



Partnering for Clean Streams: Citizens Based Stream Monitoring and the Yahara WINS Adaptive Management Program

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OUR MISSION AND WHERE WE WORK

Rock River COALITION
20 YEARS 1994-2014
MIND • BODY • SPIRIT

Get Involved ▾ Events ▾ Projects ▾ About ▾ The Basin Contact ▾

DONATE

Citizen Stream Monitoring - Be a part of assessing the health of our lakes and rivers.

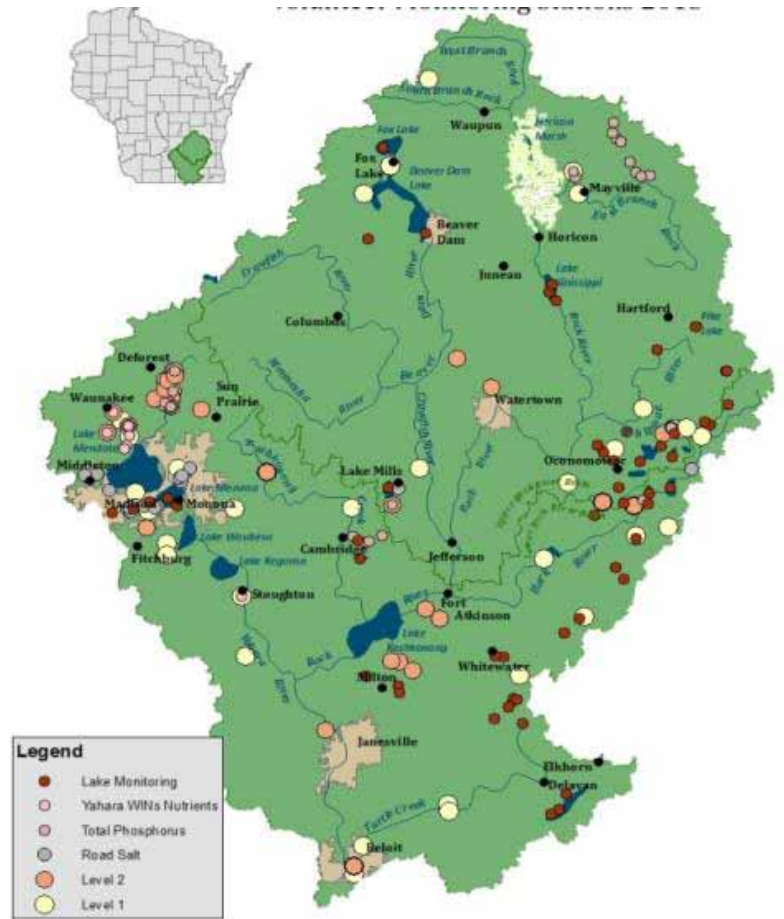
Make A Difference

Featured Project

Our Mission

There are many ways to get involved — from

Our mission is to educate and provide



OUR PROGRAMS

- ❑ **Volunteer Stream Monitoring Program**
- ❑ **Testing the Waters event in May 2016**
- ❑ **Chapters – fostering local resource groups**
- ❑ **Education – newsletter, forums, etc.**

OUR FUNDING STRUCTURE

- ❑ **Member Contributions and Donations**
- ❑ **Grants**



OUR GOAL

To improve stream and river health through our citizen based stream monitoring program.

Cleaner Streams Together.



