

Adaptive Management



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February 28, 2013



What's the problem?

Green Bay



Petenwell Flowage



Lake Winnebago

Petenwell Flowage



Potential sources of phosphorus

Nonpoint Sources



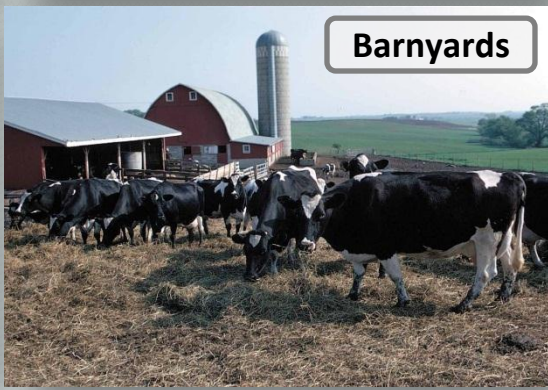
Stormwater



Construction



Agricultural Runoff



Barnyards



Bank Erosion

Point Sources



Industrial Waste



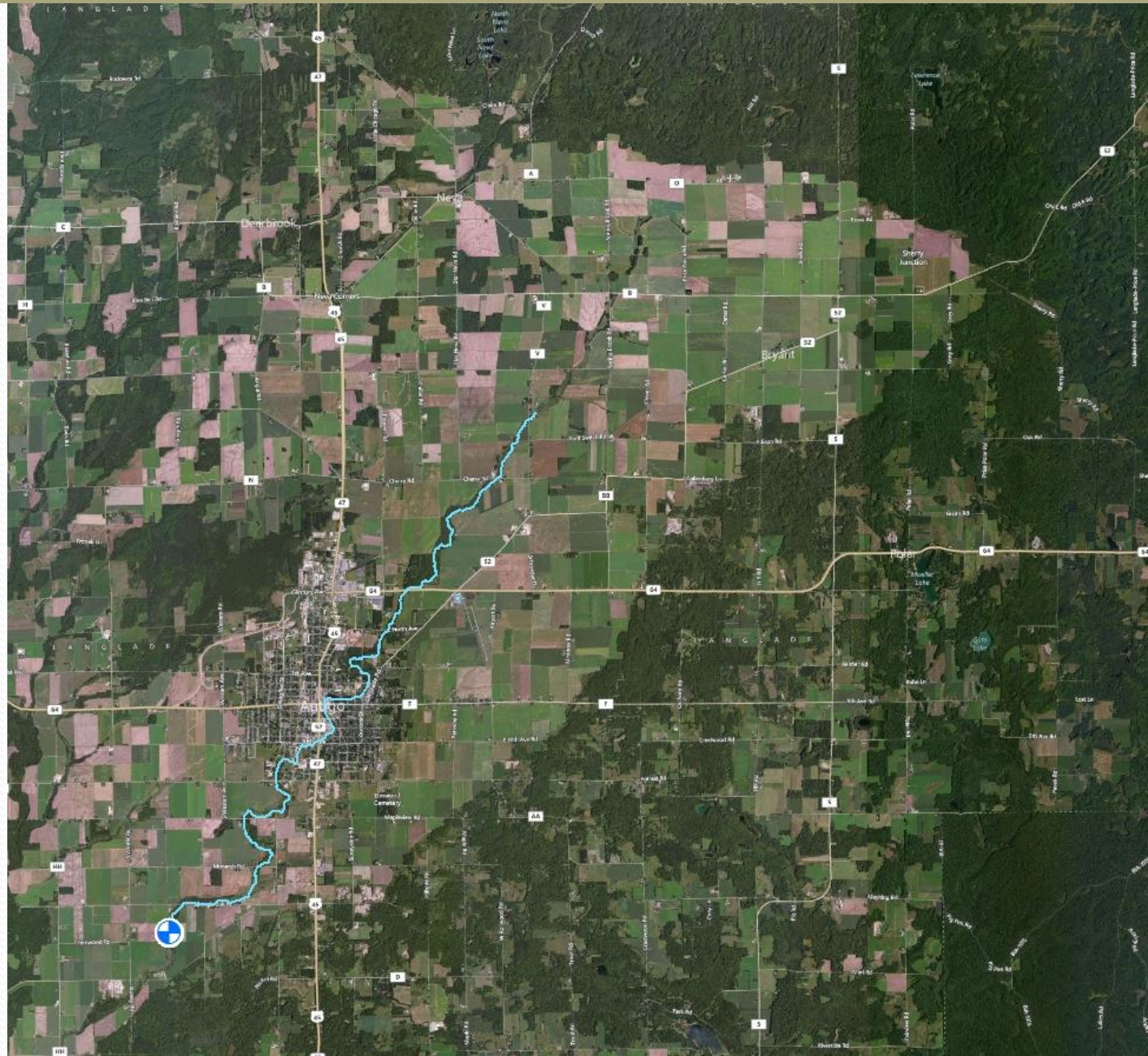
Municipal Waste

Adaptive Management- A New Tool

- Compliance option focusing on water quality improvements
- Allows point sources to work with other sources of phosphorus in the watershed (nonpoint sources, point sources)
- Goal: To reduce overall phosphorus loads so that **water quality criteria** can be attained
- NR 217.18, Wis. Adm. Code

