

# Implementing Watershed Adaptive Management

## Yahara Watershed Improvement Network



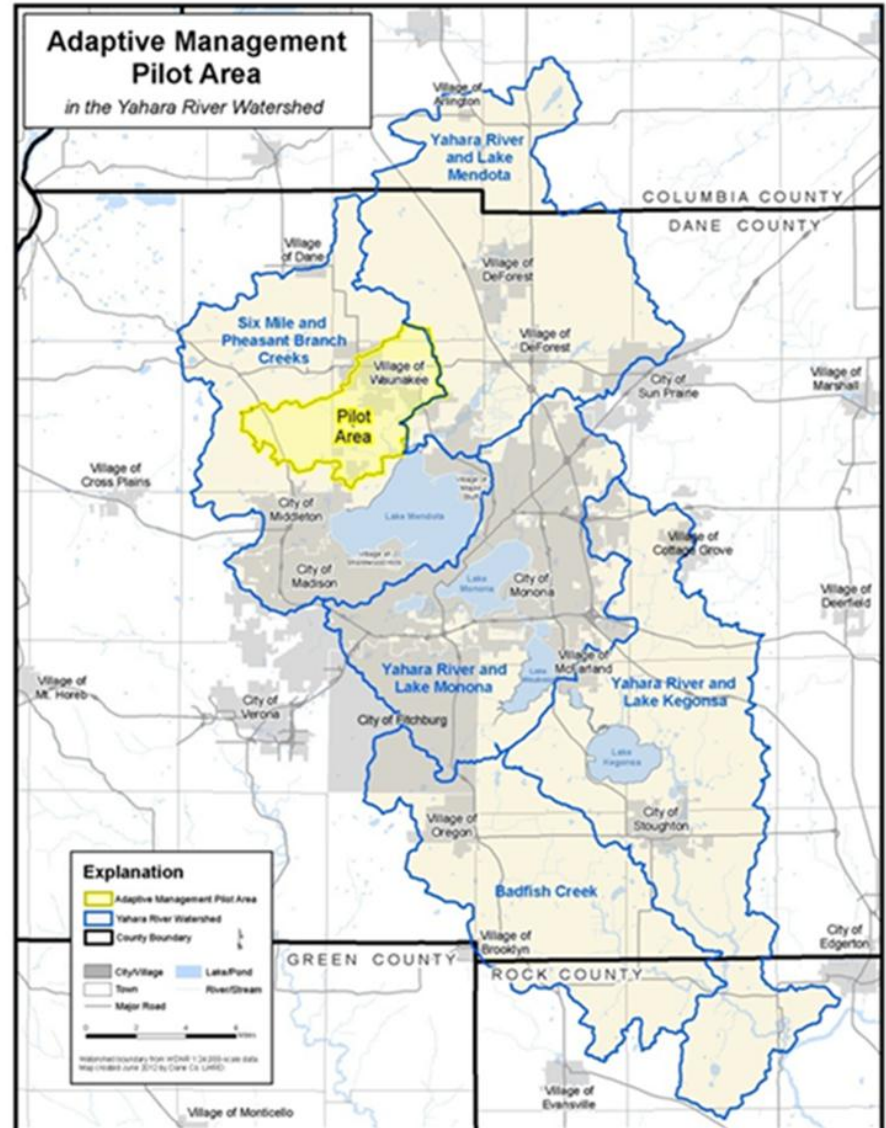
# Setting the Stage

- NR 102
  - Numeric water quality criteria for phosphorus
- NR 151
  - Municipal runoff (sediment)
  - Agricultural runoff (PI)
- NR 217
  - Implementation framework for point sources
- Rock River TMDL
  - 7-Point source
  - 25-MS4s
  - Non-point, predominately agricultural



# Opportunities with Adaptive Mgt

- Filtration Req'd
  - \$79-\$124 Million
- AM cost attractive
  - \$59 Million
- Improve our entire watershed
- Meet in stream water quality



# First Step toward AM – Pilot Project

## **Pilot Project Purpose**

- Test Adaptive Management as a method to Reduce Phosphorus inputs into the Yahara River Watershed

## **Pilot Project Goals**

- Maintain the strong partnership
- Implement a low-cost mix of urban and agricultural practices aimed at reducing phosphorus and sediment loss
- Work through administrative/regulatory details to allow successful transition to full-scale project.



