	46	151
070700021103	6	0	6
070700021205	1	0	1
070700021302	22	0	22
070700021303	4	0	4
070700021304	0	5	5
070700021501	25	4	29
070700021502	17	0	17
070700021503	77	5	82
070700021504	197	18	215
070700021505	82	1	83





mber	Acres	Nutrient Mgt Plan Holder	Nutrient Plan Date (last u	Cost Share Date	Cost Share Source	pH	OM	P2O5 (ppm)	K2O (p	Buffer pH	Soil Test D
mple	12.8	Eau Claire County	2013	<Null>	<Null>	6.6	2.1	66	166	<Null>	2/13/2013
ample	14.8	Eau Claire County	2013	<Null>	<Null>	6.6	1.1	66	166	<Null>	2/13/2013
mple	19	Eau Claire County	2013	<Null>	<Null>	6.6	2.1	66	166	<Null>	2/13/2013

Strategy Emphasis: Integrating Point Source and Nonpoint Source



- TMDLs
- PRESTO analysis of point source and nonpoint source contributions at 652 sites
- Options for integration through Point Source permits

Point Source Permits

WPDES Programs in place for phosphorus:

- Wastewater facilities –
  - technology and water quality based limits
    - Since 1993: 1.0 mg/L; average ~ 0.5mg/L
    - New: Rivers 0.1 mg/L; Streams 0.075 mg/L; Reservoirs 0.03-0.04 mg/L; Lakes…0.015-0.04 mg/L
  - Enhancing nitrogen monitoring
- CAFO permits
- MS4 permits

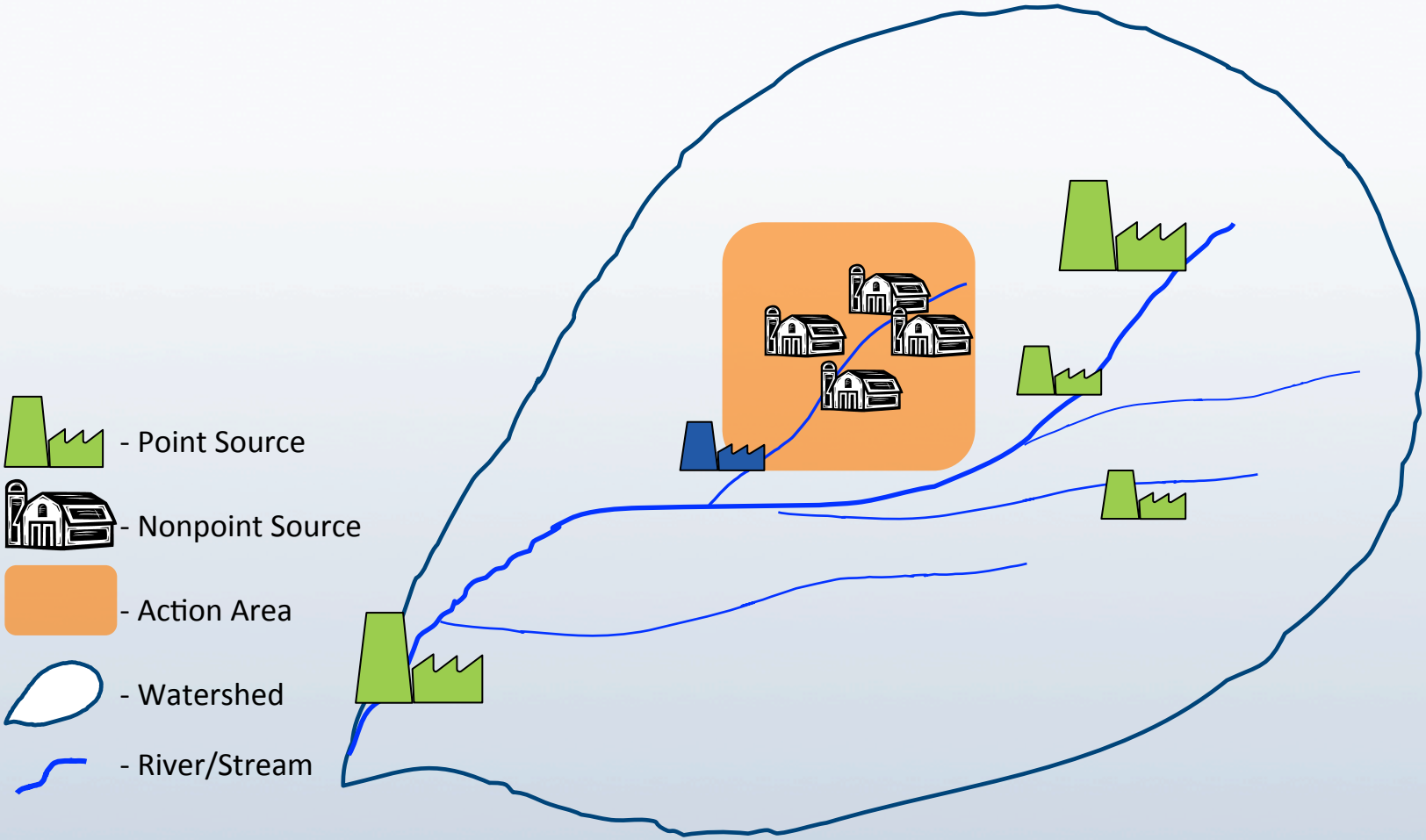
Options for Point Source permit holders to meet water quality critera

