

DANE COUNTY LAKES & WATERSHED COMMISSION

2018 BUDGET RECOMMENDATIONS

The Dane County Lakes and Watershed Commission's charge is to protect and improve water quality, as well as the scenic, economic, recreational, and environmental value of Dane County's water resources. Each year, the Lakes and Watershed Commission carefully reviews the budget requests of those departments and divisions (the Department of Land and Water Resources, the Sheriff's Department, the Department of Public Health, and Dane County UW-Extension) that are engaged in water body protection and improvement, considers the cost-effective ways to protect and restore our watersheds, and makes recommendations to inform the County Executive's proposed budget.

OVERVIEW

Dane County has an amazing resource in its lakes, rivers, and streams, which provide quality of life for all residents and are a foundation for our economy. We are fortunate to have abundant water resources in our region. Lakes and rivers are where we spend time with family and friends, boat, fish, paddle, and simply enjoy nature. Most importantly, our groundwater is a source of safe drinking water for the over 500,000 residents of the county. In addition to recreational activities that contribute significantly to the economic well being of Dane County, our waters support industry and agriculture. Agriculture provides 17,294 jobs in Dane County, accounting for \$3.4 billion in business sales, and contributes \$1.3 billion to county income¹.

In addition to attracting money to Dane County, our waters attract the talent that runs our economy; studies show young entrepreneurs value accessible natural resources as one of the top qualities they look for when choosing a location to start their careers and/or businesses. In a recent national study by the American Sustainable Business Council, 71% of small businesses owners believe that "strong clean water protections are necessary to maintain a healthy economy and create local jobs²." Here in Dane County, a 2015 survey of Dane County residents shows that clean and safe drinking water ranks highest among the "services" that nature provides and that citizens generally value the role of government in making sure we have both clean water and a productive and profitable economy.³ While healthy lakes and streams require investment, that investment helps secure a tax base that provides for other community needs. The Dane County Lakes and Watershed Commission (LWC) acknowledges the economic realities that must be balanced with effective funding. The LWC has identified several key goals to guide its specific budget recommendations. These goals are:

- Reduce excess phosphorus, nitrogen, chlorides, and dissolved solids in our lakes, rivers, streams, and groundwater
- Prevent the introduction of new invasive species into our lakes, rivers, and streams and prevent the spread of current invasive species,
- Meet all regulatory responsibilities including county ordinances and state and federally mandated water quality guidelines;
- Engage citizens to address the use, quality, and safety issues associated with Dane County waters;
- Encourage sound scientific studies of water quality and use issues; and
- Provide the required resources for safety on and near surface water.

The Dane County Lakes and Watershed Commission recommends the following investments as part of the 2018 Dane County Budget. These investments build on current programs and leverage contributions by partners, including the Madison Metropolitan Sewerage District, Clean Lakes Alliance, our cities, villages, and towns, Yahara WINS, farmers, other private sector land and water managers, citizen volunteers, and many others. They build upon current programs, and will help to align a wide range of community efforts.

¹ Dane County Agriculture: Value & Economic Impact 2014. University of Wisconsin -Extension, Wisconsin Milk Marketing Board, and Wisconsin Department of Agriculture, Trade and Consumer Protection.

² American Sustainable Business Council 2014 Small Business Owners Favor Regulations to Protect Clean Water

³ Meeting Our Future Water Needs: Key Lessons and Opportunities. Water Sustainability and Climate in the Yahara Watershed Research Brief. 2015. <https://wsc.limnology.wisc.edu/sites/default/files/2017-workshop-summary-final.pdf>

SPECIFIC BUDGET RECOMMENDATIONS

I. Initiatives to Reduce Phosphorus Pollution

While Dane County's lakes, streams, and wetlands are powerful economic drivers, however, we have nearly 40 bodies of water that do not support their designated uses due to pollution. We can do better.

