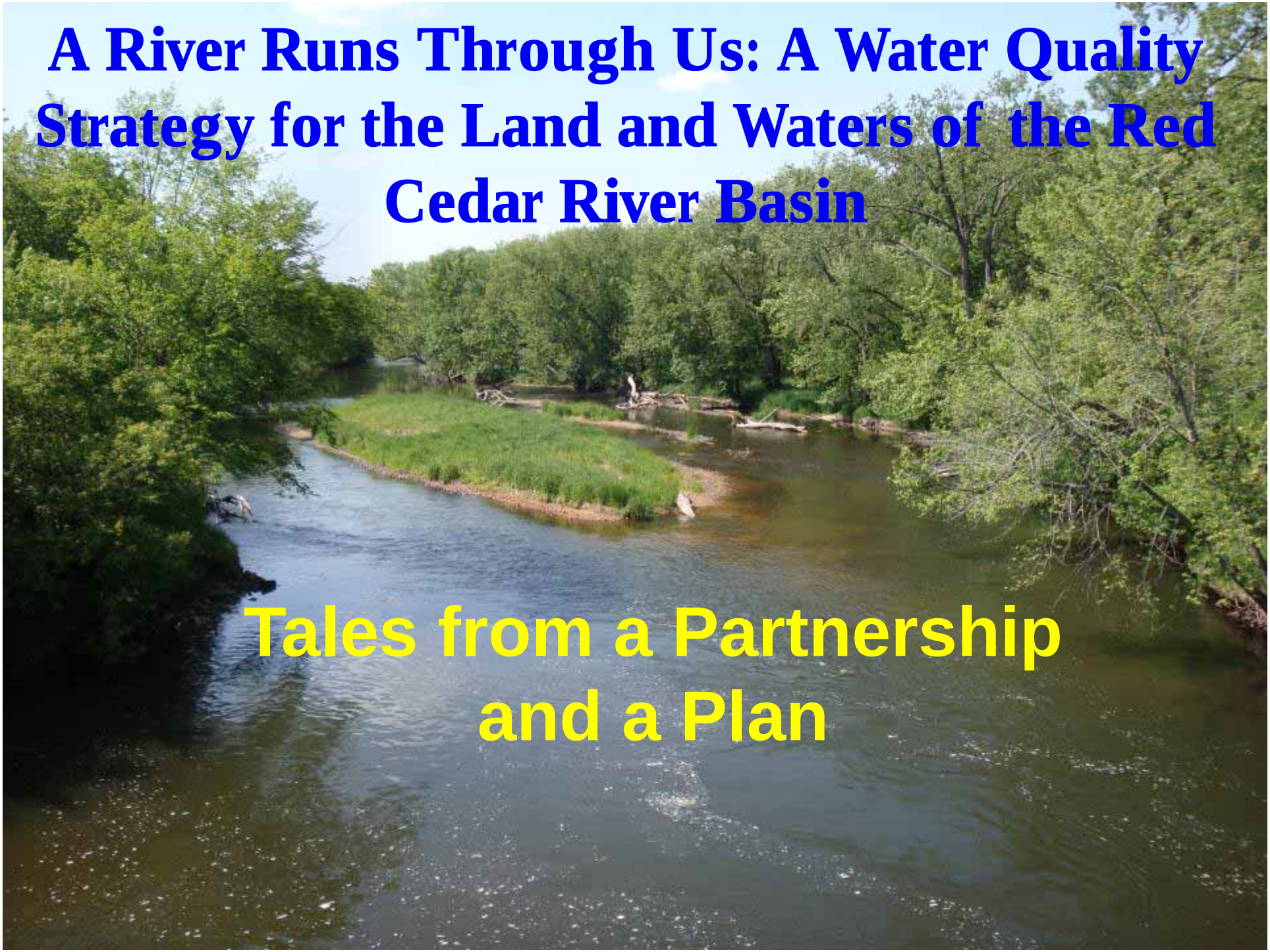
