Yahara WINS

Yahara WINS 2024 Annual Report

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Front cover: "Planting green" into cover crop (Dane County LWRD)
Back cover: Rye cover in corn field (Dane County LWRD)

ABOUT YAHARA WINS

The Yahara Watershed Improvement Network, known as Yahara WINS, is a long-term initiative to achieve clean water goals for the Yahara Watershed. In this effort, community partners, led by Madison Metropolitan Sewerage District, are collaborating on a strategy called watershed adaptive management in which all sources of phosphorus in the watershed work together to reduce nutrient runoff over 20 years. The work began in 2012, and following a four-year pilot effort, has transitioned to the full-scale implementation throughout the whole watershed. 2024 marks the eighth full year of the initiative.

Intergovernmental Agreement (IGA) Signatories

Towns
Blooming Grove
Burke
Cottage Grove
Dunn
Middleton
Westport

Villages
Cottage Grove
DeForest
Maple Bluff
McFarland
Shorewood Hills
Waunakee
Windsor

Cities
Fitchburg
Madison
Middleton
Monona
Stoughton
Sun Prairie

Others
Madison Metropolitan Sewerage District
Village of Oregon Wastewater Treatment Plant
Stoughton Utilities
UW-Madison
Wisconsin Department of Natural Resources

Interested Parties

Clean Lakes Alliance
Yahara Pride Farms
River Alliance of Wisconsin
U.S. Geological Survey
U.S. Environmental Protection Agency (EPA)
Madison Gas & Electric
Yahara Lakes Association
Dane County
Friends of Pheasant Branch
Wisconsin Department of Agriculture, Trade and Consumer Protection
Friends of Badfish Creek
Rock County
Columbia County
Rock River Coalition

Bold = Partner that has a funding agreement with Yahara WINS.

IGA Executive Committee Members

Voting Members
President: Martin Griffin, Madison Metropolitan Sewerage District
Vice President: Tom Wilson, Town of Westport
Secretary: Greg Fries, City of Madison
Treasurer: Judd Blau, Village of DeForest
At-large member: Lauren Striegl, Village of Oregon

Non-voting Advisory Members
Laura Hicklin, Dane County
Bob Uphoff, Yahara Pride Farms
James Tye, Clean Lakes Alliance

PRESIDENT'S MESSAGE

Martin Griffin,
Yahara WINS
President

Success in Yahara WINS requires an alignment of land, people and resources. To achieve reductions in phosphorus, several conditions need to be met:

- There must be a parcel of land where phosphorus is applied, or where phosphorus has accumulated in the past.
- The owner or manager of the parcel needs to be willing to implement a practice that reduces the release of phosphorus.
- There must be sufficient resources, such as equipment and funding, to implement the phosphorus reduction practice.

That combination of conditions can be easier to find in some areas of the Yahara Watershed than in others. For example, reaches (sub-watersheds) like Reach 64, which includes Lake Mendota and Lake Monona, have had ample opportunities for phosphorus reduction. The area's large proportion of agricultural land, willing farmers and staff and funding resources from Yahara WINS have allowed for hundreds of practices that have reduced phosphorus to our lakes. Additionally, the types of practices suitable for the land uses in this reach are relatively simple and inexpensive, such as cover crops and no-till agriculture. Due to these favorable conditions, Reach 64 has consistently exceeded its annual phosphorus reduction goal.

Meanwhile, it's more difficult to identify phosphorus reduction opportunities in other reaches with different characteristics. Reach 65, which contains Nine Springs Creek, is drastically different than Reach 64. It's smaller, less agricultural and more urbanized than the upper part of the watershed. The inexpensive practices that are appropriate in Reach 64 wouldn't apply to Reach 65. Accordingly, the annual phosphorus reductions in Reach 65 have been lower than its annual goal.

Overall, phosphorus reductions across the watershed have exceeded the total phosphorus reduction goal for each year, but it is not enough to meet the total annual reduction goal. Yahara WINS must also meet the annual reduction goal for each stream reach by the end of the 20-year project. This means the Yahara WINS project will need to adapt in the future to target planning and resources to areas with more difficult-to-find phosphorus reduction opportunities. Where phosphorus reductions opportunities are difficult to identify, less conventional strategies may be necessary. For example, reaches with limited opportunities for agricultural conservation practices may benefit instead from engineered practices, like streambank stabilization, or in-stream phosphorus removal through treatment or dredging.

