BLACK DOG
Watershed Management Organization

2024 WATERSHED ANNUAL REPORT

Published April 2025

Our Vision:

Water resources and related ecosystems are managed to sustain their long-term health and public value to contribute to the well-being of the communities within the watershed.

Evaluating our Success

The BDWMO watershed management plan calls for the organization and its member cities to identify outcome-based goals for specific water bodies found within the watershed, and to meet annually to discuss progress toward these goals. The BDWMO uses the following tools to track progress toward goals:

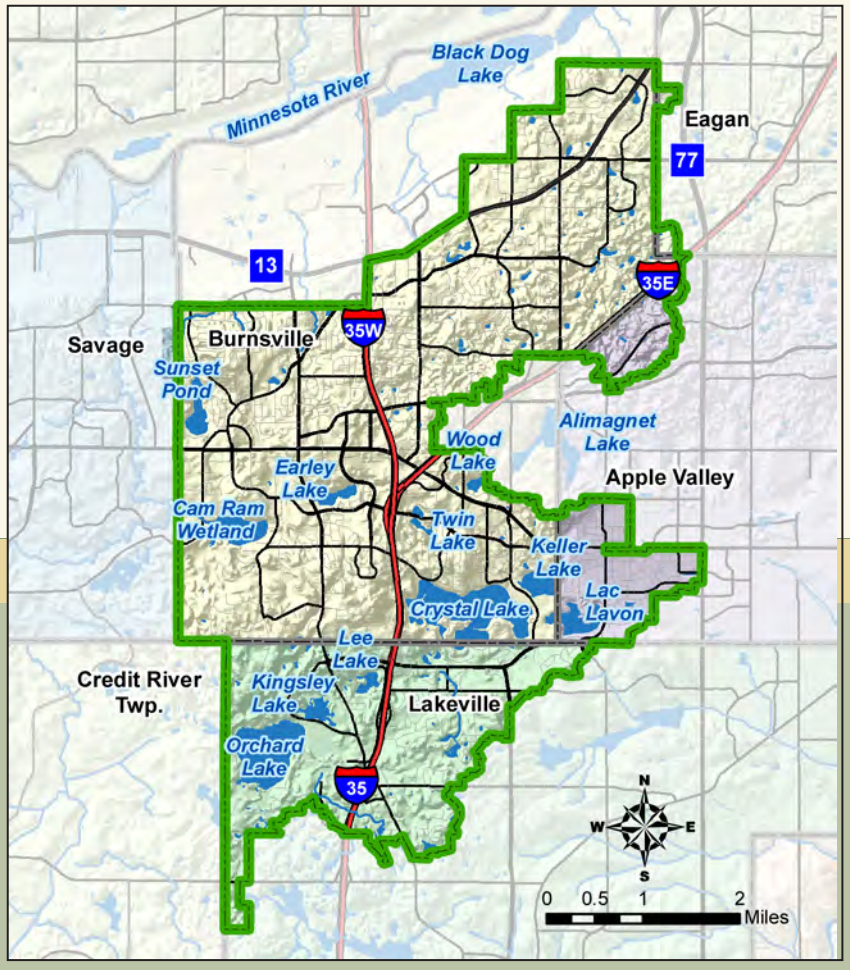
- **Trend Analysis**—The BDWMO collects water quality information to track water quality trends in its strategic waterbodies.
- **BDWMO Goal Tracking**—The BDWMO identified metrics and outcomes associated with each goal included in its watershed management plan. At least biennially, the BDWMO evaluates those metrics to assess progress toward plan goals.

This annual report outlines BDWMO and member city actions relevant to BDWMO goals, progress toward water quality goals in 2024, and plans for 2025 and beyond.

What is the Black Dog Watershed Management Organization?

The Black Dog Watershed Management Organization (BDWMO) actively manages surface water, such as that found in lakes, streams, and wetlands, located in the Black Dog and Credit River watersheds within Dakota County. To effectively manage surface water, the BDWMO develops and implements plans that address water quality, responds to drainage issues that cross multiple municipal boundaries, and assists cities within the watershed to manage surface water runoff. The BDWMO is represented by commissioners appointed by the cities within the watershed, including Burnsville, Lakeville, Apple Valley, and Eagan.

The total area of the Black Dog watershed is 17,500 acres; 70 percent of the watershed lies within the city of Burnsville, 21 percent of the area is within the city of Lakeville, 8 percent is within the city of Apple Valley, and 1 percent is within the city of Eagan.



In this Issue

Partner Reporting Aids Goal Tracking

Minnesota Rules 8410.0150 Sub. 3(E) requires watershed management organizations like the BDWMO to evaluate progress toward goals at least every two years. As a joint powers organization, the BDWMO relies heavily on the actions of its cities, Dakota County, and the Dakota County Soil and Water Conservation District (SWCD), to achieve its goals.

