

Great Lakes- St. Lawrence River Basin Water Resources Compact

Annual Water Conservation and Efficiency Assessment

November 21, 2017



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 2017 there were no major changes to this section. There is additional discussion of the new DNR Water Conservation Reporting tool in the Mandatory/Benchmark discussion and an update on the Statewide Drought Plan.

The five listed objectives are part of the required template and are not necessarily in priority order. The 2017 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.

Cover photo by Gary Alan Nelson

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 Minnesota part of the Lake Superior Basin 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.

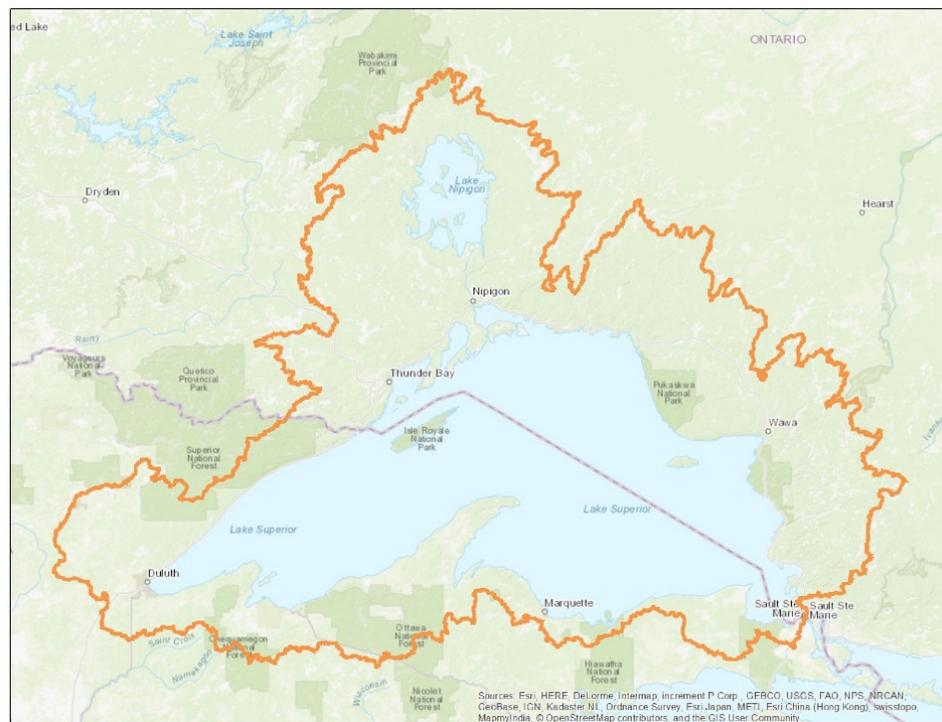


Figure 1 Lake Superior Watershed

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 includes greater emphasis on water conservation and efficiency than in the past.
 - 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 tool. Starting in 2018, the DNR will be able to provide a summary water conservation report of communities in the Lake Superior watershed.
- [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:

- Many public water suppliers provide water conservation information to customers. For example, [the City of Cloquet](#) has a simple, but concise water conservation webpage.
- 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 four accomplishments for 2017:

1. Minnesota has begun implementation of One Watershed One Plan for Lake Superior. The vision of One Watershed, One Plan is to align planning with major watershed boundaries for prioritized, targeted, and measurable watershed plans developed and implemented locally. For more information see: [Lake Superior North Pilot Watershed Profile](#) and [Lake Superior Basin Stormwater Management](#)
2. The new statewide Water Conservation Reporting tool will be going live at the end of 2017. All water suppliers serving over 1,000 people will need to report their water conservation actions and will receive a report on how close they are to achieving statewide water conservation goals. Researchers and other agencies will be able to access data.
3. The Lake Superior National Estuarine Research Reserve and LAMP holds an annual Lake Superior Day in Duluth, and also another Lake Superior event in Thunder Bay. [Lake Superior Reserve](#).
4. Minnesota is fortunate to have funding opportunities through its Legislative-Citizen Commission on Minnesota Resources (LCCMR) and the Clean Water Fund. This was augmented by Governor Mark Dayton's commitment to a new [25BY25](#) Water Quality Goal.