This type of adaptation is expected and necessary in watershed projects like Yahara WINS. Through years of project implementation, we've learned more about the watershed and phosphorus reduction practices, and those lessons feed back into our strategy. As leaders, we learn and adapt as we go.

2024 phosphorus (P) reductions

Total phosphorus reductions reported:
59,124 pounds

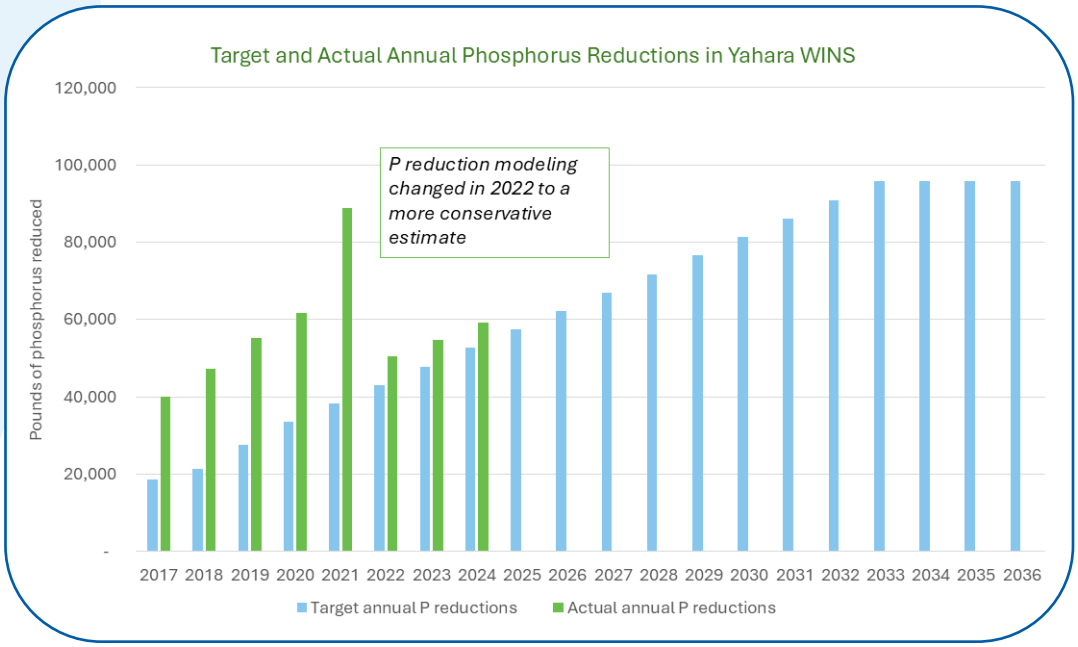
2024 reduction goal:
52,648 pounds

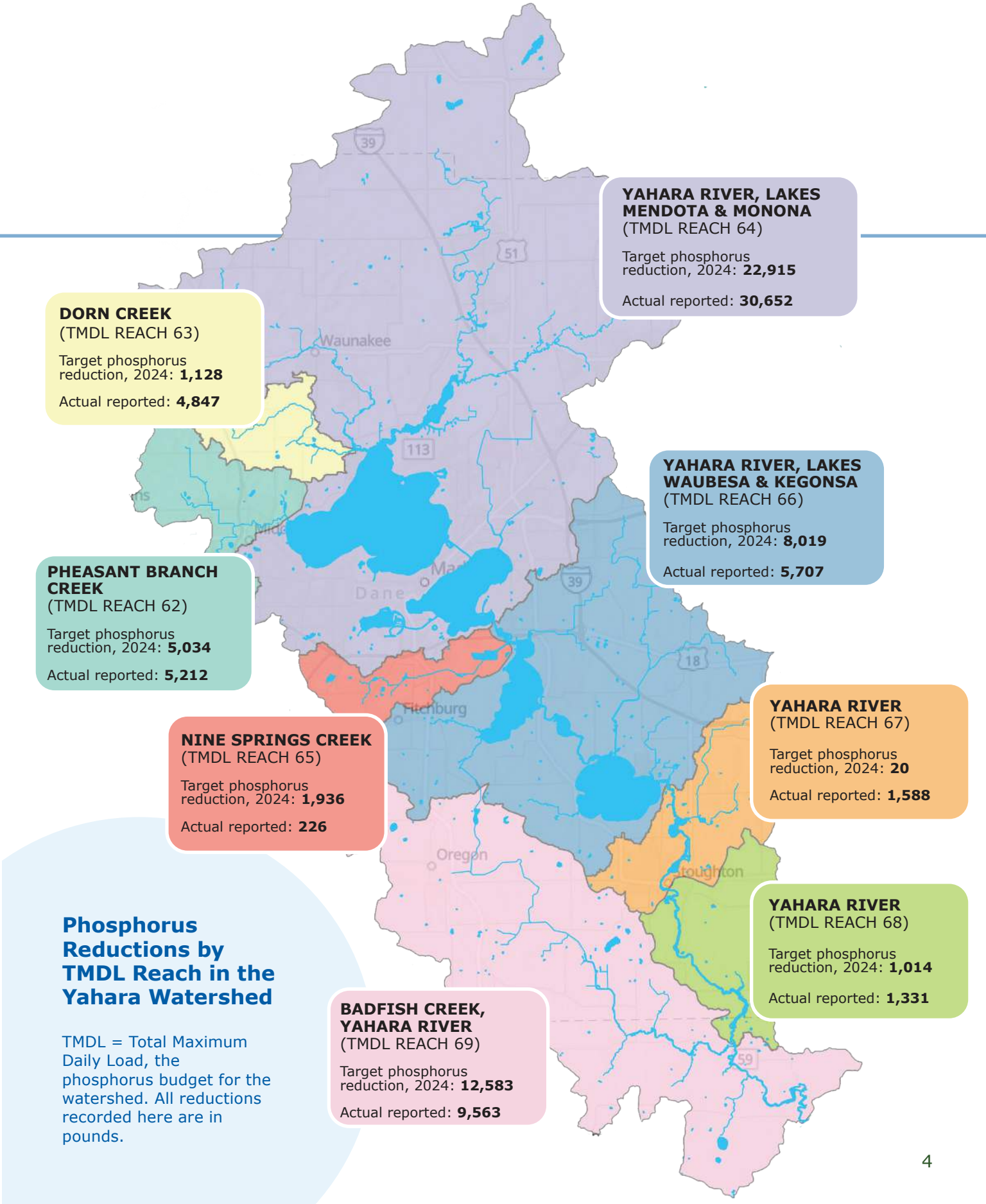
- **Phosphorus reductions are on track.** 2024 was a typical year for the project in terms of the phosphorus reduction accomplished and the type and distribution of conservation practices. Reported reductions in 2024 exceeded the annual goal by 12%.

- **Phosphorus reductions are concentrated in certain reaches.** As in previous years, Reach 64 (Lake Mendota and Lake Monona) had the highest number of conservation practices and the largest phosphorus reduction. In these reaches, phosphorus reductions exceeded the annual goal for the reach.

- **Cover crops remain a popular phosphorus reduction practice.** The most commonly implemented phosphorus reduction practice was cover crops, which are well-understood, highly visible and relatively inexpensive. Yahara Pride cost-share supported 13,592 acres of cover crops, and Dane County LWRD supported 2,292 acres.

