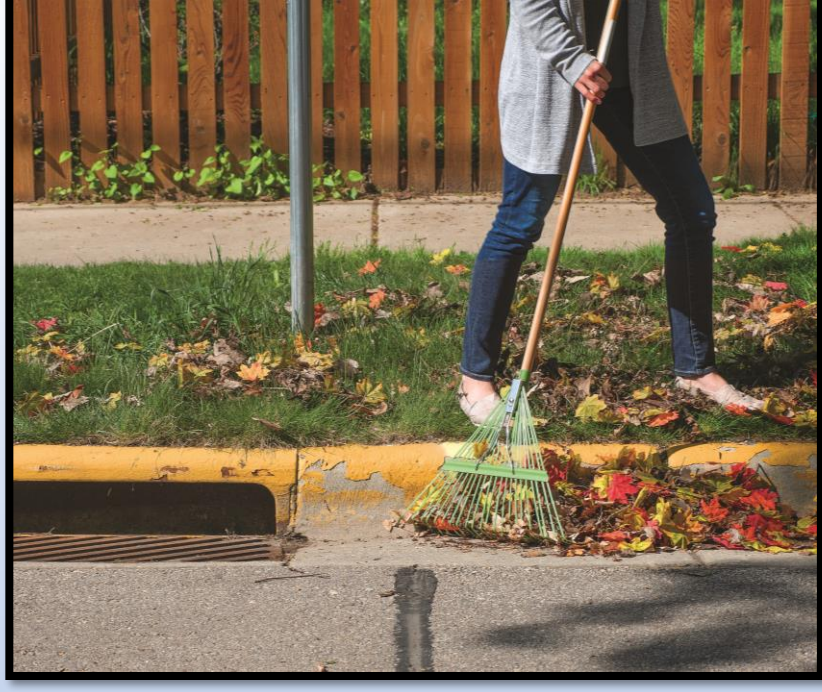

Volunteer Days


FRIEND OF CLEAN LAKES
Education/Events


LakeForecast

Resilient Landscapes



Mendota is unofficially the **most studied lake** in the world

All 5 Yahara lakes, 10 stream tributaries, and 8 beaches are **federally impaired**

