



Illinois Department of Natural Resources

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Bruce Rauner, Governor
Wayne A. Rosenthal, Director

Water Conservation and Efficiency Program Review Illinois' Ninth Report to the Compact Council and Regional Body

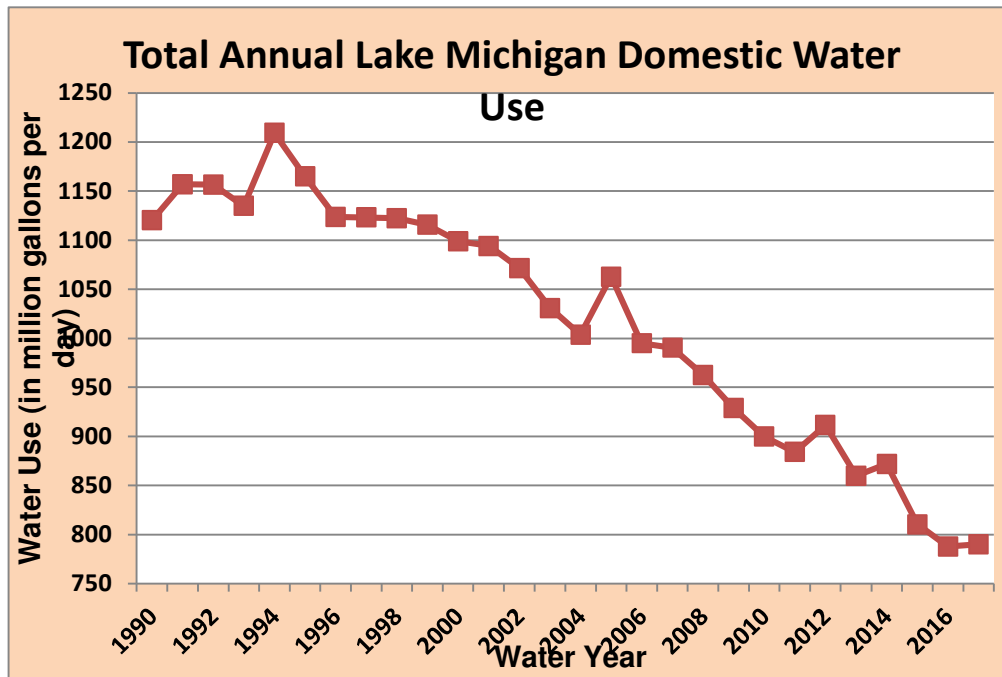
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Illinois' water conservation and efficiency program

A. Status of Illinois' Domestic Water Use from Lake Michigan



In Water Year 2017 total domestic Lake Michigan water use was 790 million gallons per day (mgd), an increase of approximately 2 mgd from Water Year 2016's pumpage. Overall, this

table shows the long-term decline in total domestic use of Lake Michigan water. The drought years of 1994, 2005 and 2012 are clearly visible, but the overall downward trend in water use that has occurred over the last 20 years is significant, approximately a 330 mgd reduction since the early 1990's. In Water Year 2017 the annual precipitation was 34.03 inches, 3.53 inches below 2016's 37.56 inches.

Water use summaries for the 2010 through 2016 Water Years are on our website: <http://www.dnr.illinois.gov/WaterResources/Pages/LakeMichiganWaterAllocation.aspx>. This information was obtained from the Annual Water Use Audit Reports (LMO-2). The Department's monthly pumpage reports (LMO-3), submitted by direct diverters are used for reporting to the Great Lakes Regional Water Use Database.

