



# Illinois Department of Natural Resources

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

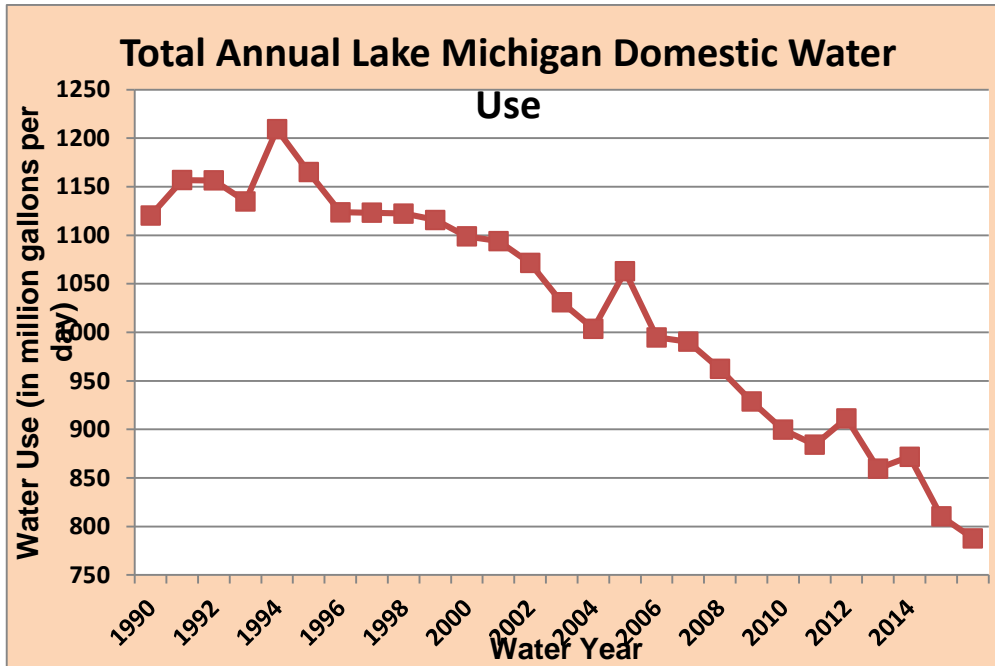
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### Illinois' water conservation and efficiency program

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



In Water Year 2016 total domestic Lake Michigan water use was 788 million gallons per day (mgd), down approximately 23 mgd from Water Year 2015'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, about a 330 mgd reduction since the early 1990's. In Water Year 2016 the annual precipitation was 37.56 inches, 5.26 inches above 2015's 32.30 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, and 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 2016 (October 2015 – September 2016) was the second year implementing these revisions. Here is a very brief summary of actions taken in the past year.

- Water Year 2016 was the second year the Department implemented its Non-Revenue Water standard. 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 with the LMO-2 form.
- The Department is currently in the process of ensuring that all Local/Municipal plumbing codes/ordinances are being updated to require that new and replacement plumbing fixtures be a labeled WaterSense product and all lawn sprinkling ordinances have been revised to comply with the Department’s new regulations.

#### **E. Program Activity – Lake Michigan Water Allocation Newsletter**

The Department did not prepare a newsletter during the last year, newsletter issuance should resume in Water Year 2018. The last newsletter was distributed in September 2014, and is still available on the Lake Michigan Water Allocation homepage:

<http://www.dnr.illinois.gov/WaterResources/Pages/LakeMichiganWaterAllocation.aspx>

#### **F. Program Activity – Develop Linkages with other Conservation Organizations**

During this past year, the Department’s 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, and 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.
- Working with the Illinois Environmental Protection Agency (IEPA) to better integrate our water conservation program with 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 will be particularly useful for Lake Michigan communities that need to upgrade their water infrastructure in response to our new non-revenue water thresholds.

**G. Program Activity – Water Use and Water Loss Monitoring**

Water loss information was again collected in 2016; this is the second year using the revised LMO-2 form which utilizes the AWWA Water Loss Audit methodology. The average percent non-revenue water/unaccounted for flow has decreased from 15.5% in Water Year 2015 to 14.5% in Water Year 2016, with an approximate reduction of 15% in the number of permittees out of compliance with the Department’s current non-revenue standard of 12%. Permittees not meeting this standard are required to submit Water System Improvement Plans that they feel will reduce their non-revenue water to below the Department’s regulatory standard.

**H. 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 159.52 cubic feet per second (cfs) in Water Year 2016. At the end of the 2016 Water Year, the five-year running average of these two components of direct diversion stands at 260.12 cfs or 44.88 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 of these 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, although 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.

**I. Project Activity – Status of Water Demand Forecasts and Water Use**

In 2008, the Department completed a comprehensive water reallocation for all our 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. A primary reason for this long timeframe is 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 is anticipating undertaking another comprehensive water reallocation in 2018 which will extend allocations out to at least the year 2040.

During this past year, the Department issued an allocation modification to the Metropolitan Water Reclamation District of Greater Chicago reducing their allocation for discretionary diversion from 270 cfs to 220 cfs beginning in Water Year 2018.

**J. Project Activity - Water Infrastructure**

During this past year, the City of Chicago continued to pursue a number of initiatives to upgrade

their water, wastewater and stormwater infrastructure. In 2016 the City of Chicago reported the installation of approximately 18,500 new water meters and proposes to replace an additional 15,000 meters in 2017. Since the inception of Chicago's Volunteer Metering Program in 2009 the City has installed over 103,000 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 22,857 unused water services (2,256 in 2016) and replaced 557 miles of old water main (90 miles in 2016).

A number of other Lake Michigan communities have also developed, or are working on conservation/sustainability initiatives. The northeastern Illinois region has a number of organizations who work with local government 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 use and diversion as allowed under a U.S. Supreme Court Decree has resulted in a 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 a non-regulatory effort.