2018-19 saw the highest total **beach closures** over the past decade

We have never been in a **stronger position** to reach our goals

Yahara CLEAN Compact

GOALS

Clearer water

Fewer cyanobacteria blooms

Open beaches

OBJECTIVES

Less phosphorus

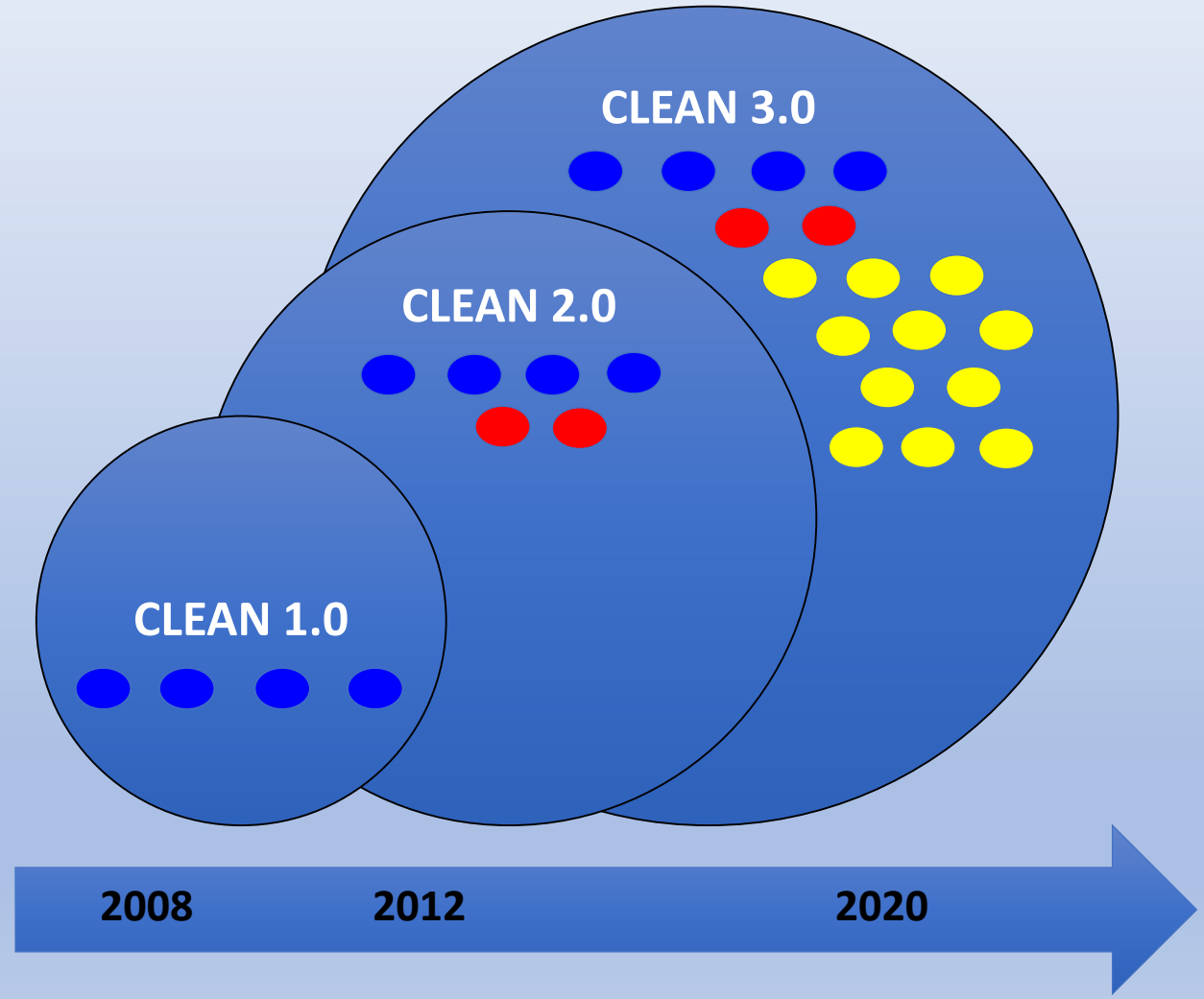
Less *E. coli*

Less runoff

Healthier soils

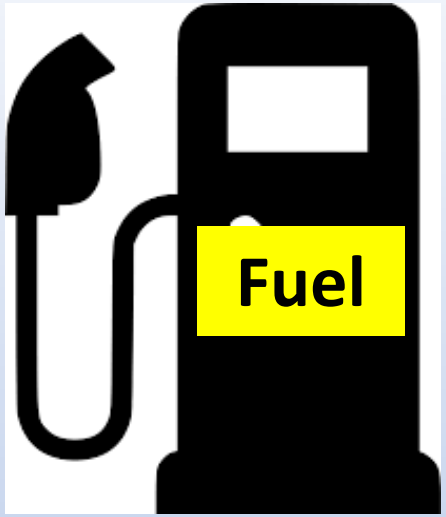
Healthier shorelines

Enlarging the Wheel



- DNR
- DATCP
- Dane County
- City of Madison
- Clean Lakes Alliance
- UW Center for Limnology MMSD
- Yahara WINS
- CARPC
- RASCW
- Dairy Farmers of WI
- UW-Madison
- UW Nelson Institute
- UW Division of Extension
- City of Middleton
- Yahara Lakes Association
- Builders Association
- DCTA
- DCVA

