

PENNSYLVANIA GREAT LAKES WATER CONSERVATION AND EFFICIENCY PROGRAM REVIEW

2017 Report
November 21, 2017

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 at 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.

DEP is currently in process to review and update the State Water Plan in accordance with the *Water Resources Planning Act (Act 220 of 2002, P.L. 1776, No. 220, 27 Pa.C.S. 3101 et. sq.)* This update will use the eight Water Conservation and Efficiency Program 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, DEP is working in conjunction with Pennsylvania Sea Grant and Pennsylvania State University to create the 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. A component of WALTeR will be access to pertinent spatial data, water conservation and efficiency information, materials, and outreach programs. DEP awarded a state Growing Greener grant to Pennsylvania Sea Grant and Pennsylvania State University including over \$155,000 for development of the WALTeR framework, website, and GIS development. The WALTeR website is preparing to launch in November 2017.

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.

DEP and Partner Organizations accomplished the following activities in 2017:

- a) Pennsylvania Lake Erie Children's Water Festival: DEP and the planning team, spearheaded by Penn State University-Behrend, built off the success of the 2015 festival to conduct a festival in May 2017. DEP funding from the Great Lakes Program and Coastal Resource Management Program provided the financial resources to hold the 2017 festival on the campus of Penn State Behrend in Erie, PA. Over 1,000 elementary students participated in the Festival which highlights water conservation and efficiency topics.
- b) Environment Erie's Begin ANEW Urban Stormwater Program: DEP provided 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.
- c) Erie County Department of Planning (ECDP) - Erie County Municipal Stormwater Assistance Program (MSAP): In 2017, DEP awarded \$60,000 in grant funds to the ECDP to implement MSAP, which provides assistance to MS4 municipalities in the Lake Erie Basin to improve effectiveness of their stormwater programs and help reduce urban stormwater pollution to Lake Erie, its tributaries,

and drinking source water areas. Shared municipal services facilitated by ECDP will include infrastructure mapping and GIS services, public education and outreach, and stormwater program and infrastructure funding assistance.

- d) Erie County Department of Health (ECDH) - Erie County Small Flow Treatment Facilities Monitoring (SFTF) Program: In 2017, DEP provided over \$148,000 in grant funding to implement the SFTF Program and help protect Lake Erie and tributary source waters. Certain soil types in the Pennsylvania Lake Erie Basin can be challenging for the proper function of traditional, in-ground, on-lot private sewage treatment in the absence of public sewage collection infrastructure. NPDES-permitted Small Flow Treatment Facilities (SFTFs) have been proliferating in recent years with over 430 in Erie County, a significant percentage (up to 25%) of which are in noncompliance for violations such as lack of disinfection, inadequate operation and maintenance, and failure to submit reports. When malfunctioning, these systems contribute to nutrient, bacterial, and other forms of pollution of Lake Erie tributaries and drinking source water areas. The new monitoring program will sample these systems for compliance and offer education and outreach to system owners.
- e) Erie County Conservation District (ECCD) – Pennsylvania Vested in Environmental Sustainability (VinES) Program: In 2014, DEP assembled stakeholders such as USDA NRCS, ECCD, Pennsylvania Farm Bureau, Penn State Cooperative Extension and others to develop a new agricultural outreach and BMP program, PA VinES. This program works with viticulture and grape growers (largest agricultural land use in the PA Lake Erie Basin) through a voluntary, proactive approach to assess agricultural operations for environmental and economic sustainability, fund best management practices identified by the assessments, and create a certification/recognition program. To jumpstart progress in 2017, DEP awarded over \$420,000 to ECCD to implement the program and protect Lake Erie, tributaries, and drinking source water areas. DEP and ECCD look to expand the program in the future to include other agriculture types found in the PA Lake Erie Basin.
- f) Erie County Department of Public Safety (ECDPS) – In 2017, PA DEP awarded \$38,000 in grant funding to ECDPS for the purchase of five PA Great Lakes Emergency Spill Response Trailers. The trailers were purchased and stocked with absorbent supplies and water booms, and will be stationed at points across the Pennsylvania Lake Erie shoreline to provide fast response to any spill that could occur by rail or road and affect drinking source water areas.