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

DNR Awards \$450,000 in Grants to Protect Coastal Resources

August 2017, through a federal grant from the National Oceanic and Atmospheric Administration, the DNR has awarded more than \$450,000 in local grants to protect and enhance inland coastal resources. This year the grant funding is being awarded to nine projects in the coastal area, some projects are for recreation or education, only projects that will help long-term sustainable water use are listed here:

- Researchers at the University of Minnesota will monitor and analyze measures designed to reduce erosion of bluffs adjacent to North Shore streams and improve water quality. \$35,900.



- Laurentian Resource Conservation and Development is planning to host a two-day conference for academia and coastal managers to bridge a gap between research results and practices of watershed assessment, protection and stream restoration. \$23,000.
- Researchers at the University of Minnesota will increase scientific understanding of success rates of coastal forest seeds. Sustainable forest cover will help protect water quality. \$98,875.
- For 18 years, the DNR and NOAA have worked together to better Minnesota's inland coast. Together, the agencies have granted \$12.6 million in pass-through funding to more than 550 projects. For more information about Minnesota's Lake Superior Coastal Program, visit www.mndnr.gov/mlscp.

Poplar River Restoration

To improve water quality in Lake Superior, Lutsen Mountains, the Cook County SWCD, the Poplar Management Board, MPCA, and BWSR are working on many watershed projects with the goal to get the Poplar River delisted from the Impaired Waters List. BWSR awarded Cook Co. with a watershed grant of \$900,000. The County is assessing channels and tributaries and conducting stream restoration and bank stabilization projects. Lutsen Mountains is clearcutting more ski runs and must ensure this work does not worsen the water quality of the Poplar River.



Figure 2 Local organizations are working together to get the Poplar River off the Impaired Waters List.

Watershed Protections Strategies

The MPCA's recently released report on the Lake Superior-North watershed confirms it contains some of the least-polluted water bodies in the state. However, land use practices, increasing development, and a changing climate may pose threats to these high quality resources. In the near future, MPCA, partner agencies, and stakeholders will work together to develop protection and restoration strategies for these important aquatic resources. See the full report: [Lake Superior - Monitoring and Assessment Report](#)

Trout Stream Funding

- June 20, 2017 marked five years since the Duluth Flood of 2012. It was an event that forever changed Duluth. The area received a total of 7.25 inches of rain and some of the surrounding areas received 8-10 inches. This event triggered a Presidential Major Disaster on July 6, 2012 and on Friday, Aug. 24, 2012 Governor Mark Dayton signed a \$167 million disaster relief bill.
- Many of Duluth's 16 cold water trout streams had significant damage. One of the most recreated streams is Chester Creek. The City of Duluth, the South St. Louis SWCD, Trout Unlimited, the DNR and other partners continue to focus restoration efforts on Chester Creek.

Emerald Ash Borers found on Minnesota Point

In 2017 Emerald Ash Borers (EAB) were found for the first time along Minnesota's North Shore on Minnesota Point. The Minnesota Department of Agriculture and the University of Minnesota are taking the lead on detection. Removal of many acres of terrestrial habitat (ash trees) might cause additional runoff. This has implications from a landscape scale management perspective which potentially impacts the aquatic habit and water quality.