To aid in tracking Plan implementation and progress towards goals, the BDWMO developed questionnaire-style worksheets for partner staff to document activities and accomplishments relevant to each of the Plan goals completed in the past year. The BDWMO will use this information to complete its first official "progress report," included with its annual report to the Board of Water and Soil Resources (BWSR).

Spoiler alert: BDWMO is meeting or making progress towards most of its goals!

The following are examples of the questions in the BDWMO questionnaire relevant to Goal D and responses provided by the City of Apple Valley and Dakota County.

Goal D. *Work with member cities to reduce chloride loading relative to current conditions through practices consistent with the Twin Cities Metropolitan Area Chloride Management Plan (MPCA, 2016) and Minnesota Statewide Chloride Management Plan (MPCA, 2021).*

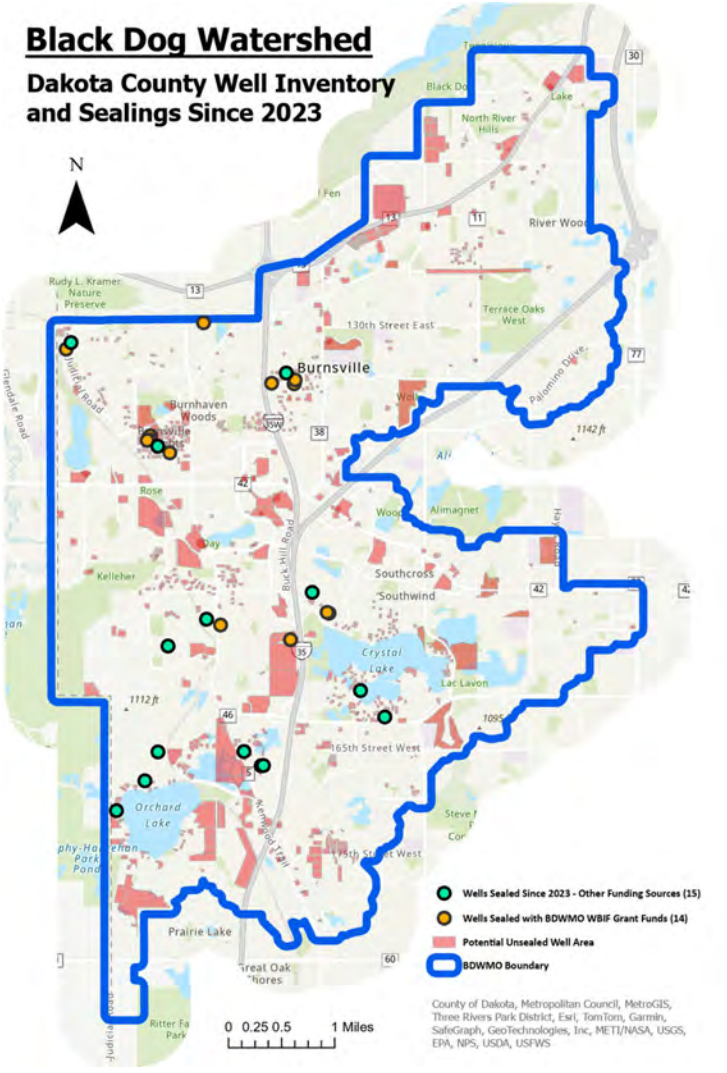
Did the City/County/SWCD perform any of the following chloride management activities last year?	City of Apple Valley	Dakota County
Training for municipal applicators	Yes	Yes (included in private applicator training)
Calibration of application equipment	Yes	Yes (annually)
Municipal use of alternative deicers	Yes (salt brine pretreatment)	Yes (brine pretreatment; salt sand for very cold temps; Cargill treated Mg chloride for temps <18 degrees)
Training for private applicators/ property managers	No	1 Property Manager training (24 attendees) 1 Smart Salting for Roads (48 attendees) 1 Smart Salting for Parking Lots & Sidewalks (23 attendees)
Site visits to promote reduced salt use in high-density areas	No	No
Distribution of educational materials	Yes	Yes (via social media)
Incentive programs for residents or property owners	No	No
Use of chloride minimization design practices	No	No
Other activities (add note)	Encourage development to consider snow management in site design	NA

Watershed Based Implementation Funding – 2024 Update

The Minnesota Board of Water and Soil Resources launched the Watershed Based Implementation Funding (WBIF) Grant Program in fiscal year 2018-2019 as an alternative to the traditional project-by-project competitive process often used to fund water quality improvement projects. This program provides dedicated funding, allocated by watershed, to allow collaborating local governments to pursue timely solutions based on a watershed's highest priority needs.

The primary purpose of this program is to implement projects and programs that protect, enhance, and restore surface water quality in lakes, rivers, and streams; protect groundwater from degradation; and protect drinking water sources.

The BDWMO convenes a meeting of city, Dakota County, and Dakota County SWCD staff annually to identify potential projects for potential WBIF funding.



Dakota County completed an inventory of unused or abandoned wells to target grants for well sealing in 2023 and 2024.

