

Great Lakes- St. Lawrence River Basin Water Resources Compact

Annual Water Conservation and Efficiency Assessment

November 21, 2018



State of Minnesota



Report Purpose:

The Water Conservation and Efficiency Program Assessment is submitted to the Great Lakes-St. Lawrence River Basin Water Resources Council annually. These Program Reports are submitted by Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin and are available online, dating back to 2008. [Great Lakes-St. Lawrence Compact](#)

The report format requires a listing of laws, regulations and policies. In 2018 there were no major changes to this section. There is additional discussion of the new Minnesota Water Conservation Reporting System in the Mandatory/Benchmark discussion, highlights from the Ecological and Water Resources Strategic Plan, and an update on the Minnesota Department of Natural Resources Lake Superior Collaborative.

The five listed objectives are part of the required template and are not necessarily in priority order. The 2018 report includes new actions that were started or accomplished during the calendar year. For previous or ongoing water conservation and sustainability programs please see earlier reports.

This plan is submitted by the Minnesota Department of Natural Resources (DNR). We have captured some of the highlights from our cooperating partners including: USGS, USFWS, USFS, Minnesota Board of Soil and Water Resources (BWSR), Natural Resources Research Institute (NRRI) at the University of Minnesota at Duluth (UMD), the Minnesota Pollution Control Agency (MPCA), Clean Water Council, county and local agencies and other governmental and non-governmental groups involved in conserving the Lake Superior resources.

State of Minnesota

Note: All underlined items are linked to the referenced Websites

1. Lead agency/agencies and contact person(s).

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2. Status of Minnesota's water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives.

Minnesota's water conservation and efficiency goals and objectives are consistent with the Basin-wide goals and objectives. Minnesota's laws, rules and policies address all of the Goals and Objectives identified in the Compact, Sustainable Water Resources Agreement, and of the Basin-wide Conservation and Efficiency Initiative. Minnesota's DNR applies an adaptive approach to its water management, so that expanding scientific knowledge and improvements in technology lead to improvements in natural resource use and protection.

The Lake Superior Basin in Minnesota encompasses portions of Aitkin, Carlton, Cook, Itasca, Lake, Pine and St. Louis Counties, covering approximately 6,200 square miles. Major watersheds in the basin include the Cloquet, Nemadji and St. Louis River systems, as well as the North Shore tributaries to Lake Superior.

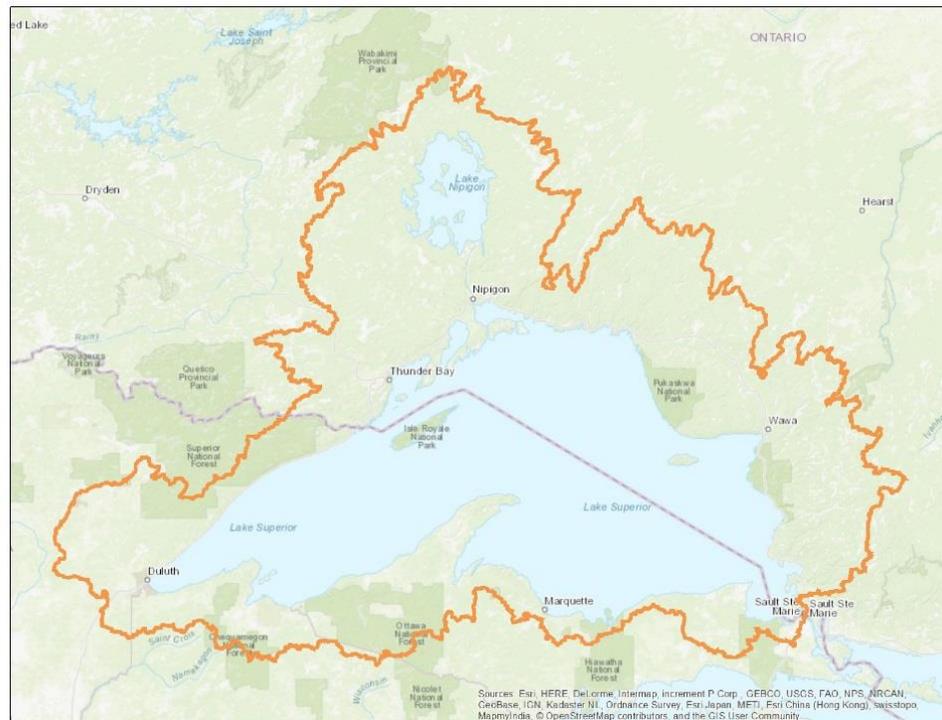


Figure 1 Lake Superior Watershed.

3. Water Conservation and Efficiency Program Overview.

a) Citations to implementing laws, regulations and policies.