CLEAN 3.0



Fuel

Vision, Hope, Community Will

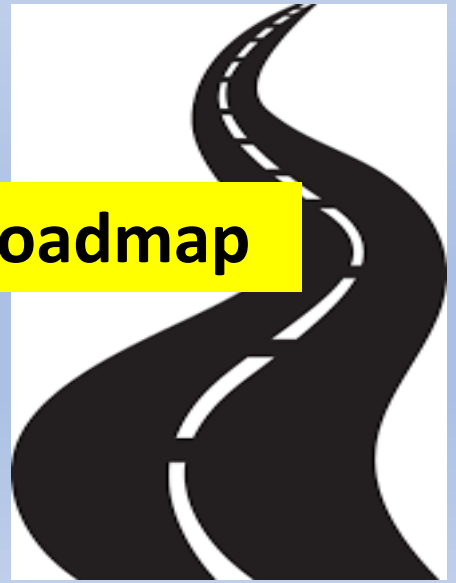
Action Dials

Knowledge **Projects** **Policies**

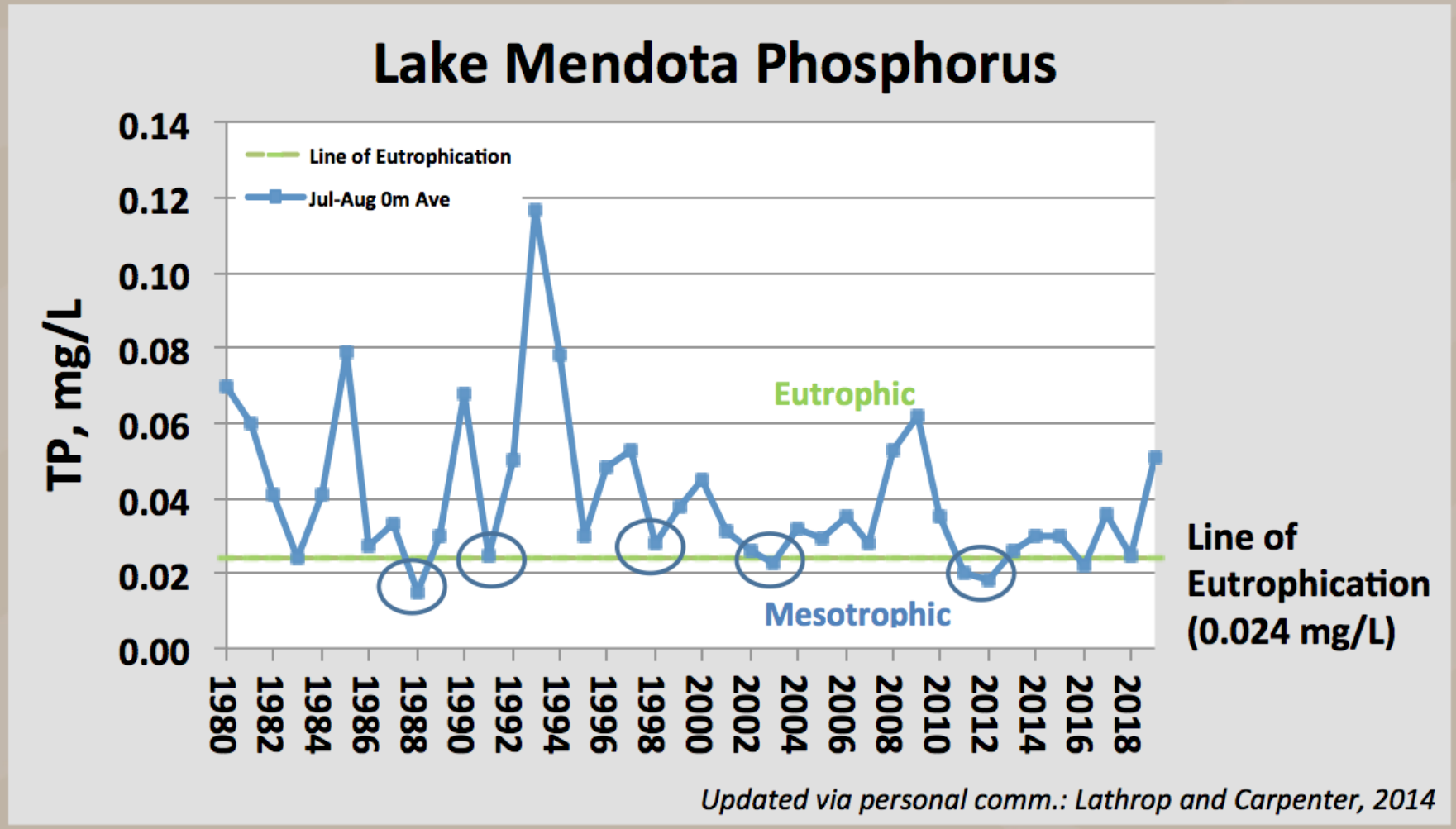
Economics **Engagement** **Resources**

? **?** **?**

Roadmap



Lake Mendota Water Quality

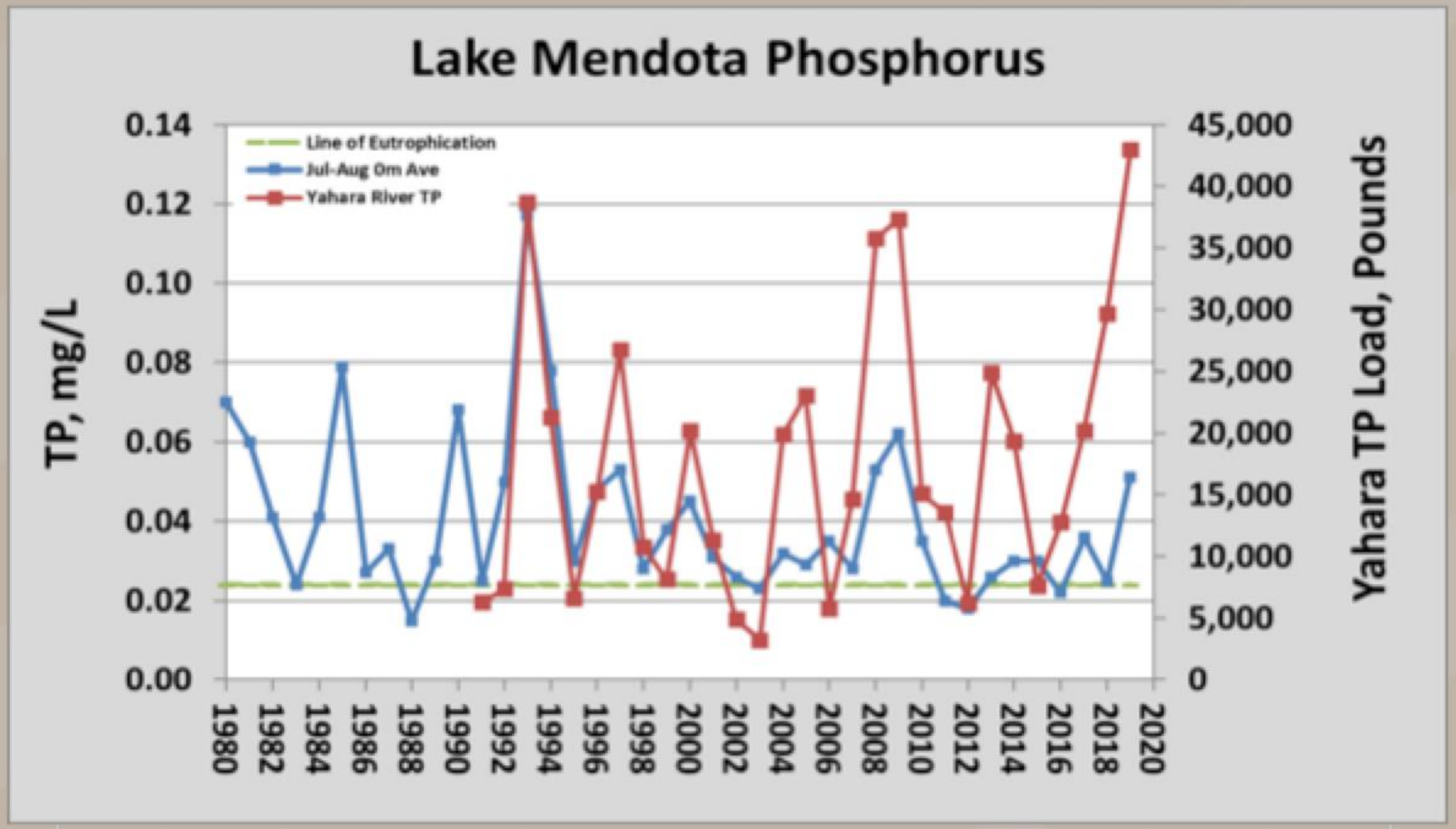


Years with low P inputs resulted in good lake water quality.