The Adaptive Management Concept

Hypothetical point source with phosphorus WQBEL equal to criteria (0.075 mg/L)

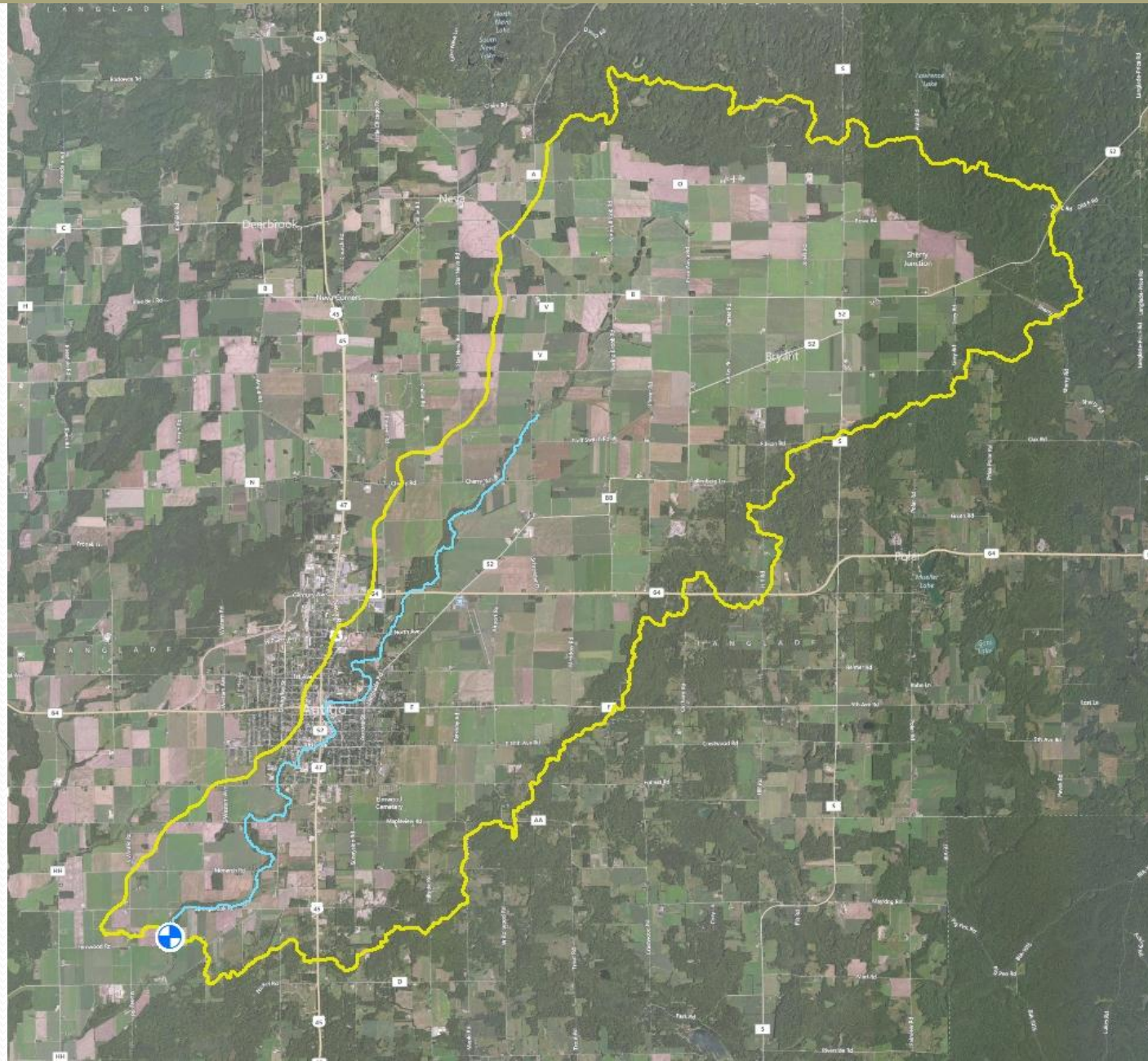


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Step 1: Define the watershed and determine the PS:NPS ratio