B. Program Legal Basis

The U.S. Supreme Court Decree [Wisconsin v. Illinois, 449 U.S. 48 (1980)] that limits Illinois' diversion of Lake Michigan water also contains language directing Illinois to implement a water conservation program. The Level of Lake Michigan Act [615 ILCS 50] incorporates the Decree language which states that:

“...all feasible means reasonably available to the State and its municipalities, political subdivisions, agencies and instrumentalities shall be employed to conserve and manage the water resources of the region and the use of water therein in accordance with the best modern scientific knowledge and engineering practice.” [615 ILCS 50/5]

This is the operative judicial and statutory language that directs the Illinois Department of Natural Resources (Department) to develop and implement a water management and conservation program covering all permittees of Lake Michigan water.

C. Program Objectives

In 2010, the Department developed and posted on our website Illinois' Lake Michigan Water Conservation Goals and Objectives, as required by the Compact and the Regional Agreement. <http://www.dnr.illinois.gov/WaterResources/Pages/LakeMichiganWaterAllocation.aspx>
The Department's water conservation and efficiency program objectives are:

- Enforce the adoption of standards that require the efficient use and conservation of Lake Michigan water by the end user (homeowner, business/industry).
- Establish standards for good water system management and leakage control by the owner/operator of a water supply system.
- Ensure that Lake Michigan water diverted directly into the Chicago Waterway system for various purposes is kept to a minimum.
- Collect water use data annually; monitor changes in water use patterns. Encourage public water supply systems to evaluate the effectiveness of their conservation efforts.
- Prepare and maintain long-term water demand forecasts.
- Promote the adoption of water rate structures that encourage conservation and water efficiency.
- Encourage water suppliers to invest in water infrastructure and the use of innovative technology to improve water systems management.

- Encourage research, development and implementation of water efficient technologies. Develop linkages with organizations such as USEPA’s WaterSense Program, the Alliance for Water Efficiency and others, to keep abreast of the latest conservation technologies.
- Inform, educate and increase awareness regarding water use, conservation and efficiency via newsletters and other such means of communication.
- Work with our Lake Michigan water allocation permittees and our Great Lakes basin partners to enhance information sharing.

D. Program Activity – Implementing Revised Administrative Rules

The Department revised its Rules and Regulations for the Allocation of Water from Lake Michigan (IL Admin. Code, Title 17, Part 3730) in November 2014. Water Year 2017 (October 2016 – September 2017) marks the third year the new standard has been employed. Here is a summary of actions taken in the past year. The standard limits non-revenue water so that it is less than 12% of net annual pumpage, decreasing to 10% in Water Year 2019. Water systems not in compliance with the non-revenue standard have been required to prepare and submit a water system improvement plan. Communities that have submitted a water system improvement plan are required to submit progress reports each year to the Department of Natural Resources, Office of Water Resources with their LMO-2 form.

E. Program Activity – Develop Linkages with other Conservation Organizations

During this past year, the Department has continued partnerships with other groups/organizations to further our water conservation program efforts. These include:

- Maintaining our membership in USEPA’s ‘WaterSense Partner’ program and updating our rules to require the use of ‘Water Sense’ labeled plumbing fixtures as our standard for water efficient plumbing fixtures.
- Working with regional organizations such as the Chicago Metropolitan Agency for Planning, the Northwest Water Planning Alliance, the Northeastern Illinois Regional Water Supply Planning Group, the Center for Neighborhood Technology, and the Metropolitan Planning Council to further our outreach to communities in the areas of water supply planning, drought management, water loss control and sustainable water resource management.
- Participating in a technical advisory committee for the development of the Chicago Metropolitan Agency for Planning’s “On to 2050” initiative.
- Working with the Illinois Environmental Protection Agency (IEPA) to better integrate our water conservation program within their administration of the Clean Water Initiative Fund, a \$1 billion low interest loan fund that significantly expands Illinois’ State Revolving Fund. These funds are available to help Illinois communities improve their water and wastewater infrastructure and are particularly useful for Lake Michigan communities that need to upgrade their water infrastructure in response to the State of Illinois’ new non-revenue water thresholds.
- Forwarding notifications of upcoming water conservation classes presented by the Illinois Chapter of the American Water Works Association to our Lake Michigan Water Allocation Permittees.