The statutes and rules listed below are available at <http://www.leg.state.mn.us>

Primary:

- [Minnesota Statutes, chapter 103A. Water Policy and Information](#)
- [Minnesota Statutes, chapter 103G. Waters of the State \(DNR's primary regulatory statute for management of water resources\)](#)
- [Minnesota Statutes, chapter 103G. 271 Appropriation and Use of Water](#)
- [Minnesota Statutes, section 103G.801, Great Lakes – St. Lawrence River Basin Water Resources Compact](#)
- [Minnesota Rules, parts 6115.0600 – parts 6115.0600 – 6115.0810. Water Appropriations and Use Permits and Use Management Plans](#)

Related:

- [Minnesota Statutes, section 103B. Water Planning and Project Implementation](#)
- [Minnesota Statutes, section 103F. Protection of Water Resources](#)
- [Minnesota Statutes, chapter 103H. Groundwater Protection](#)
- [Minnesota Statutes, chapter 103I. Wells, Borings and Underground Uses](#)
- [Minnesota Statutes, section 116B.01 Environmental Rights](#)
- [Minnesota Statutes, chapter 116D. Environmental Policy](#)

b) Summary of program elements both mandatory and voluntary.

Minnesota's water conservation program is integrated with permitting and planning requirements.

Mandatory:

- A water appropriation (use or withdrawal) permit is required for all appropriations of more than 10,000 gallons of water per day or 1 million gallons per year. The efficient use of water can be required through the permitting process ([Minnesota Rules, part 6115.0770](#)).
- Water users must measure water volumes appropriated within 10% accuracy. Flow meters are required but other fairly accurate methods, such as timers or electrical use meters, can be approved for smaller water users.
- [Preliminary approval](#) from the DNR is required before drilling a well that will need a water appropriation permit (will be used to withdraw more than 10,000 gallons of water per day or 1 million gallons per year). The DNR informs the applicant whether the anticipated water use request is likely to meet the applicable requirements in law. This process helps prospective well owners to make informed decisions by providing relevant information prior to their financial investment in equipment and well construction.
- Public Water Suppliers must meet demand reduction measures:
 - Public water suppliers serving more than 1,000 people are required to prepare a [Water Supply Plan](#) every ten years that is approved by the DNR. In these plans, suppliers identify water demand projections, development plans, water sources, and demand reduction and conservation measures. All Water Supply Plans for public water utilities along Lake Superior were due to the DNR December 31, 2016. Plans from the inland communities within the basin are due October 15, 2018. The DNR has held workshops with these communities with training that included an emphasis on water conservation and efficiency.
 - Before requesting approval to construct a public water supply well or to increase authorized water volumes, demand reduction measures must be employed by the public water supplier. A [demand reduction measure](#) serves to reduce water demand, water losses, peak water demands, and nonessential water uses. Demand reduction measures must also include a

- conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction.
 - [Benchmarks](#) for public water suppliers were developed in consultation with the Minnesota Section of the American Water Works Association. The benchmarks, which include standards for unaccounted water, per capita use, rate structure and peak demand are used in reviewing water supply plans and for water appropriation permit review. These are now incorporated into the 10 year plan as community goals and are also included in the new Water Conservation Reporting System.
- [Minnesota's buffer law](#) establishes new perennial vegetation buffers of up to 50 feet along rivers, streams and ditches that will help filter out phosphorus, nitrogen and sediment.
 - The DNR released the buffer protection map in 2016. The map will help guide the implementation of Minnesota's buffer law by landowners with the help of Minnesota's Board of Water and Soil Resources (BWSR), Soil and Water Conservation Districts (SWCDs), Drainage Authorities and other local governments.
 - While the buffer law is primarily intended to improve surface water quality in the agricultural areas of the state, there may be some improvements in the water quality of tributaries entering into Lake Superior.
- [Landscape irrigation systems](#) that operate automatically are required to have technology that inhibits or interrupts operation during periods of sufficient moisture. Cities are responsible for enforcing this requirement.
- Minnesota Statutes establish priorities for the allocation of the consumptive use of water. [[Minnesota Statutes, section 103G.261](#)]. Consumptive use is defined in Minnesota Statutes, Section 103g.005 as "...water that is withdrawn from its source for immediate further use in the area of the source and is not directly returned to the source."
- Surface water use may be suspended during low flow periods in Minnesota based on water use priorities stated in law [[Minnesota Statutes, section 103G.261](#)]. [Published procedures](#) lay out when surface water users will be suspended. Non-essential uses are the lowest priority and are subject to restrictions prior to other higher priority uses. When the flow in gaged streams and rivers reach or fall below a flow rate that is exceeded 90% of the time (the Q90) for that watercourse, all direct appropriation can be suspended in accordance with the priorities stated in law and DNR's procedures. Ecologically-based low flow thresholds can and have been developed for some surface waters.
- [Minnesota's Statewide Drought Plan](#) provides a framework for preparing for and responding to droughts including steps for public water suppliers to take for reducing water use. Beginning 2018 the DNR will be working with other agencies to update and modernize the Statewide Drought Plan.
- Groundwater withdrawals for [once-through HVAC systems are prohibited](#). Large existing systems have been converted to water efficient systems. Smaller systems cannot be expanded and must convert to a water efficient alternative within the design-life of existing equipment.
- Applicants for water appropriation permits may be required to provide alternatives to proposed actions, including conservation measures to improve water use efficiencies and reduce water demand [[Minnesota Statutes, section 103G.301](#), subd. 1 (b) (3)].
- Applicants for wastewater discharge permits are required to evaluate potential reuses of the discharged wastewater [[Minnesota Statutes, section 115.03](#), subdivision 1, item (e), sub item (10)].