Planning

- Lake Superior North One Watershed One Plan is now complete: http://www.bwsr.state.mn.us/planning/1W1P/1W1P_Lake_Superior_North_Fact_Sheet_Fall_2015.pdf. This plan is highly focused on ecosystem protection, which feeds indirectly into sustaining the surface water sources that most people use for drinking water in the region. The Board of Soil and Water Resources is taking the lead in this planning effort.
- MPCA's Watershed Restoration and Protection Strategy ([WRAPS](#)) process integrates land and water planning. The MPCA employs a watershed approach to restoring and protecting Minnesota's rivers, lakes, and wetlands. Money to accelerate efforts to monitor, assess, and restore impaired waters, and to protect unimpaired waters was funded by the Minnesota Clean Water Legacy Act.

Mapping Efforts

- Minnesota DNR is leading efforts to update the National Wetland Inventory Map (NWI) for the state. http://www.dnr.state.mn.us/eco/wetlands/nwi_proj.html. The map of Northeast Minnesota was recently completed. These wetlands are critical to reducing the severity of impacts from heavy rain events and snow melt runoff for the Lake Superior sub-watersheds.
- To aid in lake level trend analysis, the Great Lakes Restoration Initiative Project (GLRIP) including the Remote Sensing of Great Lakes Coastal Wetlands uses open-source tools to survey, catalog, map, and distribute spatial data. The SharedGeo project is funded by the [US Environmental Protection Agency](#) and administered by the [US Fish and Wildlife Service](#). The project has three main parts: 1) spatial data web services & data download; 2) a spatial data catalog; and 3) a web map integration tool. <http://www.sharedgeo.org/projects/great-lakes-restoration-initiative-glri-project/>
- The University of Minnesota continues to conduct lake water quality mapping. <http://lakes.gis.umn.edu/>

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

Municipal Efficiency

Minnesota has 18 water suppliers in the Lake Superior Watershed that are working on their Water Supply Plans. Below is a list of items of water conservation noted in plans that have been completed and approved.

- Grand Marais plans to replace 20-25% of their distribution system infrastructure in 2019-2022. This will reduce leaks and water loss.
- All submitted plans have water conserving rate structures.
- Two Harbors intends to develop an irrigation policy soon.
- Two Harbors also has a program to teach 4th graders about water conservation.
- Duluth has allocated \$1 million to water supply distribution repairs for 2017-2021.
- In 2015, Duluth installed 91 low-flow shower heads, 112 bath faucet aerators, and 63 kitchen faucet aerators in customers' homes. Approximately 700 energy conservation kits with a low-flow shower head and faucet aerator were distributed to low income residents at the Energy Awareness Expo in 2015.
- Carlton has plans to repair and expand their distribution system in 2018-2019 if funding is available.

Mining

The DNR Lands and Minerals staff regulate, track, and monitor mining water appropriation at all levels. The DNR and MPCA staff have ongoing research on mining impacts to water quality. There are three mining companies in the Lake Superior Watershed, however, only the North Shore Mining Company is appropriating water from Lake Superior. The other mines operating in the state use groundwater.

Ski Resort

Lutsen Mountains ski area has completed a Master Development plan to significantly expand its current operation. It will submit a Special Use Permit application for 550 acres of U.S. Forest Service land adjacent to existing ski runs - 434 acres on Moose Mountain and 116 acres on Eagle Mountain. The land will be used for ski runs, parking and skier services buildings, but not for lodging. This project will nearly double the skiable terrain. Full development is expected to take 7 to 15 years or longer.

The U.S. Forest Service will undertake a thorough environmental review, as part of the Special Use Permitting process. Lutsen Mountains is committed to modifying their proposal to avoid or mitigate significant environmental impacts that might be discovered during environmental review. The U.S. Forest Service has held public meetings and open houses for early scoping.

- The project will be modified as needed to avoid or mitigate wetland impacts
- State-of-the art trail design and construction will be used to minimize soil run-off
- Stormwater best management practices will be used for the protection of water quality
- The adjacent Lutsen Scientific and Natural Area, which has both snowmobile and cross country ski trails that cross the SNA will not be impacted by the proposal.

