

# **PENNSYLVANIA GREAT LAKES WATER CONSERVATION AND EFFICIENCY PROGRAM REVIEW**

2016 Report  
November 22, 2016

The following information summarizes Pennsylvania's efforts regarding its Water Conservation and Efficiency Program, and is being submitted by the Commonwealth to the Regional Body and Compact Council pursuant to the requirements in the Agreement Article 304 and the Compact Section 4.2.2.

## **1. Lead agency and contact person(s)**

Pennsylvania Department of Environmental Protection (DEP): Timothy Bruno, Manager, Great Lakes Program (814) 835-1477.

## **2. Status of the State or Province's Water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives.**

Pennsylvania continues to achieve its Water Conservation and Efficiency Goals/Objectives through a mix of voluntary efforts combined with state-wide regulatory requirements.

Pennsylvania's Act 43 of 2008 (32 P.S. Section 817.25) authorized the Commonwealth to join the Compact and established that the Water Conservation and Efficiency Program, required under Section 4.2 of the Compact, shall be a voluntary program. As part of its State Water Planning Program, Pennsylvania has eight key goals that support the Basin-wide and regional objectives of the Compact. Pennsylvania's water conservation and efficiency goals are articulated in our State Water Planning Program, (27 Pa.C.S 3120(a).)

As reported in prior updates, the eight goals are:

1. Establish guidelines for developing voluntary water use reduction in Critical Water Planning Areas.
2. Identify and compile principles, practices, and technologies to assist all water users in conserving water.
3. Identify and compile principles, practices, and technologies to encourage groundwater recharge.
4. Develop a statewide program to promote voluntary reduction of water loss.
5. Establish a voluntary statewide conservation program for all users.
6. Develop educational programs for households, industry, and other water users.
7. Facilitate Governor's Water Conservation and Efficiency Award Program.
8. Establish voluntary water use reduction goals for all users.

PA DEP has initiated a project to review and update the State Water Plan in accordance with *Water Resources Planning Act of 2002 (P.L. 1776, No. 220)*, 27 Pa.C.S. 3101 et. sq. This review and update will consider the eight goals in determining whether the current plan reflects the objectives, policies and purposes of the Water Resources Planning Act. From this review will come a long-term work and funding plan that will address current regional and state-wide priorities, filling gaps from the previous plan and examining emerging issues.

To help achieve all eight goals in the Lake Erie watershed, Pennsylvania has been working in conjunction with Pennsylvania Sea Grant and Pennsylvania State University toward the creation of a Pennsylvania Lake Erie Water and Land Technical Resources website (WALTeR). This website will provide a portal to DEP partner agencies and organizations that focus on land and water issues in the Pennsylvania Lake Erie basin. An intended component of WALTeR will be water conservation and efficiency information, materials, and outreach programs. In the first quarter of 2015, DEP awarded a state grant to Pennsylvania Sea Grant and Pennsylvania State University which included over \$155,000 for development of the WALTeR framework. Website and GIS development is concluding with an anticipated WALTeR launch date of February 2017.

To implement goal six, PA DEP developed a series of workshops named the Pennsylvania–Great Lakes Water Supplier Training in Water Audits, Leakage Management, and Metering and Billing. These three new courses were specifically designed for public drinking water supply system operators in the PA Great Lakes Basin. In 2016, the courses trained over 50 operators in three topics: In-depth Training in Water Loss Auditing using the American Water Works Association’s Free Water Audit Software; Controlling Water Utility Apparent Losses in Customer Metering and Billing Operations; and, Fundamentals of Leakage and Pressure Management for Water Utilities.

To implement goal six during 2016, PA DEP cooperatively works with, and provides funding to, partner state agencies and non-governmental organizations to explore ideas that promote water conservation in the Erie area.