- Contributing Area (59 mi²)
- 70% NPS dominated



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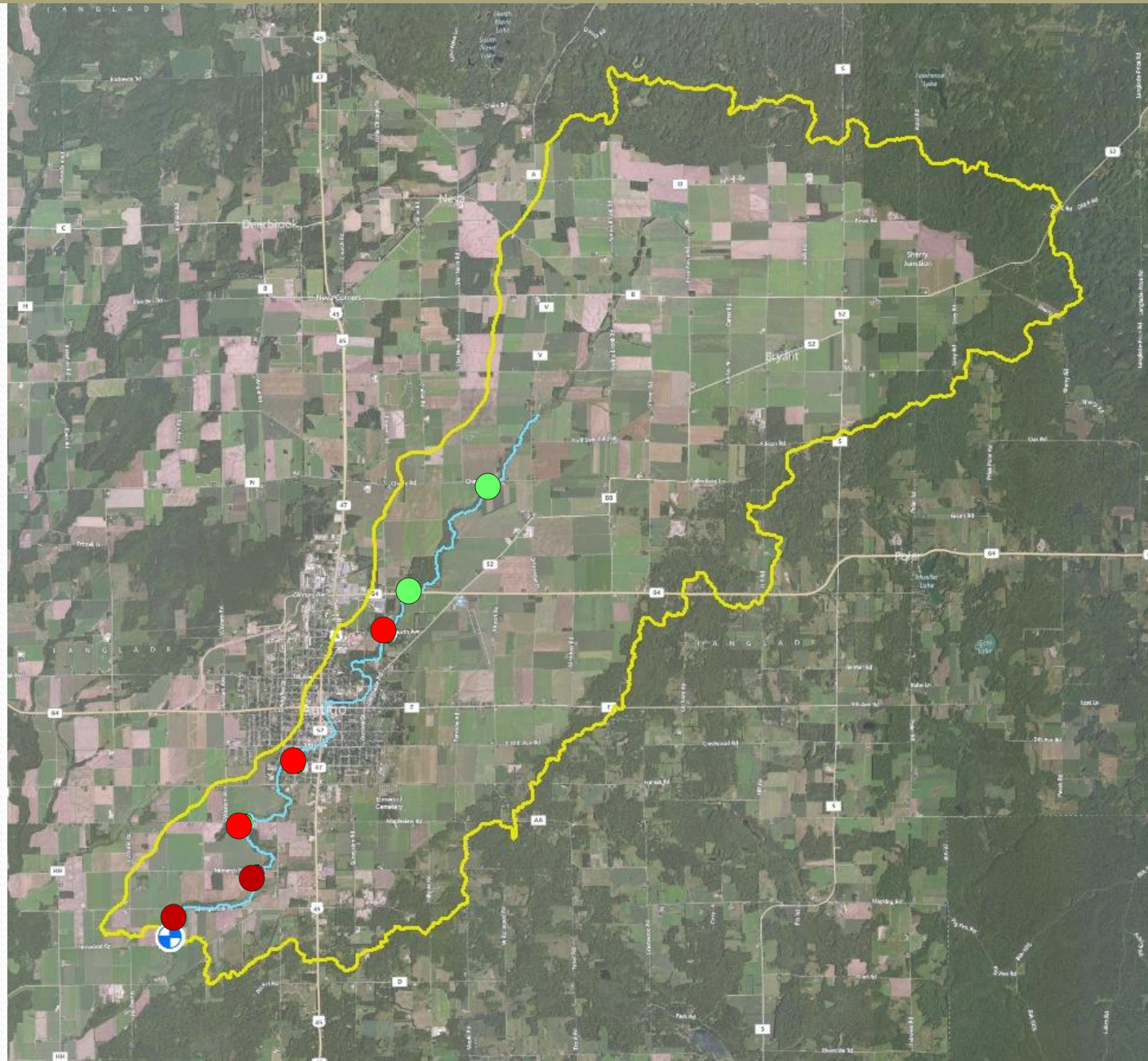
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Step 2: Determine Existing Water Quality Data

TP Median (mg/L)

- 0.041 - 0.075
- 0.076 - 0.100
- 0.101 - 0.235



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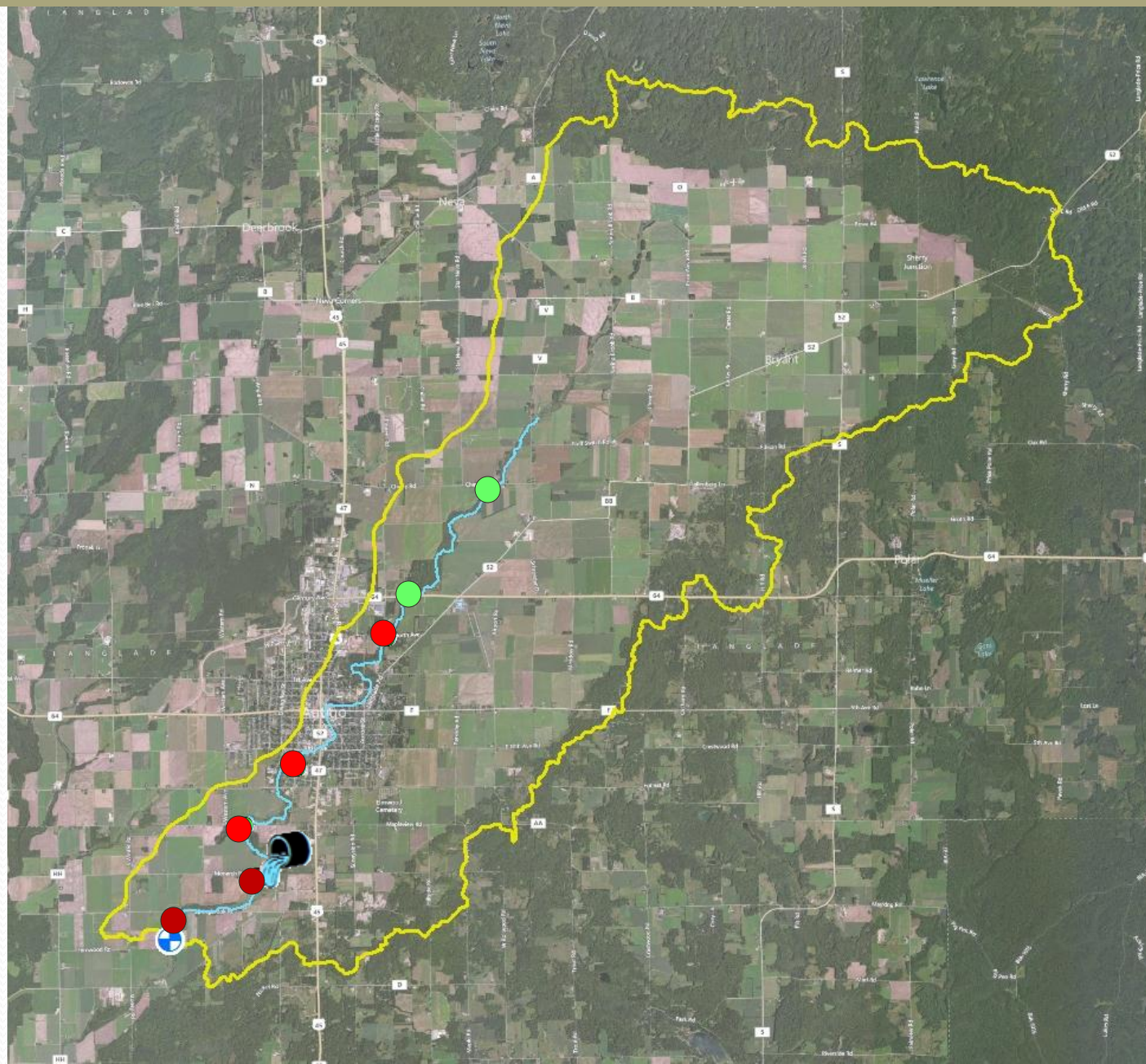
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- Point Sources