Voluntary:

- Minnesota Statutes require demand reduction measures for new public water supply wells, or increased water volumes. The Statute also provide consideration for voluntary programs to retrofit

water fixtures. Some local governments have partnered with private industry to offer water-saving fixtures and other items such as soil moisture sensors.

- Minnesota Statutes encourage the reuse of water and the evaluation of reuse options as part of applications for water discharge permits.
- Water appropriation permits are not required for stormwater use from certain facilities as defined in statute.

4. Identify how the State/Provincial program is consistent with the regional objectives:

Many efforts are underway in all levels of government, educational institutions, nonprofit organizations, business and industrial sectors, and the grassroots level to guide Minnesota toward long-term sustainable water use. As shown below, Minnesota's program is consistent with the regional objectives in the promotion of environmentally sound and economically feasible water conservation measures.

Top accomplishments for 2018:

1. The new statewide Water Conservation Reporting System was initiated in 2018. All water suppliers serving over 1,000 people completed water accounting data entry and reported their water conservation actions completed in 2017. Researchers and other agencies will be able to access data.
2. The DNR has organized its Lake Superior Collaborative to coordinate Lake Superior resource protection efforts between six programs.
3. The DNR Ecological and Water Resources Division completed its Strategic Plan 2018-2028 which includes water resource goals relevant to Lake Superior.
4. Minnesota's water conservation score improved two steps to a "B" according to the 2018 Alliance for Water Efficiency (AWE) Water Efficiency and Conservation State Scorecard: An Assessment of Laws.

OBJECTIVE 1: Guide programs toward long-term sustainable water use.

Lake Superior Collaborative: A DNR Initiative for Collaborative Water Governance

Water governance has always required cooperation, but as demand for water and water-based resources increases the need for integrated water resource management has never been greater. Over \$8 million dollars of federal money is brought into Minnesota annually for Lake Superior management. The objectives of this collaborative effort are to enhance DNR direct participation in Great Lakes programs, responsibilities and initiatives, coordinate lake wide activities with cross-jurisdictional programs, coordinate Lake Superior activities with internal State programs, and advance Lake Superior restoration and protection priorities through a variety of means.