  The reaches with the most acres in cover crops were Reach 64 and Reach 62 (Dorn Creek). Other widely adopted practices included fence construction (associated with managed grazing of livestock), low-disturbance manure injection (LDMI) and strip tillage/no-tillage.





YAHARA RIVER, LAKES MENDOTA & MONONA
(TMDL REACH 64)

Target phosphorus reduction, 2024: **22,915**

Actual reported: **30,652**

DORN CREEK
(TMDL REACH 63)

Target phosphorus reduction, 2024: **1,128**

Actual reported: **4,847**

YAHARA RIVER, LAKES WAUBESA & KEGONSA
(TMDL REACH 66)

Target phosphorus reduction, 2024: **8,019**

Actual reported: **5,707**

PHEASANT BRANCH CREEK
(TMDL REACH 62)

Target phosphorus reduction, 2024: **5,034**

Actual reported: **5,212**

YAHARA RIVER
(TMDL REACH 67)

Target phosphorus reduction, 2024: **20**

Actual reported: **1,588**

NINE SPRINGS CREEK
(TMDL REACH 65)

Target phosphorus reduction, 2024: **1,936**

Actual reported: **226**

YAHARA RIVER
(TMDL REACH 68)

Target phosphorus reduction, 2024: **1,014**

Actual reported: **1,331**

BADFISH CREEK, YAHARA RIVER
(TMDL REACH 69)

Target phosphorus reduction, 2024: **12,583**

Actual reported: **9,563**

Phosphorus Reductions by TMDL Reach in the Yahara Watershed

TMDL = Total Maximum Daily Load, the phosphorus budget for the watershed. All reductions recorded here are in pounds.

