

Wisconsin's Multi-discharger Phosphorus Variance 2023 Update

Land and Water Conservation Board Meeting
April 4, 2023

Matt Claucherty, Phosphorus Implementation Coordinator
DNR Bureau of Water Quality

Presentation Outline

- MDV Basics
 - 2010 phosphorus rule, numeric criteria, effluent limits
 - Economic driver for point sources
 - Watershed phosphorus offset requirements
- Implementation Update
 - Point sources covered, point source effluent reductions
 - Funding levels, county participation
 - County project examples and reductions achieved
- Reauthorization effort
 - Why pursue reauthorization?
 - DOA-DNR Partnership and steps to complete reauthorization
 - Opportunities to review relevant information and get involved

Statewide Phosphorus Criteria



Rivers

100 $\mu\text{g/L}$



Streams

75 $\mu\text{g/L}$



Reservoirs

- Not Stratified = 40 $\mu\text{g/L}$
- Stratified = 30 $\mu\text{g/L}$



Inland Lakes

Ranges from 15-30 $\mu\text{g/L}$



Great Lakes

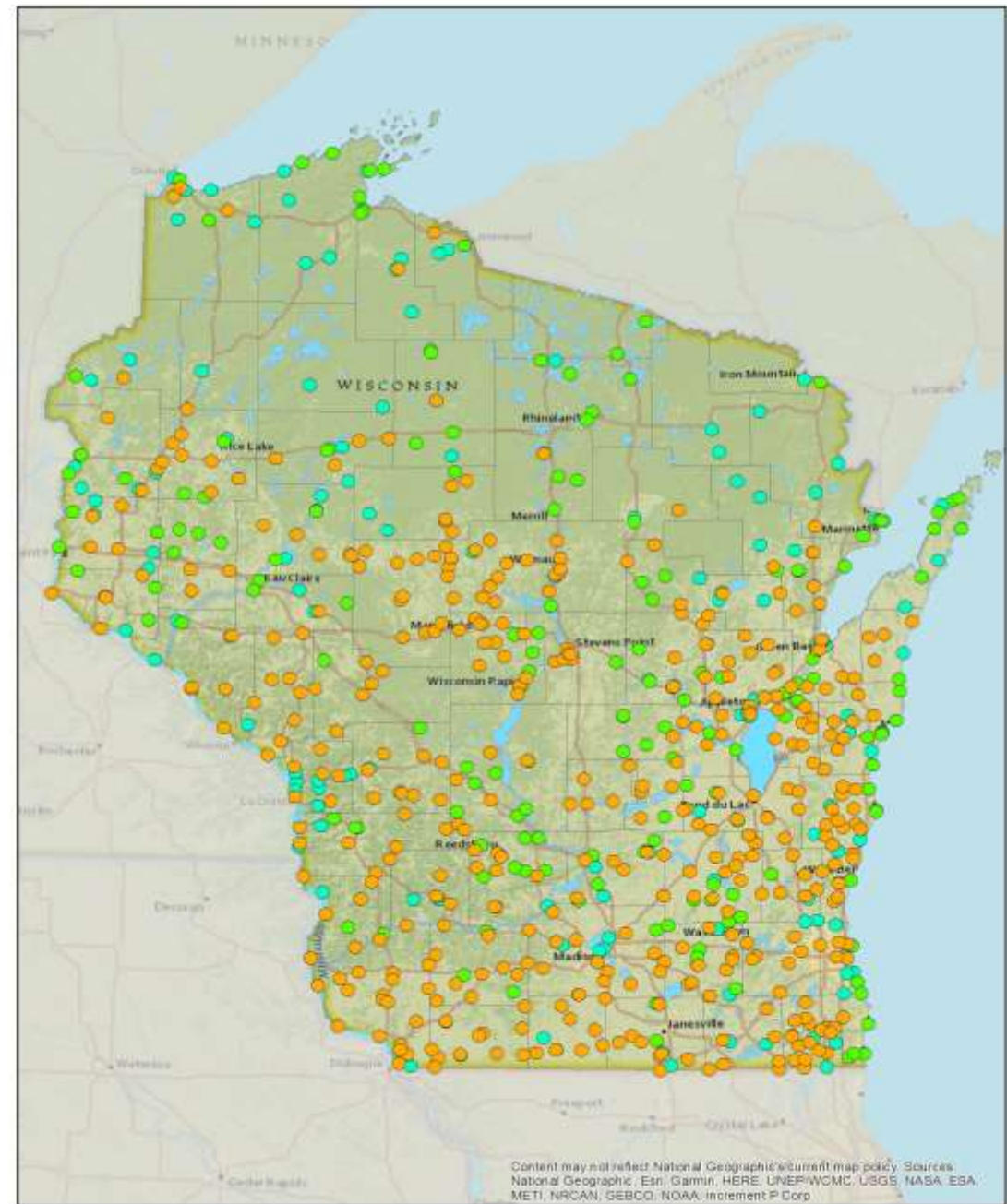
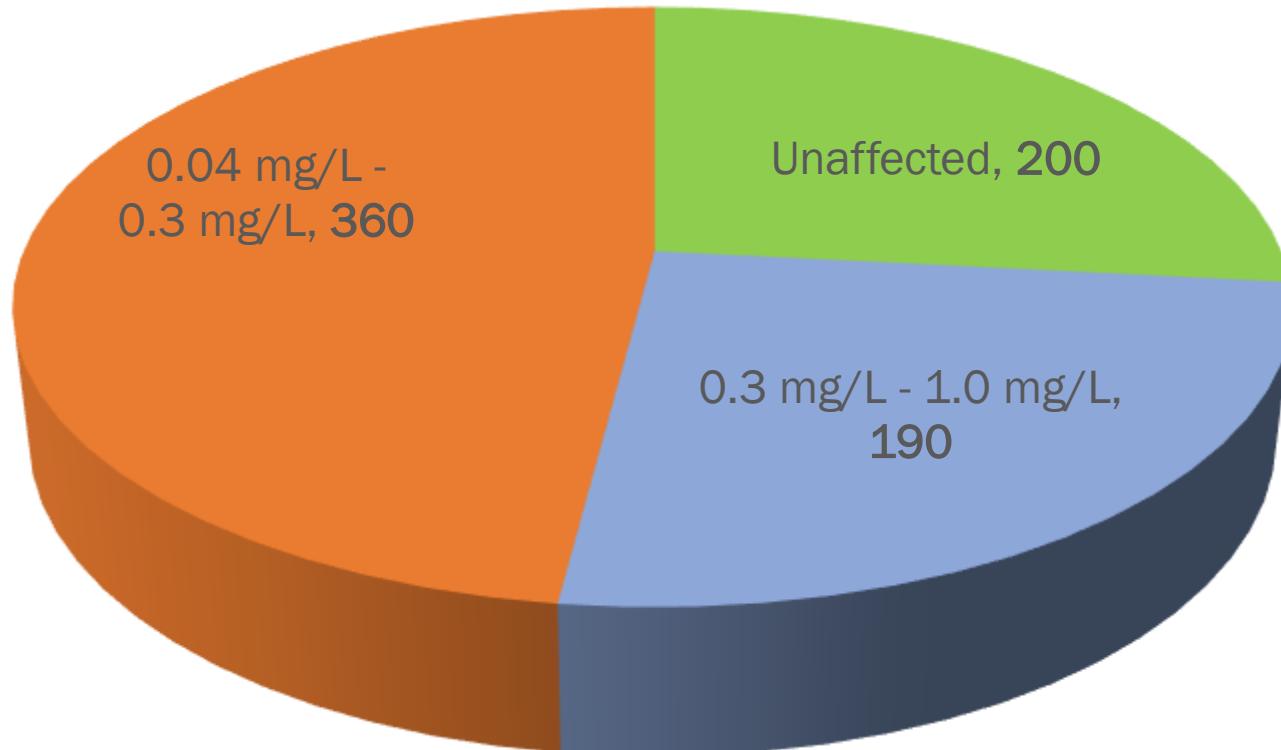
- Lake Michigan = 7 $\mu\text{g/L}$
- Lake Superior = 5 $\mu\text{g/L}$

Water Quality Based Effluent Limits: Total Phosphorus

Permitted Facilities:

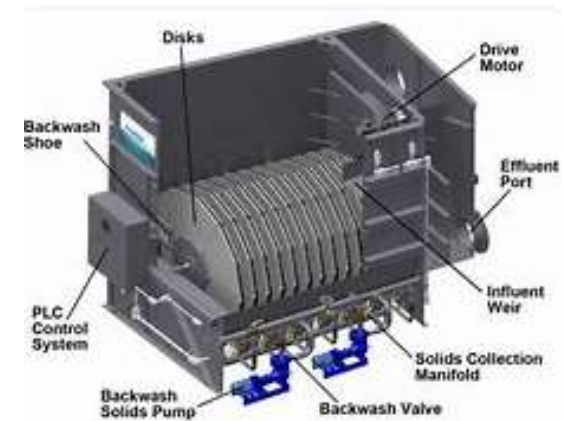
- 750 surface water dischargers

Phosphorus WQBELs Statewide



Treatment would be required to comply with WQBELs

- Most facilities are required to install or improve phosphorus treatment systems
- Limits 0.3 mg/L to 1.0 mg/L:
 - Chemical treatment
 - Biological treatment
 - Combination thereof
- Limits below 0.3 mg/L:
 - Chemical/biological treatment followed by tertiary filtration
- Very few wastewater facilities had tertiary filtration in 2010



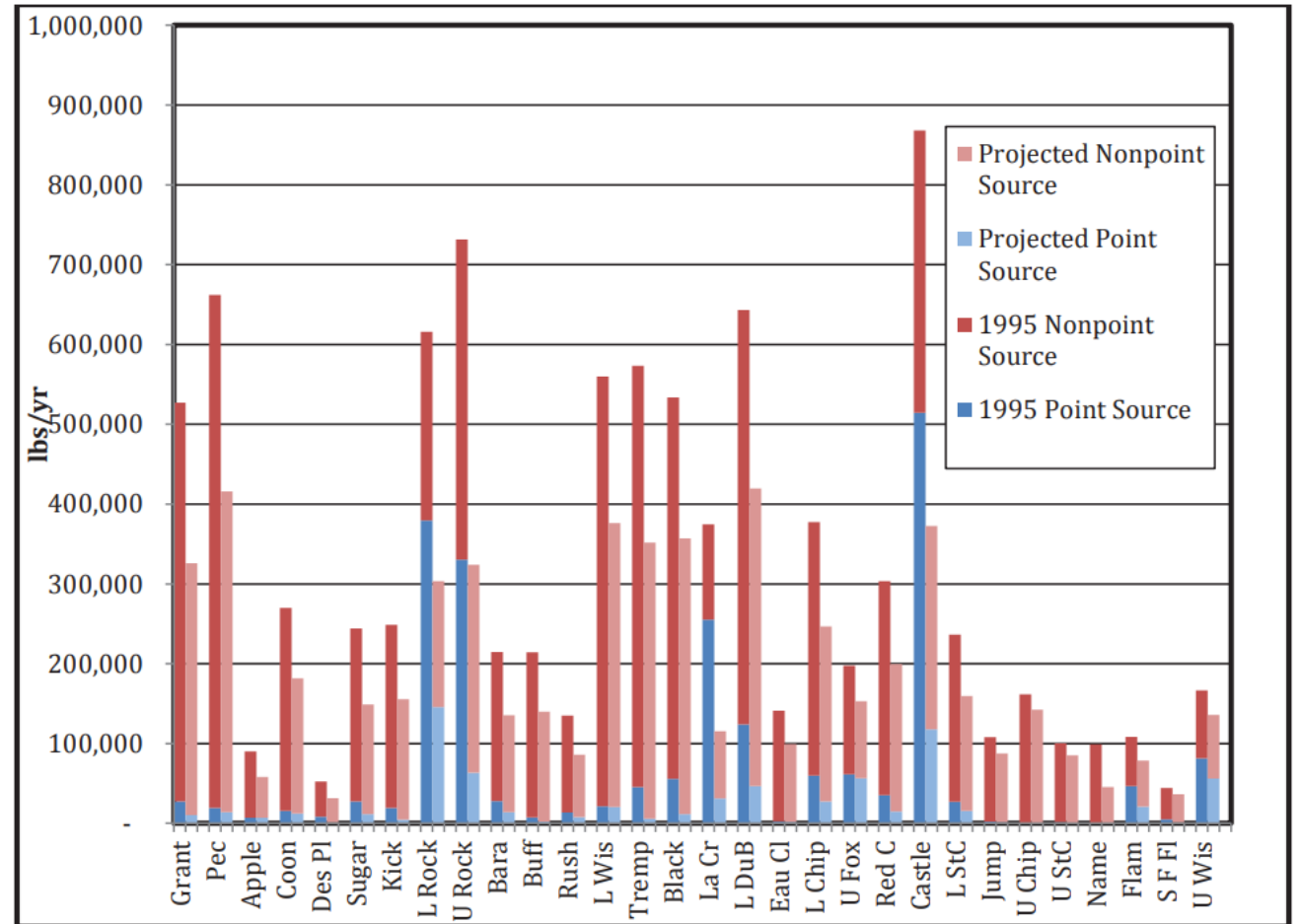
Attaining Standards: Point Sources vs. Nonpoint Sources