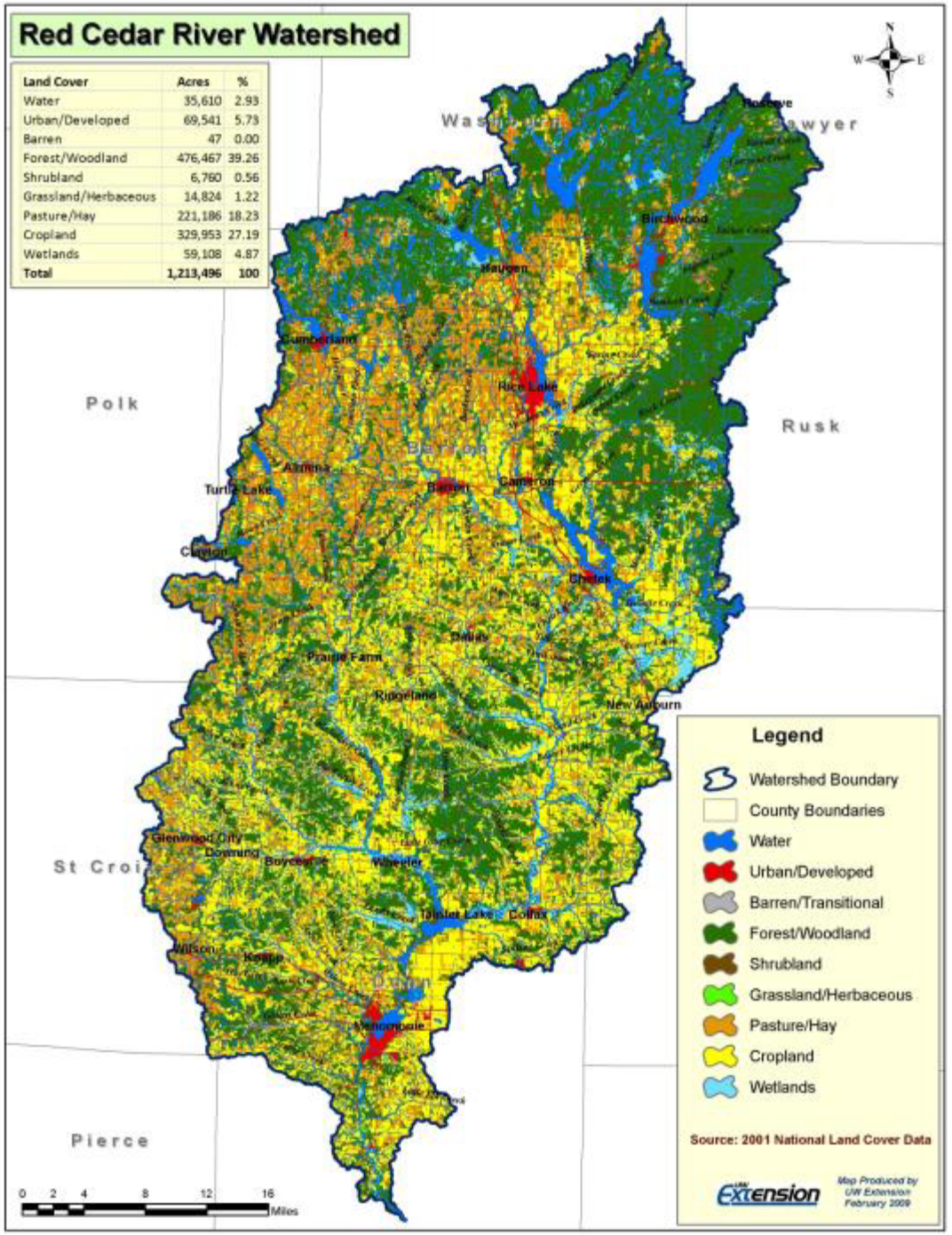