2/6/2020

Credit: Todd Stuntebeck

Linkages between P loading and in-lake P



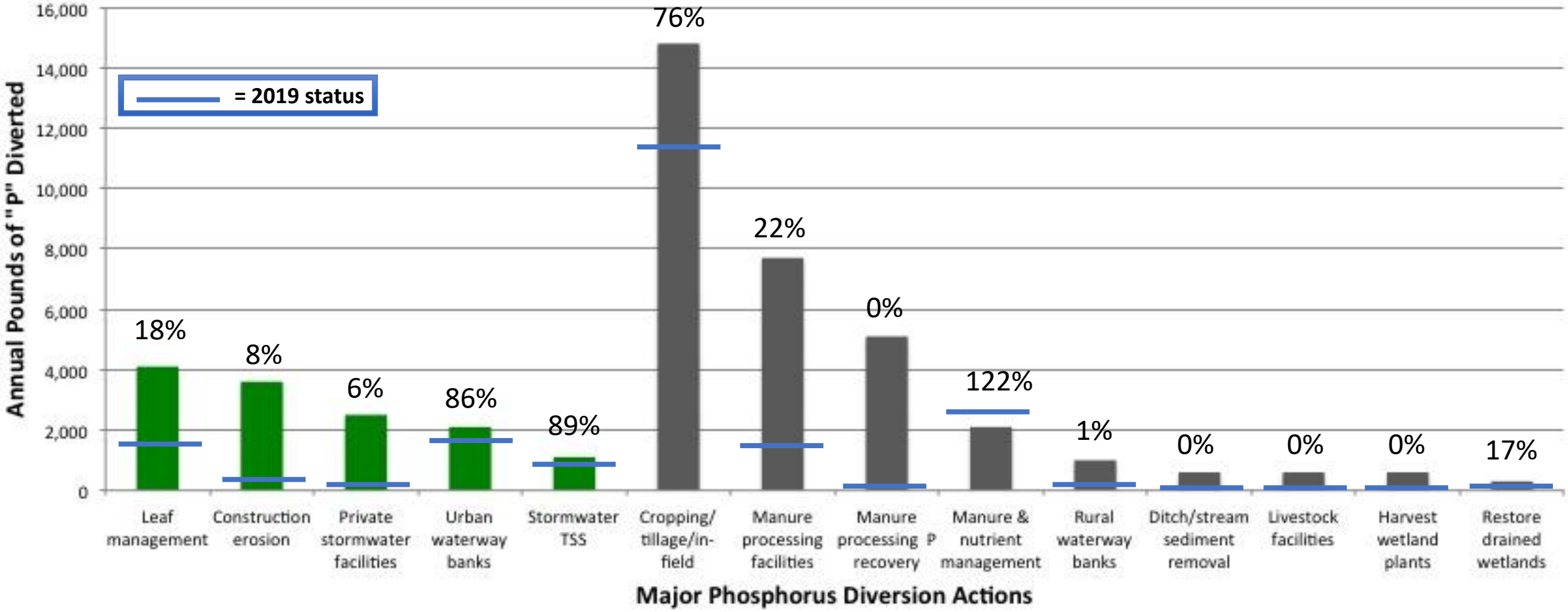
Updated via personal comm.: Carpenter and Lathrop, 2014