- Statewide phosphorus loadings are:
 - 82% nonpoint source
 - 18% point source

(Wisconsin's Nutrient Reduction Strategy, 2013)

- Success in attaining standards largely hinges on agriculture
- Agricultural reductions in phosphorus are typically more economical than at wastewater plants
- Flexibilities for dischargers: AM, WQT, & MDV - all rely on ag offsets

Total Phosphorus Loads for WI Major River Systems



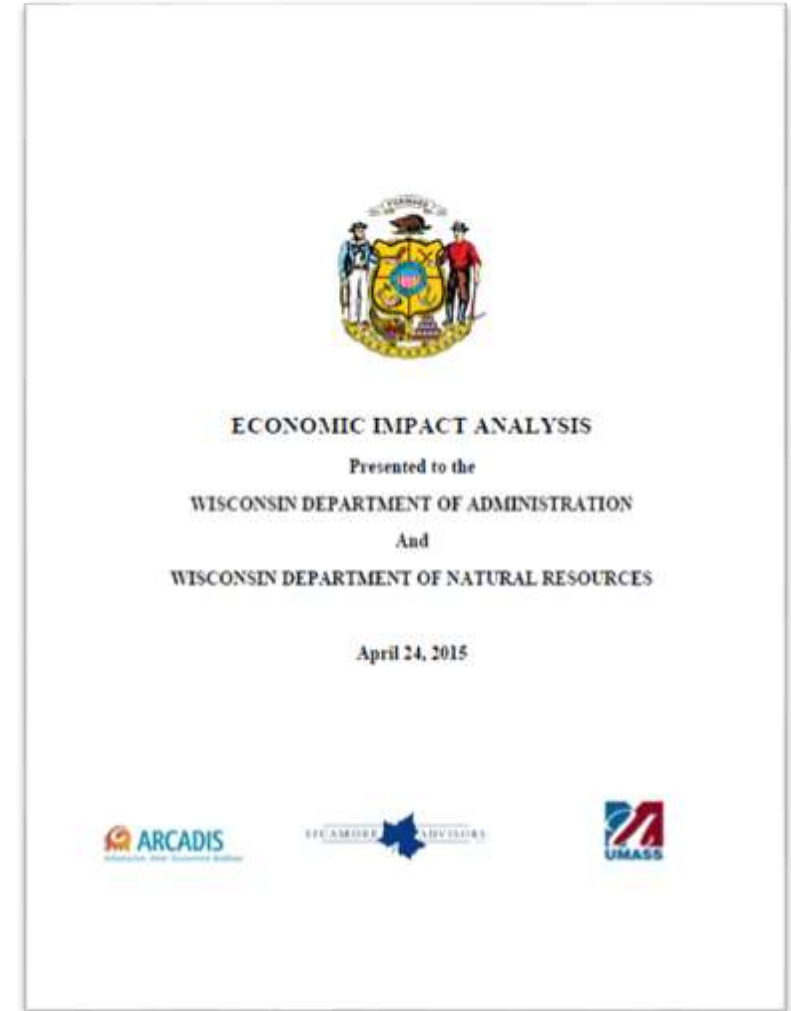
2015 Economic Impact Analysis

- Capital costs for additional treatment technology (\$7B)
- Increased facility operational costs (\$405 M annually)
- Broader impacts to Wisconsin's economy
- Immediate implementation would:
 - Double or triple sewer rates for many communities
 - Force many industries to close, relocate, or scale back