Recent WBIF Accomplishments

Dakota County used WBIF funding for targeted well sealing of unused or abandoned wells in 2023 and 2024. Unused or abandoned wells are a potential threat to health, safety, and the environment since they provide a direct conduit to the groundwater aquifer.

The County performed an inventory in 2023 that identified over 1,000 potentially unsealed, unused wells within the Burnsville, Apple Valley, and Lakeville areas of the watershed. The County sent letters to landowners with potentially unsealed wells in 2023, prioritizing properties located within city Drinking Water Supply Management Areas (DWSMAs). DWSMAs are subject to additional groundwater protection guidance due to the potential for contamination of drinking water and associated public health impacts.

WBIF funding was used to perform the inventory and seal 14 wells within the Black Dog watershed area. In addition to focusing on well seal grants within the Black Dog watershed area, Clean Water Fund grant dollars were utilized to seal an additional 49 wells throughout the county. In total, over $90,000 of cost-share grants were awarded.

WBIF Looking Forward

The BDWMO Administrator met with staff from cities, Dakota County, and Dakota County SWCD in 2024 to identify potential opportunities for future WBIF grant dollars. The City of Apply Valley identified several stormwater pond improvement projects intended to provide improved water quality treatment upstream of Keller Lake. These include:

- Whitney Pond Expansion
- Arby's Pond Improvement

The City of Apple Valley completed feasibility studies for these projects using WBIF grant dollars. WBIF will likely be used to support construction of these improvements, pending the alignment and timing of other funding sources, which also include additional Clean Water Fund grant dollars secured by the City.

DAKOTA COUNTY
SOIL & WATER
CONSERVATION DISTRICT

Apple Valley

Dakota
COUNTY

Landscaping for Clean Water—Clean Water Starts at Home

In 2024, Landscaping for Clean Water programming was held in both in-person and virtual formats. Two in-person and three virtual Introduction to Clean Water classes were held in the spring and followed by five in-person design courses. Virtual learning options for both courses were also made available. A total of 41 residents of the BDWMO participated in the introduction classes either in-person or virtually.

A total of 137 participants county-wide took part in the design classes in-person or through pre-recorded videos. A total of 127 projects were designed, 37 of which were by BDWMO residents. Project materials for participants were made available online, and an "Office Hours" program was used to provide virtual consultations to design class participants.

The Landscaping for Clean Water program offered an additional class for residents with shoreline areas, encouraging the use of native plantings to protect or enhance the areas. A total of 23 residents county-wide participated in the shoreline class.

A total of 44 projects county-wide were installed in 2024. Sixteen projects were installed within the Black Dog watershed area, including 4 rain gardens, 11 native gardens, and 1 shoreline project.

In the spring of 2024, one maintenance workshop was taught. The workshop focused on garden maintenance across all seasons and provided participants with seasonal information on how to maintain and promote the health, performance, and beauty of their gardens. A total of 22 people county-wide attended the maintenance workshop.

The 2025 Landscaping for Clean Water program will be held in-person, with virtual options also available. For more information and to sign up, visit:

www.landscapingforcleanwater.com

PROJECT
Installation of a 109 square foot residential raingarden in Burnsville.

COST
Project materials cost estimated at $2,941

FUNDING
Landowners receive a $250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District.

Landscaping for Clean Water is one type of cost-sharing program offered by the Dakota County SWCD. For more information, call 651-480-7777 or go to https://dakotaswcd.org/services/landscaping-for-clean-water/.

Spreading the Word about Landscaping for Clean Water

Last year, Dakota County SWCD engaged a consultant to develop a video advertisement promoting the SWCD's Landscaping for Clean Water program. The commercial follows a young family as they create a beautiful garden to improve water quality, save water by converting thirsty turf, and benefit pollinators with assistance from a homeowner grant available to watershed residents.

The BDWMO and other watershed management organization partners contributed funds to support the development of the advertisement. The commercial was distributed electronically and has been viewed over 25,000 times.

A new commercial advertises the benefits of the Landscaping for Clean Water Program

You can view the video at: https://www.youtube.com/watch?v=Xn-tjrqSTXE

Water Quality Monitoring Program

The BDWMO and member cities continued to monitor several of their lakes during 2024 through the Metropolitan Council's Community-Assisted Monitoring Program (CAMP) to detect any water quality changes that would require management action by the WMO. In addition, the BDWMO conducted more detailed "management-level" monitoring on Orchard Lake, including monitoring of phytoplankton (see page 7). The monitoring focused on three water quality indicators—total phosphorus and chlorophyll-*a* concentrations, plus Secchi disc transparency. All three variables correlate strongly to the open-water nuisance conditions of lakes (i.e., algal blooms).