# Business Case for Pilot Participation

	<b>TP- Reduction (lbs/yr)</b>	<b>Adaptive Management Estimated Cost (\$/yr)</b>	<b>Traditional Stormwater Control-Low (\$/yr) <sup>(1)</sup></b>	<b>Traditional Stormwater Control-High (\$/yr) <sup>(1)</sup></b>
Stormwater MS4	2,141	\$57,000	\$430,000	\$1,300,000

1) A range of \$200 to \$600 per pound of phosphorus controlled was used as a reasonable estimate based on actual capital cost of constructed BMPs in Wisconsin and their modeled phosphorus reduction. Data was assembled by AECOM, Middleton, WI.

	<b>Traditional Approach (\$/yr)</b>	<b>Adaptive Management (\$/yr)</b>	<b>Potential Cost Savings (\$/yr)</b>
Wastewater <sup>(2)</sup>	\$207,000	\$21,400	\$185,600

(2) Wastewater costs represent the incremental compliance costs – i.e. the additional costs that would be passed on to City above the amount that they are currently billed for wastewater services



# Diverse Partners Critical for Success

## Cities

Fitchburg  
Madison  
Middleton  
Monona  
Stoughton

## Villages

Arlington  
Cottage Grove  
DeForest  
Maple Bluff  
McFarland  
Oregon  
Shorewood Hills  
Waunakee

## Towns

Blooming Grove  
Bristol  
Burke  
Cottage Grove  
Dunn  
Middleton  
Westport  
Windsor

## Others

Clean Lakes Alliance  
Clean Wisconsin  
Dane County  
MG&E  
MMSD  
Sand County Foundation  
Stoughton Utilities  
USGS  
WDNR  
Yahara Pride Farm Group

## Other Interested Parties \*

DATCP

CARPC

NRCS/USDA

River Alliance

USEPA Region 5

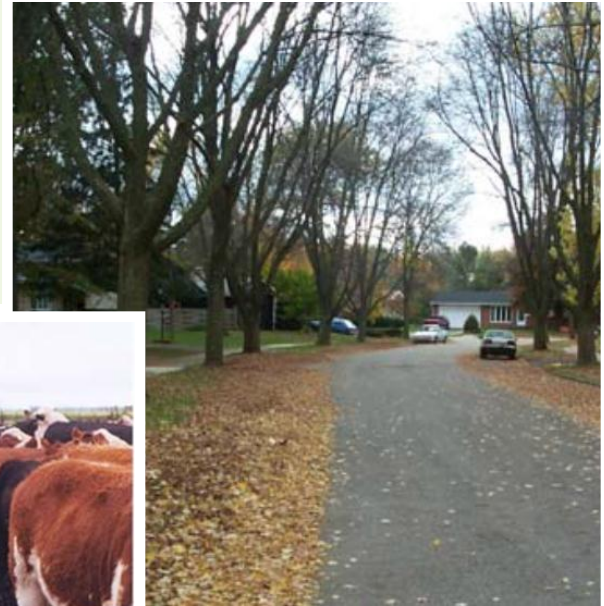
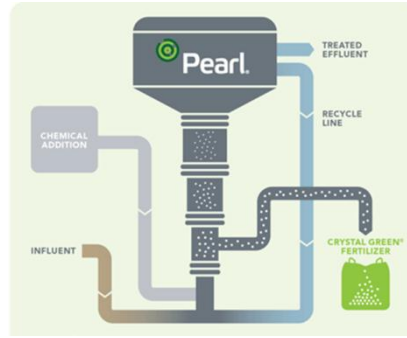
Yahara Lakes Association