State Agencies and Academic Institutions



County Agencies



Municipalities



Friends Groups

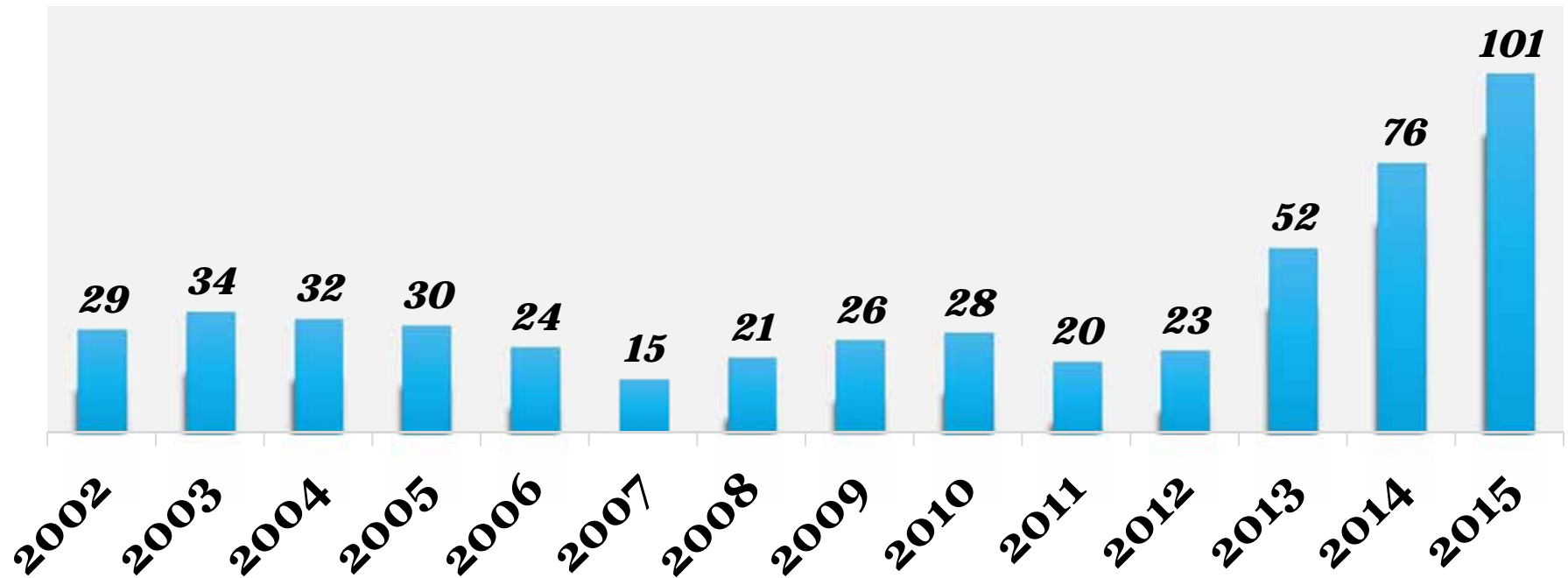




PAST AND FUTURE: GROWTH IN MONITORING SITES

Started in 2002

....and still growing

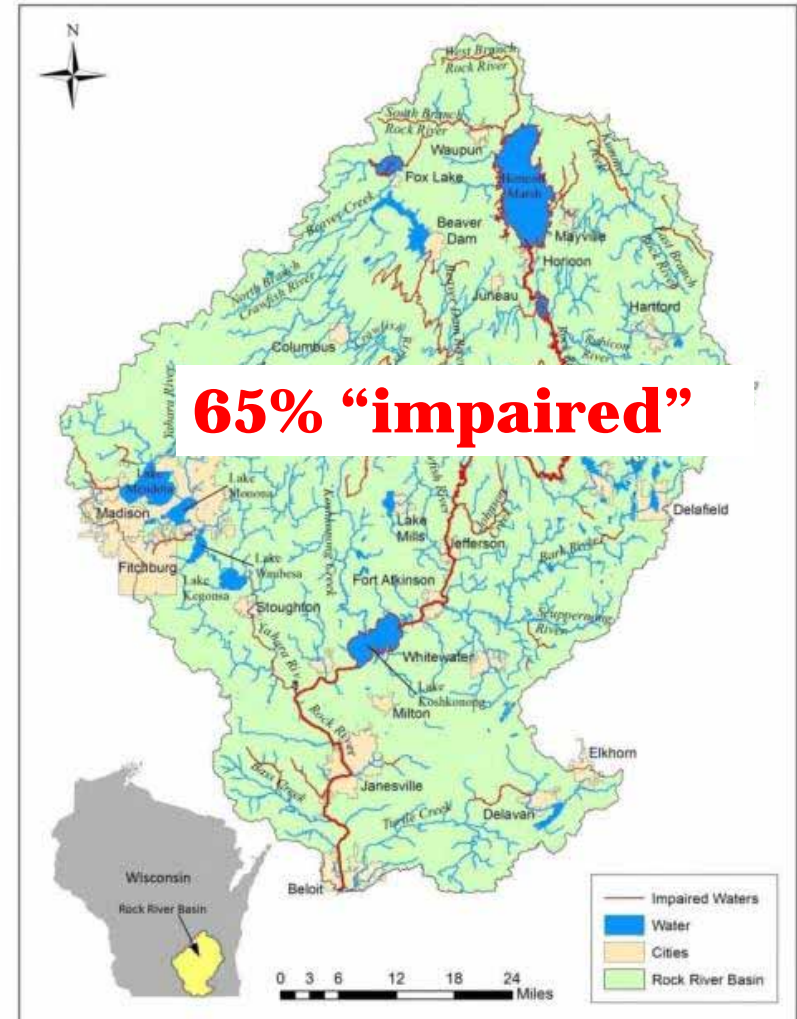


OUR CHALLENGE