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

report. 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 DEP).

As previously reported, DEP implements an electronic 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.

Pennsylvania observed higher overall water use during the 2016 Water Year; increasing by almost 4 Mgal/d from approximately 36 Mgal/d to almost 40 Mgal/d. Although all sectors reported increases in average daily withdrawals from 2015, the largest increase came from the self-supplied livestock sector, 3.9 Mgal/d for 2016, which is a 76 percent increase from 2015, but only 28 percent above the sector's historical 9-year average. Facilities reporting within the livestock sector are all fish hatcheries (aquaculture) where consumptive losses are very minimal. The next largest increase in withdrawals from 2015 to 2016 came from the self-supplied industrial sector. This sector accounted for 3.75 Mgal/d, which is a 24% increase from 2015 but is an overall decrease of 13.5 percent from the sector's historical 9-year average.

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 (Act 365 of 1939, 32 P.S. Section 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.). Specifically, 32 P.S. Section 817.25 (relating to powers and duties of the department), states 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 (Act 220 of 2002, 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 (Act 365 of 1939) Pennsylvania Surface Water Allocation Program—under this act, public water supply agencies must obtain Water Allocation Permits from DEP to acquire rights to use surface water sources in Pennsylvania. Included in the review of permit applications, 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:

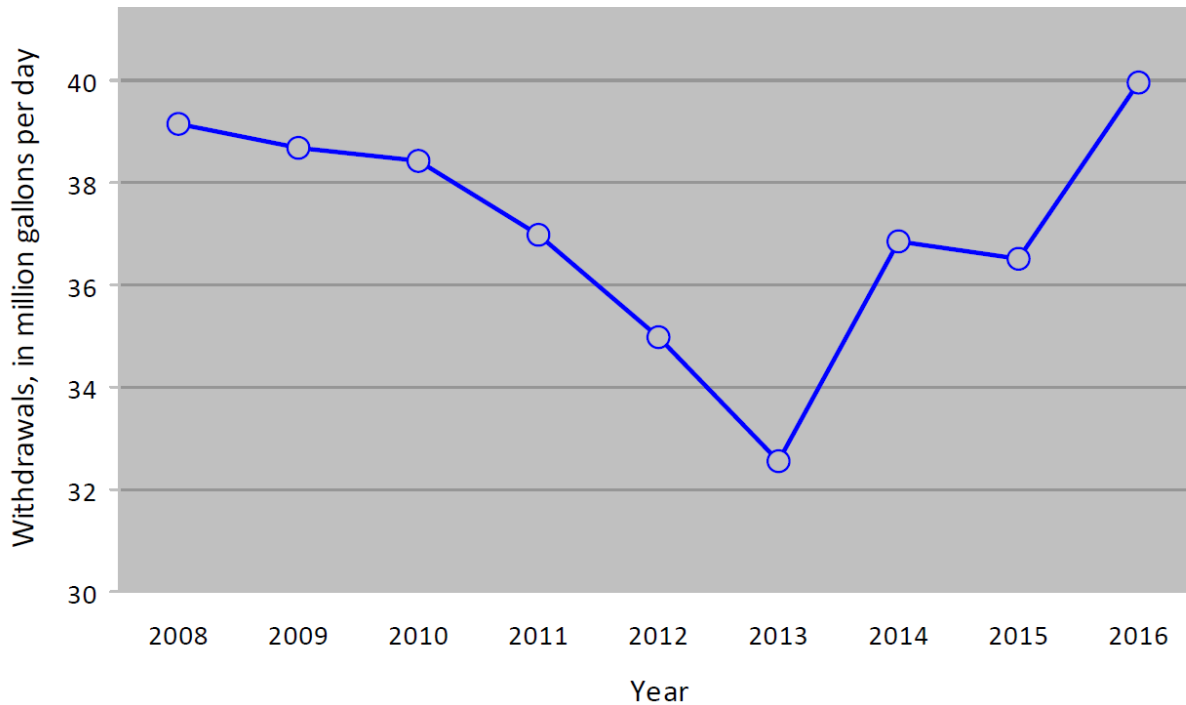
OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
<p>Guide programs toward long term sustainable water use</p>	<ul style="list-style-type: none"> ➤ Water Rights Act, 32 P.S. §§ 636-637. — Under this act, public water supply agencies must obtain Water Allocation permits from DEP to acquire rights to surface water in PA. In its review of the permit applications, DEP considers water conservation and use of existing water supplies. ➤ Water Resources and Planning Act (Act 220 of 2002), 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. ➤ PA Public Utility 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