Friend of Badfish Creek

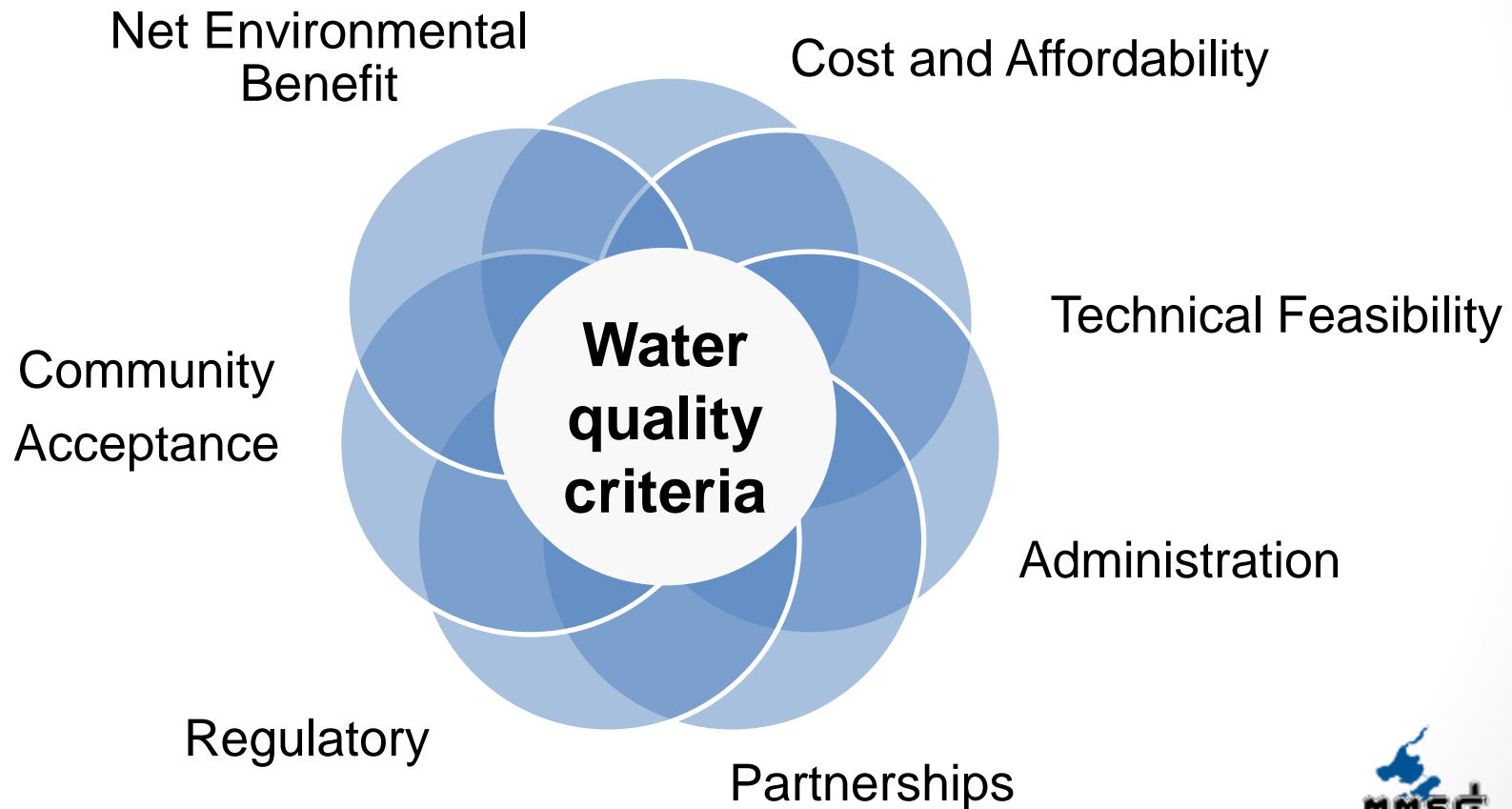
\* Periodically updated



# Partnerships will Focus Resources

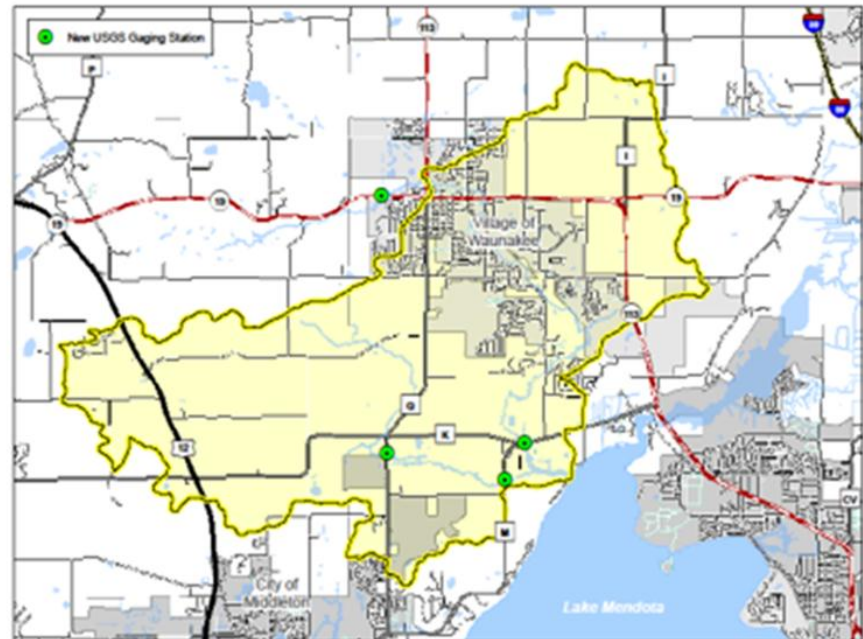


# What Does Success Look Like?



# Testing and Refining Project Structure

- Financing:
  - MOU signatories, MRBI and others
- Banker:
  - MMSD - Segregated Account
- Project Administration:
  - SPW/Ex Com
- Broker:
  - Dane County LCD



# Outreach, Information & Education

- Meetings/discussions
- SPW/ExCom Meetings
- Engaging Environmental Advocates
- Engaging Regulators
- Documents/updates/website

## Yahara WINs Pilot

### Annual Report 2012

Yahara Watershed Improvement Network  
Watershed Adaptive Management Pilot Project

Prepared by: Madison Metropolitan Sewerage District



# Challenges



- Pilot project allows us to test adaptive management and find solutions to the various challenges.