F. Program Activity – Water Use and Water Loss Monitoring

Water loss information was collected in 2017 using the revised LMO-2 form which utilizes the AWWA Water Loss Audit methodology, initiated 3 years ago. The average percent non-revenue water/unaccounted for flow has decreased from 14.5% in Water Year 2016 to 13.6% in Water Year 2017. Permittees not meeting the 12% water loss standard are required to submit Water System Improvement Plans that will sufficiently reduce their non-revenue water to below the Department's regulatory standard.

G. Program Activity – Control of Direct Diversion into Chicago Waterway System

The total amount of Lake Michigan water diverted into the Chicago Waterway System for discretionary diversion and navigation makeup flow was 176.49 cubic feet per second (cfs) in Water Year 2017. At the end of the 2017 Water Year, the five-year running average of these two components of direct diversion stands at 240.76 cfs or 64.24 cfs below the combined allocation (305 cfs) for these two components of direct diversion. The Metropolitan Water Reclamation District of Greater Chicago holds the Lake Michigan water allocation for both discretionary diversion and navigation makeup.

The other primary use of Lake Michigan water diverted directly into the Chicago Waterway System is to operate the navigation locks at the mouth of the Chicago River and on the Calumet River. Both lock facilities are operated and maintained by the U.S. Army Corps of Engineers. Illinois does not have any control over the amount of water diverted for lockage or for leakage through these structures, even though this water is included in the accounting for Illinois' diversion under the U.S. Supreme Court Decree. Lake Michigan water levels have a significant impact on the amount of water diverted for the operation of the navigation locks. Higher Lake Michigan water levels yield greater amounts of Lake Michigan water diverted directly into the Chicago Waterway System via the navigation locks.

H. Project Activity – Status of Water Demand Forecasts and Water Use

In 2008, the Department completed a comprehensive water reallocation for all of the State of Illinois water supply permittees. As part of this reallocation, water demand forecasts for each year out to 2030 were developed and ultimately included in the Department's updated Lake Michigan water reallocations. Long range water demand forecasts are essential to ensure that the Department's water allocation program is sustainable over the foreseeable future and will continue to keep Illinois' total diversion below the authorized U.S. Supreme Court Decree limit of 3200 cfs. The Department will begin another comprehensive water reallocation in early 2019 that will extend allocations out to the year 2050.

During this past year, the Department issued a new allocation to the Village of Bartlett for 3.27 mgd in Water Year 2019 increasing to 4.04 mgd in Water Year 2040.

I. Project Activity - Water Infrastructure

During this past year, the City of Chicago continued to pursue several initiatives to upgrade their water, wastewater and stormwater infrastructure. In 2016 the City of Chicago reported the installation of approximately 15,000 new water meters and proposes to replace an additional 15,000 meters in 2018. Since the inception of Chicago's Volunteer Metering Program in 2009 the City has installed over 118,000 new water meters. This is a great accomplishment and

shows Chicago's commitment to conserving Lake Michigan water. In the last 10 years Chicago has terminated 24,749 unused water services (1,892 in 2017) and replaced 647 miles of old water main (90 miles in 2017).

Several other Lake Michigan communities have also developed or are working on conservation/sustainability initiatives. The northeastern Illinois region has several organizations who work with local governments to help them become more sustainable. These initiatives are also moving outside the Lake Michigan water service region.

Conclusion

Illinois has had a Lake Michigan water conservation and efficiency program for over 30 years. Our program is consistent with and fully supports the Great Lakes-St. Lawrence River Basin Water Conservation and Efficiency Objectives. The unique nature of Illinois' Lake Michigan water uses and diversion as allowed under a U.S. Supreme Court Decree, has resulted in a strong water conservation and efficiency program that is implemented primarily as a regulatory program, with additional measures, such as conservation pricing, conservation education and information sharing, implemented through non-regulatory efforts.