Partner summaries

The majority of Yahara WINS funding goes to partners who support the implementation of phosphorus reduction practices in the watershed. These partners have agricultural expertise and relationships with area farmers that translate into successful practice implementation. Yahara WINS funding is used by implementing partners for staffing, planning and design, equipment and direct cost-share for conservation practices.

YAHARA PRIDE FARMS

- Distributed cost-share that supported 29,713 acres of conservation practices.
- Offered cost-share for 10 conservation practices, including planting strategies to prevent runoff (such as cover crops) and manure management practices like composting.
- Reported a phosphorus reduction of 33,252 pounds in 2024, a 6% increase from 2023.
- Allocated $500,108 in cost-share to support conservation practices. Cost-share covers a portion of the cost of practices, so participating farmers contributed an additional $548,507 towards these practices.

DANE COUNTY LAND AND WATER RESOURCES DEPARTMENT (LWRD)

- Implemented 102 new conservation practices associated with a phosphorus reduction of 6,116 pounds.
- Reported a total annual phosphorus reduction of 22,271.2 pounds, including pounds from practices new in 2024 and from practices implemented in previous years that continue reducing phosphorus.
- Performed 48 verification checks of conservation practices to ensure they were working as expected. 45 of the inspected practices were in satisfactory condition.
- Allocated $368,378 in cost-share assistance in the Yahara Watershed. Of this funding, $157,770 was from Yahara WINS, with the rest provided by federal, county and other funding sources. The remainder of the $540,000 provided by Yahara WINS to Dane County supported staff and equipment used in Yahara WINS practices.
- Supported Biological Farming Friends, a producer-led watershed group. Phosphorus reductions achieved by this group are included in the Dane County total.

ROCK COUNTY LAND CONSERVATION DEPARTMENT (LCD)

- Reduced 3,601 pounds of phosphorus from practices implemented since 2017 that are still in place.
- Focused on planning and design of projects in 2024 during a period of staff development following turnover.
- Planned/designed five projects for implementation in 2025. In total, $130,246 have been allocated to these projects, which are projected to reduce 314 pounds of phosphorus. This reduction is expected to exceed the 2025 service agreement reduction goal of 138 pounds.

Top: Permanent vegetative cover on a field (Rock County LCD)
Left: Mastermind Dinner hosted by Dane County LWRD to highlight role of farm partners in conservation decisions (Dane County LWRD)
Right: Cattle in cover crop (Dane County LWRD)

Find full partner annual reports at yaharawins.org/resources/annual-reports

Yahara WINS Farmer Profiles

Farmers across the watershed implement conservation practices that increase soil health and keep phosphorus on the land. These profiles of Yahara WINS farmers are courtesy of Marie Raboin, Dane County LWRD. Marie is the county liaison for Biological Farming Friends, a farmer-led group centered in the southern part of the Yahara Watershed. These farmers are members of Biological Farming Friends.

WATSON FAMILY FARM

Overlooking the scenic Yahara River near Edgerton, the Watson Family Farm blends history, hard work and forward-thinking in every acre. A fifth-generation farm, it's a place where tradition meets transformation—and where even the youngest hands pitch in. From five-year-olds helping feed the show hogs to teenagers raising pumpkins, sweet corn and tending tobacco, the entire Watson family plays a role in their agricultural legacy.

While their crop rotation includes staples like corn, wheat and soybeans, the Watsons have also raised everything from hogs and beef to tobacco and pumpkins. But what truly sets them apart is their deep commitment to conservation and community.

Curt Watson, a leader in both local agriculture and organizations like the Wisconsin Pork Association and Edgerton FFA Alumni, has been an early adopter of cover crops in Dane County. Over the years, he and his family have invested in tools and techniques to nurture their soil—embracing managed grazing, planting green and exploring new approaches to nutrient cycling and pest control.