The partner members accomplished the following activities in 2016:

1. Pennsylvania Lake Erie Children’s Water Festival: PA DEP and the planning team, spearheaded by Penn State University-Behrend, are building off of the success of the 2015 festival to plan another even in May 2017. PA DEP funding from the Great Lakes Program and Coastal Resource Management Program will provide the financial resources to hold the 2017 festival on the campus of Penn State Behrend in Erie, PA. It is anticipated that over 1000 elementary students will again participate in the Festival which highlights water conservation and efficiency topics.
2. Environment Erie’s Begin ANEW Urban Stormwater Program: PA DEP provided over \$30,000 to augment existing grants totaling almost \$120,000, to

Environment Erie, a local non-profit organization, to conduct the Begin ANEW program that focuses on water conservation and urban stormwater management in the Pennsylvania Lake Erie Basin. Numerous public education and outreach sessions were conducted to encourage the use of rain barrels and cisterns, rain gardens, lawn and garden BMPs, roof gardens and green roofs, and riparian buffers.

3. PA DEP provided over \$370,000 of grant funding to Pennsylvania Sea Grant to acquire high-resolution digital orthophotography and LIDAR of the Pennsylvania Lake Erie watershed in an effort to evaluate changing land use and impacts on tributary water quality and potential water users. Completed in 2016, geospatial products also included an updated hydrologic database to update USGS stream maps. The geospatial products of this project are available on the Pennsylvania Spatial Database located at [www.pasda.psu.edu](http://www.pasda.psu.edu).

Pennsylvania has several regulatory programs, administered by the Department and the Public Utility Commission, that support the objectives of water use reduction, water loss reduction, and overall water conservation. These regulatory programs are established on a state-wide basis, independent of the Great Lakes Compact, and are implemented on an on-going basis. The programs, which primarily involve Public Water Supply Agencies and water users who withdraw 10,000 gallons of water per day or more on a 30 day average, are discussed in further detail in Section 4 of this paper. A chart showing withdrawals, diversions, and consumptive use in Pennsylvania's portion of the Great Lakes watershed is attached at the end of this report (Source: Great Lakes Commission based on data supplied by PA DEP).

As previously reported, DEP implements an electronic web-based Drought Emergency Application for use by golf courses, public water suppliers and athletic field operators who must submit plans for water use to the Department in meeting regulations under the Pennsylvania Emergency Management Agency towards conserving water and ending non-essential water uses during drought emergency declarations. This system allows submission of electronic plans via the Department's website, and it generates notifications to known entities to provide information, guidance, and requirements during a drought emergency.

### **3. Water Conservation and Efficiency Program Overview.**

Pennsylvania's Water Conservation and Efficiency Program is implemented through a mix of voluntary efforts combined with state-wide regulatory requirements. Pennsylvania's Act 43 authorizes the use of a voluntary water conservation and efficiency program. As part of its State Water Planning Program, Pennsylvania has eight key goals that support the Basin-wide and regional objectives of the Compact. In addition, regulatory programs that support and complement water conservation and efficiency goals and objectives are already in place through other statewide laws and policies of the Commonwealth. The majority of water use in Pennsylvania's Great Lakes basin is attributable to Public Water Supplies. Public water supply agencies throughout the Commonwealth are required to obtain a water allocation permit for

surface water sources, with approvals of systems metering, use justification, drought management, and water conservation and efficient use elements included in the permitting process that implements the Water Rights Act, (P.L. 842 No. 365), 32 P.S. SS 63, et seq..

*Pennsylvania regulatory programs with citations and summaries include the following:*

*The Great Lakes-St. Lawrence River Basin Water Resources Compact—32 P.S. Section 817.21 et seq. Section 5 (Powers and Duties of department) of that PA statute, 32 P.S. Section 817.25, states, inter alia, that, “The department shall have the power and duty to”: (2) Administer and implement within the basin a water conservation and efficiency program required under section 4.2 of the Compact. Such a program shall be a voluntary program, utilizing the provisions of 27 Pa.C.S. Section 3120 (relating to water conservation).”*

*Water Resources Planning Act of 2002 (P.L. 1776, No. 220), 27 Pa.C.S. 3101 et. sq.* Act 220 authorizes DEP to build capacity to the water use reporting system to develop a program for water users to record their voluntary water conservation and efficiency efforts.