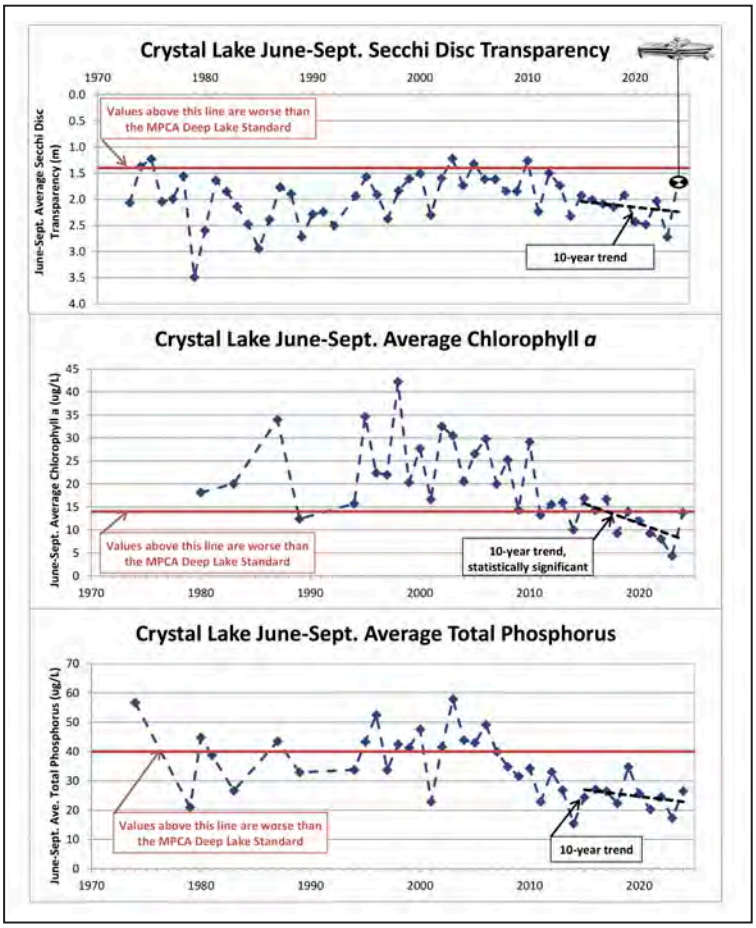
Long-term monitoring is important because lakes can change from year to year. Only when several years of data are compiled do trends become apparent. The MPCA periodically evaluates water quality data from the most recent 10 year period to determine if a lake exceeds applicable water quality standards. The BDWMO has adopted the same time convention for conducting its annual trend analyses. Graphs on this page and subsequent pages show historic water quality and water quality trends observed in the past 10 years.

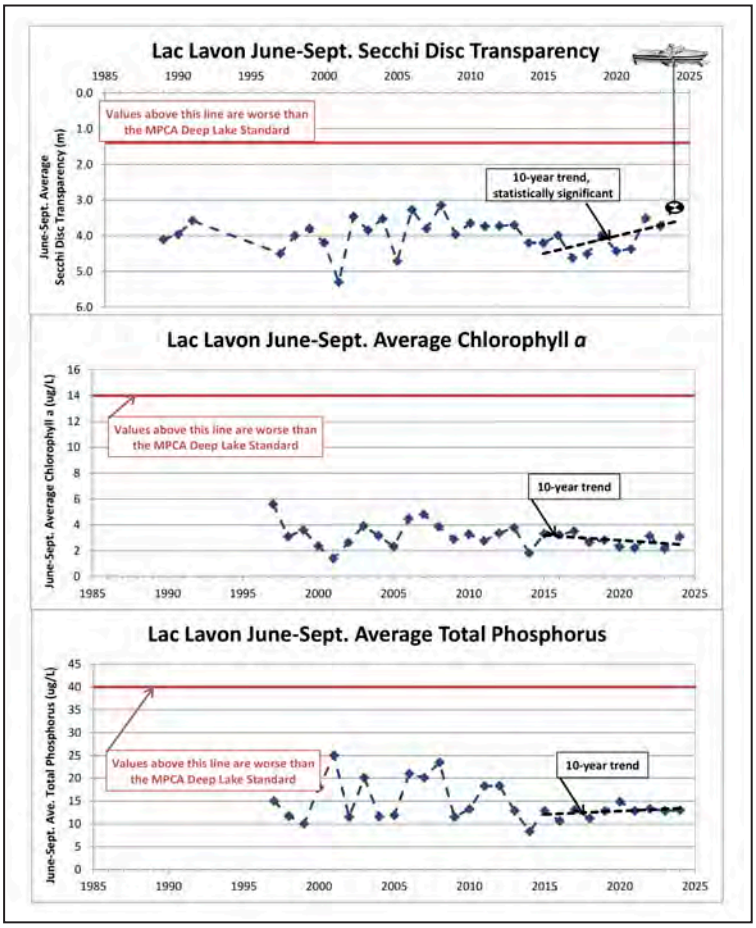
Crystal Lake (Burnsville & Lakeville)

