

**LWC – nutrients & pathogens workgroup  
Budget Priorities DRAFT**

**Expanded Beach Health Monitoring, Education and Public Notification.**

Public Health Madison and Dane County (PHMDC) staff provides monitoring of lakes and shoreline waters for chemical and microbiological indicators, assures compliance with the State storm water regulation mandates (WI Admin Code NR 216) for illicit discharge detection and elimination, monitors point source discharges of chemicals from local industries and businesses and maintains permits for their facilities to assure adequate discharge water quality, assures water quality and regulatory testing compliance (SDWA) for municipal water customers and private well testing and consultation for home owners, and assures compliance with WI Admin Code Chapter NR 507 mandate of environmental monitoring for five closed landfills. The monitoring function of PHMDC is critical for informing county-wide decision-making.

Beaches in Madison are frequently closed because of either high levels of pathogenic bacteria or *Cyanobacteria* (blue green algae). We have already seen this happening in 2021, with the closure of beaches starting in early June. These pathogens are naturally present in the water and soil (*Cyanobacteria*) or enter through runoff containing animal waste (*E. coli* and *Salmonella*). Heavy rainfall, high temperatures and high phosphate concentrations in the lakes increases the risk for pathogenic outbreaks. *Cyanobacteria* produce multiple toxins which are toxic to humans and pets. *E. coli* and various *Salmonella* species produce a variety of intestinal infections varying from very mild to life threatening. Children and elderly are especially vulnerable.

To protect public health, Public Health Madison and Dane County (PHMDC) monitor area beaches for these water-borne pathogens and close beaches when levels are high enough to pose a health risk. Past years' heavy rains and high temperatures, combined with high phosphorus levels in the lakes, has resulted in a significant public health risk reducing recreational activities for Dane County residents, and can hinder tourism for Dane County.

*Allocating \_\_\_\_\_ (2020 amt = \$40,000) to PHMDC to provide additional staff and supplies for collecting and processing and to allow for more frequent sampling at beaches due to Cyanobacteria's rapid biological response to changing environmental factors. Funding will also be used in development of a unified monitoring plan for Dane County surface waters done in coordination with other ongoing monitoring efforts (i.e. USGS, Clean Lakes Alliance). In addition to closing beaches when contamination levels are high, we recommend PHMDC also communicate lake-wide health advisories about water quality risks (directed at the general public and lake users outside of beaches. i.e., anglers and boaters) to provide additional safety. A risk notification system similar to the "Slow No Wake" response would be helpful.*

**Initiatives to Reduce Phosphorus Pollution.**

In 2018, 40 bodies of water in Dane County did not meet water quality standards because of pollution. [IF 020 NUMBERS AVAILABLE INSERT HERE]. Excess phosphorus, largely from nonpoint runoff, is the

primary pollutant. Wisconsin is one of the first states to have a numeric phosphorus water quality standard for lakes and streams and is the only state to include an innovative, regulatory compliance option, called Watershed Adaptive Management. This law allows regulated wastewater point sources (Madison Metropolitan Sewerage District, MMSD) to work with nonpoint sources (agricultural producers, municipal storm water utilities, etc.) on cost effective strategies that target phosphorus reduction while achieving water quality criteria. One of the first adaptive management projects in the nation, called Yahara WINS is being led by MMSD, who has contracted with Dane County (Land and Water Resources Department) to assist rural landowners in implementing conservation practices that reduce phosphorus. In addition, the County's taxpayers have invested in the construction of manure storage facilities, manure digesters, composting and other new technologies to remove phosphorus from manure and stream sediments.

We strongly support these ongoing investments, enforcement of current agricultural performance standards and conservation efforts to ensure investments in conservation practices will result in high levels of soil and nutrient retention. Every pound of phosphorus in our lakes has the capacity to create up to 500 pounds of algae, reducing water quality and the ability to use our lakes for fishing, swimming, and other water recreation.