USGS science for a changing world

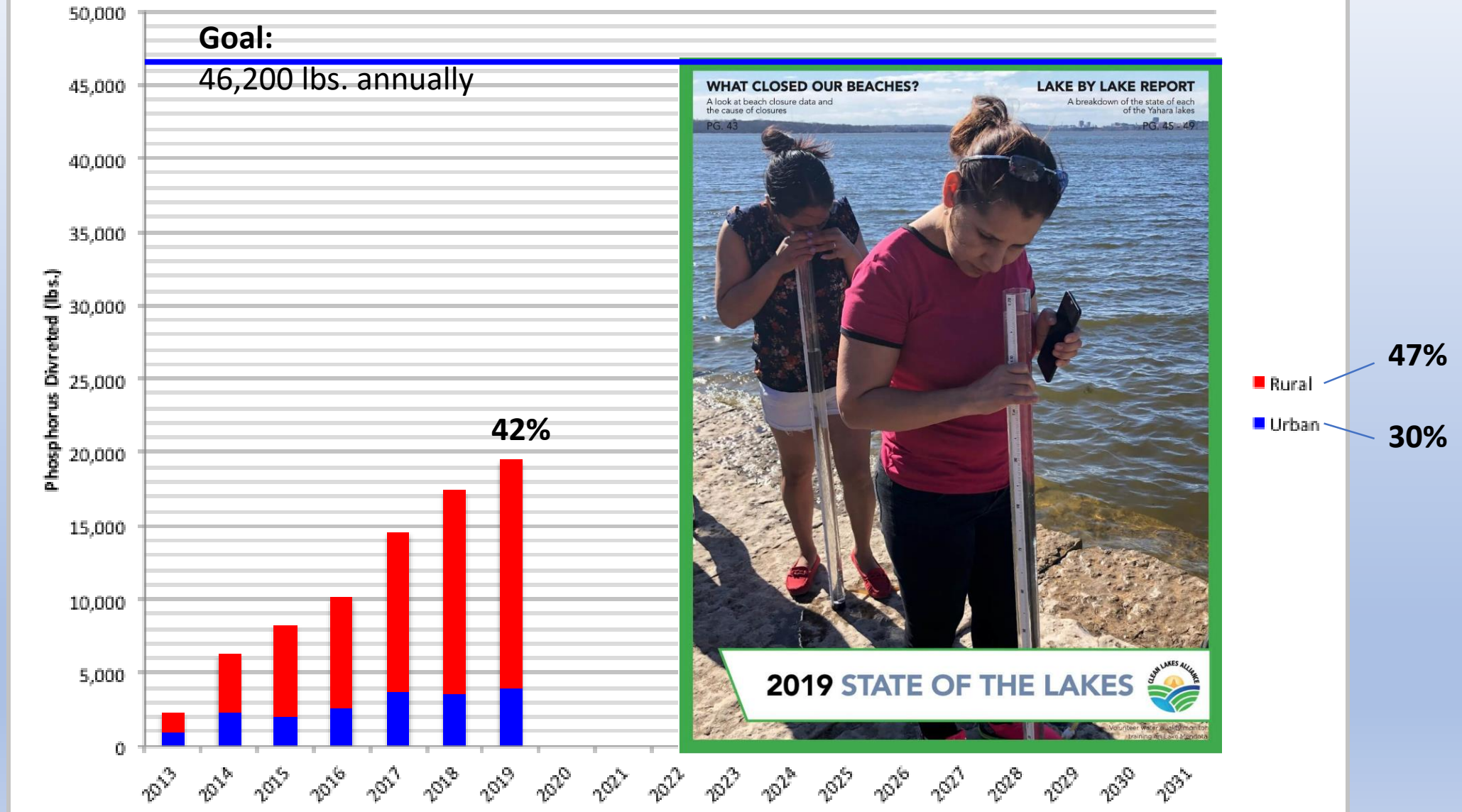
2/6/2020

Credit: Todd Stuntebeck

Yahara CLEAN 2.0 Action Goals & Progress Dashboard



Yahara CLEAN Progress (2013-2019)