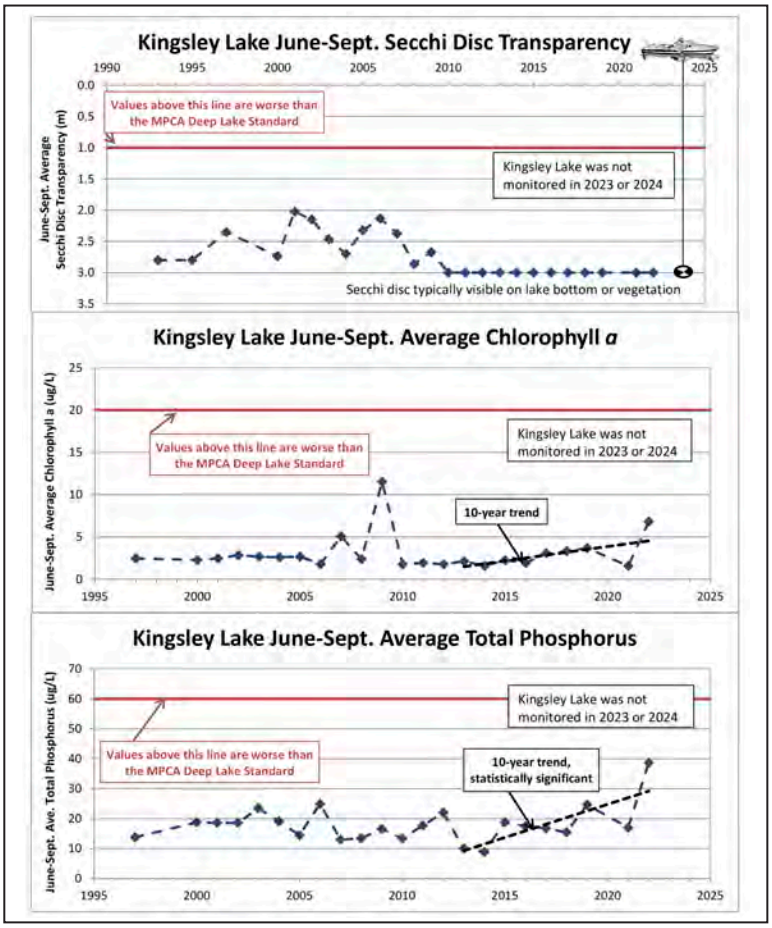
Water Quality Monitoring—Crystal Lake continued to experience good water quality in 2024. Summer averages of total phosphorus (27 µg/L), chlorophyll-*a* (13.8 µg/L), and SDT (1.6 meters [5.4 feet]) were all better than deep lake water quality standards. Water quality was worse in 2024 compared to 2023, which had some of the best water quality in recent years for Crystal Lake; the 2023 summer average of chlorophyll-*a* (4 µg/L) was the best on record for the lake. Although the 2024 summer average of chlorophyll-*a* was the worse it had been 2019, there is a statistically significant trend of improving water quality in summer averages of chlorophyll-*a* for the period 2015-2024. There were no statistically significant trends in summer averages of Secchi disc transparency or total phosphorus. The BDWMO will continue to monitor the water quality of Crystal Lake in 2025, including management level monitoring.

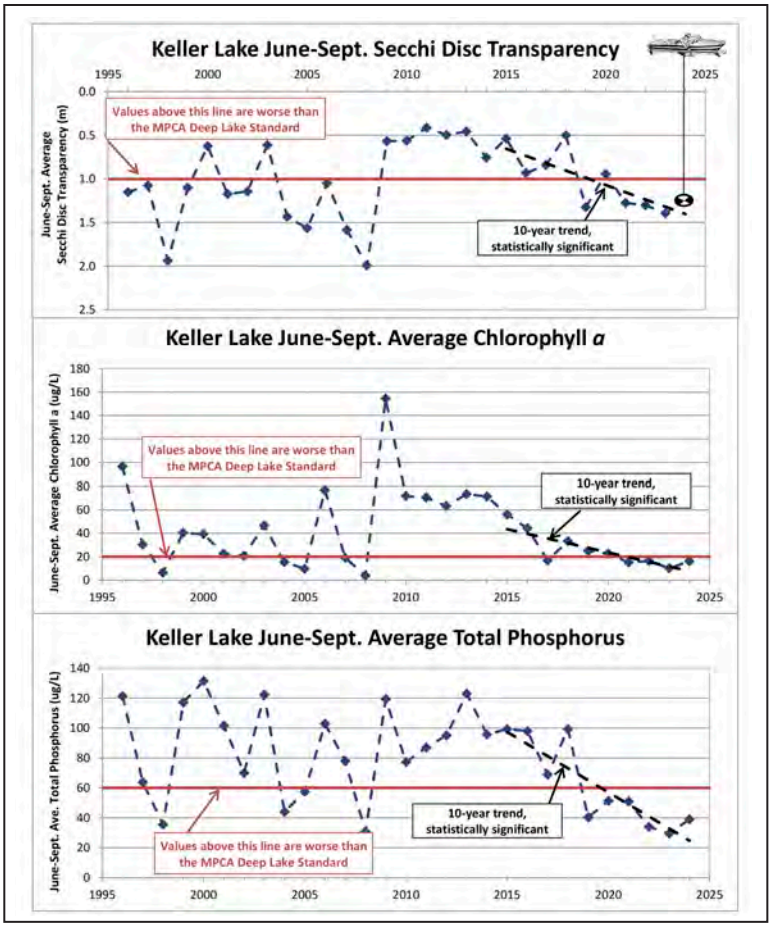
Lac Lavon (Apple Valley & Burnsville)