Excess phosphorus is the primary pollutant in many of these public waters. Dane County is working with partners on several fronts to reduce phosphorus levels, including conservation practices and the construction of manure storage facilities, construction of manure digesters, and installation of new technologies to remove phosphorus from manure. Scientists measuring phosphorus loading in the Yahara River Watershed reported that between 1990-2006, phosphorus loading during January to March comprised 48% of total phosphorus measured.⁴ In 2014 the highest loading to Lake Mendota occurred during high rainfall and snowmelt events, when phosphorus in soil or manure applied to frozen soil runs off into the lake.⁵ Trends in higher rainfall events, including 20-40% increases in spring rainfall⁶ and more frequent, heavy rain events due to climate change will lead to more phosphorus loading and a serious obstacle in achieving water quality improvements. Continued improved efforts to manage phosphorus from all sources (e.g. fertilizer, manure, urban sources, and legacy sediments) can reduce the levels of phosphorus in the surface waters of Dane County.

- A. **Provide adequate staff resources to manage farm conservation programs with a focus on sustainable data management systems for tracking progress on agricultural phosphorus management.** While there are more staff needed to work one-on-one with farmers, sufficient data management systems are critical for demonstrating the success of Yahara WINS. We propose the addition of one Dane County staff person to develop and maintain data management systems for tracking progress on agricultural phosphorus management. This position will help document and communicate the progress of Yahara WINS through its 20-year life and provide value for tracking nutrient management and other conservation efforts throughout Dane County. Estimated position investment: \$85,000.
- B. **Continue supporting adaptive management of phosphorus for healthy Dane County waters by supporting critical results-oriented research.** University of Wisconsin-Madison researchers are well-positioned to update our understanding of traditional and innovative phosphorus management strategies can improve water quality in the shortest amount of time. Some specific questions that UW researchers can help address in the next 1-2 years include:
1. How much animal manure, municipal biosolids, and other forms of phosphorus can be added to the landscape and still yield acceptable water quality?
 2. What are the tradeoffs among annual and perennial cropping systems for nutrient runoff?
 3. To what extent can reductions of soil phosphorus and best management practices offset plausible effects of climate change?
 4. If stream sediments are reduced, what impacts would this have, and how long would the effects last before the process would need to be repeated?

Answering these questions will help ensure the effectiveness of public and private investment in agriculture and our lakes. The results of this research will also help us manage community expectations for lake quality and provide guidance for Yahara WINS efforts. Clean Lakes Alliance has agreed to contribute \$100,000 over 2 years to university researchers to help answer these and other critical phosphorus management questions. We request an additional \$100,000 over 2 years to support this effort. Researchers, Clean Lakes Alliance, and the Lakes and Watershed Commission are seeking additional funding to complement Clean Lakes Alliance and county investment.

- C. **Maintain land and water conservation funding, including farm conservation cost-share and support for innovative farm management practices.**
1. Continue investing \$750,000 annually to protect Dane County lands to improve the water quality of Dane County lakes and their tributaries. These investments should support a mix of standard and innovative farm management practices and continue protecting streambanks through restoration and easements.
 2. Establish a carp management fund for use in cost sharing community carp management efforts.

⁴ Richard C. Lathrop (2007) Perspectives on the eutrophication of the Yahara lakes, *Lake and Reservoir Management*, 23:4, 345-365, DOI: 10.1080/07438140709354023

⁵ Carpenter SR, Booth EG, Kucharik CJ, Lathrop RC (2014) Extreme daily loads: role in annual phosphorus input to a north temperate lake. *Aquatic Sci* 77(1):1-9. doi:10.1007/s00027-014-0364-5

⁶ Vavrus S, Van Dorn J (2010) Projected future temperature and precipitation extremes in Chicago. *Journal of Great Lakes Research* 36, Supplement 2(0):22-32. doi:10.1016/j.jglr.2009.09.005