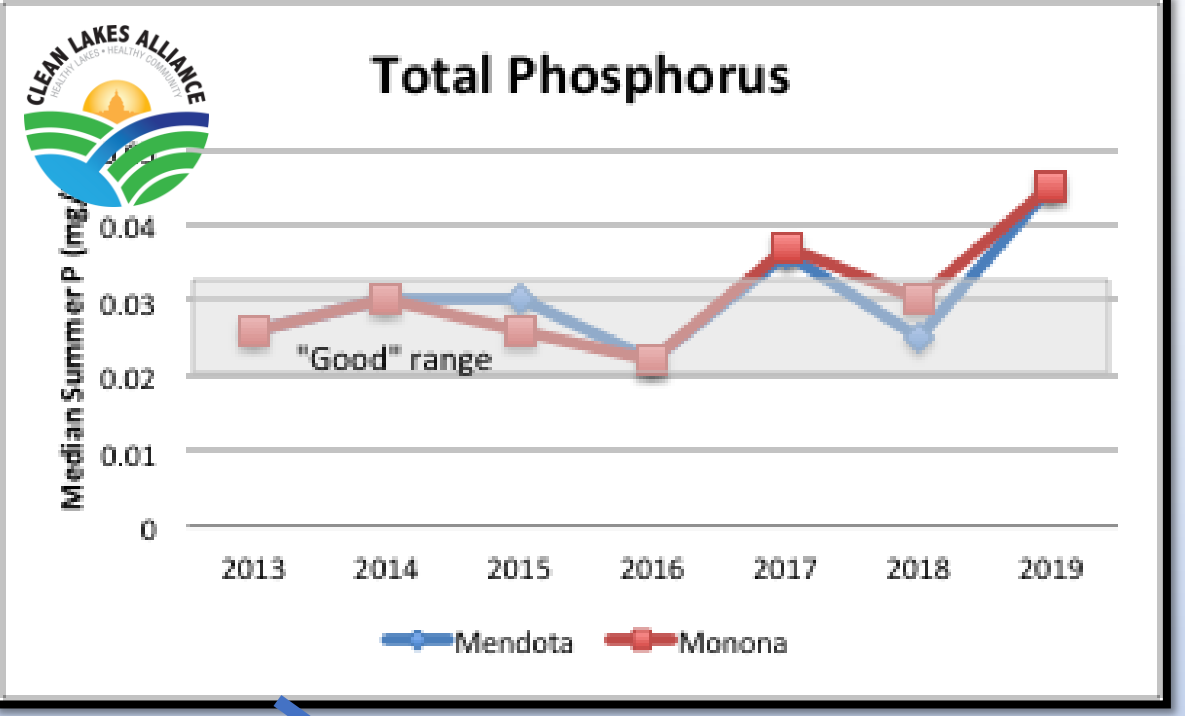


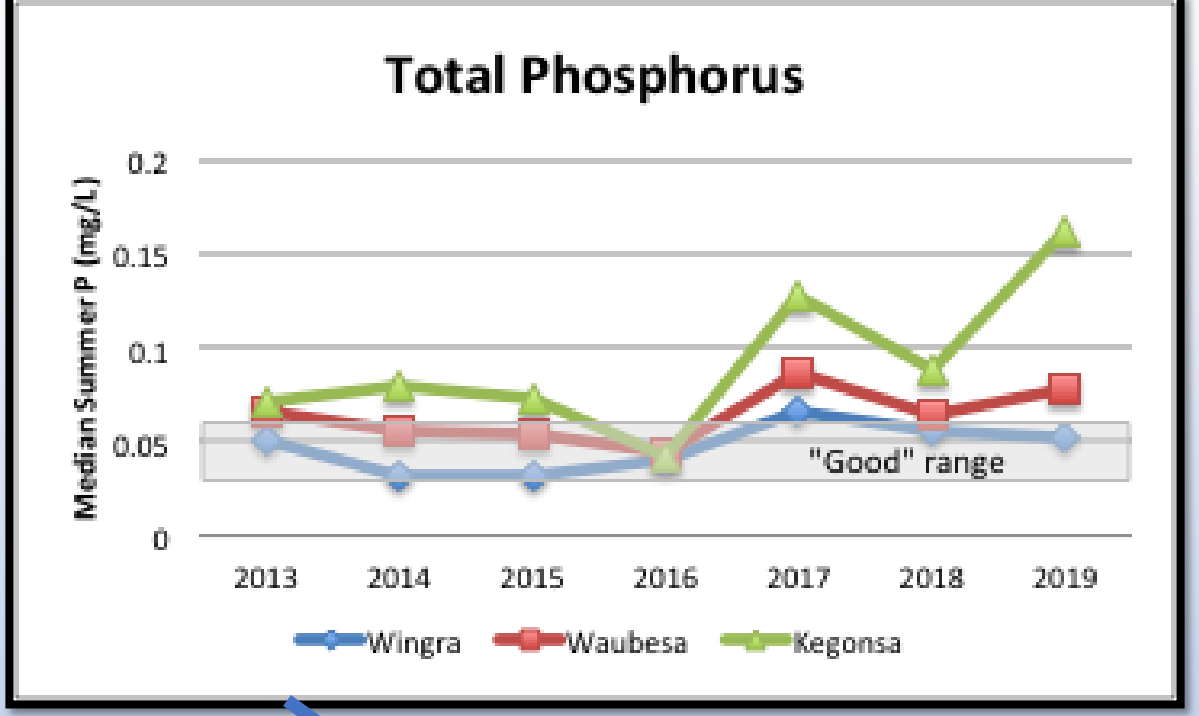
Yahara CLEAN Strategic Action Plan

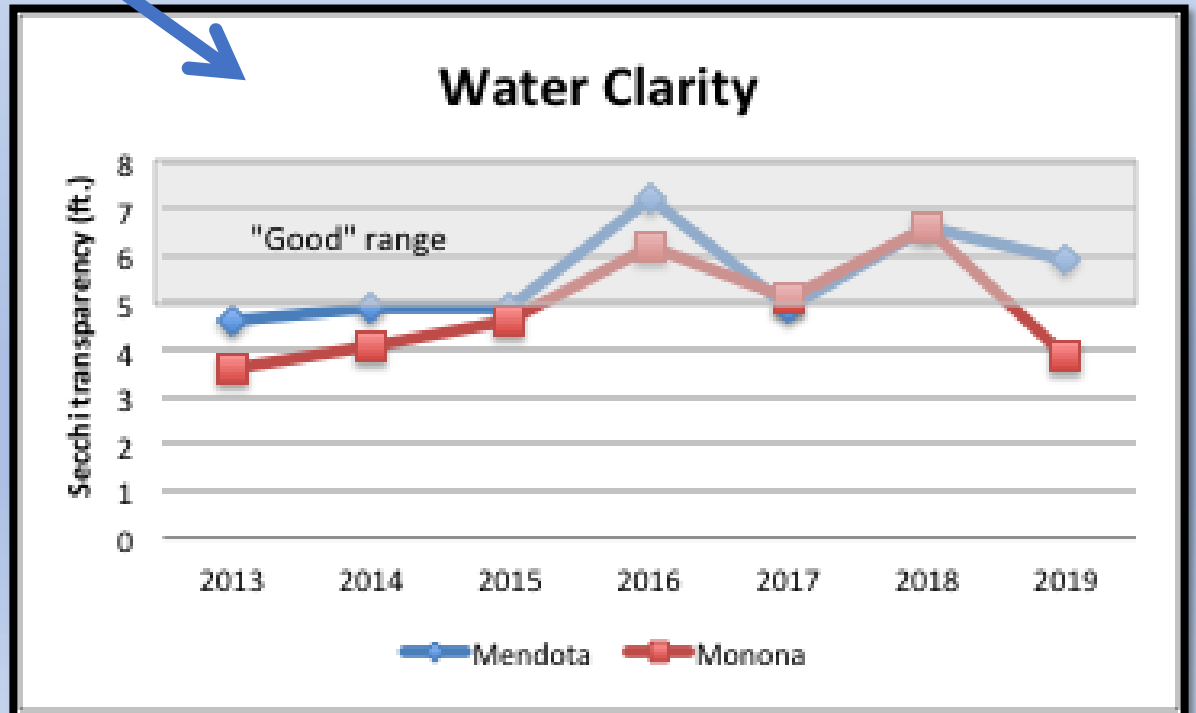
All Lakes	Total P Diverted Per Year (lbs)	Goal	Lead Agency	Present Value Cost over 20-Year Period (Millions)	Present Value Cost per lb Diverted (20-Year)
Urban Actions					
Improve Leaf Management	4,100	20% increase in collections	MAMSWaP[1] and each municipality	$4.1	$50
Improve Control of Construction Erosion	3,600	Reduce sediment runoff in new development by 80%	Dane County	$1.7	$25
Maintain Permitted Stormwater Facilities	2,500	Achieve compliance from 400 (out of 1500 total) noncompliant facilities	Dane County	$1.7	$34
Stabilize Urban Waterway Banks	2,100	13,700 linear feet	Each Municipality	$4.7	$113
Reduce TSS in Municipal Stormwater	1,100	Achieve 40% target for all facilities	Department of Natural Resources	$17.6	$860
Urban Subtotal	***13,400***			***$29.8***	***$111***
Rural Actions					
Improve Cropping, Tillage, and In-Field Practices	14,800	54,900 acres per year	Dane County	$14.5	$49
Build Community Digesters	7,700	5 systems	Dane County	$60.0	$390
Adjustment for Business Investment in Digesters				*-$49.5*	*-$322*
Subtotal for Community Digesters				*$10.5*	*$68*
Remove Additional P at Digesters	5,100	5 systems	Dane County	$10.0	$98
Manage Manure (m) and Nutrients (n)	2,100	11,572 (m) plus 15,700 (n) acres per year	Dane County	$3.2	$81
Stabilize Rural Waterway Banks	1,000	17,000 linear feet	Dane County	$2.1	$104
Dredge Drainage Ditches	600	2.5 miles per year	Dane County	$2.4	$218
Relocate or Cover Livestock Facilities	600	14 sites	Dane County	$2.1	$174
Harvest Wetland Plants	600	1,700 acres (once/3years)	Dane County	$2.0	$170
Promote Restoration of Wetlands	300	100 acres/year	Dane County and Natural Heritage Land Trust	$2.0	$328
Rural Subtotal	***32,800***			***$48.8***	***$74***
Total All Lake Direct Drainage Load Reductions	**46,200**			**$78.6**	**$85**
Total All Lake Direct Drainage Load Inputs	**95,000**				
Percent All Lake Load Reduction Achieved	**49%**				