Review Document: [Lutsen Master Plan](#) More Information: [Lutsen expansion](#)

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 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 will be published in late 2017. [MDH Reuse webpage](#)

State Government Buildings Water Conservation Initiative

In 2016 the Office of Enterprise Sustainability (OES) was established to help state agencies make choices that will improve outcomes through the implementation of best practices in their agency.

The OES will provide agencies with the assistance needed to:

- Reduce greenhouse gas emissions and water usage,
- Increase energy efficiency and recycling, and
- Support better coordination of sustainably efforts across state government.
- Develop sustainability plans to reduce costs associated with operations while improving Minnesota's environment.

Enterprise Sustainability methods have been identified to achieve a 15% goal of water conservation for all state government buildings (irrigation, leak detection, efficient appliances, etc.)

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

New Statewide Water Conservation Reporting System

The DNR has embarked on developing a 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. The system will establish uniform water conservation and efficiency measure definitions, methods of measurement and reporting formats. The system is Cloud-based for easy data entry and record management. The conservation reporting system is being pilot tested in November 2017 in four communities. Training webinars will be held in December, and cities will begin reporting their water conservation efforts January 2018.



Figure 3 Main dashboard of the new DNR Water Conservation Reporting tool. Cities will enter their water accounting data, direct and indirect water conservation actions. The final dashboard will give them a report card on how well they are doing

OBJECTIVE 4: Develop science, technology and research.

- A Clean Water Funded project is underway to assess channel stability and stressors, with an emphasis on hydrologic impacts caused by various in-channel and watershed based impairments.
- The DNR is collaborating with a number of other agencies to advance improved ways to display existing conservation plan priorities in a GIS format. This can lead to land management choices that integrate multiple conservation objectives (e.g., habitat protection, water quality restoration, etc.). In addition, the DNR has advanced additional GIS data for watershed health scores, and work is underway to deliver these spatial source data to field staff and the public via the [Watershed Health Assessment Framework](#).
- The DNR is evaluating lake level and streamflow data to better understand the characteristics of various lake types and streams. This evaluation provides the basis for DNR to set protection levels for individual streams and basins based on sensitivity to reductions in water levels or flows. By

developing a water budget the DNR can establish withdrawal limits to protect surface waters from negative impacts of groundwater pumping.

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

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 2017.

Water Conservation Communications Plan

The DNR and other partners are preparing a statewide 3-year water conservation communication plan. It will include education and outreach.

New Water Video

The Minnesota Pollution Control Agency's newly released video, "It Takes a (Shipping) Village," is about Duluth's industrial and maritime evolution and the resulting pollutants that still remain – above and below the waterline - throughout the harbor. Today, estimates suggest that cleaning up more than a century's worth of industrial port-related contamination and restoring aquatic habitat could cost more than \$200 million. A coordinated effort among multiple state, federal, tribal and non-profit organizations continues to act strategically and leverage funds to address these impairments. The collective goal is to help return the St. Louis River and Superior Bay to a healthier condition that supports beneficial uses such as water supply, fishing, swimming and boating by 2025. [It Takes a \(Shipping\) Village Video](#)

Conferences and Water Conservation Presentations

- **Water Conservation Summit** - The first Water Conservation Summit directed specifically to large lawn/park irrigation sites, was held at the University of Minnesota in 2017.
- **Water Conservation Workshop** - GreenStep Cities held a day-long workshop on water conservation and water reuse for cities participating in the GreenStep Cities program.
- **Minnesota Rural Water Conference** – a presentation/workshop was given on the new Water Conservation Reporting system to several hundred participants from around the state.
- **Lake Superior Partners** – Minnesota agencies that work on Lake Superior projects met in June to discuss water conservation efforts; looking at successes and gaps.
- **MN Water Technology Summit** –this is an international conference on water efficiency and reuse primarily targeting the industrial sector.
- **Minnesota Department of Commerce** – hosted a joint meeting with DNR to discuss the energy-water nexus and learn about the new DNR Water Conservation Reporting systems.