A River Runs Through Us: A Water Quality Strategy for the Land and Waters of the Red Cedar River Basin
Tales from a Partnership and a Plan

- **The Red Cedar River Watershed covers most of Barron and Dunn Counties, and parts of several others.**

- **1,900 square miles**

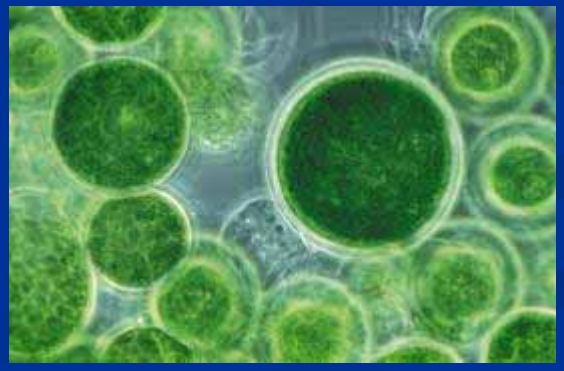
- **Historically forest, now mostly agricultural land uses.**

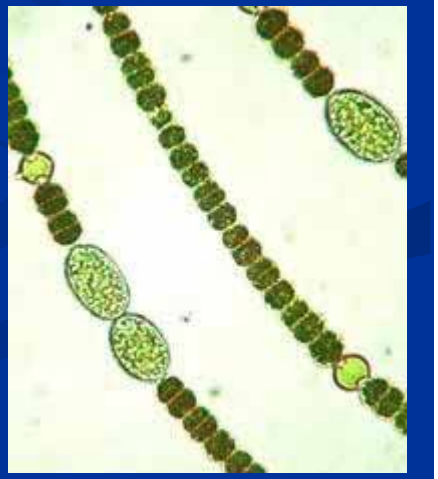


What's All That Green Stuff?

- Algae, cyanobacteria (blue-green algae)
- Photosynthetic organisms that, just like plants, need nitrogen and phosphorus to function
- Is naturally in our waters, but too much nitrogen and phosphorous cause algae to increase dramatically – known as an algal "bloom"

WDNR





www.lernz.co.nz

How is Phosphorus Getting In The Water?

- **Many Sources**
  - Farm fields
  - Lawns & Yards
  - City streets
  - Failing septic systems
  - Barnyards/Manure
  - Eroding shorelines and banks
  - Point sources

Total Maximum Daily Load (TMDL)

- Amount of pollutant (phosphorus) that a water body can receive and still meet water quality standards
- Also is a research document that describes how this amount was derived, sources of pollutant, and possible solutions
- Lakes Tainter and Menomin and the Red Cedar River listed as “impaired” in 1996
- The TMDL was finally approved in 2012
- Recommends a 65% reduction in P inputs to the lakes