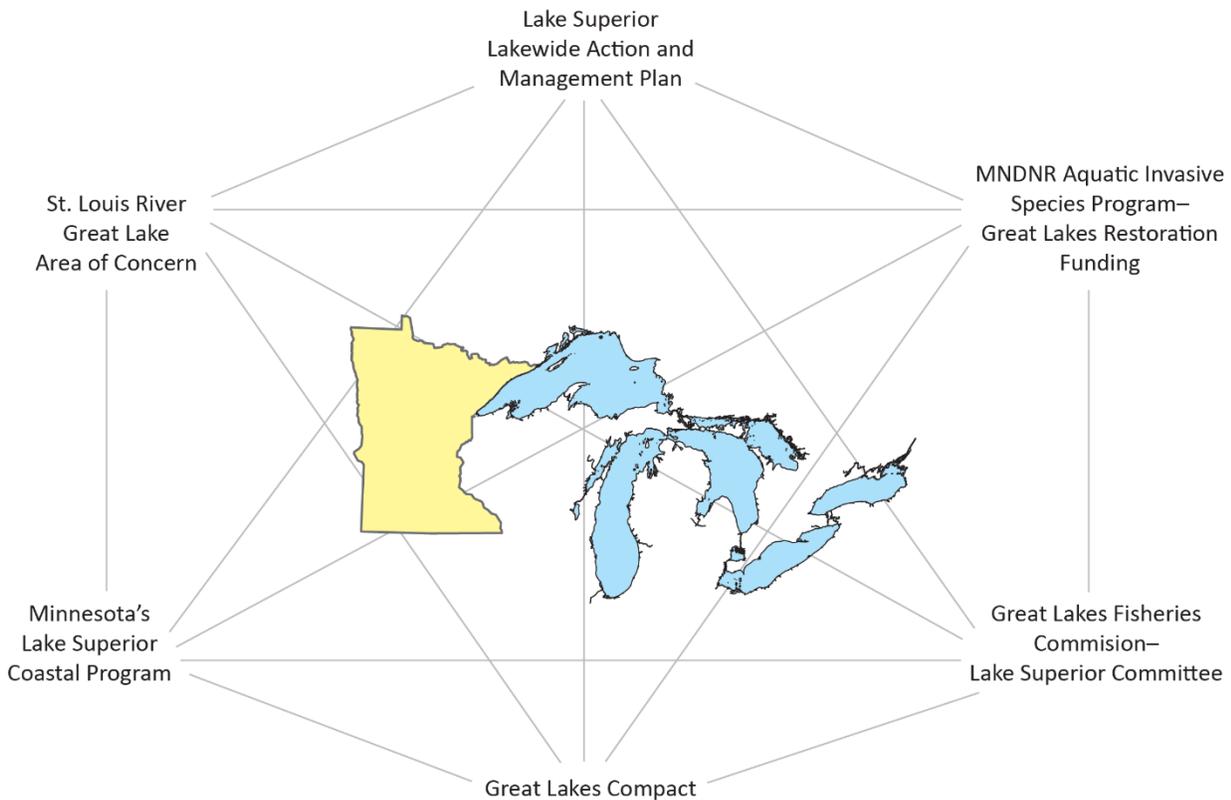


Figure 2. Graphic of the DNR programs involved in the Lake Superior Collaborative.

The Six DNR Programs in Great Lakes Management

The Great Lakes Fisheries Commission - The Great Lakes Fishery Commission was established in 1955 by the Canadian/U.S. Convention on Great Lakes Fisheries. The commission coordinates fisheries research, controls the invasive sea lamprey, and facilitates cooperative fishery management among the state, provincial, tribal, and federal management agencies.

Minnesota's Lake Superior Coastal Program - Minnesota's Lake Superior Coastal Program is a federal-state partnership dedicated to the comprehensive management of our coastal resources. The Program provides technical and financial resources for the local community, by bringing federal dollars into Minnesota for the Lake Superior coastal area.

Lake Superior Lakewide Action and Management Plan - Each Great Lake has a Lakewide Action and Management Plan (LAMP). LAMP provides a management framework for a binational, watershed-based approach to the overall restoration, protection and maintenance of the Lake Superior ecosystem.

St. Louis River Restoration Initiative - Minnesota DNR is leading habitat restoration projects in the estuary to address degradation of fish and wildlife populations, and to restore fish and wildlife habitat. DNR and its partners have identified ecological targets to guide selection, design, construction and monitoring projects.

Great Lakes Compact Council - The DNR ensures the fulfillment of and implementation of the Compact in Minnesota. In addition to the Compact the DNR is guided by the Great Lakes Regional Body Agreement for management and protection of the Great Lakes Basin water resources.

Aquatic Invasive Species Program - The Great Lakes Restoration Initiative (GLRI) was launched in 2010 to accelerate efforts to protect and restore the Great Lakes. The GLRI Action Plan II summarizes the actions that federal agencies plan to implement during FY15-19. The purpose of the MNDNR AIS is to curb the spread and minimize harmful effects of nonnative species.

Western Lake Superior Sanitary District Success Story

In 2018 the Western Lake Superior Sanitary District (WLSSD) celebrated 40 years of improving water quality in the St. Louis River and Lake Superior. October 13, 2018 they held an open house event to [celebrate their success](#). In the past, industries in and around Duluth and Cloquet — from lumber and paper mills to slaughterhouses and steel mills, food processing plants and much more — discharged their minimally treated wastewater directly to the St. Louis River. Once the WLSSD went on line the results were stunning and quick. The St. Louis River, free from most paper-mill waste and other pollution, transformed almost immediately. Over the years the WLSSD brought on more areas like the near North Shore, Pike Lake, Oliver, Rice Lake Township, and the Fond du Lac Reservation. There have been continual technology upgrades and they have improved their sludge disposal process. Now the district is working to build systems to capture heat and otherwise wasted energy from the sewage treatment process to heat and power their facility.

Heavy Rains Result in sediment flowing into Lake Superior

Excessive rainfall on June 16-17, 2018 produced destructive flooding in northeastern Minnesota. The rains, in excess of a half-foot in places, led to flash flooding that washed out highways. Runoff carried sediment into Lake Superior as shown in Figure 3. The Nemadji River that flows from Carlton County in Minnesota to Superior, Wis., reached its highest level on record, the National Weather Service reported. The rising water forced the closure of highways 2 and 53 at the river crossing on the east side of Superior.