<http://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2002&sessInd=0&act=220>

*Water Rights Act, P.L. 842 (Act No. 365) Pennsylvania Surface Water Allocation Program—*under this act, public water supply agencies must obtain Water Allocation Permits from the DEP to acquire rights to use surface water sources in Pennsylvania. Included in the review of permit applications, the DEP considers the conservation, development, and use to the best advantage of existing sources of water supply. Permits generally contain requirements to implement water conservation programs, adopt drought contingency plans and submit annual permit compliance reports.

<http://www.legis.state.pa.us/WU01/LI/LI/US/PDF/1939/0/0365..PDF>

**4. A description of how Pennsylvania promotes Environmentally Sound and Economically Feasible Water Conservation Measures consistent with the regional objectives follows:**

OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
<p>Guide programs toward long term sustainable water use</p>	<ul style="list-style-type: none"> <li>➤ Water Rights Act, 32 P.S. §§ 636-637.—Under this act, public water supply agencies must obtain Water Allocation permits from DEP to acquire rights to surface water in PA. In its review of the permit applications, DEP considers water conservation and use of existing water supplies.</li>   <li>➤ Water Resources and Planning Act (Act 220), 27 Pa.C.S. §§ 3117; 3120, authorizes DEP to build capacity of the water use reporting system to develop a program for water users to record their voluntary water conservation and efficiency efforts.</li>   <li>➤ PA Public Utilities Commission (PUC) has provisions in the PA Code for water conservation measures for public water suppliers (52 Pa. Code § 65.11) in the event of short term water supply deficiencies. In addition, public water suppliers are to encourage customers to implement cost-effective water conservation measures. Rates for water utilities are set with consideration for the following factors: customer education, efficient plumbing fixtures, leak detection, water audits for large non-residential customers, unaccounted for water, and metering (52 Pa. Code § 65.20). This section also requires public water suppliers to file mandatory conservation contingency plans.</li> </ul>
<p>Adopt and implement supply and demand management to promote efficient use and conservation of water resources</p>	<ul style="list-style-type: none"> <li>➤ A DEP regulation, which establishes water withdrawal and use registration, monitoring, record-keeping and reporting requirements at 25 Pa. Code §§ 110.201; 110.301, became effective upon its publication in the Pennsylvania Bulletin on November 15, 2008.</li> <li>➤ This regulation requires water users who withdraw 10,000 gallons or who purchase water through interconnection in excess of 100,000 gallons of water per day or more on a 30 day average to report their water use to DEP. <i>See also</i>, Water Resources and Planning Act (Act 220), 27 Pa.C.S. § 3118.</li> </ul>