2,932 total stream miles

Major pollutants
total phosphorus (43%)
total suspended solids/sediments (37%)

Since 1998 no stream or river has been “delisted”



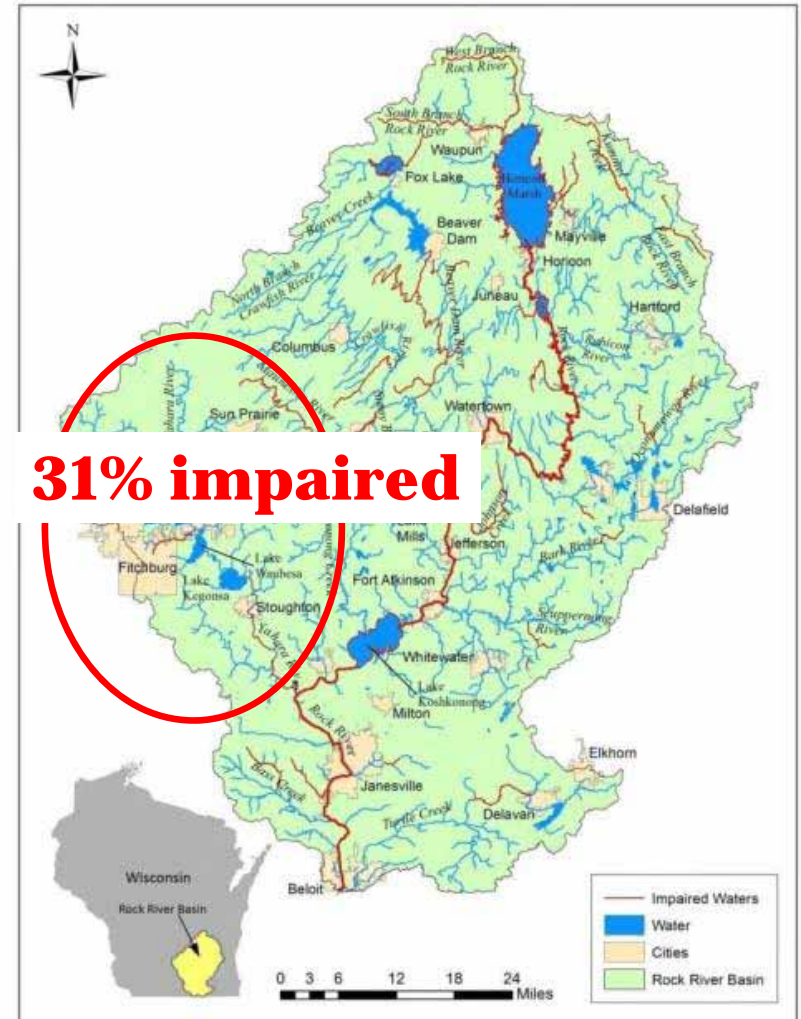
AN OPPORTUNITY

Partnering with Yahara Watershed Improvement Network (Yahara WINS)