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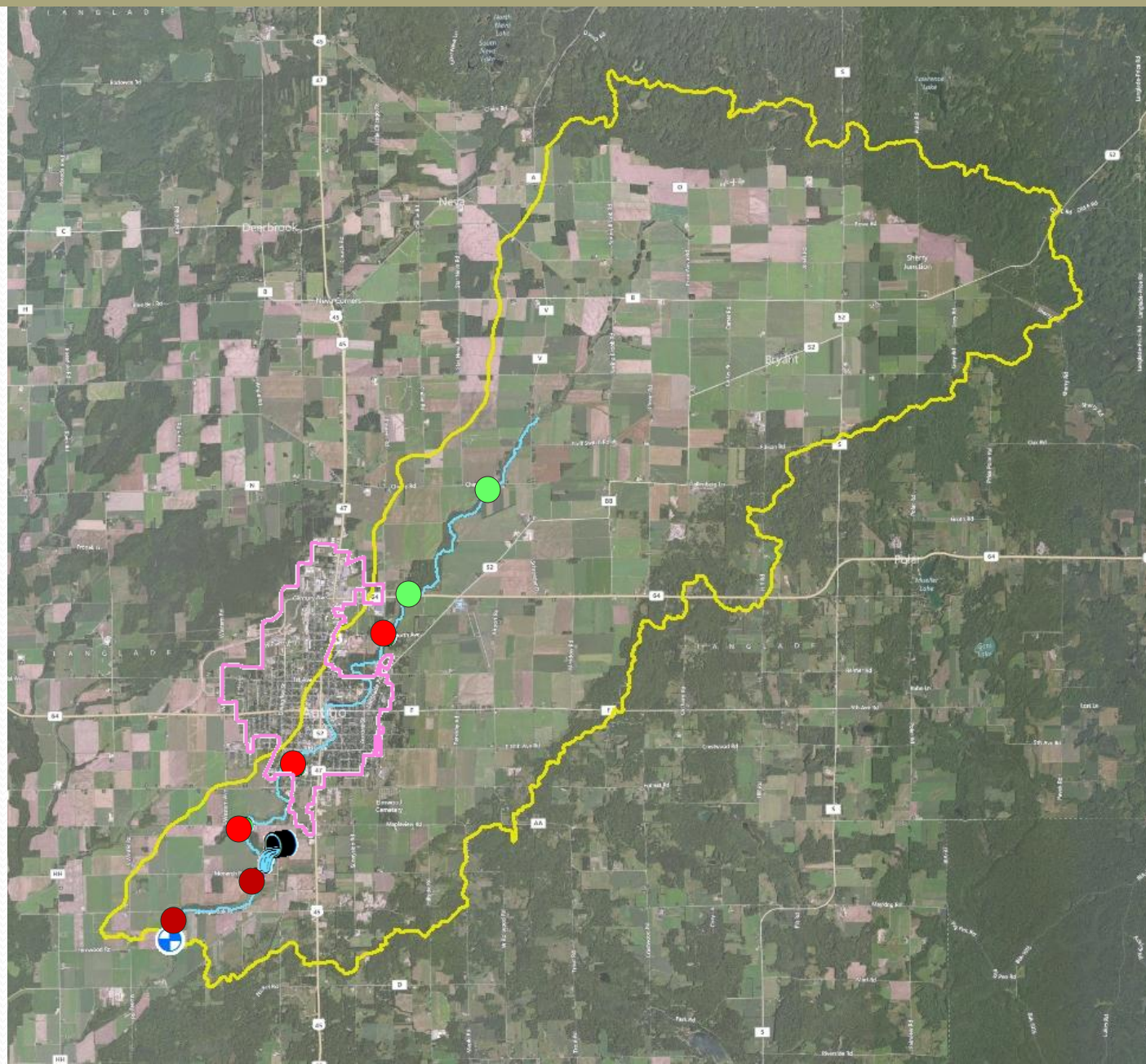
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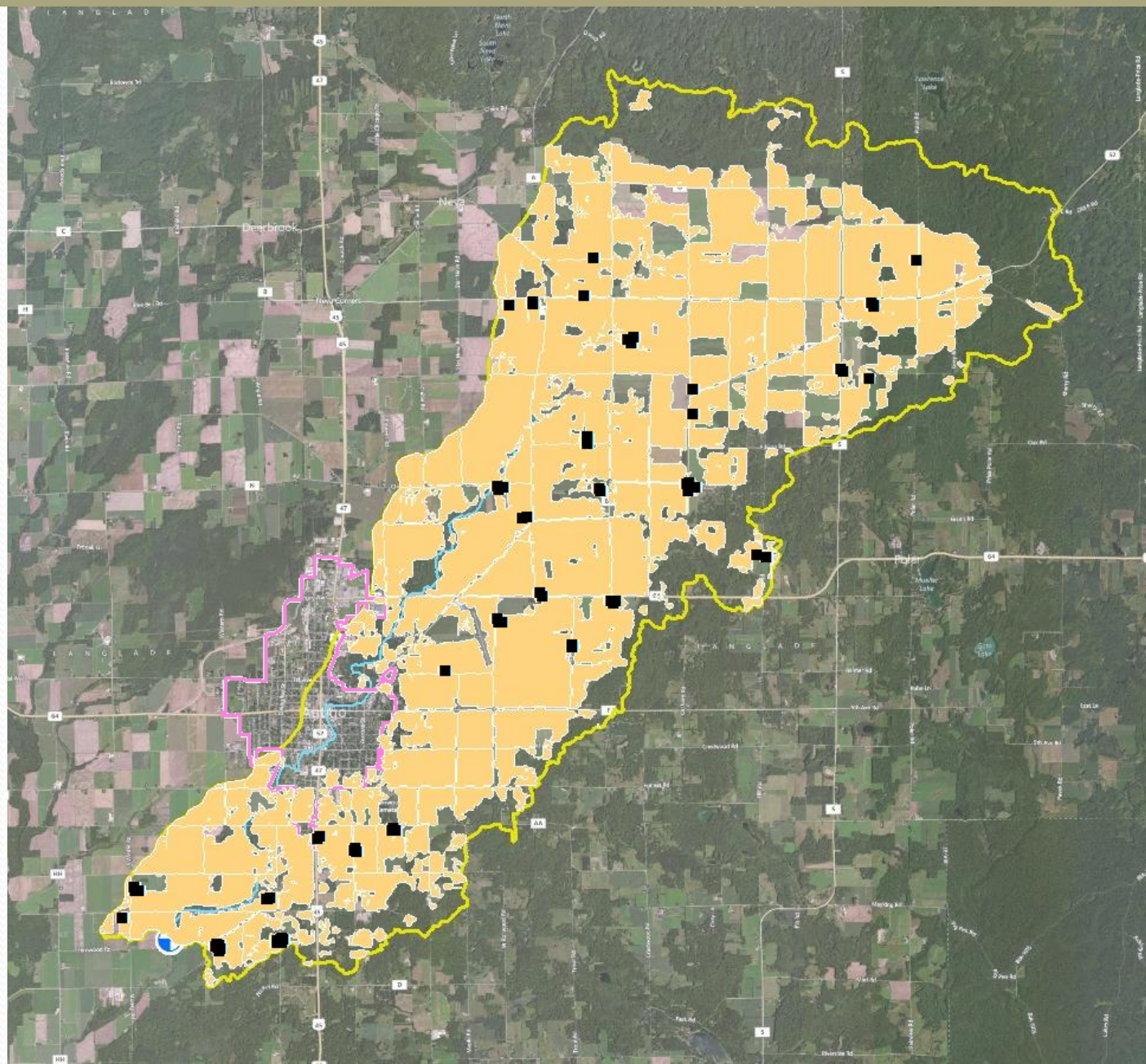
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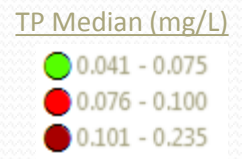