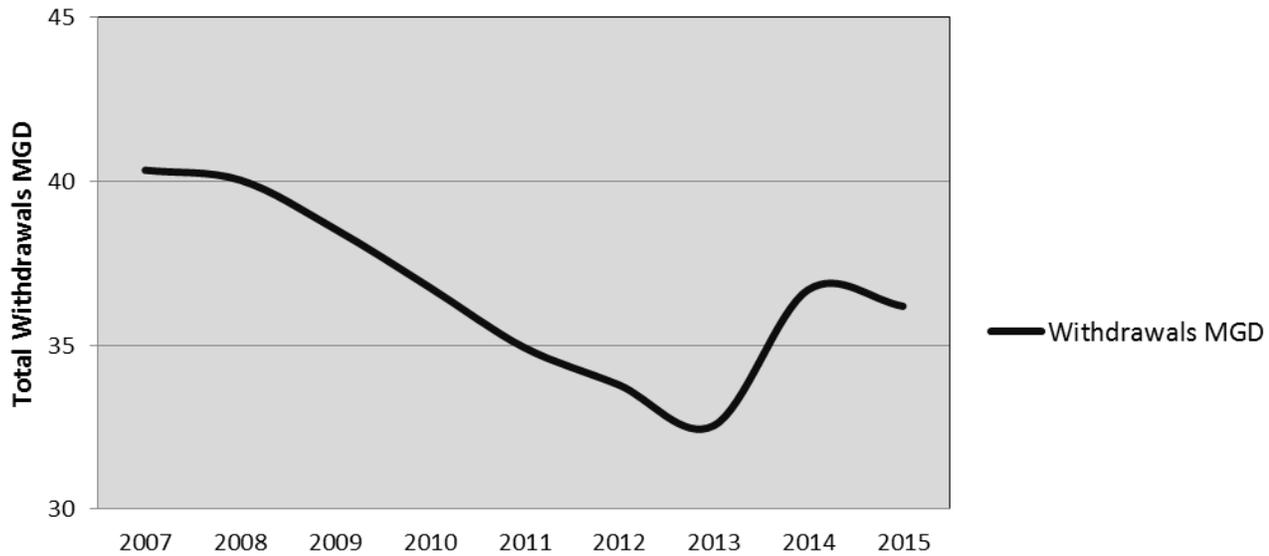
<p>Improve monitoring and standardize data reporting among State water conservation and efficiency programs</p>	<p>➤ Pennsylvania participates in the Great Lakes Regional Water Use Database process. Currently this process is administered by the Great Lakes Commission in consultation with the Council of Great Lakes Governors, to meet the goal of standardizing data reporting among the Jurisdictions. A reporting requirement has been imposed in the Commonwealth on all water uses over 10,000 gallons per day; and any water use for oil and gas development requires submission of a water management plan. Oil and Gas Act, 58 Pa. C.S. § 3211(m). Water Resources and Planning Act (Act 220), 27 Pa.C.S. §§ 3117; 3118. <a href="#">25 Pa. Code §§ 110.201; 110.301.</a></p>
<p>Develop science, technology and research</p>	<p>➤ DEP plans to continue to seek the assistance of Pennsylvania Sea Grant and Penn State University to focus on developing science, technology, and research in the Great Lakes Basin.</p>
<p>Develop education programs and information sharing for all water users</p>	<p>➤ Water Resources Planning Act (Act 220), 27 Pa.C.S. §§ 3117; 3120, authorizes DEP to build capacity of the water use reporting system to develop a program for water users to record their voluntary water conservation and efficiency efforts.</p> <p>➤ Pennsylvania is considering new ways to increase water conservation and efficiency awareness and enhance commitments made in Resolution 5 of the Compact Council and Resolution 6 of the Regional Body. DEP plans to continue to seek the assistance of Pennsylvania Sea Grant and Penn State University to increase the level of water conservation and efficiency outreach and education in the Great Lakes basin and promote an existing Penn State Extension website for water conservation and continue to publish articles in the Erie Times News In Education series regarding Water Conservation, particularly as it applies to the Lake Erie watershed.</p>

**5. Description of the State or Provincial Water conservation and efficiency program implementation timeline and status.**

- a. With the completion of the 2016 conservation and efficiency training to public water suppliers in PA’s Great Lakes area, DEP is exploring opportunities during 2017 towards continuing the education initiative. This training will increase specific system-level training on water infrastructure management and help Pennsylvania meet its conservation and efficiency goals through reductions in leakage and increased efficiencies by public water suppliers.