- D. **Maintain momentum on legacy sediment removal.** Legacy sediments are upland (usually agricultural) soils that have been eroded, transported, and deposited in nearby rivers and streams. These sediments have accumulated over decades as a result of human land use. Legacy sediments usually consist of large amounts of silt and are capable of transporting significant amounts of phosphorus and other nutrients. We support the ongoing investment of \$12 million over 4 years to clean 33 miles of streams, removing approximately 870,000 pounds of phosphorus from our lakes. Every pound of phosphorus can create up to 500 pounds of algae, reducing water quality and the ability to use our lakes for fishing, swimming and other water recreation.
- E. **Provide cost-share funding for urban runoff control.** Dane County's Urban Water Quality Grant program provides cost-sharing grants to municipalities for construction of best management practices that will provide efficient, cost-effective treatment of urban runoff. This collaborative program with municipalities has been very successful in meeting its goal of improving the quality of urban stormwater runoff entering Dane County lakes, rivers and streams. The Lakes and Watershed Commission supports increased funding for this program to an annual level of \$2 million in new funding for five years, and carrying forward and awarding of all unspent funds in the program. This program should:
1. Promote green infrastructure and improve storm drain outlets that dump untreated storm water and litter into county lakes and streams.
 2. Maintain emphasis on the county's "top ten" problem stormwater outlets by making them eligible for matching grants covering up to 75% of improvement costs with no dollar cap.
 3. Carry forward and award of any unspent funds in the program from previous fiscal years.
 4. Provide an annual program report to the Lakes and Watershed Commission.
- F. **Develop a coordinated strategy for urban leaf management.** The Lakes and Watershed Commission and Clean Lakes Alliance jointly recommend working with the Madison Area Municipal Stormwater Partnership to form a task force to:
1. Create a 4-year strategy to address urban leaf management to minimize phosphorus runoff.
 2. Recommend a suite of best practices for municipalities and citizens, which could include developing smart technology to let residents know about leaf management, rules and schedules.

Task force members should include the Lakes and Watershed Commission, Clean Lakes Alliance, the Madison Metropolitan Sewerage District, and representatives from the Madison Area Municipal Stormwater Partnership, including Dane County. We support continued Dane County investment in the .5 FTE Madison Area Municipal Stormwater Partnership outreach position. Clean Lakes Alliance will provide additional in-kind staffing to complement the Madison Area Municipal Stormwater Partnership position.

II. Initiatives to Reduce Chloride Pollution

Thanks in part to the work of the multi-agency Wisconsin Salt Wise partners since 2014 (<https://www.wisaltwise.com>), there is expanded public awareness that road salt use and inefficient water softeners have markedly increased chloride levels in area lakes, creeks, marshes, and groundwater. In addition to its ongoing outreach and education for the general public, the Wisconsin Salt Wise partners also support annual winter maintenance training for those who apply de-icers containing chloride to roadways, parking lots, sidewalks and driveways.

The Lakes and Watershed Commission has advocated for and supported this collaborative approach to reducing chloride pollution reduction, in order to address community concerns about elevated chloride levels in Dane County surface and groundwater.

The Commission supports the good work being done by Dane County Highway and Transportation and Dane County Facilities management, in upgrading their equipment and operations to learn about and support improvements to their operations that means using only the right amount of salt. As the Commission and the county advocates for improvements in organizational and individual practices to reduce salt, they believe that their message to the public on this issue is reinforced by their ability to point to our own internal improvements in operations.

A significant example from the past year is how Dane County Facilities Management, supported by the Office of Lakes and Watersheds, with funding from Madison Metropolitan Sewerage District and the Dane County SMART fund (sustainability grants) upgraded six water softeners in five buildings by optimizing settings and replacing equipment; and replaced water softening systems in six additional facilities. These saving thousands of pounds of salt monthly and preventing it from reaching the wastewater treatment plant and area waterways. LWC supports Dane County Facilities Management in its work to upgrade water softeners in county facilities, in order to improve efficiency, save money, use less salt, and reduce the chloride load to MMSD and our waterways.

The Commission is also excited about the progress in working with applicators of chloride deicers to parking lots and sidewalks. Some estimates show that deicers applied to sidewalks, driveways, and parking lots comprise about one half of the total road salt applied in Dane County --a substantial part of the total chloride load. Using funds provided in the 2017 budget, Land and Water Resources Department staff are working with a national expert to develop locally tailored application rate guidelines that aim to provide best practices for fighting winter storms using the minimum amount of materials that will have the least impact to our environment while continuing to provide an acceptable level of service for the public. They are also working with the City of Madison and other partners to develop a Madison-based voluntary certification program, again for applicators to parking lots and sidewalks, that we believe will help applicators dramatically reduce salt application rates while still maintaining safe surfaces throughout the winter. This voluntary certification program has the potential to extend throughout Dane County.