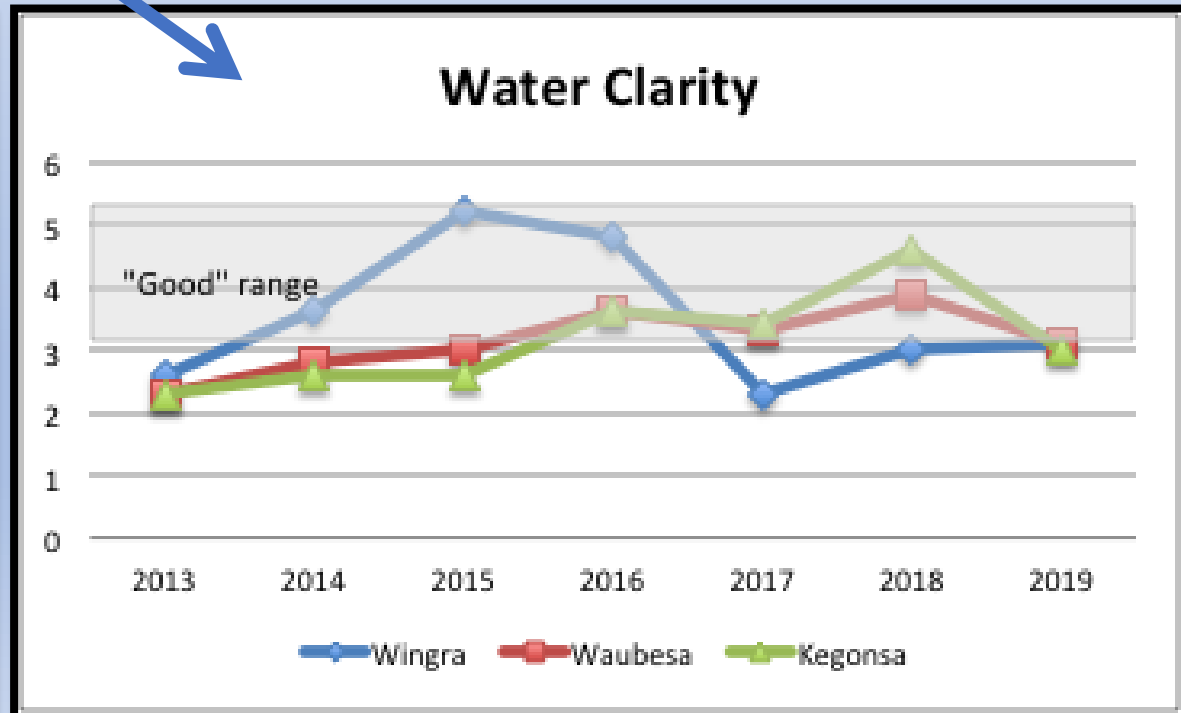
[1]Madison Area Municipal Storm Water Partnership