# Timing

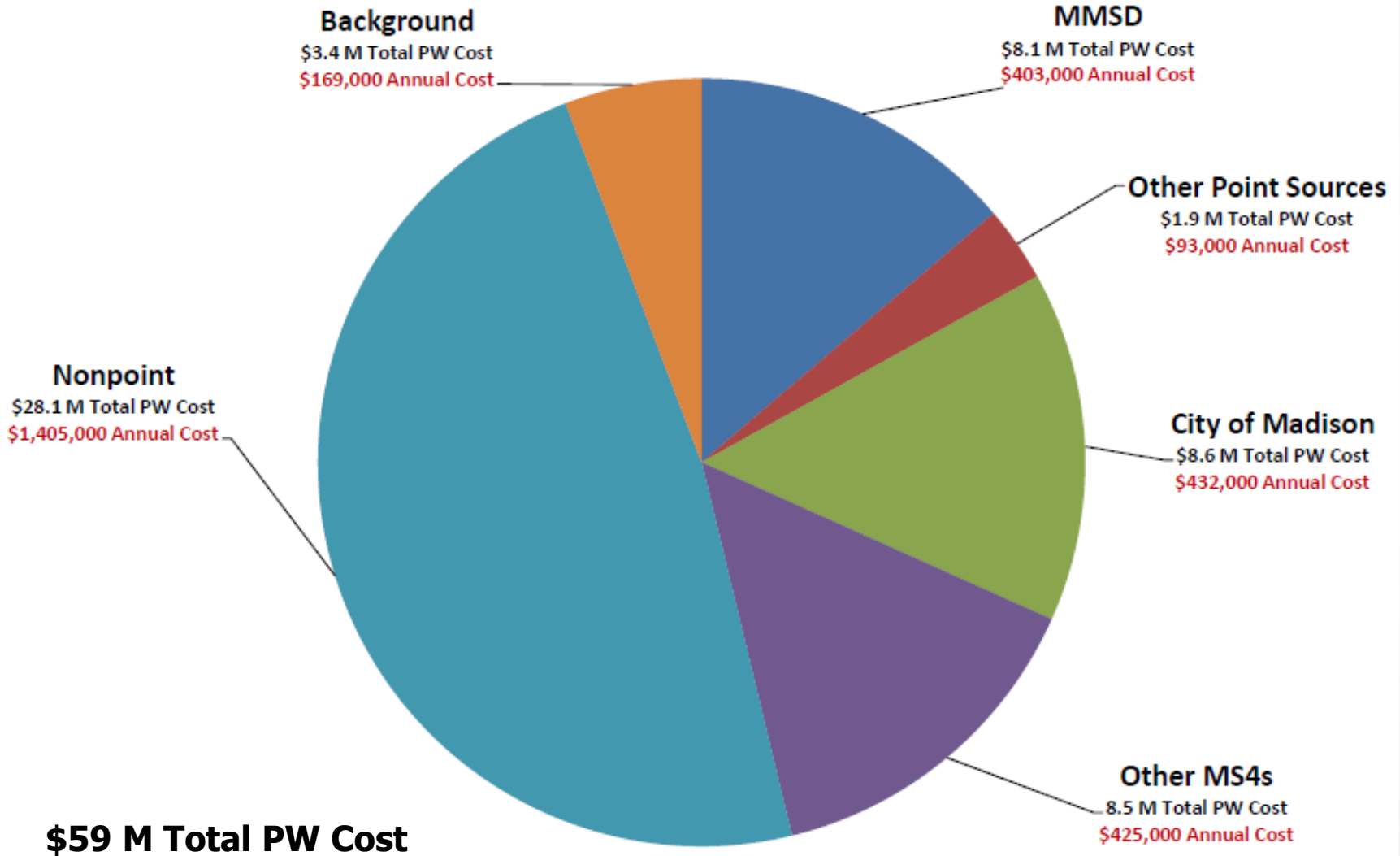
Permit 1  
Years 0-5

Permit 2  
Years 5-10

Permit 3  
Years 10-15

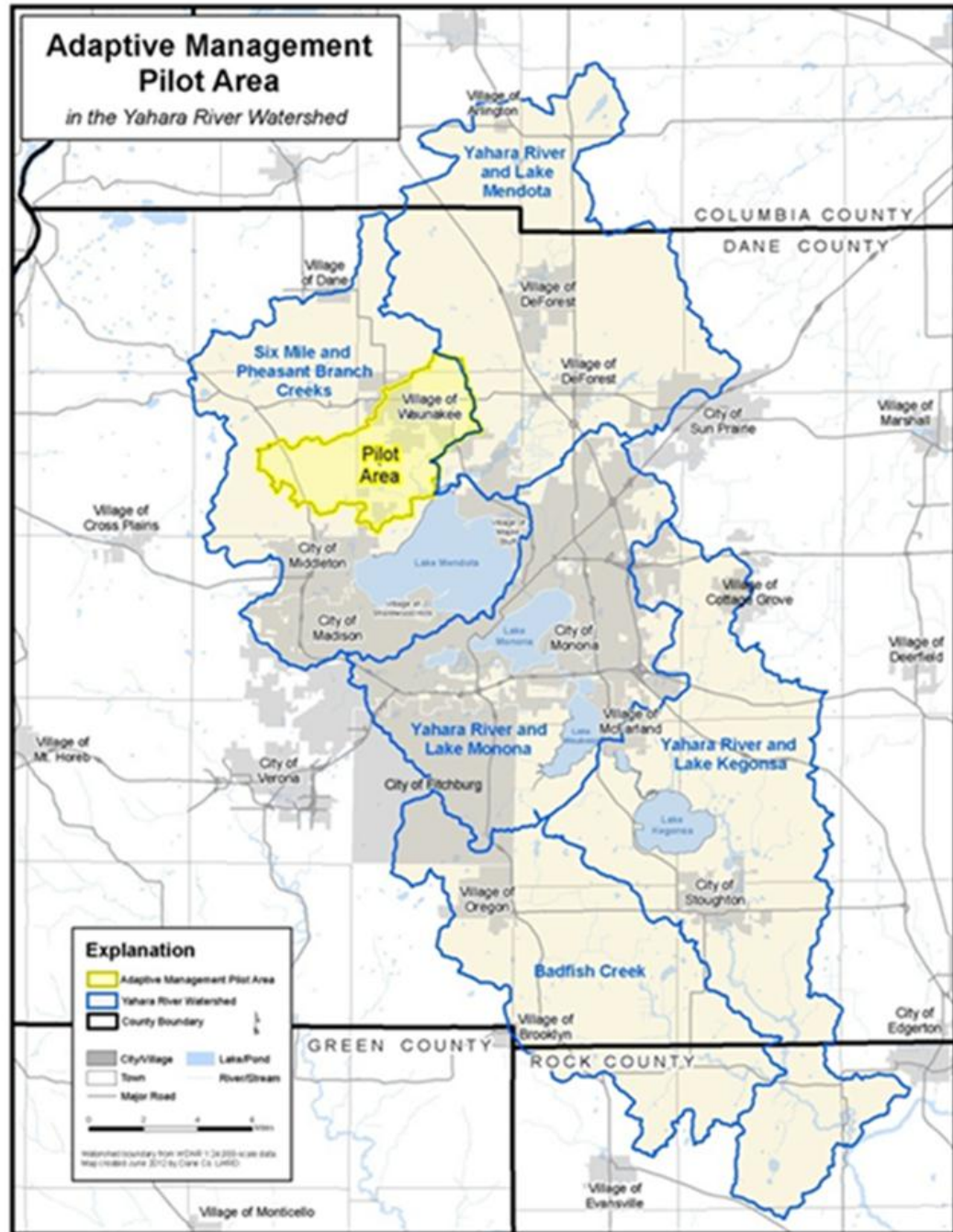


# Equity



# Geography

- Diverse muni's working together
- Low-cost mix of practices
- Municipal Boundaries
- New languages

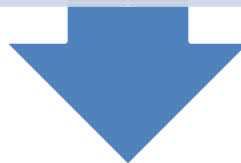


# Payment Program Leverages Existing Programs

## Level 1

**Baseline Data**

**One time Payment**



## Level 2

**Payments for  
Installing  
phosphorus  
reducing activities**

**\*Per Acre payment  
for cropping/tillage  
(soft practices)**

**\*One time payment  
for Water  
Management (hard  
practices)**

# Effluent Dominated Streams

- Effluent quality
  - Commitment to WQ improvements in watershed & plant optimization
- Possible options:
  - Variance
  - Variance Water
  - Site Specific Criteria
  - Other possibilities
- Discussions with DNR and environmental groups



# Multiple/Overlapping Regulations

## Water Quality Monitoring

### NR 102

- In-stream Concentration

### NR 217

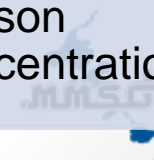
- Implementation guidance for NR 102
- Monitoring required in receiving water to assess P loading

### NR 151

- TSS, Percent Reduction - Load
- Phosphorus Index - Load (rotational avg)

### Rock River TMDL

- Load reductions required
- Based on meeting monthly target concentrations 7 of 10-years
- Modeling based on 6-growing season concentrations