Figure 4. This pair of images, provided by the U.S. Geological Survey by way of the National Weather Service shows the Nemadji River, on the afternoon of June 16th (top) and then amid flash flooding the afternoon of June 17th (bottom) after heavy rain fell in the region.



Figure 3. Sediment showing on the south shore of Lake Superior after heavy rain June 15-17, 2018 (NOAA/UW-Madison CIMSS)



Figure 5. Damage along State Highway 23 near the South Fork of the Nemadji River in Carlton County, Minn., after flash flooding. Courtesy of Sgt. Jason Warnygora | Carlton County Sheriff's Office

Great Lakes Fishery Commission

March 2018 the Lake Superior Committee of the Great Lakes Fishery Commission was presented the “State of the Lake” by the Lake Superior Technical Committee. Each year a different Great Lake Technical Committee presents it’s State of the Lake which encompasses five years of data and is reported two years after the most recent Cooperative Science and Monitoring Initiative sampling. These presentations report primarily on the accomplishments towards the 2003 Fish Community Objectives for Lake Superior. Below is a link to the presentations that were given, which are recorded as voice-over PowerPoint presentations and made available as YouTube videos: <http://www.glfc.org/2018-lake-committee-videos.php> Minnesota DNR Fisheries has been involved with fisheries management on Lake Superior since at least 1951, which is even prior to the creation of the Great Lakes Fishery Commission through binational treaty (1954 Convention on Great Lakes Fisheries).

St. Louis River Area of Concern and Restoration Program

DNR and MPCA staff working on the St. Louis River Area of Concern (AOC) met in September, 2018 to look at longer-term issues that will transition between delisting, long-term maintenance plans, monitoring after delisting, and data management.

A complex mix of funding supports cooperative projects with restoration site teams and partner agencies. Several projects of focus in 2018:

- **Kingsbury Bay/Grassy Point Habitat Restoration Project** – mitigate latent contaminated sediments, legacy wood waste, and excessive sedimentation to restore 240 acres of fish and wildlife habitat.
- **Kingsbury Creek Watershed** – reduce sediment loading from big storm events.
- **Perch Lake** – make this small lake that is connected to the St. Louis River more ecologically productive.
- **Mud Lake** –restore habitat and riverine conditions.
- **Wild Rice Restoration in STL Estuary** – manage restoration condition suitable for wild rice habitat.
- **Various MPCA/Superfund sites** – ongoing work

Ecological and Water Resource Strategic Plan

The DNR’s Ecological and Water Resources Division released its [Strategic Plan 2018-2028](#). One of the primary goals is: “Minnesota water resources will be managed and used sustainably and the water quality will be improved and protected.”

Strategies to accomplish our goal:

- Collect, analyze and share important data on the status and trends of Minnesota’s waters and their use to support decision-making, permitting and awareness.
- Engage water users and other stakeholders to address challenges and opportunities in water use, watershed function and impaired waters.
- Use a systems-based approach for water management and conservation.
- Ensure our permitting responsibilities are carried out efficiently, effectively and consistently with regulatory authority.

The plan recognized that 100 non-native species are living in Lake Superior and its wetlands. It highlighted the effort of Minnesota’s Lake Superior Coastal Program, the Water Conservation Reporting System and DNR’s Project WET water conservation educational efforts.

Invasive Species Management

Bloody Red Shrimp, an invasive species organism, was recently reported in Superior Ore Docks Harbor. Up until now the Bloody Red Shrimp has not been found in Lake Superior. Federal biologists have the specialized equipment for early detection and monitoring. 1854 treaty biologists are also involved in sampling.

Non-native Phragmites control efforts on the Minnesota side of the St. Louis River are underway. Control efforts are sponsored by the St. Louis River Alliance and include mechanical knock down and herbicide application.

Minnesota hosted the Upper Midwest Invasive Species Conference in Rochester on October 15-18, 2018.

Great Lakes Restoration Action Plan III

This plan is to outline priorities and goals for the GLRI for 2024. Minnesota hosted a Public Information Session in Duluth in July 2018.

Lake Superior-North Flute Reed River TMDL

The EPA recently approved the Total Maximum Daily Load report for the Lake Superior-North watershed and Flute Reed River. Nearly all lakes and streams evaluated in the Lake Superior-North watershed meet water quality standards, according to MPCA studies. The MPCA studied 67 streams and 152 lakes in this northeast corner of the state, and only one stream – the Flute Reed River – failed to support standards. The Flute Reed River’s sediment levels are higher than allowed under state standards and are impacting clear water and clean gravel stream habitat for trout. The sediment impairs the trout’s ability to capture food and lay eggs, potentially leading to a population decline. For humans, too much sediment reduces the enjoyment for swimming and other aquatic recreation. The related Lake Superior-North Watershed Restoration and Protection Strategies (WRAPS), approved by the MPCA in August 2018, outlines several strategies to protect the excellent water quality in this watershed.

