

**Great Lakes- St. Lawrence River Basin Water Resources Compact
Water Conservation and Efficiency Annual Program Review
November 24, 2014**

State of Minnesota

Note: All underlined items are linked to the referenced Websites

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

Minnesota Department of Natural Resources (DNR), [Division of Ecological and Water Resources](#) (EWR)

- Julie Ekman, Conservation Assistance and Regulation Section Manager
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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 continues to make progress with an increased emphasis on water conservation, not only with current water law, rules, policies, and their implementation, but also with improvement plans for laws, rules and approaches that further both state and Compact goals. While our current 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, we continue to face water resource management challenges and are implementing additional management tools to enable the state to achieve a more sustainable use of its limited water resources. The laws cited and programs described in Item 3 a) and b) provide a framework for sustainable water management that promotes efficient use of the state's water resources. [State-wide programs](#) that monitor and protect water resources are managed by several Minnesota agencies, including the DNR, the Pollution Control Agency, Department of Health, Department of Agriculture, and the Board of Water and Soil Resources. Minnesota 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. DNR has been actively engaging with other state agencies and partners on planning and goals that will help us better establish and achieve our conservation goals statewide.

The Minnesota Legislature directed the University of Minnesota in 2008 to develop a framework that describes what needs to be done to assure a sustainable water future in Minnesota. That report was released in January of 2011. One of the top five recommendations of the [Minnesota Water Sustainability Framework](#) report was to revise Minnesota's water appropriation permitting system to better protect and restore water quantity. With funding received from Minnesota's constitutionally dedicated Clean Water Fund, the DNR has created and implemented an online permitting system for water appropriations ([Minnesota DNR Permitting and Reporting System](#)), has increased the number of surface and groundwater monitoring systems, and has established groundwater management areas at 3 locations around the state (though none are yet in the Great Lakes Basin).

Minnesotans are fortunate that in 2008 voters approved a constitutional amendment that dedicates proceeds from 3/8's of one percent of sales tax to provide for clean water, natural resource protection, recreation and cultural heritage protection for 25 years. With these funds we have been able to embark on new efforts toward the implementation of the Water Conservation and Efficiency goals adopted by the Council and Regional Body.

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 \(primary regulatory statute\)](#)
- [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 users withdrawing 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.
- As of July 2013 preliminary approval from the DNR is required before drilling a well that will need a water use 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. We are currently developing the 2016 plan format that will have a strong emphasis on water conservation and efficiency.
 - [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.

- 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 suppliers. 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.
- Conservation rate structures, or a uniform rate with a conservation program that achieves demand reduction, are required by January 1, 2015 for public water suppliers in the Basin which serve more than 1,000 people.
- [Landscape irrigation systems](#) that operate automatically are required to have technology that inhibits or interrupts operation during periods of sufficient moisture.
- *Minnesota Statutes* establish water use priorities for the allocation of waters during periods of limited supplies. Non-essential uses are the lowest priority and are subject to restrictions prior to other higher priority uses [[Minnesota Statutes, section 103G.261](#)].
- [Minnesota's Statewide Drought Plan](#) provides a framework for preparing for and responding to droughts including steps for public water suppliers to take for water conservation.
- Groundwater withdrawals for large once-through HVAC systems are prohibited as of Dec. 31, 2010 and existing systems have been converted to water efficient systems.
- 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)].
- Surface water use can be and has been 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. The current standard is that when flow in 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 must be suspended. Ecologically-based low flow thresholds can and have been developed for some surface waters.

Voluntary:

- A number of public water suppliers provide water conservation information to customers.
- *Minnesota Statutes* that require demand reduction measures for new public water supply wells or increased water volumes 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 non-consumptive water and the evaluation of reuse options as part of applications for water discharge permits.
- All public water suppliers and the general public are referred to a [website developed by the Metropolitan Council](#), in cooperation with the DNR, which contains water conservation tips and resources for individual water users and program guidance for public water suppliers.

4. Identify how the State/Provincial program is consistent with the regional objectives: As shown below, Minnesota's program is consistent with the regional objectives in the promotion of environmentally sound and economically feasible water conservation measures.