Table 3-2: Statewide Economic Impacts, 2017 and 2025

Economic Impacts	2017	2025
Total Employment (Jobs)	-1,608	-4,517
Gross State Product (Millions of Fixed 2014 Dollars)	-\$177.3	-\$616.6
Total Wages (Millions of Fixed 2014 Dollars)	-\$68.3	-\$238.3
Population (Individuals)	-2,036	-10,964

Source: Regional Economic Models, Inc., as calculated by the University of Massachusetts Donahue Institute.



MDV's "Two-pronged" Approach :

Agricultural Phosphorus Reductions

- Self-directed, third-party, and county payment options
- County payment option is most popular
 - Dischargers pay \$50/lb (plus inflation) for phosphorus discharged
 - Counties use the funding to implement NR 151 Ag Performance Standards
 - Counties are required to address highest polluting sites when planning and quantify reductions achieved

Effluent Phosphorus Reductions

- Mandated by statute and permit
- Facilities must install basic treatment
- Ongoing optimization required
- Driven by economic incentive to reduce nonpoint source offset requirement



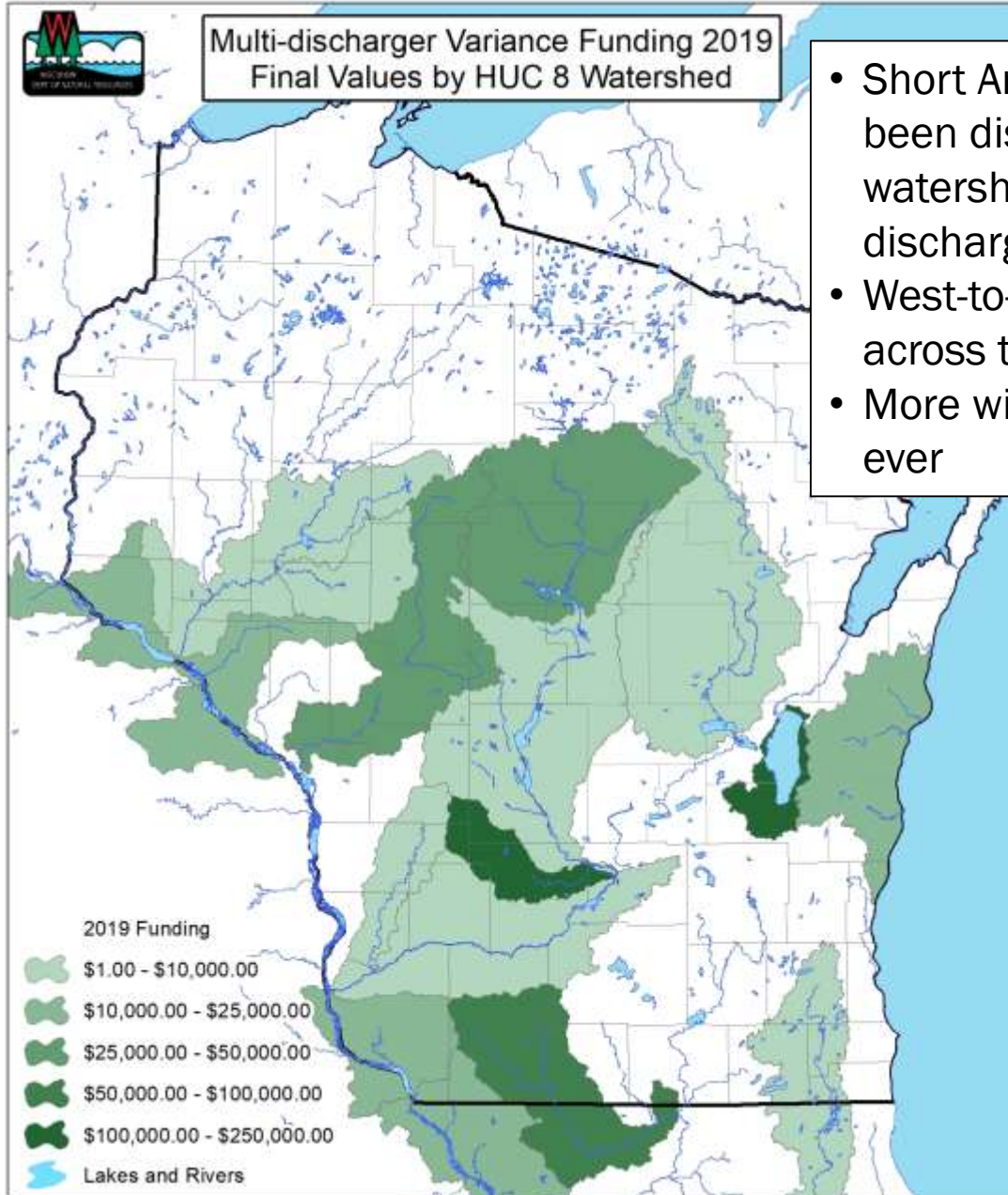
County Funding and Participation

	2017	2018	2019	2020	2021	2022*
Number of facilities covered	2	34	73	98	119	139
Total County Payment	\$2,606.02	\$619,363.60	\$938,116.95	\$937,241.50	\$1,144,247.72	\$1,063,050.46
Counties Participating	1	25	34	35	26	23

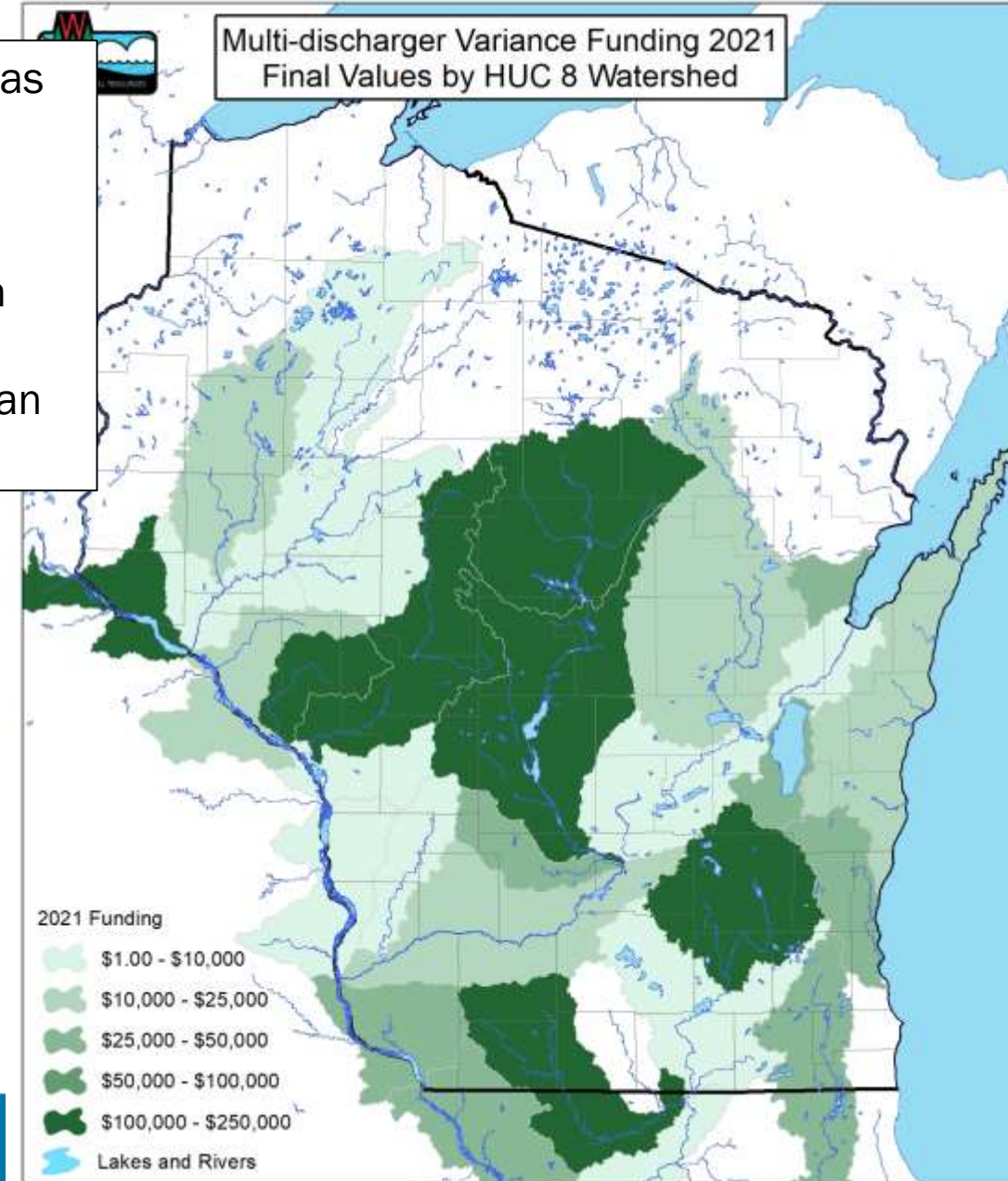
*2022 values are tentative as of 3/23/23