- Facility upgrades (brick and mortar projects)
  - Often expensive – approaching **$500 million** or more to upgrade facilities in Lower Fox
- Watershed Approaches:
  - Water quality trading (WQT)
  - Adaptive management option (AMO)

Watershed Approaches

- Driven by WPDES dischargers
- Pay for reductions elsewhere in the watershed in order to save money on costly upgrades at treatment facility.
- Water Quality Trading:
  - *Discharge/end of pipe*
  - reduction accomplished by buying "credits" from other watershed sources
- Adaptive Management Option:
  - *in-stream standards* at discharge point
  - met by reducing phosphorus in the watershed

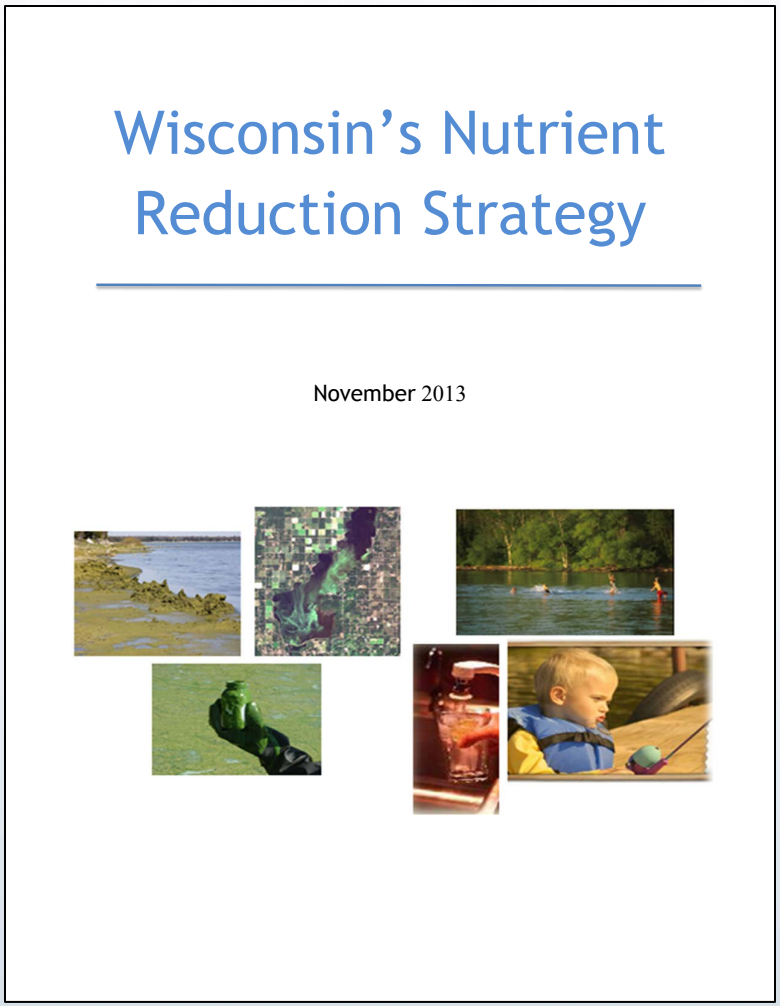
Watershed Approach



More information: search dnr.wi.gov for “adaptive management” or “trading”

Moving Forward

- Multiple discussions of Phosphorus Implementation
  - Tracking, brokering, etc. associated with Trading, AMO
- Nitrogen Science Summit and Roundtable Series
  - Focus: N in Wisconsin's soil, surface water, groundwater, and air – what we know, don't know, and uncertainties
  - Kick-off Summit – March 28, 2014 – UW-Madison
  - 'Roundtable' meetings in 2014-2015
- Annual meeting and updates for Nutrient Reduction Strategy



Strategy Document: http://dnr.wi.gov/topic/SurfaceWater/nutrientstrategy.html

Watershed approaches: search dnr.wi.gov for "adaptive management" or "trading"