One of Curt's current passions is working to reduce insecticide use through innovative practices. He's participating in a University of Wisconsin research study on planting "naked" soybean seed—untreated with insecticides—to boost populations of beneficial native insects and reduce dependency on chemical inputs.

This progressive mindset, paired with a strong conservation ethic and a deep-rooted connection to their community, makes Watson Family Farm not only a working farm but a living model of sustainable agriculture in action.

FURSETH FARMS

Nestled in the rolling countryside of Stoughton, Wisconsin, Furseth Farms stands as a proud testament to four generations of dedication, innovation and resilience. As one of only two remaining dairy farms in Rutland Township, the Furseth family has held tightly to their roots while adapting to the ever-evolving landscape of agriculture.

Their fields stretch across acres of corn, soybeans, wheat and hay—a mix that reflects both tradition and transformation. As many farms in the area have shifted from dairy to cash grain, perennial crops like alfalfa have given way to annuals such as corn and soybeans. But while farming practices have changed, the Furseths have remained leaders in conservation.

Long before it was common, they adopted no-till farming, and about a decade ago, they took their commitment a step further. Exploring new frontiers in soil health, they began experimenting with cover crops and planting green—techniques designed to protect and enrich the soil.

In 2016, they were among the first in the county to take part in a bold new experiment: aerially seeding cover crops into standing corn and soybeans to curb erosion and nutrient runoff. The results spoke volumes. Inspired by the success, they invested in an airseeder, allowing them to take control of cover cropping with precision and efficiency.

Since then, innovation has become their hallmark. Every season brings new trials, lessons and successes. The Furseth family is now not just a pillar of the local farming community, but a source of inspiration—sharing their story at conferences, guiding fellow farmers and contributing to cutting-edge research at the University of Wisconsin.

Water quality monitoring

Water quality monitoring provides a long-term measurement of project progress. Yahara WINS annually funds the U.S. Geological Survey (USGS) and Rock River Coalition to collect water quality data in water bodies throughout the watershed.

USGS WATER YEAR SUMMARY

The USGS conducts water quality monitoring throughout the watershed and provides data for each Water Year (WY), which is measured from Oct. 1 of the preceding year through Sept. 30 of the current year to account for winter precipitation. Data from WY 2024 indicated the following:

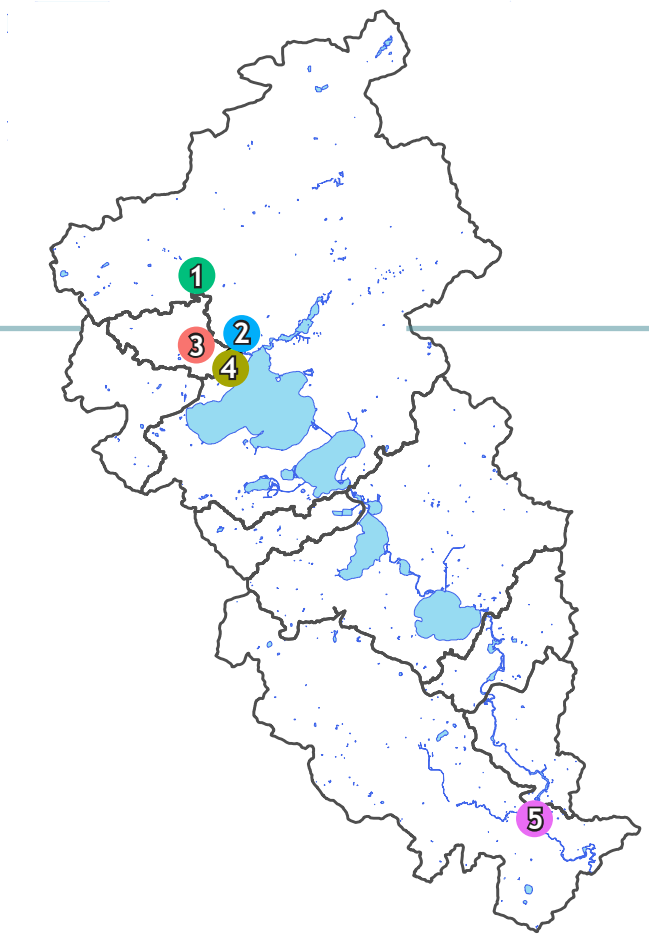
- **A "lost winter":** The period from Dec. 2023 to Feb. 2024 was the warmest winter on record for the region.
- **Concentrated rainfall:** There were drought conditions in the fall, winter and spring, but rainfall was above average (46 inches compared to an average of 37 inches). About 20 inches of rain fell between May and mid-July 2024.
- **Highest phosphorus loading in the early summer:** Coinciding with the heavy summer rains, 60% of the phosphorus loading to Lake Mendota occurred from April to June.
- **Phosphorus loading around the historical average:** Around 60,000 pounds of phosphorus entered Lake Mendota in WY 2024, compared to the average annual loading of 62,000 pounds since 1990.