Water Quality Monitoring—Lac Lavon continued to experience excellent water quality in 2024. The 2024 summer-average Secchi disc transparency was 3.2 meters (10.5 feet)—much better than the MPCA deep-lake water quality standard of 1.4 meters. The 2024 summer averages of total phosphorus (13 µg/L) and chlorophyll-*a* (3 µg/L) are also considerably better than respective deep-lake water quality standards and further indicate excellent water quality for Lac Lavon. The data show a trend of degrading of Secchi disc transparency for the 10-year period of 2015-2024 that is statistically significant at the 90% confidence level, but the trend is mild. There were no statistically significant trends in total phosphorus or chlorophyll-*a* for the same period, and summer water quality averages of both parameters have been consistently excellent for many years. The BDWMO will continue to monitor the water quality of Lac Lavon in 2025.









Kingsley Lake (Lakeville)

Water Quality Monitoring—Water quality monitoring was not performed on Kingsley Lake in 2023 or 2024, due to low water levels which made accessing open water difficult. A discussion of water quality through the year 2022 is included below. Water quality monitoring data from 2022 show continued good water quality in Kingsley Lake. Water is often clear enough that the Secchi disc used to measure transparency can still be seen when resting on the bottom of the lake.* The 2022 summer average of total phosphorus (39 µg/L) was the worst on record, and double the 2021 summer average, but still much better than the shallow lake standard (60 µg/L). However, there is a statistically significant trend of degrading total phosphorus concentration for the 10-year period of 2013–2022. Chlorophyll-*a* (7 µg/L) concentrations were the worst they have been since 2009, but also still much better than the shallow lake standard (20 µg/L). The 2022 summer averages of total phosphorus and chlorophyll-*a* were better than the MPCA's shallow lake standards and have consistently been better than the water quality standards since 1997. Water quality was not monitored in Kingsley Lake in 2020. The BDWMO will continue to monitor the water quality of Kingsley Lake in 2025 if water levels allow. **Secchi disc readings in Kingsley Lake are difficult because lake vegetation obscures the Secchi disc, giving false measurements; therefore, there is no trend line in the graph at left.*

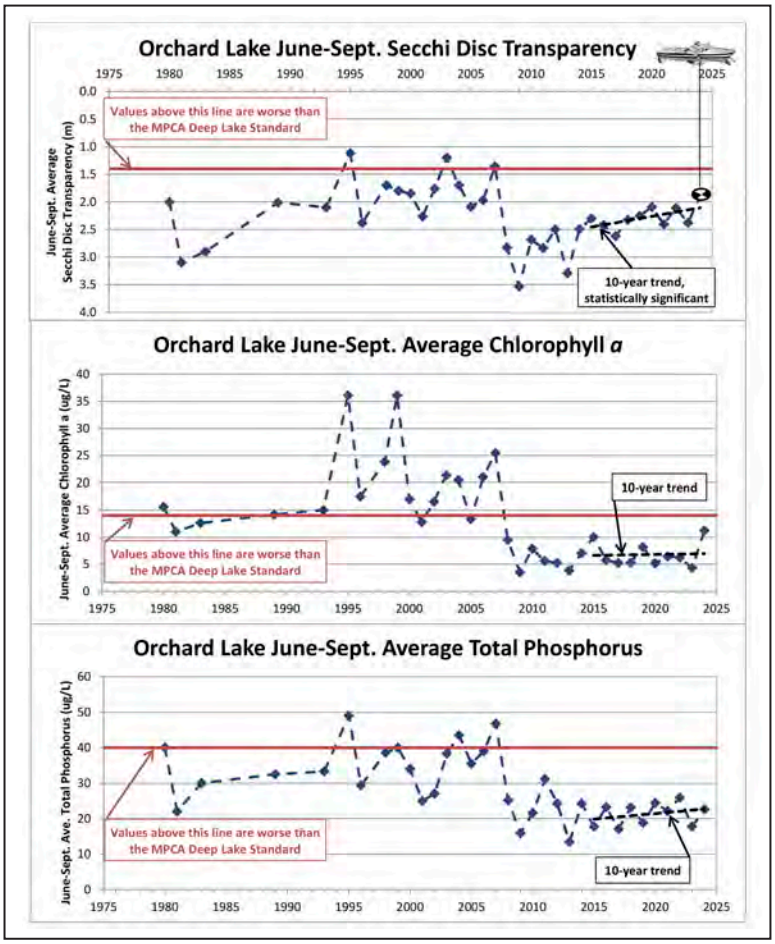
Keller Lake (Burnsville & Apple Valley)