For 2018, it is important to build on that progress, and to continue Dane County leadership and participation in these efforts. We suggest the following Dane County contributions to maintaining and growing community collaborations to address chloride pollution.

- A. Develop a Dane County training program for winter maintenance of parking lots and sidewalks in 2017 and review and finalize guidelines, tools, and certification program developed in 2017.** Total county funds requested: \$35,000.
1. Contract with a national expert to develop Dane County training program for winter maintenance of parking lots and sidewalks using the updated manual being developed by the City of Madison.
 2. Train the trainers so that local people will be well-positioned to provide regular training for certification
 3. Provide stipends for local winter maintenance experts to offer their expertise during training and consult with applicators
 4. Contract with a national expert to hold two meetings March – May 2018 to review, with advisors and participants, the application rate guidelines piloting in winter 2017-18, the web-based decision tool to accompany the guidelines, and the voluntary certification program. Modify guidelines, tools, and certification program to reflect improvements identified during the piloting of these materials in winter 17-18.

We anticipate that county funds will be matched by \$25,000 in City of Madison funds for development of a local training manual for parking lots and sidewalks. The manual will incorporate local application rate guidelines (being developed in 2017), local case studies, and updated research into base training materials developed in MN that have been used in Dane County for the last 10 years. This new training manual must be developed starting in early 2018 to be ready for winter 2018-19 training.

- B. Maintain the current OLW staff time focused on chloride reduction.** The 2017 Office of Lakes and Watersheds workplan allocates 17% of staff time for chloride reduction initiatives. This level of staff contribution should continue in order to have these efforts be most successful. Dane County is best positioned to maintaining and growing community collaborations to address chloride pollution. The increased staff time devoted to chloride reduction initiatives in 2017 has resulted in strengthened relationships with public and private sector applicators of chloride deicers to parking lots and sidewalks, and a solid set of application rate guidelines to pilot during the upcoming winter. For 2018, LWC supports continued outreach collaboration with Wisconsin Salt Wise partners, and increased focus on supporting homeowner actions to improve water softener efficiency, both in urban areas discharging to MMSD and rural areas discharging to private onsite wastewater treatment systems.

III. Public Health

Dane County takes pride in our rolling farmland and rich rural life, our thriving downtowns, and the lakes and streams so central to our communities. To take full advantage of this unique mix of resources, people need the best information about when it's safe to be in the water. Public Health Madison and Dane County (PHMDC) staff are skilled and dedicated to public safety. Specifically, this department:

- provides timely and accurate 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. (The IDDE program monitors harmful material releases; provides guidance on best management practices and prevents harmful contaminant releases into the environment)
- 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 /guidance for home owners, and
- assures compliance with WI Admin Code Chapter NR 507 mandate of environmental monitoring for five closed landfills to prevent migration of contaminants out of the landfills into drinking water and surface water resources

The monitoring function of PHMDC is critical for informing county-wide decision-making. While PHMDC has robust monitoring plans across their range of responsibilities, the Lakes and Watershed Commission strongly supports one-time LTE resources to assist PHMDC in the development of a unified monitoring plan for Dane County surface waters, with a focus on *E.coli*, cyanobacteria, and chlorides. A unified monitoring plan would help 1) communicate existing PHMDC monitoring, 2) coordinate among related monitoring efforts (e.g. USGS, Clean Lakes Alliance), and 3) identify gaps and resource needs to help people make informed decisions about safe use of our lakes and streams.

The Commission encourages Dane County to maintain existing investment in monitoring and reporting pending the completion of a unified monitoring plan.

V. Protecting Dane County Water Resources through Community Engagement

The decisions people make every day ultimately determine whether we have clean water. Helping people be effective water stewards in big and small ways is empowering and more cost effective in the long run. The Lakes and Watershed Commission supports the following investments to expand community engagement in water stewardship.