Lake Superior Partnership Working Group

Minnesota hosted the Lake Superior Partnership Working Group (previously known as the Lake Superior Bi-National Program) in Beaver Bay June 12-14, 2018. The meeting included updates from standing committees on mining, habitat and biota. The meeting also focused on plans for the lake implementation planning process, the Great Lakes Water Quality Agreement, and results of the 2016 CSMI monitoring year.

OBJECTIVE 2: Adopt and implement supply and demand management to promote efficient use and conservation of water resources.

Municipal Water Efficiency

Minnesota has 18 water suppliers in the Lake Superior Watershed that are required to complete a Water Supply Plan. All plans were due to the DNR Oct. 15, 2018 and most will be approved within the next year. As part of monitoring implementation of Water Supply Plan conservation objectives, municipalities serving over 1,000 people began reporting their conservation efforts in 2018 through the Minnesota Water Conservation Reporting System. See Objective 3 below for more detail on this new water accounting system. Duluth is the largest municipality in the watershed. Below is a summary of Duluth’s Water Conservation and Efficiency efforts. This is the type of information that DNR gathers for all municipalities serving over 1,000 people.

Summary of Duluth, Minnesota’s 2017 Water Conservation Report

Total water pumped	4,901,210,000 gallons
Population	103,541 (this includes the adjacent communities of Hermantown, Proctor and Rice Lake)
Residential GPCD	36.6
Total Peaking Factor	1.81
Water Loss	13%
Residential vs. Non-Res. Use	1,381,792,368 gallons vs. 2,869,929,392 gallons
# of Residential connections	26,221
# of Non-Res. connections	2,022
Date of Highest Use	6/15/17

Water Reuse

Water reuse will be an increasingly important part of managing water resources as demands on water supplies continue to grow due to population increases, urbanization, climate change, and changes in water use. The DNR participated in an interagency workgroup led by the Minnesota Department of Health (MDH). The workgroup researched and wrote a comprehensive [MDH Water Reuse Report](#). The report summarizes existing policies, guidance and regulations from states and municipalities throughout the nation as well as internationally. The workgroup examined opportunities and obstacles for reuse of treated wastewater, graywater, stormwater, and rainwater, as well as subsurface water discharged for dewatering purposes. The Report was published in 2018.

Other Water Conservation Efforts

The Vikre Distillery in Duluth recently changed their cooling and heating system to reduce water use by over 70%. They also implemented a bottle return and reuse program. In 2018 they are working to become a zero-waste facility and hope to switch all energy to renewables. Other breweries and distilleries are all getting on board with water awareness education, including: Hoops, Bent Paddle, and Castle Danger. They realize that City of Duluth water from Lake Superior makes better tasting beer.

OBJECTIVE 3: Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.

New Minnesota Water Conservation Reporting System

The Minnesota DNR has contracted with Energy Systems Platform (ESP) to develop a new water conservation reporting system. It is the first and only statewide water conservation reporting system in the nation. This system is similar to the existing Minnesota energy conservation reporting program. This system is the first comprehensive effort to monitor water supplier conservation efforts from source to consumption, with the goal of determining the impact of conservation efforts in the state. The system is Cloud-based for easy data entry and record management.

In early 2018, the DNR/ESP team rolled out the Water Conservation Reporting system to 348 Minnesota utilities, provided training, and gathered 2017 utility operational data. Analysis of the results is in a report that is in the final stages of review. It will then be distributed to cities and other partners.

Relative to DNR's conservation goals, the 2017 data indicate:

- 94% of the 348 invited water suppliers participated in submitting data.
- In total, statewide utilities have a water loss of 8.87%, meeting the DNR conservation goal of no more than 10% water loss.
- The statewide value for residential consumption, Gallons Per Capita per Day (GPCD) is 52 gallons, meeting the DNR conservation goal of no more than 75 GPCD.
- Peak Daily Use (maximum gallons per day during the year, divided by average daily use) is 2.36, meeting the DNR conservation peaking factor goal of no more than 2.6.
- 61% of the 348 reported direct conservation projects before the customer meter (Leak detection, line repairs).
- Utilities reported 13 water reuse projects that resulted in 75 million gallons of water saved in 2017.
- 55% reported direct conservation efforts after the customer meter (rebate programs, retrofits).
- 74% reported having one or more conservation-related ordinances.
- 58% reported collaboration activities, of those 48% collaborate with the Minnesota Department of Health.