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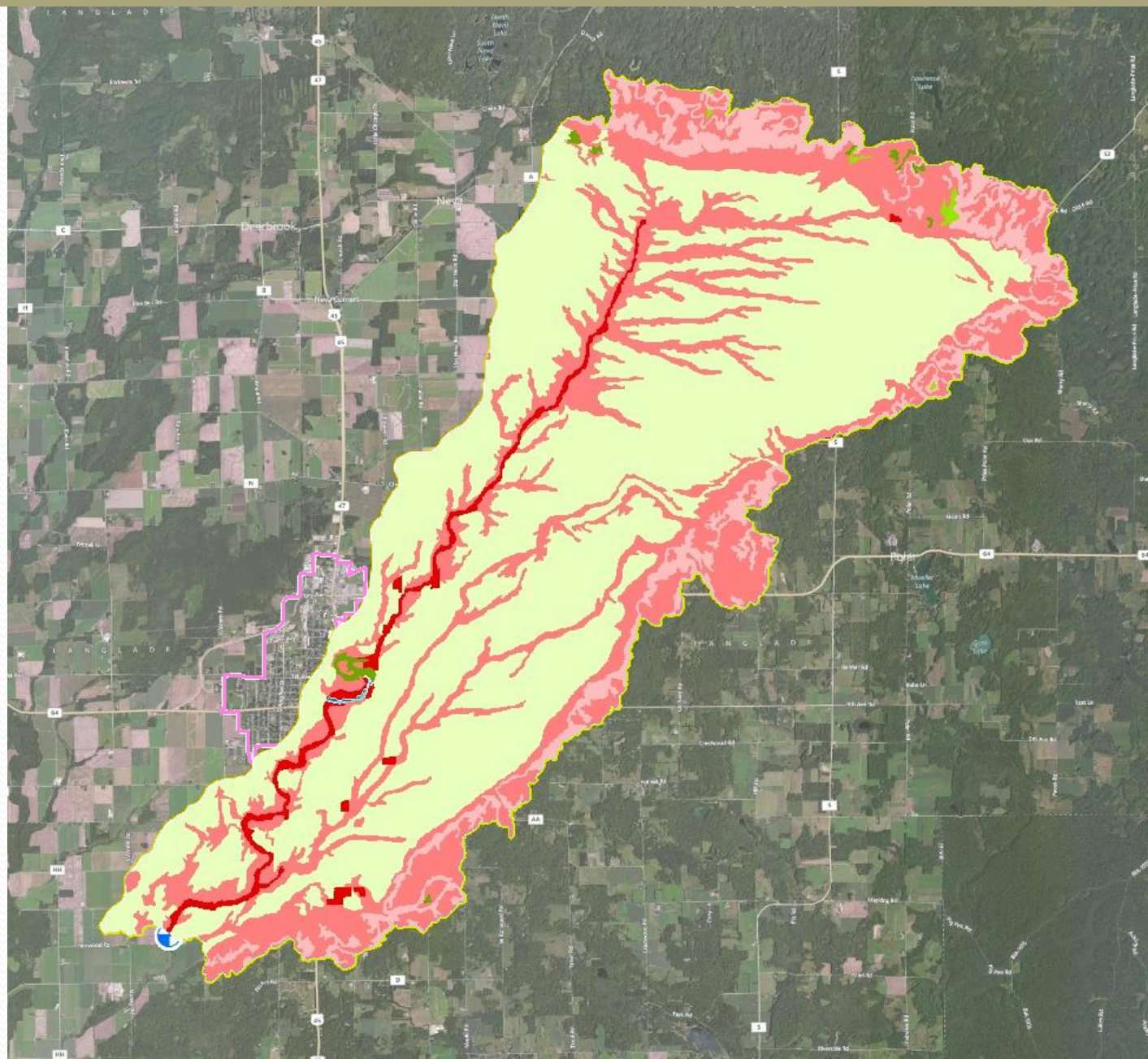
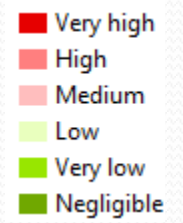
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- Point Sources
- Urban Partners
- Agricultural Partners