TMDL Recommendations

TMDL Phosphorus Load Allocation for Tainter Lake

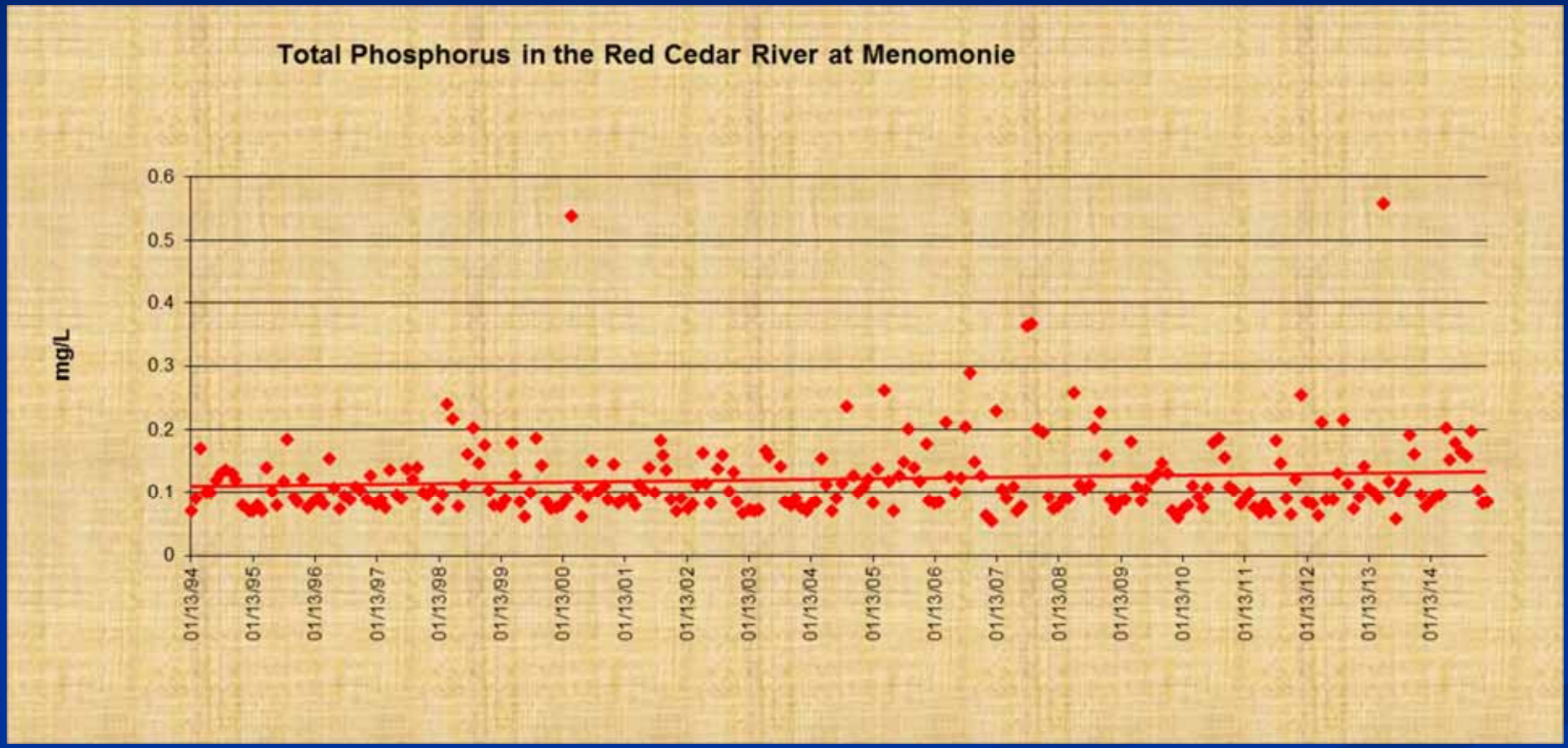
Category	1990/93 Baseline Annual Phosphorus Load (pounds)	Annual Phosphorus Load Allocation (pounds)
Non-Point Sources	463,400	157,400
WPDES Permits	42,900	20,100
Totals	506,300	**177,000**

TMDL Recommendations

TMDL Phosphorus Load Allocation for Lake Menomin

Category	1990/93 Baseline Annual Phosphorus Load (pounds)	Annual Phosphorus Load Allocation (pounds)
Discharge from Tainter Lake at TMDL Goal	319,000	145,300
Non-point Sources (unsewered watershed)	3,500	2,200
Point Sources (Menomonie MS4)	3,500	2,200
General WPDES Permits		10
Totals	326,000	**149,710**

Phosphorus Monitoring



The amount of phosphorus in the Red Cedar River at Menomonie is not going down. (data from DNR WATERS system)