These data indicate good performance overall for Minnesota utilities in 2017. Of course, some utilities met these goals and others did not. These data are to be used to help utilities better understand where to focus their conservation efforts in order to meet these water conservation goals and further improve statewide performance.

Based on these results, the most significant water savings to be achieved for Minnesota utilities is found in repairing and enhancing water delivery systems (fixing leaks), and using best practices to maintain meters so water delivery and use can be accurately measured. Many water suppliers are aware of these issues and are working to correct the problems as funding becomes available.

OBJECTIVE 4: Develop science, technology and research.

Minnesota agencies partner with other states and federal agencies on several science, technology and research efforts:

NERRS/NERRA Annual Meeting: Staff from across the nation's 29 [National Estuarine Research Reserves](#) (NERRS) and the National Estuarine Research Reserve Association (NERRA) met in Duluth November 5 – 9, 2018 for their [annual meeting](#). The plenary was free and included a panel discussion on partnerships and remarks from NOAA staff on the Great Lakes Areas of Concern, Great Lakes Restoration Initiative and the region's maritime heritage. The [full meeting](#) offered breakouts, field trips, a poster session, film fest, and a celebration at the Great Lakes Aquarium.

Great Lakes Coastal Resiliency Study: US Army Corps of Engineers provided funding for the [Great Lakes Coastal Resiliency Study](#) in 2019. The Minnesota's Coastal Program has been and will continue to work with the partners on developing the project and identifying meaningful and relevant products. There are two projects currently underway – the US Army Corps of Engineers' Great Lakes Regional Sediment Budget and NOAA's Office for Coastal Management's Hardened Shoreline Analysis.

- Hardened Shoreland Study – will produce maps at a very local scale. This study will be done late 2019.
- US Corp is doing a Sediment Budget Study– similar to what they did in Lake Michigan – but on Great Lakes-wide scale, including sediment sinks and sources and impact on structures. We are seeking a greater understanding of moving cells of sediment and how to manage them. This is applicable to Duluth Harbor and land use and zoning decisions.

Agencies considering removing fish impairment from St. Louis River Area of Concern: Recent research in the St. Louis River estuary shows that white sucker fish have a low rate of fish tumors and deformities. However, in response to the recent research, the MPCA and Wisconsin Department of Natural Resources (WDNR) and are requesting that the St. Louis River no longer be listed as impaired for fish tumors and deformities. Fish sampled in 2011, 2013, and 2015 were studied to determine if fish tumors and deformities were more common in the St. Louis River Area of Concern (AOC) than elsewhere. Because of these findings, the MPCA and the WDNR proposed that the fish tumors and deformities impairment be removed for the St. Louis River AOC.

OBJECTIVE 5: Develop education programs and information sharing for all water users.

Lake Superior Most-Loved Lake

The month-long contest for Minnesota's most-loved lake is over, and Lake Superior has won. The great lake bested Lake Kabetogama in the final round. Some people said Lake Superior shouldn't count in the voting because Minnesota shares its shoreline, but Minnesotans' attachment to their 189 miles of Superior's shores was too strong for that argument. Superior and its 3 quadrillion gallons of water, 10 percent of the planet's surface freshwater, beat the other 271 nominated lakes.

Toilet Leak Detection Tablets

The DNR provides communities and organizations with free toilet leak detection tablets (blue dye tablets) with information cards on the importance of water conservation and repairing leaks. Over 5,000 educational pieces were distributed in 2018.

Water Conservation Communications Plan

The DNR and other partners have drafted a statewide 3-year water conservation communication plan. The plan is intended to elevate the importance of water conservation and highlight opportunities for partnerships. Individual cities and organizations will have more detailed and targeted communication efforts. As demand for water increases and sustainable water use becomes a challenge, water conservation becomes essential. The role of the DNR is to assist and promote communication and education of water issues and conservation.

The plan is based on Community-Based Social Marketing (CBSM) to foster behavior change. The process involves looking at particular ways to connect with local communities and adapt to the most effective methods. The Water Conservation Communication Plan will complement existing messages, not replace them.

Conferences and Water Conservation Presentations

- **Minnesota Rural Water Conference** – A presentation was given on the results of the new Water Conservation Reporting system to several hundred participants from around the state.

- **Water Energy Nexus** – The Governor’s office hosted a joint meeting with multiple state agencies to discuss the energy-water nexus and develop a plan of action.
- **University of Minnesota Water Resources Conference** – DNR presented a Poster on the Great Lakes Collaborative.
- **AWWA State Conference and Central Region Water Operators Training** - A presentation was given on the results of the new Water Conservation Reporting system to several hundred participants from around the state.
- **Minnesota Groundwater Association** - A presentation was given on the results of the new Water Conservation Reporting system to several hundred participants from around the state.