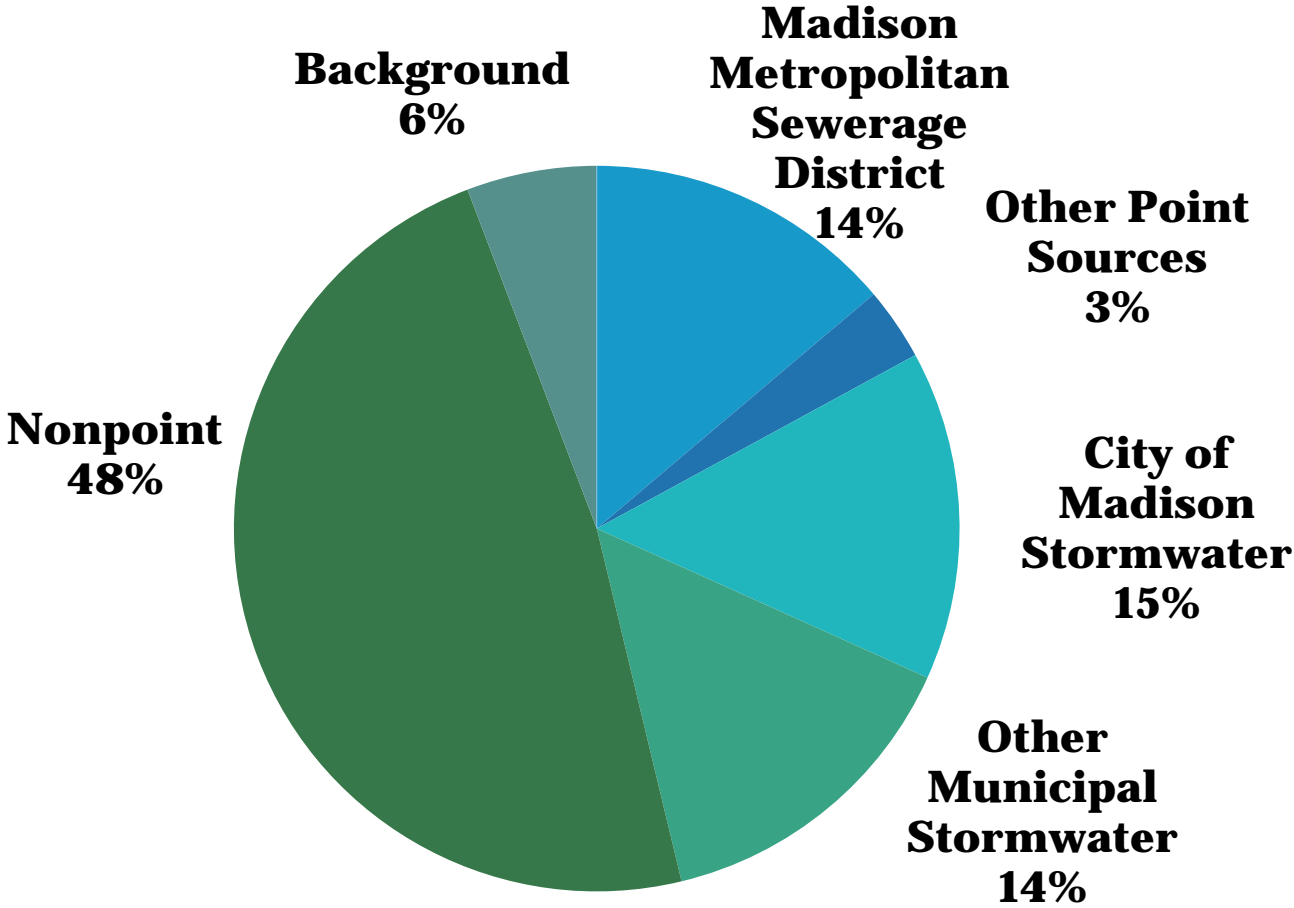
Major pollutants

***total phosphorus (47%)**

***total suspended solids/sediments (19%)**

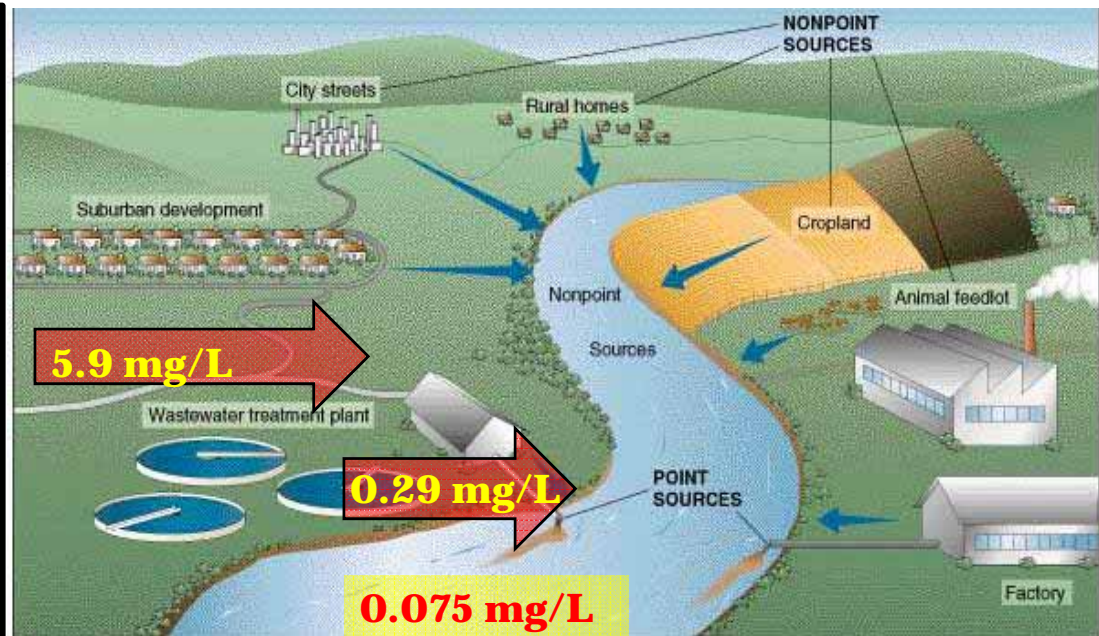


MULTIPLE SOURCES OF POLLUTION IN YAHARA RIVER WATERSHED



HOW TO MEET PERMIT REQUIREMENTS

Madison Metropolitan Sewerage District



Reduce total phosphorus by 106,000 lbs/year

ADAPTIVE MANAGEMENT OPTION

- **Option for **SOME** Municipalities and Industries**
- **Reductions in Phosphorus from Multiple Sources**
- **Conservation Practices on Agriculture Land**
- **GOAL: achieve phosphorus water quality criterion in surface water**
- **REQUIREMENT: in-stream monitoring**

Yahara Watershed Improvement Network Participants

<u>Cities</u>	<u>Villages</u>	<u>Towns</u>	<u>Others</u>	<u>Other Interested Parties*</u>
Fitchburg	Arlington	Blooming	Clean Lakes Alliance	DATCP
Madison	Cottage	Grove	Clean Wisconsin	CARPC
Middleton	Grove	Bristol	Dane County	River Alliance
Monona	DeForest	Burke	MG&E	Yahara Lakes Association
Stoughton	Maple Bluff	Cottage	MMSD	Friends of Badfish Creek
Sun	McFarland	Grove	Sand County	Friends of Pheasant
Prairie	Oregon	Dunn	Foundation	Branch
	Shorewood	Middleton	Stoughton Utilities	Rock River Coalition
	Hills	Westport	USGS	
	Waunakee		WDNR	
	Windsor		Yahara Pride Farm	
			Group	
			USEPA Region 5	

Significant investment required by Yahara WINs Partners and is to be proportional to TMDL required reductions