Red Cedar River Water Quality Partnership

- **Began meeting in late 2013**

- **<u>Statement of Identity and Purpose</u> –** ***The Red Cedar River Water Quality Partnership is a Civic Organizing entity that works for the common good of water quality within the Red Cedar River Basin through the practice of Civic Governance; whereby the partners develop the civic imagination, and organize the civic infrastructure needed to produce sustainable water quality, while coordinating the implementation of water quality strategies for the Basin.***

Red Cedar River Water Quality Partnership

- Dunn Co Land Conservation
- Barron Co Land Conservation
- Dunn Co UW-Extension
- Barron Co UW-Extension
- WDNR
- NRCS
- City of Menomonie
- 3M Corporation
- West Wisconsin Land Trust
- UW – Stout
- Tainter/Menomin Lake Improvement Association
- Desair Lake Restoration, Inc.
- Red Cedar Lakes Association
- Big Chetac and Birch Lakes Association
- Chetek Lakes Protection Association
- Farmers Union
- UW-Extension

Red Cedar River Water Quality Implementation Plan

- **Ten Year Plan**
- **Aims for an "interim" goal of 40% reduction of NPS phosphorus inputs (186,000 lbs) to Tainter Lake**
- ***Just approved in January!!*** **Meets federal and state guidelines for watershed planning (US EPA's "Nine Key Elements of a Watershed Plan")**
- **Will make the Red Cedar River watershed more attractive for certain grant funds**

Practices and Projected Load Reductions

BMP	Lbs P reduced
No-Till Farming Practices (60,000 – 86,0000 acres)	63,000
Manure Storage Structures (50)	34,000
Nutrient Management Plans / Practices (86,000 acres)	31,500
Cover Crops (107,000 acres)	18,000
Traditional Conservation Practices (10% of cropland)	11,000
Treatment of Milk House Waste (50)	6,600
Urban Storm Water Control (non-permitted)	5,700
Stream Buffers on Riparian Frontage (10%)	4,700
Barnyard Upgrades (68)	3,800
Replace Failing, Critically-Located Septic (440)	420
Storm Water Control on Rural Properties (2200 lots)	220
Wetland Restorations (200 acres)	210
Past Barnyard Reductions	27,000
Total	**206,150**