Staff Training

Training was provided to MN DNR Information Center Staff on water conservation resources and materials to help them respond effectively to water conservation questions. The Info Center receives more than 100,000 calls and emails annually and provides immediate customer service for all aspects of the DNR.

AWE Water Efficiency and Conservation State Scorecard: An Assessment of Laws

Alliance for Water Conservation (AWE) released their 2018 Water Efficiency and Conservation State Scorecard: An Assessment of Laws. Minnesota’s score improved two steps from a “C+” in 2012, to a “B” in 2018 and was one of only eleven states in the nation with a score of “B” or higher. New this year, the report analyzed how states are addressing the water resource impacts of climate change. Minnesota had a Climate Resiliency score of B+. Minnesota was one of only 11 states receiving some combination of “A” and “B” for both conservation and efficiency laws and climate resiliency plans and laws.

Publicity & Webpages

The DNR’s website devotes [a page for Great Lakes Compact](#) information and links and a page for [water conservation](#).

5. Description of Minnesota’s conservation and efficiency program implementation timeline and status.

DNR Timeline and Status

The DNR has a fulltime Water Conservation Consultant who works with staff, other state agencies, and organizations to direct and coordinate water conservation and efficiency efforts. Water conservation in Minnesota is built on a foundation of knowledge about water use.

The existing MNDNR Permitting and Reporting System (MPARS) and the newly implemented Water Conservation Reporting System provide a robust supply and demand assessment of end-use customers and businesses. Data sources include local water supply plans, water use records, population demographics, and business types. Since municipal water supplies are the largest water users, initial conservation and efficiency programs are being implemented in this sector. In the coming years, DNR will work with agricultural, industrial and commercial sectors on water conservation and efficiency. Below are some of the short term program strategies and actions.

2015-2018 Water Supply Planning – Most are Approved for Lake Superior Basin

Six out of the eight local water supply plans for public water suppliers within the Lake Superior Basin have already been approved. These ten-year plans are required from 360 water suppliers around the state that

serve over 1,000 people. In addition to emergency preparedness and future demand projections, the [water supply plans](#) include water conservation measures such as municipal leak detection and repairs, encouraging improved local ordinances, incentive programs, rate review, peak demand reduction and smart irrigation, and educational efforts. Water conservation goals have been set for all water suppliers.

2015-2018 Water Efficiency Education and Outreach - Ongoing

An interagency task force meets five times per year to share success stories, network, and develop new strategies for K-12 education and target audience outreach efforts.

2016-2018 Implementation of water conservation reporting system – Now Implemented

Compliance assessment will be achieved with the new conservation reporting system. As part of their annual water use reporting, water suppliers serving over 1,000 people will have an additional report to submit that will track progress toward established water conservation goals. Municipalities submitted their reports in 2018. Next year commercial, industrial and institutional water use permittees will also report their conservation efforts.

2016-2018 Reuse Improvements – Report Complete

The Interagency work group completed the [Advancing Safe and Sustainable Water Reuse in Minnesota 2018](#) report to clarify, modify, and improve water reuse codes, best practices, and health and safety guidelines.

2015-2018 Integration with Wellhead Protection - Ongoing

In Minnesota wellhead protection planning is under the purview of the MDH, while water supply planning and water conservation is under the purview of the DNR. These efforts are closely intertwined. Staff from both agencies continue to align requirements, funding, and priorities.

2018-2019 Comprehensive Planning – In progress

Minnesota will be engaged in two comprehensive project planning efforts, estimated to take 12 to 16 months. A team has been formed that will update the statewide Drought Plan. A new statewide team will work on developing a Minnesota Water Conservation and Efficiency Plan. Both projects will include active stakeholder involvement

2018-2020 Lake Superior Collaborative – In progress

In 2018 the DNR began a Lake Superior Collaborative. The core team has DNR staff with partner agencies assisting as needed. The purpose of this team will be to identify and prioritize future actions to continue achieving the Great Lakes Compact goals and state mandates.

2018-2019 CII Conservation – In progress

Following the implementation of the new Water Conservation Reporting System for municipalities, the DNR will begin working with the University of Minnesota Technical Assistance Program (MnTAP) and Ecolab to enhance water conservation programs and reporting with the state's Commercial, Industrial and Institutional sectors (CII) including the energy sector.

2019- 2020 Agricultural Irrigation

Efforts will begin to work with the agricultural irrigation sector, which is the fastest growing water use sector in Minnesota. An LCCMR project recently developed an irrigation scheduling assistant tool that is beginning to be used. The DNR will be helping to promote this water conservation tool.