~ \$123 Million over the next 20-years

HOW TO MEASURE SUCCESS WHILE ALSO ENGAGING WATERSHED RESIDENTS



1 USGS GAGE



**34 CITIZEN BASED
STREAM
MONITORING
STATIONS**

Rock River Coalition & Yahara WINS Partnership

GOALS

- 1. Provide water quality data for smaller creeks and tributaries**
- 2. Increase the frequency of water quality monitoring**
- 3. Provide *actual* stream water quality data to verify reductions
*not just modelled reductions!***
- 4. Increase community/citizen engagement**



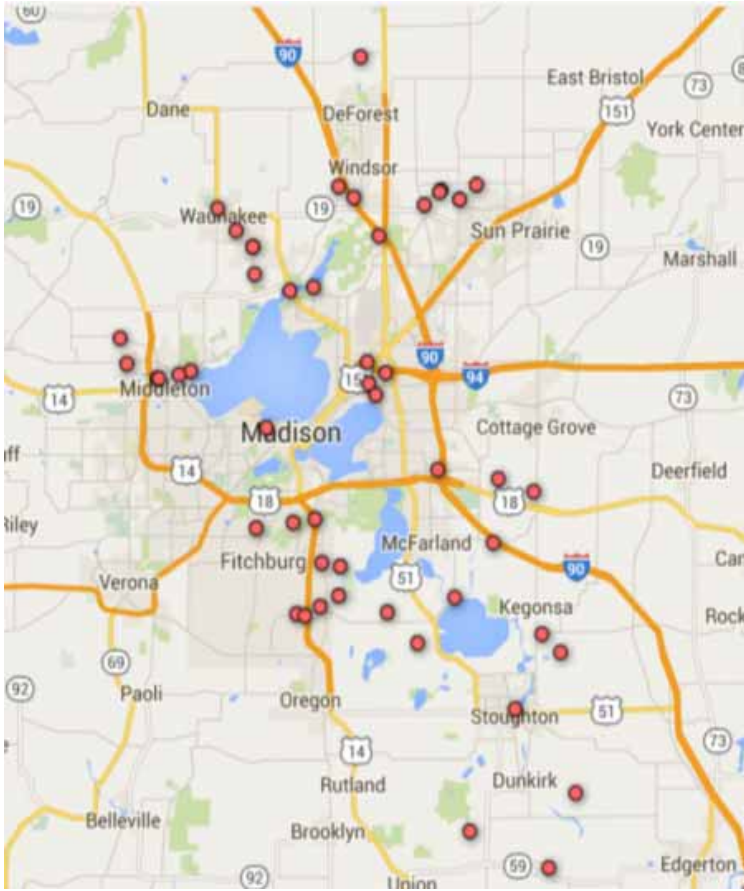
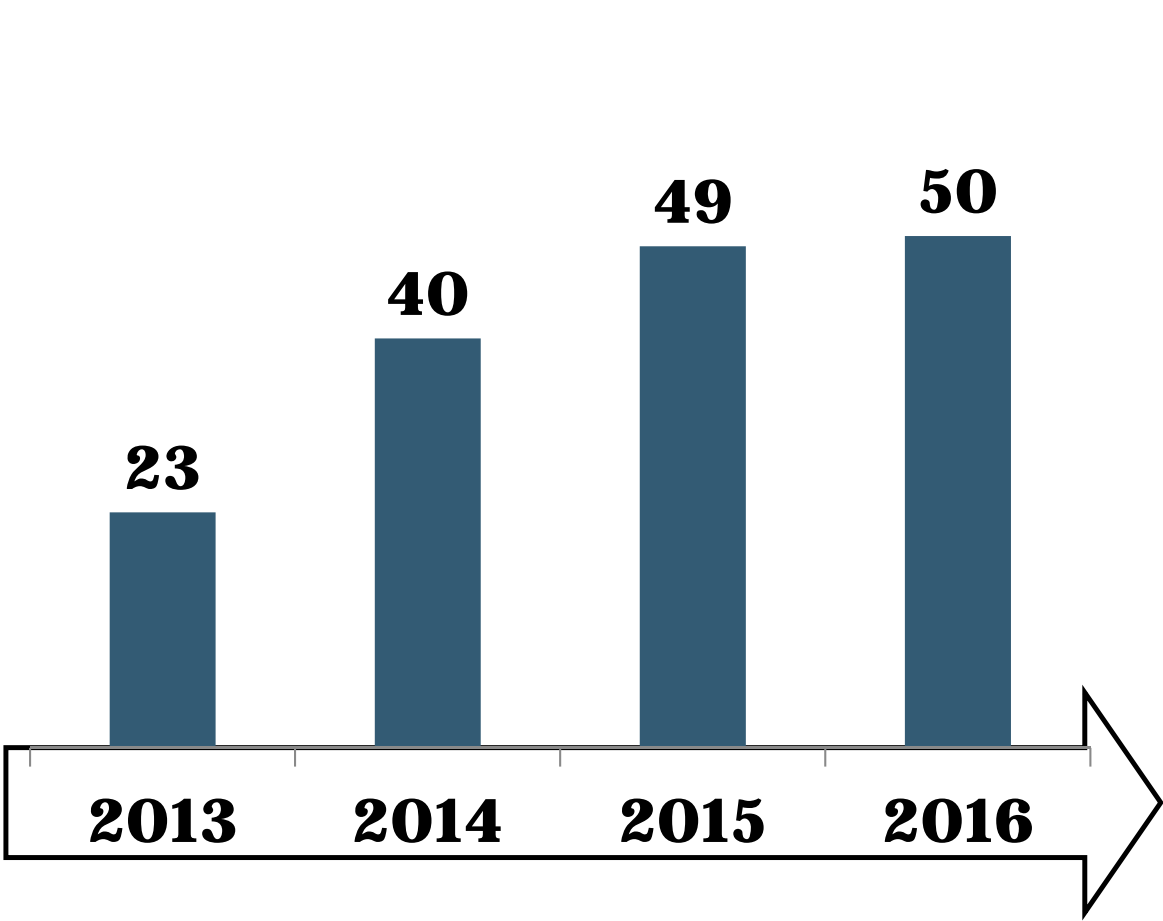
KEY INGREDIENTS