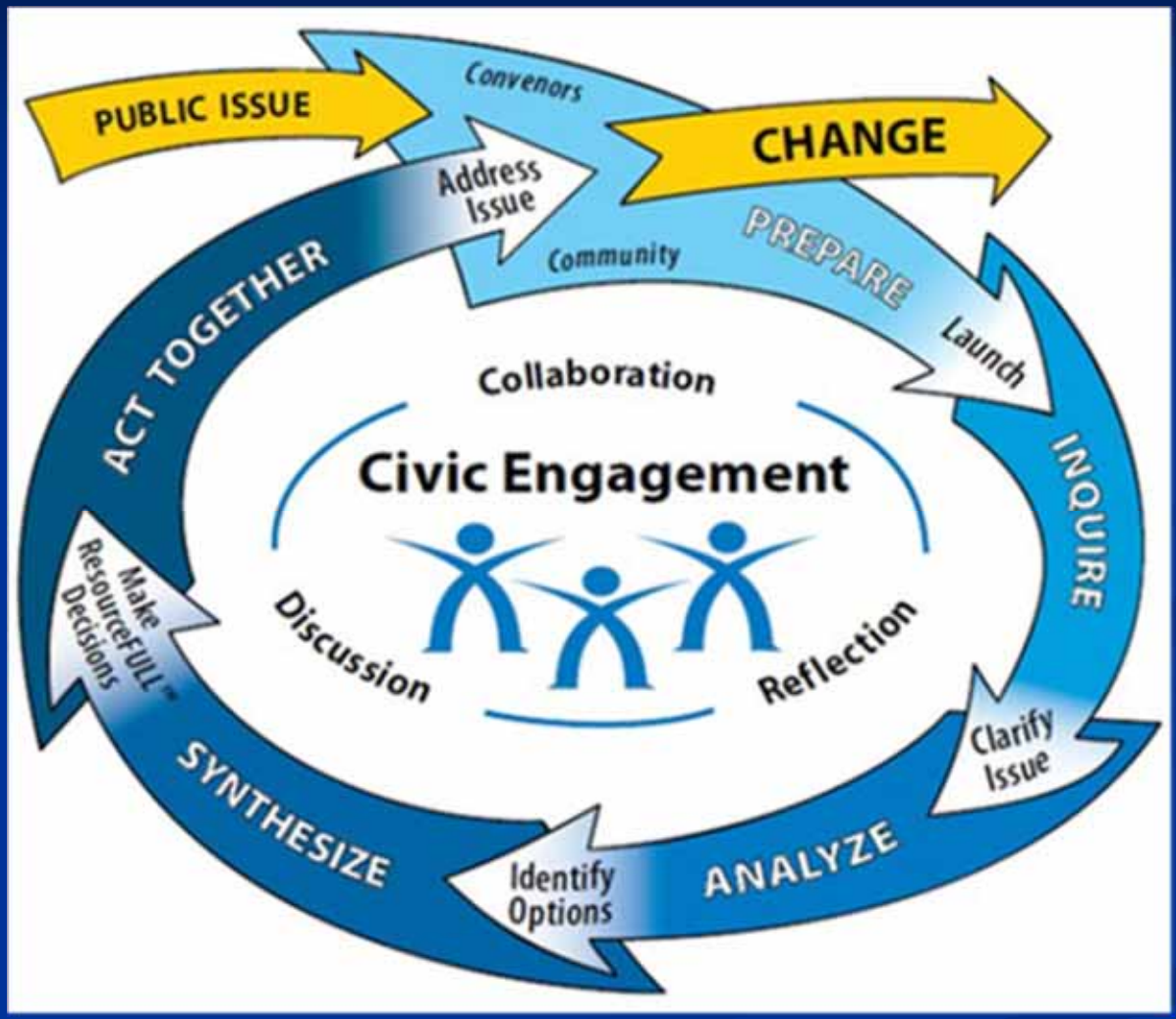
How?

Civic Engagement

and

Civic Governance

Civic Engagement



Authors: Radke, B., Hinz, L., Horntvedt, J., Chazdon, S., Hennen, M.A. and Allen, R.

Civic Governance

- Creating the infrastructure to govern for the common good
- Incorporating feedback from stakeholders in measureable ways, reported in open forums
- Partners take what they learn back to the realms in which they act/interact.