**Continuous Cover Program - Perennial Agriculture Cost Share and Conservation Easement Program.**

Cost sharing for conservation programs is typically the amount that is needed to encourage a farmer to install and maintain a conservation practice. This new \$750k conservation program launched in 2019 was designed to complement the "suck the muck" investments to reduce legacy sediments by implementing upstream perennial agriculture practices. Research shows the best performing practice for reducing run-off and improving water quality is maintaining perennial vegetative cover on the land. Along with reduced run-off, perennial vegetation also provides for increased infiltration and improved soil health. The program was very popular and applicants exceeded cost share dollars. This program was also listed as an agricultural recommendation within the *2020 Dane County Climate Action Plan*. The LWC recommends:

1. *Expanding this program to \_\_\_\_\_ [last budget \$20 million in capital funds (\$4 million/year for 5 years)] with the goals of;*
  - a. *Establishing 100,000 acres of perennial vegetation practices in Dane County in five years (native prairies and non-native pastures),*
  - b. *Providing education and technical assistance to land owners (including non-farmer landowners) on ways to integrate perennials (perennial cover crops, prairie strips, harvestable buffers, alley cropping etc.) into farm plans and leases targeting fields that contribute high levels of phosphorus and*
  - c. *Expanding the use of conservation easements.* During this period, leases for all county-owned land (purchased via the taxpayer-funded Dane County Conservation fund) which are steep sloped or high in phosphorus will be converted to perennial vegetation. Over time, wherever practical, other county owned lands will be converted to prairie or perennial vegetation. In the Yahara River Watershed, we recommend exploring a matching cost-share program with Yahara WINS for perennial establishment and integrating it into their adaptive management program. Creating easements in strategic watershed locations is a smart investment in improving our water quality for future generations.

**Continue to partner with the University of Wisconsin to predict and validate phosphorus reductions.**

Dane County is partnering with researchers in the UW-Madison College of Agricultural and Life Sciences who were awarded a grant in 2018 to establish the *UWLandLab*, whose mission is to identify science based solutions and improve phosphorus reduction outcomes. This work will be expanded in 2019 with \$10 million in support from USDA for Grassland 2.0 whose goal is to engage in the local watersheds to develop greater supply and demand for grass-fed livestock and technical and financial tools for grass-based farming enterprises. The LWC recommends:

1. *That Dane County Land and Water Resources Department continue to collaborate with UW researchers, and look for ways to expand grass based ideas in MMSD's adaptive management implementation efforts and to annually present to LWC, EANR, and LCC its strategy for implementing phosphorus reductions.*

**Improve Nutrient Management Planning, Compliance and Phosphorus Accounting.** Because clean lakes and streams and safe drinking water are important to all, the State of Wisconsin, with the support of farm organizations, adopted minimum agriculture performance standards, including mandatory nutrient management (NM) plans, for all Wisconsin farms. Counties are responsible for implementing state farm conservation and NM standards. Improved nutrient management and conservation compliance could significantly reduce phosphorus and we should continue to work to get additional farms implementing NM plans.

1. *That the County continue its partnership with UW and Yahara WINS to develop a mass balance accounting system (starting in the Yahara River Watershed) that quantifies inputs and outputs from the watershed.*
2. *Continued support of Nutrient Management Plan farmer training and cost share assistance.*
3. *Continued tracking of nutrient management plan implementation*

**Matching grants for watershed and farmer-led groups for local planning and implementation.**

Successful land and water management includes understanding the ecology of a place and the needs and motivations of the people that use and impact the land and water. Leadership by farmers and other citizens in local watersheds is critical for short- and long-term success. Multiple literature reviews and the personal experience of many professionals and volunteers indicate that effective watershed coordinators are integral to successful collaboration within watershed initiatives. Therefore, Dane County should work with partners to provide sustained funding and support for watershed leadership and coordination throughout Dane County by providing matching grants for citizen organizations, including farmer-led organizations to coordinate and participate in watershed planning, implementation, and monitoring. Small grants would allow for the purchase of conservation equipment and administrative support to grow local watershed leadership and outreach. They would also complement existing funding for conservation practices. Coordinators would work with LWRD and partners to set and prioritize watersheds and tasks. They would also work with Land Conservation staff and others to integrate farm and property scale technical assistance up to watershed scale performance and communication of results. Coordinators would work to build trust and shared direction in watersheds, as well as support science and data-based conversations about both well-understood and innovative conservation practices.

**NR 151 Conservation Compliance Inventory** – Over time, the County has invested hundreds of millions of dollars in urban and agricultural conservation practices to meet the state's run off management law

(NR 151) but does not have a transparent mechanism for the public to evaluate the investment of these taxpayer funds. The LWC recommends:

1. *The development of a compliance inventory to track where dollars are invested and whether water quality goals are being achieved.*

**Nitrate and phosphorus reduction - farmer education/support:**

Investment in funds to support and enhance farmer education campaigns.