- The MDV is more frequently used by dischargers than water quality trading or adaptive management
- Dischargers are able to optimize phosphorus discharged, thereby reducing payments over time
- County participation has declined in recent years. Counties most commonly cite the following reasons for not participating
 - Staffing challenges (turnover, inability to allocate staff time)
 - Funding levels for specific counties may not be worth the administrative effort (\$100 – \$10,000 /yr)
 - Cannot find cost share opportunities that meet program requirements (NR 151 & phosphorus reduction)

Where has the funding been distributed?

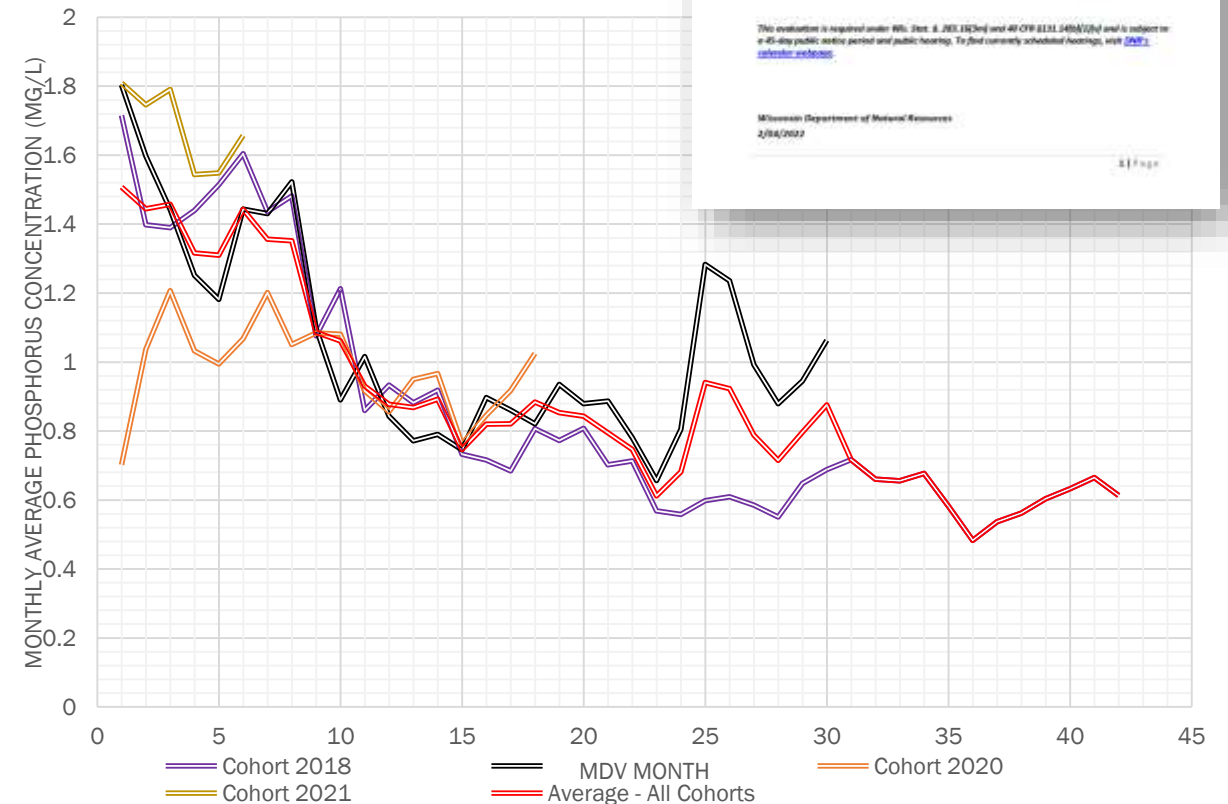


- Short Answer: Funding has been distributed in watersheds where dischargers are located
- West-to-east progression across the State
- More widely available than ever



Program Accomplishments

- 5-year review recently completed:
- Effluent phosphorus reduction has been highly successful
- County payments act as an incentive to optimize treatment
- Many facilities are adopting phosphorus treatment for the first time – and quickly!
- Overall point source reduction estimate: 127,602 lbs/year



Program Accomplishments

Nonpoint source phosphorus reductions:

- Counties: 17,037 lbs/year reduction for the 2019 funding year (2021 reports)
- Most common BMP types:
 - Nutrient Management, Grassed Waterway, Cover Crops, Streambank Restoration
- DNR Launched the BMP Implementation tracking system (BITS) for county MDV Reporting. See webpage for approved reports: <https://dnr.wisconsin.gov/topic/nonpoint/mdvAnnualReports>



Lincoln County



Fond du Lac County

County Name	BMP Type(s) Installed / Planned
Calumet	Grassed Waterway, Nutrient Management
Chippewa	Sediment Basins, Buffers, Nutrient management
Eau Claire	Grassed Waterway, Manure Storage, Cattle Crossing
Fond du Lac	Grassed Waterway, Nutrient Management, Streambank, Sediment Basin
Grant	Cover Crops, Streambank, No-till
Iowa	Barnyard Practices
Juneau	Streambank
Lafayette	Streambank, Cattle Crossings
Lincoln	Manure Storage