Step 4: Prioritize Areas

Example:

Runoff Potential



Keys to Trying Adaptive Management

- Adaptive Management must be cost effective to offset potential risk
- Point source(s) must be willing to spend money throughout the watershed, not just in the municipal boundary
- Partnerships are available to help develop/implement adaptive management

Process

Step 1

- Determine eligibility
- Decide if Adaptive Management is right for you

Step 2

- Submit a preliminary request to WDNR
- Work with partners to develop the Adaptive Management plan

Step 3

- Submit Plan to WDNR
- Permit will be reissued/modified to include Adaptive Management requirements

Step 4

- Comply with permit requirements and implement Adaptive Management plan
- Up to 15 years

Step 1: Determine Eligibility & Interest

- Phosphorus WQBEL=Criterion, or have a TMDL-derived WQBEL
- Major upgrades needed to comply with limit
- NPS dominated watershed
 - Look up online!
 - Visit <http://dnr.wi.gov/>, search “PRESTO”
- Willing to work with partners in the watershed

Step 2: Develop the Plan

- Complete the Preliminary Request Form
 - Confirms your eligibility
- Begin developing the Plan
- Plans will be complex
 - Review guidance
 - <http://dnr.wi.gov/>, search “adaptive management”
 - Other guidance documents also available

Steps of the Plan

- Identify partners
- Describe the watershed and set load reduction goals
- Conduct a watershed inventory
- Identify where reductions will occur
- Describe management measures
- Estimate load reductions expected by permit term
- Measuring success
- Financial security
- Implementation schedule with milestones

Tips to Developing the Plan

1. Seek out a variety of partners
 - County LCDs, WDNR, local agricultural and environmental groups, statewide NGOs, etc.
2. Start early
 - Takes time to develop the plan
3. Prioritize management practices
 - Location
 - Time needed to establish practices
 - Likelihood of success
4. Keep communication lines open
 - Partners
 - WDNR



Step 3: Permit Requirements

- Interim limits
- Compliance schedule(s)
- Actions proposed in plan
- Monitoring
 - In-stream & effluent
- Annual reporting
 - Status update
 - Report successes/needs
 - Provide amendments to the plan

Permit
term 1

• 0.6 mg/L

Permit
term 2

• 0.5 mg/L

Permit
term 3

• Revised
WQBEL

Step 4: Implementation



Adaptive Management vs. Trading

Adaptive Management

- Permittee improves water quality in a watershed by reducing in-stream phosphorus concentrations
- Permit compliance is demonstrated by reducing in-stream phosphorus concentrations and eventually achieving the phosphorus water quality criteria
- For phosphorus compliance only (may also apply to TSS)

Water Quality Trading

- Permittee purchases "credits" in the watershed to achieve permit compliance
- Permit compliance is demonstrated by comparing permittee discharge data and "credits" available
- Can be used to comply with a number of pollutants, not just phosphorus

A more detailed comparison...