Fond du Lac Community – St. Louis River Watershed

The Fond du Lac Office of Water Protection is responsible for protecting the aquatic resources of the Reservation: surface waters (lakes and streams), wetlands, and ground water. They are also implementing water and energy conservation measures in their building. In addition, Fond du Lac has conducted research on environmental contaminants such as mercury, lead and PCBs, and analyzed fish from Reservation waters for mercury concentrations, leading to fish consumption guidelines. They are working on restoration projects, such as improving stream crossings and enhancing wild rice production in Wild Rice Lake. The Office

of Water Protection is beginning a nonpoint source management program for the Reservation, and working on a cooperative wastewater management project. <http://www.fdlrez.com/RM/watermain.htm>

Water Conservation Scorecard

The DNR, MDH and the Plumbing Board completed and submitted the Alliance for Water Conservation (AWE) water conservation scorecard. The national results from the scorecard have not been released yet.

Classroom Programs and Materials

Duluth Children’s Museum in collaboration with Positive Energy Outdoors will create a year round, innovative outdoor science, technology, engineering, and math active learning experience for children, particularly those in low-income households with limited access. \$33,100.

Publicity & Webpages

- The Governor wants Minnesota to accelerate the pace of progress towards clean water. He is challenging everyone to improve water quality 25% by the year 2025. The “25 by ‘25” goal would engage local governments, businesses, farmers, scientists, and others in a new collaborative effort to restore and improve water quality across Minnesota. Without additional actions, water quality is only expected to improve 6 to 8 percent by 2034. Governor Dayton’s proposal would not add new regulations, but would drive public engagement and partnerships to address Minnesota’s water quality challenges. Governor Dayton hosted a series of Town Halls during the summer and fall of 2017 to have conversations with citizens about what they can do at the local level. The Northeast Minnesota Town Hall was held in [Ely, MN](#).
- The DNR’s website devotes [a page for Great Lakes Compact](#) information and links.

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. Although a comprehensive water conservation plan has not been written for the state, a strategy is in place and being implemented. Water conservation in Minnesota is built on a foundation of knowledge about water use.

The existing MPARS system and the soon to be implemented water conservation tracking system will provide a robust supply and demand assessment of end-use customers and businesses. Data sources include Local Water Supply Plans (WSPs), consumption records, population demographics, and business types. Since municipal water supplies are the largest water users, initial conservation and efficiency programs are being implanted in this sector. In the coming years, efforts will also be targeted at agricultural irrigation and industrial sectors. Below are some of the short term program strategies and actions.

2015-2018 Water Supply Planning

Over the past two years, efforts have focused on providing workshops to the 360 water suppliers around the state serving over 1000 people. The last series of workshops was concluded April, 2017. Water conservation training includes 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. Completed water supply plans are due over a period of three years, with the last round due October 15, 2018.

2015-2018 Water Efficiency Education and Outreach

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. Planned actions include development of classroom curriculum, short videos, toilet leak detection cards, posters, web resources, and displays.

2016-2018 Integration of Water Conservation into GreenStep Cities Program

Initial steps have begun with this effort. Future actions include producing web materials and training for GreenStep Cities.

2016-2018 Implementation of water conservation reporting system

Compliance assessment will be achieved with the new conservation reporting system. As part of their annual water use reporting, water suppliers serving over 1000 people will have an additional report to submit that will track progress toward established water conservation goals.

2016-2018 Reuse Improvements

Interagency work will continue to clarify, modify, and improve water reuse codes, best practices, and health and safety guidelines.

2015-2018 Integration with Wellhead Protection

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

2018-2019 Comprehensive Planning

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

2018-2020 Great Lakes Steering Team

The DNR will begin to develop a collaborative Great Lakes Steering Team. The core team will likely be 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

Following the completion of water supply plan training and the implementation of the new Water Conservation Reporting tool 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.

2018- 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.