The overall story of WY 2024 is reminiscent of themes of previous years: intense, concentrated storms, exacerbated by climate change, drive the majority of phosphorus loading to the Yahara lakes. Conservation practices that mitigate erosion, like cover crops, are a valuable tool for reducing phosphorus loss during intense storms.

ROCK RIVER COALITION

Yahara WINS provides annual funding to Rock River Coalition (RRC), a nonprofit watershed stewardship organization, to support its volunteer water quality monitoring program throughout the Yahara Watershed. Volunteer stream monitoring data is analyzed in the District lab and expands the data set of water quality indicators throughout the project area.

In 2024, RRC volunteers maintained 53 baseline monitoring sites, 42 nutrient monitoring sites and 25 continuous temperature monitoring sites. They also provided volunteer stream monitoring trainings in English and Spanish. Due to volunteer retirements, RRC will be focusing on stream monitoring volunteer recruitment in 2025.



The below graph shows the growing season (May-October) median total phosphorus (TP) concentration at the five USGS sites funded by Yahara WINS. The USGS also monitors seven additional sites in the watershed for TP concentrations.

2024 IN-STREAM PHOSPHORUS CONCENTRATIONS

USGS samples for the project area were collected on the 15th of every month during the growing season (May-October). The median of these values is reported for each location. Most of these samples reflect baseflow conditions when the stream is not experiencing higher flow due to storm runoff.

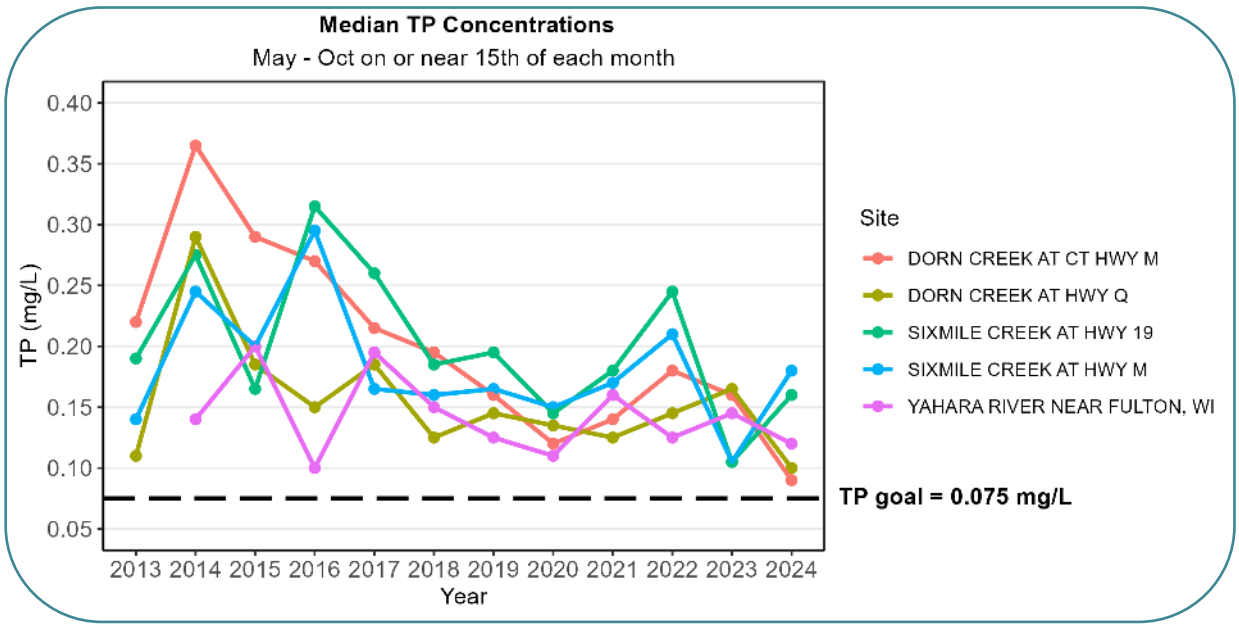
1) **Sixmile Creek at Highway 19**
2024 concentration: 0.16 mg/L