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

- The DNR's Division of Ecological and Water Resources published, in 2010, a [water availability](#) assessment of the state's water resources as a step toward measuring and assuring sustainability. The assessment looked at 10 year trends and concluded that certain parts of Minnesota are starting to experience water availability problems. The Great Lakes Basin within Minnesota experienced slightly below normal stream flow conditions during those 10 years.
- In 2010, the DNR's Division of Ecological and Water Resources completed an evaluation of and recommendations for options to provide for the long-term protection of the state's surface water and groundwater resources and the funding of programs to provide this protection. The report, [Long-Term Protection of the State's Surface Water and Groundwater Resources](#), recommends funding of over \$400 million over the next 25 years to fully implement water resource protection and monitoring efforts.
- In 2013 the DNR's Division of Ecological and Water Resources conducted an evaluation of its water management programs and developed a [strategic plan](#) to lead all water users toward sustainable groundwater use. The plan proposes strategies to improve information about Minnesota's groundwater resources and improve compliance with existing regulations. Three areas in Minnesota have been identified where high groundwater use is of concern. Although none of [these areas](#) is within the Great Lakes Basin, the collaborative process and resulting groundwater management area plans will help us to address difficult groundwater related resource challenges throughout Minnesota.
- The 2013 Minnesota legislature provided significant financial resources to DNR to enhance its water management programs to meet sustainability requirements in state law.
- DNR was an active partner in preparation of the [2010 Minnesota Water Plan](#) developed by partner environmental agencies under the guidance of the Minnesota Environmental Quality Board. This report specifically called for executive branch agencies to work together to promote wise and efficient use of water, to employ water resource management units to adequately address quantity issues, and to apply adaptive management so as to meet the state's water sustainability goals. These goals are guiding current priority efforts of the interagency work groups.
- As mentioned in Number 2 of this report, the University of Minnesota completed its [Water Sustainability Framework](#), which may be used to guide future funding of water sustainability efforts in Minnesota. Some of the recommendations of that report are already being implemented.

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

- The DNR, in cooperation with the owners of water supply systems, can analyze water use practices and has required more efficient water use practices to be employed.
- Public water suppliers must implement [demand reduction measures](#) before requesting approvals for new wells or increases in authorized water volumes.
- Reuse of water is encouraged and funding was provided by the legislature in 2009 for projects that reuse municipal wastewater for the conservation and protection of water resources. Law

changes in 2014 provide an incentive to use storm water runoff [[Minnesota Statutes 103G.271, Subd. 6 \(g\)](#)].

- Public water suppliers are currently required to include demand forecasting in ten year water supply plans. Water efficiency benchmarks are used for evaluating water supply plans, permit actions and well installation requests.
- DNR works with large water-using industries in the Great Lakes basin in Minnesota to transition to a sustainable water supply. Lutsen Mountain Corporation (LMC), Sappi Paper, and many mining companies are being encouraged to incorporate innovative water conservation strategies into their operations.

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

- Minnesota tracks the effectiveness of water conservation measures through [annual water use](#) reporting. Public water suppliers report water use by customer categories and unaccounted water volumes. Information on water rates and peak use volumes is also requested.
- Groundwater and surface water monitoring improvements are occurring rapidly, with the influx of funding from the state's new dedicated Clean Water Funds. Since 2010 DNR has added 152 stream gages and 237 water level monitoring wells to the state networks bringing the current total to 255 stream gages and 855 monitoring wells. We use this information to better understand the hydrology of watersheds in our state. Live readings from several gaging stations in the Great Lakes Basin can be seen on [DNR's website](#).
- The DNR has transitioned from a paper-based system to an online system for water use reporting, water permit applications and change requests. The [Minnesota DNR Permitting and Reporting System \(MPARS\)](#) is designed to provide a simple, convenient and easy-to-use system. Some of the public benefits of MPARS include:
 - Increased transparency of the permit application process - permit applicants may login to the MPARS system to see what stage their application is at in the process
 - An easy way to map the location of their proposed project
 - Improved access to permit files - all permit records will be maintained online, allowing permit holders to access their permit file at any time
 - Better tracking of payments through a secure online method for payment
 - Reduced data entry errors as permit holders will enter their own water use data and double-check its accuracy

The natural resource benefits include:

- Monitoring data will be more readily available enabling evaluation of impacts from projects
- Reduced time on administrative tasks will allow more time to focus on resource evaluation and protection
- The system includes a map of permitted projects that enhances evaluation of cumulative impacts

OBJECTIVE 4: Develop science, technology and research.