	Adaptive Management	Trading
Pollutants Covered	TP (and possibly TSS)	All pollutants except BCCs
End Goals	Attaining the water quality criteria	Offsetting the limit
Offsets	No trade ratios	Trade ratios apply
Timing	Implemented throughout the permit term	Generating credits before they can be used
In-Stream Monitoring	Required	Not required
Level of Documentation Needed	General watershed information	Field-by-field documentation

Advantages of Adaptive Management

- Time
 - Pollution reductions occur throughout the permit term, not prior to the permit term
 - Adaptive management is has a 10-15 year project life
- Flexibility
 - Can adjust plan as you gain more experience
 - Flexibility in quantifying offset requirements and interim success
 - Can always switch to a different option if AM doesn't work, including trading
- Potentially fewer offsets required
 - Trade ratios, delivery ratios, credit thresholds not required

Advantages of Trading

- Certainty
 - A “1, 2, 3” process- calculate the offset, do the offset, and meet your limit
 - Do not need to meet criteria
- Potential pollutants
 - Can look at trading for a number of pollutants, not just P
- Experience
 - Trading has already been done in Wisconsin and in other states

Projects in *Motion*

- Yahara Wins Pilot Project
 - 24 entities involved
 - Goals:
 - Evaluate the cost, performance and ability to implement phosphorus control practices
 - Gauge the level of community support for a full-scale project
 - Evaluate water quality impacts associated with implementing phosphorus control practices
- Lodi Adaptive Management Project
- Others?

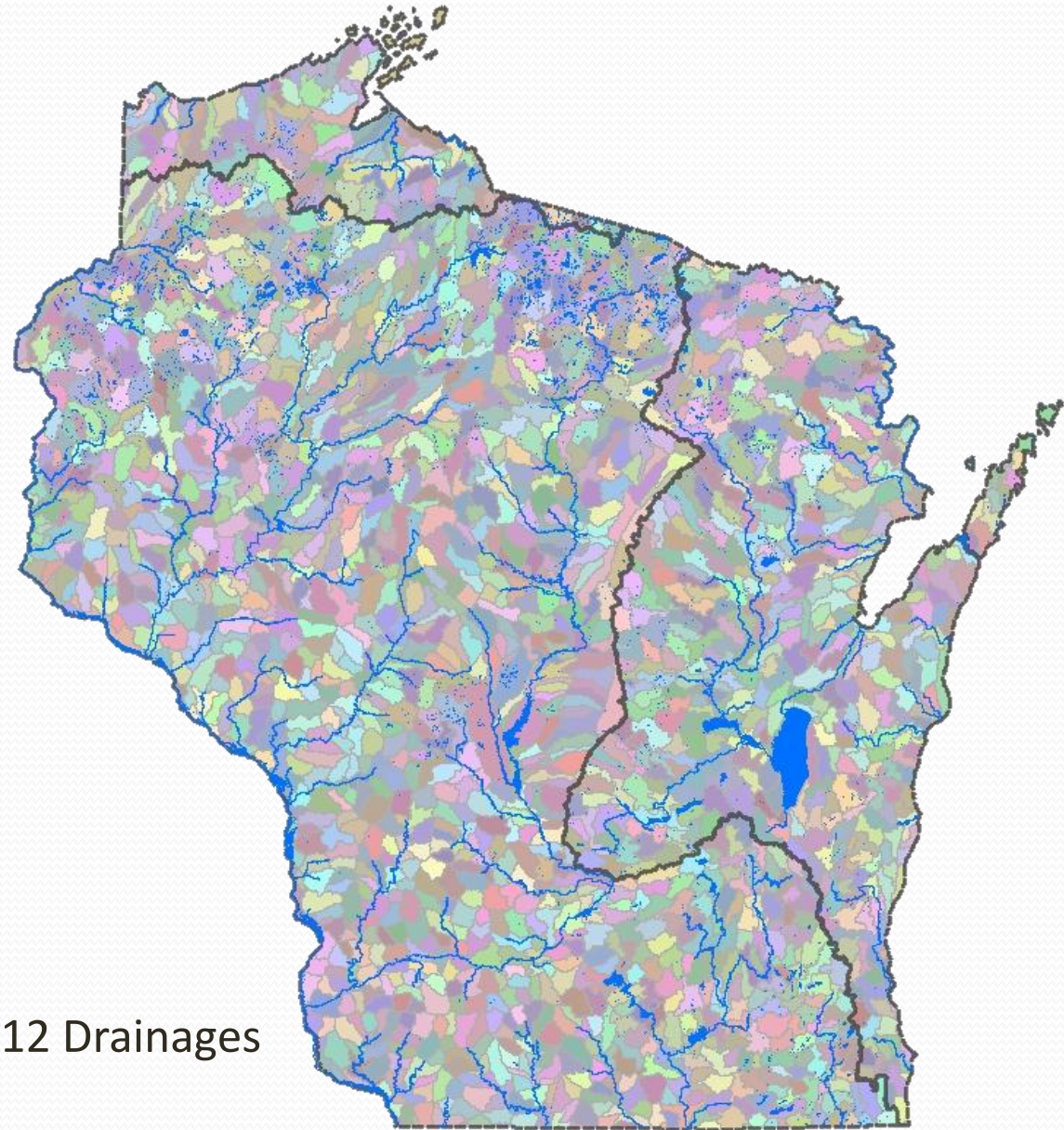


Lessons Learned (To Date)