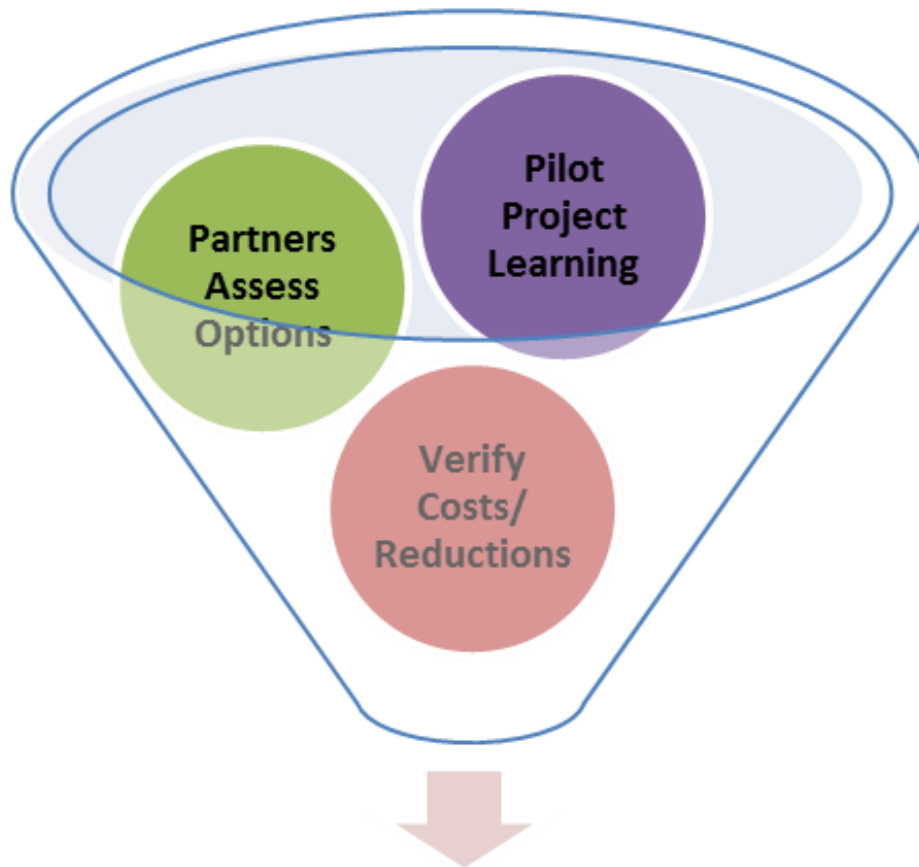


# Verify Phosphorus Reductions

- Long-term: meeting water quality criteria through monitoring
- Short-term: verify baseline, verify reductions, target reductions, populate/refine models to focus practices for water quality improvement.
- Determine acceptable level of 'verifiable results' to satisfy:
  - For regulators
  - For permittees
  - For farmers



# Transitioning to Full-Scale AM



**Full-Scale Yahara WINs**



# Reasons to Implement AM

- **Cost Savings:** Everything is on the table. Resources go where they can really improve our water quality.
- **Collaborative:** Solve tough problems by bringing all types of people and organizations together. Find common ground and develop stronger communities.
- **Effective:** Working together, we will comply with our permits and improve water quality.



# More info?

# madsewer.org




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- Pump Station 18
- Questions/Suggestions
- Sewer Use Ordinance
- Yahara WINS

**Yahara WINS**  
(Yahara Watershed Improvement Network)


Yahara Watershed Improvement Network

Home Resources Links Meetings Contacts FAQs

Adaptive management pilot project area map  
(Click map to view a larger image)



- [Yahara WINS](#)
- [Yahara WINS Pilot Project](#)
- [Pilot Project Location](#)



[Six Mile/Hwy 18](#) [Six Mile/Hwy M](#) [Dom M](#) [Dom Q](#)

[Cover Crop Seeding Video](#)

What's Up

Watershed Adaptive Management Strategic Planning Workgroup meeting Tuesday, Oct 9, 2012 / 10:00am at Lussier Heritage Center - [Agenda](#)

Watershed Adaptive Management Executive Committee meeting Tuesday, Oct 9, 2012 / 11:30am at Lussier Heritage Center - [Agenda](#)

[Background on EPA Approval](#)

[Most Current Water Quality Data](#)

[Historical Water Quality Data](#)