Yahara CLEAN Strategic Plan for Phosphorus Reduction			Status*				
	Priority Actions	Goal	2017	2018	2019	% of Goal	Comments
Urban (pounds of phosphorus diverted from the lakes)							
[1]	Improve leaf management	4,100	390	150	750	18%	Includes estimated phophorus reductions from reported new or expanded collection programs, or from collections in excess of an established baseline.
[2]	Control construction erosion control	3,600	910	760	290	8%	Most progress associated with city of Madison's Expanded Erosion-control Enforcement Program.
[3]	Maintain private permitted stormwater facilities	2,500	150	150	150	6%	Dane County inventories and issues notices of non-compliance. No additional facilities were brought into compliance in 2019.
[4]	Stabilize urban waterway banks	2,100	1,440	1,550	1,820	86%	Recent projects completed in Madison on heavily eroded waterway banks.
[5]	Reduce total suspended solids in municipal stormwater	1,100	810	900	980	89%	Recent projects in Madison and village of DeForest, with assistance from Dane County's Urban Water Quality Grant Program. Includes stormwater treatment ponds and green infrastructure.
	Alternative & emerging technologies						New technologies, such as in-stream phosphorus inactivation, could play an important role as they are developed and piloted.
	Urban subtotal	**13,400**	**3,700**	**3,500**	**4,000**	**30%**	
Rural (pounds of phosphorus diverted from the lakes)							
[6]	Improve cropping, tillage & in-field agricultural practices	14,800	7,360	10,060	11,230	76%	Farmers are adoping conservation measures to limit soil and phosphorus loss from fields. Recent progress mostly reported through Yahara Pride Farms and Dane County Land & Water Resources, and with funding from Yahara WINS and other assistance programs. Cover crops and low-disturbance manure injection were the biggest gainers.
[7]	Build community manure-processing facilities	7,700	1,660	1,660	1,660	22%	Two of the recommended five facilities have been built.
[8]	Recover additional phosphorus at digesters for export	5,100	0	0	0	0%	Dane County is in the process of installing a nutrient concentration system at one of the two manure digesters.
[9]	Manage manure and nutrients	2,100	1,850	2,140	2,560	122%	Biggest gains were from farm nutrient management planning and the headland stacking or composting of manure. The latter practice previously received funding support from Clean Lakes Alliance and other partners.
[10]	Stabilize rural waterway banks	1,000	0	0	10	1%	Recent project in Town of Westport funded through Yahara WINs and Clean Lakes Alliance.
[11]	Dredge drainage ditches	600	0	0	0	0%	Dane County's "Suck the Muck" project has removed legacy sediment from sections of Dorn and Token Creeks. Associated phosphorus reductions to the lakes have yet to be estimated.
[12]	Relocate or cover livestock facilities	600	0	0	0	0%	Dane County continues to identify high-risk facilities and advertise cost-share availability.
[13]	Harvest wetland plants	600	0	0	0	0%	Work is needed to identify suitable sites.
[14]	Restore critical drained wetlands	300	30	50	50	17%	Work is needed to identify additional restoration sites.
	Alternative & emerging technologies						New technologies, such as those involving manure handling and processing, could play an important role as they are developed and piloted.
	Rural subtotal	**32,800**	**10,900**	**13,900**	**15,500**	**47%**	
	Total	**46,200**	**14,600**	**17,400**	**19,500**	**42%**	

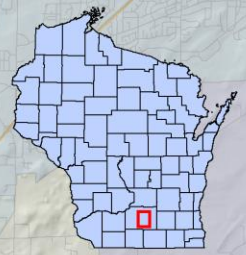

Total Phosphorus
Median Summer P (mg/L)
0.04
0.03
0.02
0.01
0
"Good" range
2013
2014
2015
2016
2017
2018
2019
Mendota
Monona


Total Phosphorus
Median Summer P (mg/L)
0.2
0.15
0.1
0.05
0
"Good" range
2013
2014
2015
2016
2017
2018
2019
Wingra
Waubesa
Kegonsa


Water Clarity
Secchi transparency (ft.)
8
7
6
5
4
3
2
1
0
"Good" range
2013
2014
2015
2016
2017
2018
2019
Mendota
Monona


Water Clarity
6
5
4
3
2
1
0
"Good" range
2013
2014
2015
2016
2017
2018
2019
Wingra
Waubesa
Kegonsa

Yahara Lakes Public Shoreline



66.4 Total Miles of Shoreline
49% Publically Owned

Town, Village, City, County, State, and University-owned Shoreline

Waunakee
Burke
Westport
Springfield
Middleton
Maple Bluff
Lake Mendota
Shorewood Hills
Madison
Lake Monona
Wingra
Monona
Cottage Grove
Blooming Grove
McFarland
Lake Waubesa
Pleasant Springs
Fitchburg
Dunn
Lake Kegonsa

Greater Madison Beaches

Waunakee
Burke
Sun Prairie
Westport
Maple Bluff
Lake Mendota
Shorewood Hills
Madison
Lake Monona
Wingra
Monona
Blooming Grove
McFarland
Lake Waubesa
Fitchburg
Dunn
Pleasant Springs
Lake Kegonsa

Sand Beach Swim Areas	
1	BB Clark
2	Bernie's
3	Brittingham
4	Esther
5	Frost Woods
6	Goodland County Park
7	Governor Nelson State Park
8	James Madison
9	Lake Kegonsa State Park
10	Lake Mendota County Park
11	Maple Bluff
12	Marshall
13	McDaniel
14	Olbrich
15	Olin
16	Schluter
17	Spring Harbor
18	Tenney
19	Vilas
20	Warner
*Non-Beach Swim Areas	
1	Burrow's Park
2	Hudson
3a	Law Park East
3b	Law Park West
4	Lake Farm County Park
5	UW Memorial Union
6	Paunack (A.O.) Park
7	Picnic Point
8	Willow
9	Wingra Park

*Non-official beaches. Water can be accessed from piers, boat launches, small sandy areas, etc.

Total Beach Closure Days