- DNR encourages innovative management practices by promoting aquifer [water use management planning](#). This concept involves the definition of a management area and the involvement of a wide range of interests in the development of these plans. About \$2.3 million has been appropriated from the state's Clean Water Fund this biennium to work on modeling and strategies needed to implement such groundwater management planning efforts

in select parts of the state. These three plans are currently being drafted and DNR will begin implementation of these plans during 2015.

- A Clean Water Funded project is underway to develop or assess watercourse stressors, with an emphasis on hydrologic impacts caused by various in-channel and watershed based impairments.
- DNR is collaborating with a number of other agencies in various projects focused on developing data layers and decision-support approaches that employ systematic conservation. This approach is being used within the DNR and on projects with partners working together in specific landscapes. The goal is to advance improved ways to display existing conservation plan priorities in a GIS format and to link data to an outcome-optimizing tool that can lead to land management choices that best optimize multiple conservation objectives. Those choices are specific to the given landscape location and are fine-tuned to reflect priorities among multiple conservation needs (e.g., habitat protection, water quality restoration, etc.). In addition, the DNR Ecological and Water Resources Division has recently 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.

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

- [Minnesota Project WET](#) trains classroom and other educators in hands-on, interactive lessons that are focused on water and encourage critical thinking. By providing training, materials, and support to these educators, MN Project WET works to improve Minnesotans' understanding of our water resources. Educators from the Basin have participated in these lessons.
- The DNR, Minnesota Rural Water Association and other organizations help promote conservation with presentations at workshops and other events. Sources of [water conservation information](#) are available through DNR's website.
- [Minnesota's Lake Superior Coastal Program](#) is a voluntary federal-state partnership dedicated to the comprehensive management of our coastal resources. The Program provides technical and financial resources for local communities in the Lake Superior coastal area.
- DNR's website devotes [a page for Great Lakes Compact](#) information and links.
- The Minnesota DNR is a Promotional Partner in [EPA's WaterSense Program](#), which seeks to promote water efficiency and water efficient products.
- The [Minnesota Technical Assistance Program](#) (MnTAP) is an outreach program at the University of Minnesota that helps Minnesota businesses develop and implement industry-tailored solutions that prevent pollution at the source, maximize efficient use of resources, and reduce energy use and cost to improve public health and the environment.
- The DNR refers water suppliers and water users to the Metropolitan Council website's Water Conservation Toolbox. The toolbox provides tips and resources for [customers](#) and [suppliers](#). We will be working with the Metropolitan Council and other partners in 2014 on updates and improvements to the Water Conservation Toolbox.
- During 2012, DNR engaged in targeted outreach efforts to communicate with the public, as well as high water-using groups, on the value of conservation. The drought faced during the summer and fall provided a clear context in which the public could see the impacts of decreased precipitation in surface water features. DNR used this visibility to communicate with target audiences on water conservation and water efficiency practices they could implement to protect both surface water and groundwater for a long-term sustainable future. DNR sent email communications to hundreds of Minnesota's public water suppliers and other

water-based organizations so they might also share this message with their customers and members. DNR staff then released a statewide press release and engaged with media outlets across the state, and elsewhere, to encourage water users to act on the conservation message.

- DNR is working with MPCA and other partners to link water conservation strategies into the Minnesota GreenSteps Cities Program for a more effective outreach and support to communities on both energy and water conservation efforts.

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

Minnesota has a number of water conservation measures that are currently in place and integrated with the water appropriation permit program; we continue to explore ways to expand our water conservation efforts. Water supply plans for public water suppliers must be updated and approved every ten years. We are in the planning process to develop new and improved water conservation, monitoring and management standards to incorporate into public water supply plans that are due for updating starting in 2016. We are also looking for ways to expand support for water supply planning that includes small community public water suppliers. Water conservation rate structures for public water suppliers within the Basin must be implemented by 2015. All of the other efforts described above have funding related timelines that will affect the timing of their delivery.