- Adaptive management is an adaptive process
- Takes a lot of planning time
 - Develop and effectively work with partners
 - Establish baseline & collect data
 - Work with partners to develop a successful strategy
- Turns “us vs. them” into “we”
- We have a lot more to learn

Lessons Learned

Not an option everywhere, but a great option in some cases



HUC 12 Drainages

WDNR Resources Available

- Statewide and regional adaptive management & trading coordinators
- Adaptive Management Handbook
- Trading How To Manual
 - To be released April 2013

Statewide

- Amanda Minks
- Amanda.Minks@Wisconsin.gov
- 608-628-0585

NE

- Keith Marquardt
- Jim Schmidt

NO

- Lonn Franson

SC

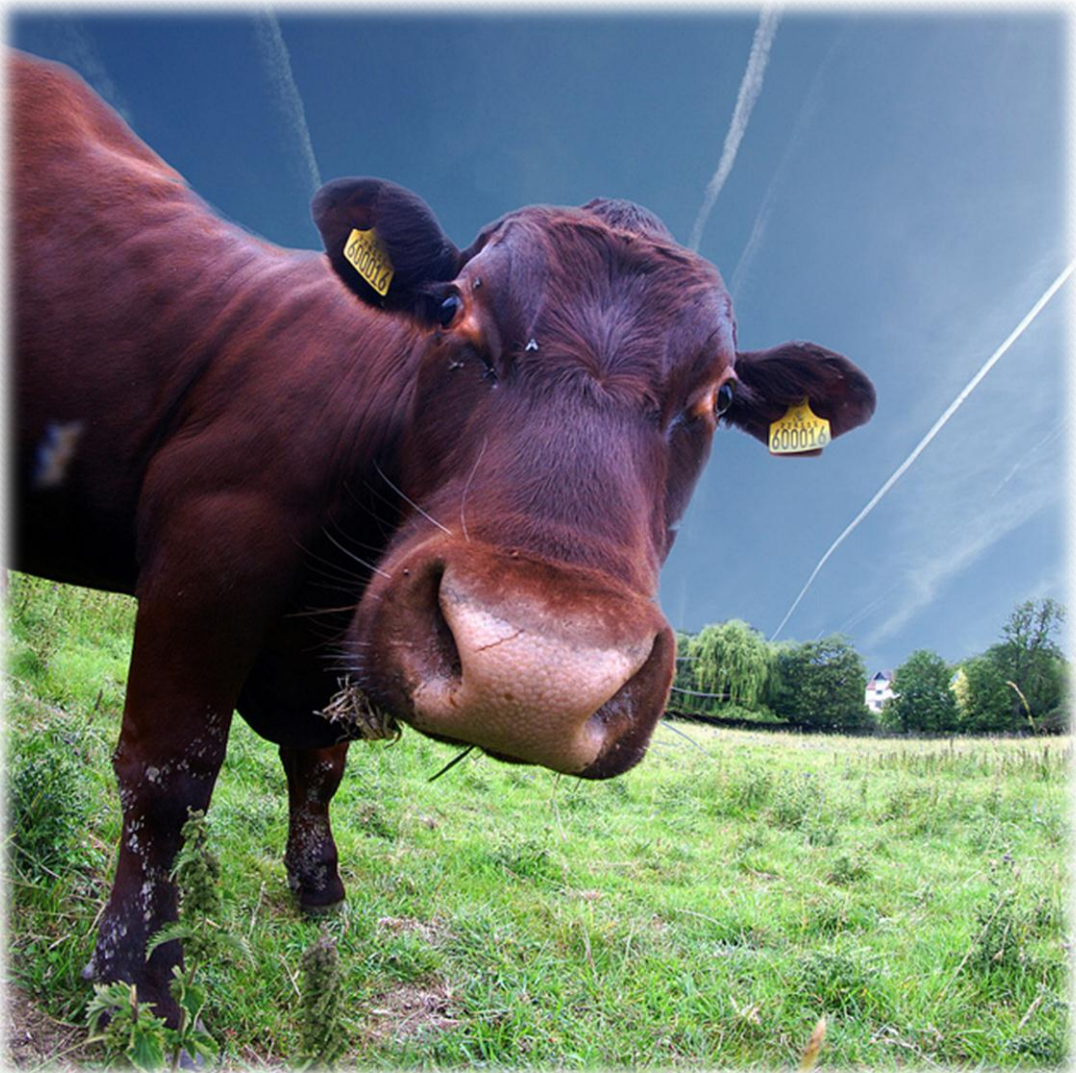
- Mike Vollrath
- Amy Schmidt

SE

- Sharon Gayan

W

- Paul LaLiberte



Questions?