- 1. Volunteer Stream Monitoring Champions**
- 2. Nimble Organizational Structure To Encourage New Projects**
- 3. Accepted Methods and Procedures**
- 4. Partnerships**



“Partnerships can be beneficial to help reduce overhead monitoring costs, and to maximize the public’s involvement and connection to the watershed project.” The Adaptive Management Technical Handbook, (WDNR, 01/07/2013)

CITIZEN BASED MONITORING SITES



DATA COLLECTED

Monthly Samples Collected By Volunteers

All Samples Analyzed by Madison Metropolitan Sewerage Treatment Plant Lab

- Total Phosphorus**
- Total Suspended Solids**
- Ortho-Phosphorus**
- Ammonia**
- Nitrate**
- Nitrite**
- TKN**



DATA COLLECTED

NOT JUST NUTRIENTS

...Monthly Baseline Data Also

- Dissolved Oxygen (mg/L & saturation)**
- Water Temperature**
- Water Clarity**
- Flow: when possible**
- Biotic Index: at least twice a season**

...Continuous Stream Temperature Also



MEASURES OF SUCCESS

**72 Volunteer Participants
Since 2013**

78% Retention Rate

**~370 Nutrient Samples Collected By
Volunteers and Analyzed by
Madison Metropolitan Sewerage
District**

**Energized and engaged
local resource groups**



NEXT STEPS.....