	<p>metering (52 Pa. Code § 65.20). This section also requires public water suppliers to file mandatory conservation contingency plans.</p>
<p>Adopt and implement supply and demand management to promote efficient use and conservation of water resources</p>	<ul style="list-style-type: none"> ➤ A DEP regulation, which establishes water withdrawal and use registration, monitoring, record-keeping and reporting requirements at 25 Pa. Code §§ 110.201 and 110.301, became effective upon its publication in the Pennsylvania Bulletin on November 15, 2008. ➤ This regulation requires water users who withdraw in excess of 10,000 gallons per day on a 30-day average 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.
<p>Improve monitoring and standardize data reporting among State water conservation and efficiency programs</p>	<ul style="list-style-type: none"> ➤ 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 on a 30-day average; 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 of 2002), 27 Pa.C.S. §§ 3117; 3118. 25 Pa. Code §§ 110.201 and 110.301.
<p>Develop science, technology and research</p>	<ul style="list-style-type: none"> ➤ 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>Develop education programs and information sharing for all water users</p>	<ul style="list-style-type: none"> ➤ Water Resources Planning Act (Act 220 of 2002), 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>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 through partnerships within the local and regional communities.</p>

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

- a. DEP will be exploring opportunities during 2018 toward continuing an initiative that extends conservation and efficiency education and training to public water suppliers in PA's Great Lakes Basin and surrounding area. These potential trainings will increase specific system-level understandings of 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 is in the process of forming the Great Lakes Water Resources Regional Committee to guide the process of making Lake Erie Basin amendments to the Pennsylvania State Water Plan. The Committee will aid in the collection and dissemination of data, prioritization of resource availability and protection, and the formation of water use policies in the Basin.
- c. Due to prioritization of other important Lake Erie water quality initiatives during 2017, DEP will look to 2018 to evaluate current water use reporting methods as identified in the Water Resources Planning Act (Act 220 of 2002) and identify operational opportunities to increase percentage of on-time water user submissions for annual tracking and reporting purposes.
- d. In 2018, 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 individuals that has created or participated in the development of a project that promotes environmental stewardship and economic development in the state. Information on the 2017 awards may be found at:
<http://www.dep.pa.gov/About/Awards/EnvironmentalExcellence/Pages/default.aspx>
- e. In 2018, 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 1,000 elementary school children to increase water awareness and encourage water conservation and efficiency. The Festival is now being established as an annual event to tie young people to the Great Lakes resource within their communities. These efforts will be funded through grants provided by DEP.

PA Great Lakes Reported Annual Water Withdrawals: 2008-2016



Data Source: 2016 Pennsylvania Department of Environmental Protection, Chapter 110 Water Use Reporting

PA Great Lakes Water Withdrawals, Diversions and Consumptive Use: 2016

Sector	Withdrawals				Diversions		Consumptive Use
	GLSW	OSW	GW	TOTAL	Intrabasin	Interbasin	
Public Water Supply	29	0	1	31	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	3	1	4	0	0	0
Self-Supply Industrial	4	0	0	4	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
Other Self Supply	0	0	0	0	0	0	0
Total	33	3	3	39	0	0	4

In millions of gallons per day

Water Sources: Great Lakes surface water (GLSW), other surface water (OSW) and groundwater (GW)

Data Source: Draft Annual Report of the Great Lakes Regional Water Use Database Representing 2016 Water Use Data – Nov. 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

Diversión: 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)