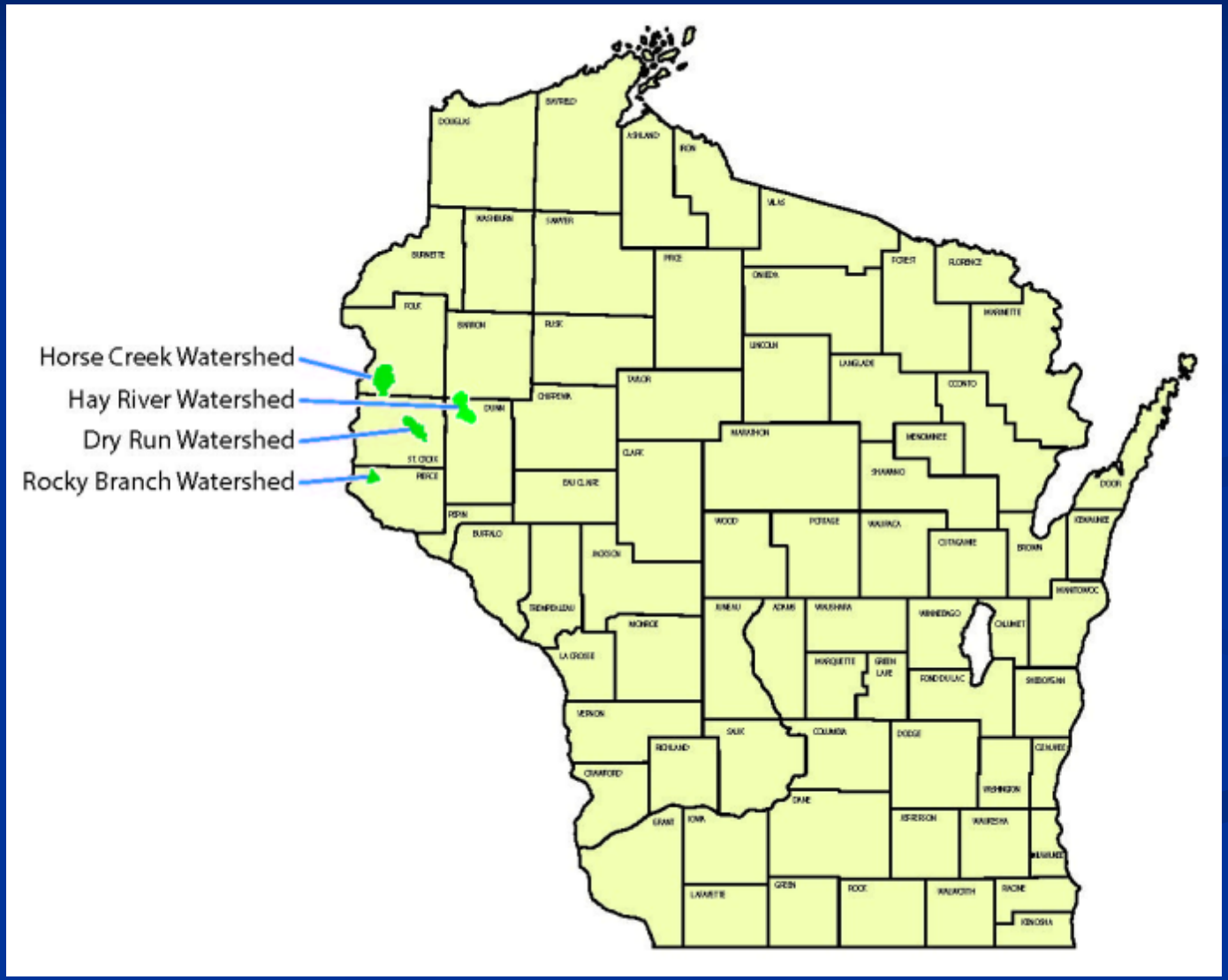
Matt Zoschke

Civic Governance

- Example: Farmer-Led Councils
- 4 Councils already established in NW Wisconsin
- FLC in Hay River watershed in northern Dunn Co
- Project collaboration between the County LCDs, UW-Extension, DNR and Farmers Union
- FLCs developing incentive payments (with money from a McKnight Foundation grant) that pay for certain practices the FLC decides are relevant

Civic Governance

Farmer-Led Councils



Outreach and Education

- **Red Cedar River Conference!**
- **Presentations at various events**
- **Recognition of participants/partners**
- **Plan is available electronically**

http://naturalresources.uwex.edu/redcedar/

Measuring Progress

- **Social science measures – Assessments of current opinions and knowledge**
- **Participation measures – How many people are participating; how many acres; how many BMPs**
- **Water quality measures – Are levels of phosphorus in the river system and lakes changing?**

The Plan in Perpetuity

- Plan is in effect for ten years
- Plan will be reevaluated periodically during that time
- Changes made as necessary
- When ten years expires, it will be time to tackle the remainder of the problem with more sustainable watershed planning and management
- Cleaner rivers and lakes!

Daniel Zerr
Natural Resources Educator
UW-Extension
daniel.zerr@ces.uwex.edu
715-836-5513

UW Extension
University of Wisconsin-Extension

http://naturalresources.uwex.edu/redcedar/