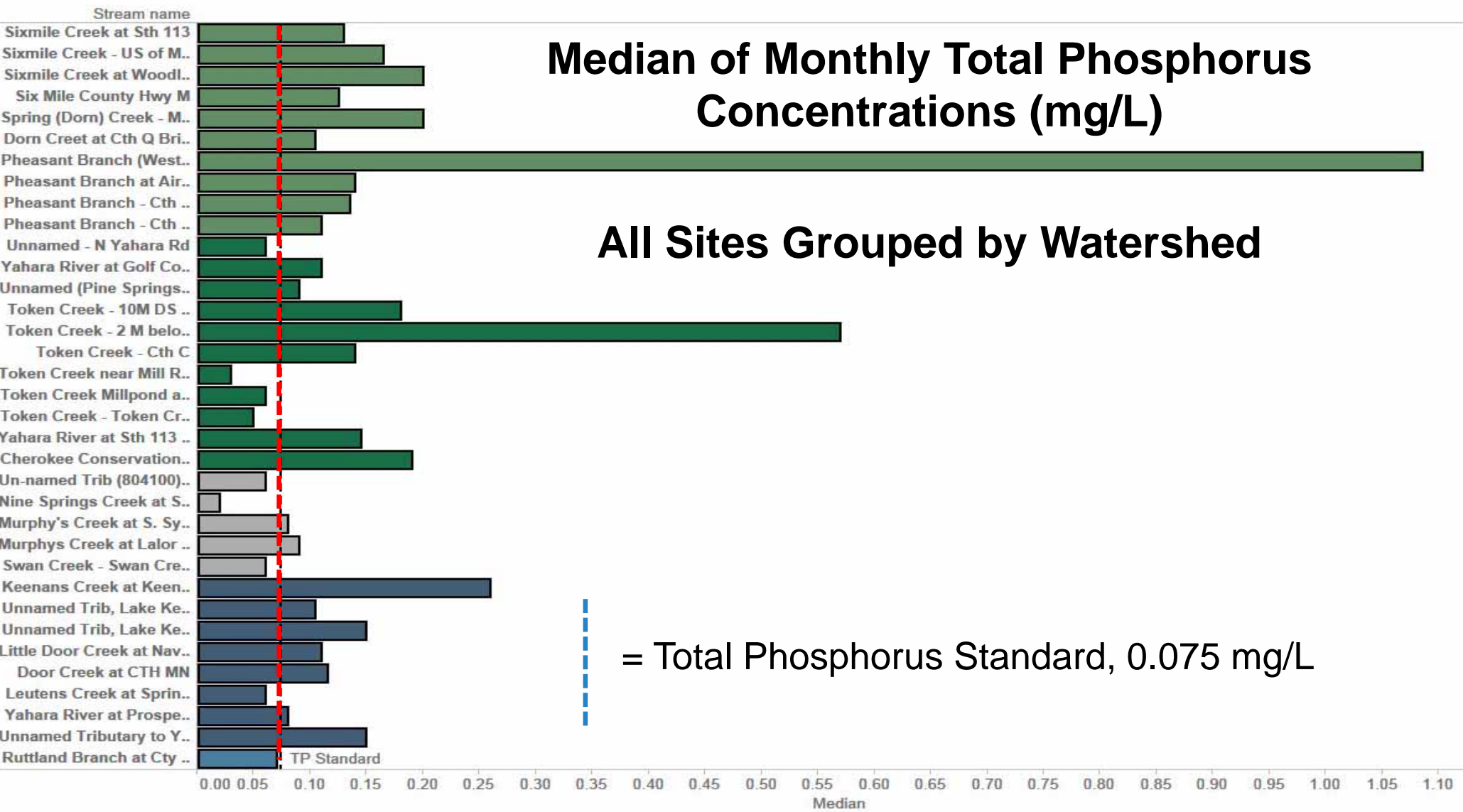
- 1. Create partnerships to collect flow data on low gradient, mucky streams**
- 2. Work with Madison Metropolitan Sewerage District and WDNR to upload nutrient data to SWDV**
- 3. Enhance collaboration in the use of citizen stream monitoring data with other partners including USGS, Dane County, UW-Madison, and local resource groups**

Thank you.

Questions?

Median of Monthly Total Phosphorus Concentrations (mg/L)

All Sites Grouped by Watershed



= Total Phosphorus Standard, 0.075 mg/L