- A. **Continued County Investment in Community Strategic Engagement.** The LWC requests continued county investment in community engagement through the Strategic Engagement Coordinator position in the Office of Lakes and Watersheds, the MAMSWaP position hosted by Water Resources Engineering, and the complementary contributions by the Clean Lakes Alliance. Dane County's investment in watershed leaders through the Dane County Watershed Network and volunteer engagement has paid great dividends, increasing awareness and focus of watershed organizations on county clean water goals.
- B. **Expand the Integration of Equity and Inclusion into Natural Resources Management.** In January 2017, the Lakes and Watershed Commission adopted a statement and plan; discussed collaboration on this with other natural resources related Committees, Commissions and Councils in June, and hopes its accomplishments and that of the Office of Lakes and Watersheds in this area can become the basis for a Land and Water Resources Department equity plan integrated with all its related natural resources committees, commissions and councils.
1. Connect with diverse communities through Simpson Street Free Press Internships. Simpson Street Free Press is an after school academic achievement program that grows writing and critical thinking skills. Simpson Street Free Press students produce and publish content on multiple media platforms, and are recent recipients of an award from the Wisconsin League of Conservation Voters. In 2017, the Land and Water Resources Department hosted five interns over the course of the summer. (See more on the web at <https://olw-lwr.dcountyofdane.com/Simpson-Street-Free-Press>). They have helped us connect with more diverse communities in Dane County, expose readers to the different backgrounds of staff who work at the Land and Water Resources Department, and highlight Department actions that protect and improve the county's natural resources. We are requesting \$10,000 in new funding to continue this program in 2018.
 2. Provide \$5,000 in new funding to translate, into Spanish and Hmong⁷, several important publications within the Land and Water Resources Department as part of its development and implementation of an equity and inclusion plan. Initial priorities for this funding would be to:
 - a. Translate publications about actions citizens can take to improve runoff water quality. These publications would be developed and printed by the Office of Lakes and Watersheds and Madison Area Municipal Storm Water Partnership, and distributed by groups within the Watershed Network. Calls to contact numbers on these publications would be directed to someone who speaks the language of that publication.
 - b. Translate the Dane County Parks brochure series (16 brochures highlighting selected properties in the park and open space system). These brochures highlight park features and entice park and facility use by diverse communities. Another Parks Division translation priority would be to translate several other key publications and signs for Lake Farm County Park, whose annual visitors include a significant proportion of Spanish and Hmong-speaking people.
 - c. Provide funding to expand the Lake Explorers Camp (currently held for youth at Brittingham and Wingra Boats) to the Bayview Community Center.
 3. Build water-related capacity in existing multicultural organizations by supporting the ecological restoration and other water-related programming being offered by existing multicultural groups within Dane County, for example the Catholic Multicultural Center, Centro Hispano, Bayview Foundation, and others. These small investments will

⁷ In Dane County, 5% of Dane County residents speak Spanish, and 1% speak Hmong. Source: American Community Survey 2011-2015 5-Year Estimates, Table 816001, summarized by the Capital Area Regional Planning Commission.

effectively leverage existing community and county interests and resources. For 2018, we propose that Dane County provide \$2000 in new funding for stipends for Centro Hispano organization staff to work additional hours on water-related programs that are not currently part of their core work, and for event support. The intent is to later expand this initiative and work with additional organizations.

VI. Continued Support for Other County Investments in Water Resource Management.

Water resource management is complex. It requires investment from county Departments and staff with diverse areas of expertise and authorities, as well as investment in Dane County citizens that are providing leadership throughout the county.

- A. **Maintain Funding for Other Operating Costs, such as gasoline and parts for equipment maintenance.** Aquatic plant harvesting is one effort that suffers significantly when gasoline or replacement parts are not available. Like the need for appropriately trained dedicated staff, these supplies are critical to improving water quality as well as maintaining target lake levels.
- B. **Fund the Capital Request of the Marine and Trail Enforcement Bureau of the Dane County Sheriff's Department for Dive Team Equipment.** With over 25,000 registered boats in Dane County, this Bureau is responsible for year-round patrolling of Dane County lakes, enforcement of all laws pertaining to the lakes, investigation of accidents, and rescue operations. The Lakes and Watershed Commission strongly supports the Bureau's request for a total of \$34,900 for dive team equipment.