Water Quality Monitoring—An alum and sodium aluminate treatment was conducted on Keller Lake in Spring 2019 and Spring 2021, resulting in improved water quality in recent years. Keller Lake has now experienced four consecutive years (2021-2024) where summer averages of all three parameters are better than standards. Water quality was somewhat worse in 2024 compared to the previous year, but 2023 had some of the best water quality on record for Keller Lake. The 2024 Secchi disc transparency summer average was 1.2 meters (4.0 feet), which is better than the MPCA's shallow lake standard of 1.0 meters (3.3 feet). The summer-average total phosphorus (39 µg/L) was also better than the MPCA's shallow lake standard of 60 µg/L; the previous year's summer average (29 µg/L) was the best on record for Keller Lake. Summer averages of total phosphorus had been consistently worse than the MPCA standard every year for the period 2009-2018, before the alum and sodium aluminate treatment of the lake. The 2024 summer-average of chlorophyll-*a* (16 µg/L) was also better than the MPCA's shallow lake standard of 20 µg/L.

Trend analyses for Keller Lake are presented herein for the first time since the alum and sodium aluminate treatments were performed 2019 and 2021; they demonstrate statistically significant improvements in total phosphorus, chlorophyll-*a*, and Secchi disc transparency and reflect the impact of the treatments. Continued water quality improvement measures are planned for the Keller Lake watershed. The BDWMO will continue to monitor the water quality of Keller Lake in 2025.

Orchard Lake (Lakeville)

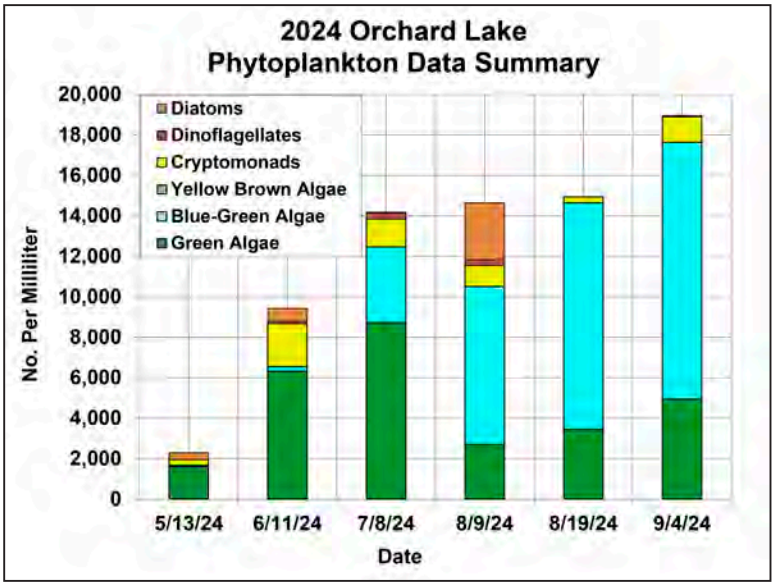
Water Quality Monitoring—Orchard Lake's water quality remained good in 2024, and summer averages of total phosphorus (23µg/L), chlorophyll-*a* (11 µg/L), and SDT (1.9 meters [6.2 feet]) were all better than deep lake water quality standards. Orchard Lake monitoring activities in 2024 included management level monitoring as well as routine CAMP level monitoring. While the 2024 summer average of phosphorus was comparable to or even better than other recent years, the summer averages of chlorophyll-*a* and SDT were the worst observed since 2007. However, this occurred just one year after the third best summer average of chlorophyll-*a* for Orchard Lake (4 µg/L in 2023); summer averages of phosphorus and SDT also showed good water quality in 2023. There was a statistically significant trend of degrading water quality for the summer averages of SDT for the most recent 10-year period 2015-2024). There were no statistically significant trends for phosphorus or chlorophyll-*a* for the same period. Summer averages of water quality in Orchard Lake have been consistently better than the water quality standards for the last seventeen years (2008-2024). The BDWMO will continue to monitor the water quality of Orchard Lake in 2025.



Orchard Lake 2024 Phytoplankton Monitoring

Samples of phytoplankton, microscopic aquatic plants, were collected from Orchard Lake to evaluate water quality and the quality of food available to zooplankton (microscopic animals). Phytoplankton numbers were very low in May. The numbers increased from June through September but remained low to moderate, generally reflecting the lake's good water quality.

Green algae are a good source of food for the lake's zooplankton and comprise most of the phytoplankton present in May, June, and July. Green algae were present throughout the summer but declined as a percentage of the overall phytoplankton community (see figure below).



Blue-green algae, which are associated with water quality problems and can be a source of health concerns (if certain species are present in significant numbers), were present in very small numbers in May and June. Blue-green algae numbers increased later in the season and were the dominant type present in August and September. The World Health Organization (WHO) has established that lakes with blue-green algae densities of less than 20,000 cells per milliliter pose no risk to the health of humans or pets. Blue-green algae concentrations in Orchard Lake in 2024 were consistently below this threshold.