2) **Sixmile Creek at Highway M**
2024 concentration: 0.18 mg/L

3) **Dorn Creek at Highway M**
2024 concentration: 0.09 mg/L

4) **Dorn Creek at Highway Q**
2024 concentration: 0.10 mg/L

5) **Yahara River at Fulton**
2024 concentration: 0.12 mg/L



Targeted approaches

2024 was a benchmark year for Yahara WINS. The District, as the lead permitted entity tied to the project, submitted its first five-year report to WDNR as a requirement of its discharge permit. Yahara WINS partners also supported the first major revisions to the project cost model, which is a tool for estimating the combination of practices necessary to achieve phosphorus reduction goals and their associated costs.

2024 COST MODEL UPDATES

Why: The initial cost model for the project used assumptions about conservation practices and their costs that have become out-of-date. Based on the experience of implementing partners, the performance of practices in reducing phosphorus and the cost of these practices didn't match estimated values. Yahara WINS decided to work with experts to update the inputs (conservation practices, phosphorus reductions and cost of practices) for the model to develop a cost estimate that more accurately reflects current conditions and knowledge.

Who: The District contracted with Emmons & Olivier Resources (EOR) for the cost model update. EOR convened a Technical Advisory Committee (TAC) made up of Yahara WINS stakeholders to provide expert opinion.

Findings: The TAC identified five areas of the cost model that needed updated information: land use characteristics, updated phosphorus reductions associated with best management practices (BMPs), BMP costs, the types of BMPs used in the project and requirements for point source dischargers.

Model updates:

- Adjusted the model to more accurately reflect carry-over pounds of phosphorus from multi-year projects.
- Updated predictions for BMP implementation based on land uses, cost of practices and farmers' preferences for certain practices.
- Built in inflation rates to reflect volatile economic conditions affecting the cost of project materials like construction supplies and seeds.
- Updated the BMP list based on practices that landowners have shown preferences for in implementation to date.
- Updated phosphorus reductions and costs associated with BMPs to meet current dollars.

Next steps: With updated model inputs and structure, Yahara WINS now has a tool that better reflects real-world conditions in the watershed. Yahara WINS coordinators at the District will use the cost model to build scenarios that illustrate how to achieve phosphorus reduction goals in different watershed reaches. By identifying the types and number of practices necessary to reach the goal, project planners can determine best path forward to reach goals and the associated cost.

FIVE-YEAR ADAPTIVE MANAGEMENT REVIEW

The District is required to submit reports annually to WDNR reporting progress toward the adaptive management goals. In addition to the annual reports, the District submitted its first five-year report of the Yahara WINS project to WDNR in 2024. This report is a requirement of the District's wastewater discharge permit because Yahara WINS is the District's compliance strategy for meeting phosphorus regulations. The report is an in-depth progress report on the project, including practices implemented and pounds of phosphorus reduced, so the WDNR can determine if the project is on the right track.

Overall, the WDNR was satisfied with how the project is progressing. Yahara WINS coordinators at the District are continuing conversations with WDNR about recommended updates to the project, such as standardized methods for verifying implementation of practices.

REFINING KNOWLEDGE OF LAND USES IN THE WATERSHED

The updated cost model will add accuracy to planning for future activities and costs in the Yahara WINS effort. Another step for increasing accuracy is getting more specific information about the watershed and remaining opportunities for phosphorus reduction.

Yahara WINS planners are beginning talks with a company that provides detailed geospatial data about land uses in watersheds. Satellite imagery and other tools can determine the extent of agricultural land in a watershed and the cropping and conservation practices taking place on land parcels.

Using this information, project planners can assess how much potential there is for additional conservation practice implementation. In other words, detailed land use information can help determine how many more pounds of phosphorus can be reduced in each watershed reach based on remaining parcels of land where practices have not yet occurred, or where practices have occurred but not been documented for Yahara WINS.

With more detailed land use information and the updated cost model, project planners can create scenarios that illustrate pathways for Yahara WINS to reach its long-term phosphorus reduction goals.