Manitowoc	Nutrient Management Plans
Marathon	Cover Crops
Monroe	Cattle Crossing, Streambank
Outagamie	Grassed waterway, Grade Stabilization
Ozaukee	Harvestable buffers
Pierce	Streambank
Racine	Grassed waterway, buffer strip
Sauk	Streambank, Perennial Vegetation
Shawano	Manure Storage
Taylor	Barnyard Practices
Trempealeau	Cattle Crossing, Streambank
Walworth	Cover Crops, No-till
Waupaca	Sediment Basins, Cattle Crossing
Waushara	Riparian Buffer
Winnebago	Grassed Waterway, Wetlands, Riparian Buffers
Wood	Nutrient Management Plans

MDV Reauthorization

- The MDV was initially approved by EPA in 2017 for a 10-year duration
- DNR anticipates ongoing need for this permitting approach past the 2027 expiration
- 5-year permits are already pushing into 2028
- Counties and dischargers alike have integrated MDV into their operations
- State statute authorizes MDV coverage for any single facility for 4 permit terms (20 years)

DOA – DNR Reauthorization Partnership

- Section 283.16(2)(a), Wis. Stats.

“The department of administration, in consultation with the department of natural resources, shall determine whether attaining the water quality standard for phosphorus.... would cause substantial and widespread adverse social and economic impacts on a statewide basis.”

(Completed in 2016)

- Section 283.16(3)(c) Wis. Stats.

“the department of administration, in consultation with the department of natural resources, shall decide whether the determination ...remains accurate.”

(Targeting completion in 2023)



Steps for Reauthorization

- Evaluate current phosphorus treatment technology
- Compile status of all WPDES facilities regarding phosphorus limits
- Use updated information to re-run the core economic metrics
- Draft a preliminary report
- Share with stakeholders (WPDES facilities, industry, environmental groups, agencies)
- Accept comments
- Finalize report
- Submit the report and reauthorization package to EPA

CONNECT WITH US

Matt Claucherty

Matthew.Claucherty@wisconsin.gov
(608) 400 - 5596



/WIDNR



@WIDNR



@WI_DNR



/WIDNRTV



"WILD WISCONSIN:
OFF THE RECORD"