BLACK DOG
Watershed Management Organization

www.blackdogwmo.org

WANTED: Lakeville Alternate Commissioner

The City of Lakeville is seeking an alternate commissioner to represent the City on the Black Dog Watershed Management Commission through 2025. Alternates serve as an acting member but vote only during the absence of a regular commissioner. The Commission meets the third Wednesday of each month. The position is open to Lakeville residents ages 18 and older who live within the Black Dog Watershed. Those interested in this volunteer position should send a letter of interest to the Lakeville City Engineer Zach Johnson. The City will interview interested qualifying candidates.

Email Zach Johnson at:
zjohnson@lakevillemn.gov

Board of Commissioners

Representing Burnsville:

Curtis Enestvedt, Chair
(serving since 2014)
Mike Hughes, Vice Chair
(serving since 2008)
Paul Below, Commissioner
(serving since 2024)
Todd Christopherson, Commissioner
(serving 2023 to 2024)
Cyndi Bergloff, Alternate
(serving 2023 to 2024)

Representing Apple Valley and Eagan:

Rollie Greeno, Commissioner
(serving since 2018)
Greg Helms, Alternate
(serving since 2011)

Representing Lakeville:

Scott Thureen, Secretary/Treasurer
(serving since 2008)
Alternate — Open position

Engineering Consultant:

Greg Williams, P.E., Barr Engineering Co.

Legal Consultant:

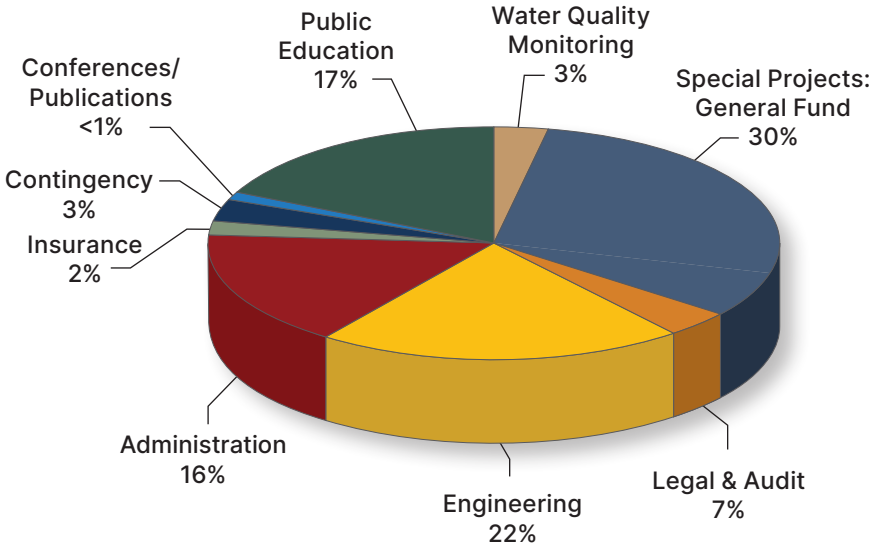
Cole Birkeland, Campbell Knutson, P.A.

For more information, please contact:

Daryl Jacobson, Administrator
Black Dog WMO
City of Burnsville
13713 Frontier Court | Burnsville, MN 55337
Phone: 952-895-4574
Daryl.Jacobson@burnsvillemn.gov

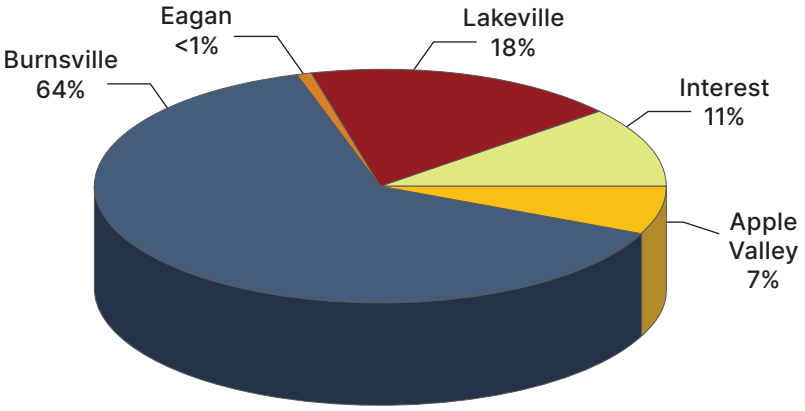
2025 Budget

Engineering	$34,000
Legal and Audit	$11,000
Administrative Services	$25,000
Public Education	$25,700
Insurance	$2,500
Special Projects – General Fund	$46,000
Conference/Publications	$500
Water Quality Monitoring	$5,400
Contingency	$5,000
Total Expenditures	**$155,100**



2025 Income

Member Contributions	$119,000
Interest	$15,000
Total Income	**$134,000**



Regular board meetings...

are held at 5:00 p.m. on the third Wednesday of the month at the Burnsville Maintenance Facility at 13713 Frontier Court.