LOOKING AHEAD: YAHARA WINS COMMUNITY MEETINGS

Over a decade ago, in the beginning of Yahara WINS and its preceeding pilot project, District staff met with participating communities to explain its initiatives, goals and benefits of being part of the project. Now that the project has been ongoing for several years, District Yahara WINS coordinators are planning on another "road show" to present project information to WINS member communities.

Whether your community has new staff or elected officials, or the same people have been involved since the beginning, these meetings will be valuable opportunities to receive updates on the project and share your questions, concerns and suggestions. Stay tuned for meetings in your community being scheduled in the coming year.

Financial summary

Yahara WINS is funded primarily by signatories to its Intergovernmental Agreement (IGA), which contribute to the project proportionate to the amount of phosphorus they need to reduce under the TMDL. This funding is then distributed to partners contracted for services with Yahara WINS, including implementing conservation practices and conducting watershed monitoring.

The 2025 budget was approved unanimously at the Yahara WINS group meeting on October 15, 2024.

2024 ADOPTED BUDGET (rounded to the nearest $100)

Unencumbered carryover from 2023	$0
REVENUE	
IGA participants	$1,524,920
Income from grants, other MOUs, etc.	$0
MGE Foundation	$5,000
Savings account interest	$4,000
Total Revenue	*$1,533,920*
Total Revenue plus unencumbered carryover	***$1,533,920***
EXPENDITURES	
Phosphorus reduction	
Dane County phosphorus reduction services agreement	$540,000
Rock County phosphorus reduction services agreement	$150,000
Yahara Pride Farms phosphorus services agreement	$425,000
Subtotal	***$1,115,000***
Water quality monitoring or modeling	
Water quality monitoring analytical services (District)	$65,000
USGS joint funding agreement	$75,000
Rock River Coalition water quality monitoring	$40,000
Cost Model Update	$58,000
Subtotal	***$238,000***
Supporting services	
District service agreement	$60,000
Financial audit	$11,000
Communications	$5,000
Legal services agreement	$4,000
Subtotal	***$80,000***
Transfer of funds to designated operating reserve	**$100,000**
Total Expenditures	**$1,533,000**
Revenue minus expenditures (potential unencumbered carryover)	**$920**

2025 ADOPTED BUDGET (rounded to the nearest $100)

Unencumbered carryover from 2024	$0

REVENUE

IGA participants	$1,527,890
Income from grants, other MOUs, etc.	$0
MGE Foundation	$0
Savings account interest	$4,000
Total Revenue	*$1,531,890*
Total Revenue plus unencumbered carryover	***$1,531,890***

EXPENDITURES

Phosphorus reduction	
Dane County phosphorus reduction services agreement	$540,000
Rock County phosphorus reduction services agreement	$150,000
Yahara Pride Farms phosphorus services agreement	$525,000
Subtotal	***$1,215,000***
Water quality monitoring or modeling	
Water quality monitoring analytical services (District)	$65,000
USGS joint funding agreement	$75,000
Rock River Coalition water quality monitoring	$46,000
Subtotal	***$186,000***
Supporting services	
District service agreement	$60,000
Financial audit	$11,000
Communications	$5,000
Legal services agreement	$4,000
Subtotal	***$80,000***
Transfer of funds to designated operating reserve	**$50,000**
Total Expenditures	**$1,531,000**
Revenue minus expenditures (potential unencumbered carryover)	**$890**

2025 BUDGET CHANGES

Compared to the 2024 budget and previous budgets, the 2025 budget includes the following changes:

- General P reduction funding expenditure was removed for the 2023 and 2024 budgets and remains removed for 2025.
- Innovation grant program expenditure was removed for the 2023 and 2024 budget and remains removed for 2025.
- Cost Model update budget capacity that was included for the 2024 budget is no longer needed for the 2025 budget and was removed.
- The amount designated for the operating reserve under the 5-year budget has a decrease in 2025 compared to the amount designated for 2024.
- Yahara Pride Farms and Rock River Coalition 2025 agreement cost increases.
- The 3-year funding commitment from the MGE Foundation ended in 2024. At the time of budgeting a new funding commitment was not finalized. The revenue line will be $0. Since the approval of the 2025 budget, MGE Foundation committed $15,000 over a 3-year period (2025-2027) and the revenue line was adjusted for 2025 and future budgets.

Yahara WINS

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