- b. Pennsylvania State Water Planning will be conducted in 2017 including the formation of Great Lakes Water Resources Regional Committee to aid in the collection and dissemination of data, prioritization of resource availability and protection, and the formation of water use policies in the Basin. The products of this Committee will be incorporated into the State Water Plan.
- c. In 2017, DEP will evaluate current water use reporting methods as identified in Act 220 and identify operational opportunities to increase percentage of on-time water user submission for annual tracking and reporting purposes.
- d. In 2017, DEP will continue to work towards implementing Goal No. 7 (Facilitating a Governor's Water Conservation and Efficiency Award Program), by evaluating the promotion of water conservation and efficiency successes through the current Governor's Award for Environmental Excellence. This award is open to any Pennsylvania business, farm, government agency, educational institution, non-profit organization and individual that have created, or participated in the development of a project that promotes environmental stewardship and economic development in the state. Information on the 2016 awards may be found at:  
<http://www.dep.pa.gov/About/Awards/EnvironmentalExcellence/Pages/default.aspx>
- e. In 2017, Pennsylvania will once again convene a Children's Water Festival on the Penn State University Behrend Campus in Erie, PA. This festival will reach over 1000 elementary school children to increase water awareness and encourage water conservation and efficiency. These efforts will be funded through grants provided by Pennsylvania Department of Environmental Protection.

## PA Great Lakes Reported Annual Water Withdrawals: 2007-2015



Data Source: 2015 Pennsylvania Department of Environmental Protection, Chapter 110 Water Use Reporting

## PA Great Lakes Water Withdrawals, Diversions and Consumptive Use: 2015

Sector	Withdrawals (MGD)				Diversions (MGD)		Consumptive Use (MGD)
	GLWS	OSW	GW	TOTAL	Intrabasin	Interbasin	
Public Water Supply	29	0.1	2	30	0	0	3
Self-Supply Commercial & Institutional	0	0	0	0	0	0	0
Self-Supply Irrigation	0	0	0	0	0	0	0
Self-Supply Livestock	0	1	1	2	0	0	0
Self-Supply Industrial	3	0	0	3	0	0	0
Self-Supply Thermoelectric Power Production (Once-through cooling)	0	0	0	0	0	0	0
Self-Supply Thermoelectric Power Production (Recirculated cooling)	0	0	0	0	0	0	0
Off-Stream Hydroelectric Power Production	0	0	0	0	0	0	0
In-Stream Hydroelectric Water Use	0	0	0	0	0	0	0

All Withdrawals reported in Millions of Gallons per Day (MGD). Withdrawal Water Source Abbreviations: Great Lakes Surface Water (GLWS), Other Surface Water (OSW) and Groundwater (GW)

Data Source: Draft Annual Report of the Great Lakes Regional Water Use Database Representing 2015 Water Use Data – Oct., 2016. Values shown are as submitted to the Great Lakes Commission and should be considered preliminary until final publication.

**Consumptive use:** that portion of water withdrawn or withheld from the Great Lakes basin and assumed to be lost or otherwise not returned to the Great Lakes basin due to evapotranspiration, incorporation into products or other processes

**Diversion:** a transfer of Water from the basin into another watershed, or from the watershed of one of the Great Lakes into that of another by any means of transfer, including but not limited to a pipeline, canal, tunnel, aqueduct, channel, modification of the direction of a watercourse, a tanker ship, tanker truck or rail tanker but does not apply to water that is used in the basin or Great Lakes watershed to manufacture or produce a product that is then transferred out of the basin or watershed (Agreement Article 103; Compact Section 1.2)

**Intrabasin transfer:** a transfer of water from the watershed of one of the Great Lakes into the watershed of another Great Lake (Agreement Article 103; Compact Section 1.2)

**Mgd:** million gallons per day

**Principal facility:** facilities withdrawing in excess of the Great Lakes Charter uniform trigger level of 100,000 U.S. gallons/day (380,000 liters/day) averaged over a 30-day period. A principal facility is determined by its total withdrawal (or consumption) from all sources combined (Great Lakes surface water, other surface water, and groundwater). The combined withdrawals (or consumption) of separate wells or operations undertaken by the same facility or company will be evaluated separately for the purpose of determining principal facility status unless those operations are covered under the same registration (or permit) or are physically contiguous. Principal facilities are a subset of all facilities in the database.

**Withdrawal amount:** water removed or taken from surface or groundwater (including hydroelectric use)