

PENNSYLVANIA GREAT LAKES WATER MANAGEMENT PROGRAM
 Five Year Report
 (2014-2019)

The following information is included in the report submitted by the Commonwealth of Pennsylvania to the Regional Body and Compact Council pursuant to the requirements in the Agreement Articles 200, 201, 206-208, 300, 301, and 304 and the Compact Sections 3.4, 4.1-11, and 4.13.

GENERAL INFORMATION

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

Pennsylvania Department of Environmental Protection (DEP):

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2. Citations to Pennsylvania’s Water Management Program implementing laws, regulations and policies that establish or implement programs meeting the requirements of provisions of the Compact and Agreement:

a. Laws and Regulations

COMPACT	AGREEMENT	IMPLEMENTING LAWS
Compact Section 3.4	Agreement Article 300	<ul style="list-style-type: none"> • The Great Lakes-St. Lawrence River Basin Water Resources Compact of 2008 (P.L. No. 526, No. 43), (“Act 43”) 32 P.S. § 817.22.3.4.
Compact Section 4.1	Agreement Article 301	<ul style="list-style-type: none"> • Act 43, 32 P.S §§ 817.22.4.1;817.25(1) • The Water Resources Planning Act of 2002 (P.L. 1776, No. 220), (“Act 220”) 27 Pa.C.S. §§ 3117-3118. • 25 Pa. Code §§ 110.201- 110.402.

<p>Compact Sections 4.2(2), 4.2(4), and 4.2(5)</p>	<p>Agreement Article 304</p>	<ul style="list-style-type: none"> • Act 43, 32 P.S §§ 817.22.4.2.2; 817.22.4.4; 817.22.4.5; 817.25(2). • Act 220, 27 Pa.C.S. §§ 3111-3112; 3115-3116. • The Pennsylvania Safe Drinking Water Act of 1984 (“Safe Drinking Water Act”) (P.L. 206, No. 43), 35 P.S. § 721.7. 25 Pa. Code § 109.603. • The Dam Safety and Encroachments Act of 1978 (P.L. 1375, No. 325), (“Dam Safety Act”) 32 P.S. § 2. 25 Pa. Code §§ 105.15; 105.113. • The Emergency Management Services Code of 1978 (P.L. 1332, No. 323), (“EMS Code”) 35 Pa.C.S. § 7313. • 4 Pa. Code §§ 118.4-118.5; 119.2; 119.4; 120.3-120.5.
<p>Compact Section 4.3</p>	<p>Agreement Article 200</p>	<ul style="list-style-type: none"> • Act 43, 32 P.S § 817.22.4.3. • The Water Rights Act of 1939 (P.L. 842, No. 365), (“Water Rights Act”) 32 P.S. §§636-637. • The Pennsylvania Clean Streams Law of 1937 (P.L. 1987, No. 396), as amended (“Clean Streams Law”) 35 P.S. §§ 691.402; 691.611. • The Pennsylvania Oil and Gas Act (“Oil and Gas Act”) (P.L. 87, No. 13), 58 Pa.C.S. §3211(m).
<p>Compact Sections 4.8, 4.9 and 4.13</p>	<p>Agreement Article 200, 201 and 208</p>	<ul style="list-style-type: none"> • Act 43, 32 P.S §§ 817.22.4.8-817.22.4.9; 817.22.4.13. • Water Rights Act, 32 P.S. §§ 636-637. • Clean Streams Law, 35 P.S. § 691.611.

<p>Compact Section 4.10</p>	<p>Agreement Article 206</p>	<ul style="list-style-type: none"> • Act 43, 32 P.S §§ 817.22.4.10. • Act 220, 27 Pa.C.S. § 3118. 25 Pa. Code §§ 110.201-110.402. • Water Rights Act, 32 P.S. §§ 636-637. • Clean Streams Law, 35 P.S. §§ 691.401-691.402; 691.611. • Oil and Gas Act, 58 Pa.C.S. § 3211(m). • Dam Safety Act, 32 P.S. §§ 6-7; 9.
<p>Compact Section 4.11</p>	<p>Agreement Article 207</p>	<ul style="list-style-type: none"> • Act 43, 32 P.S §§ 817.22.4.11; 817.24(3). • Act 220, 27 Pa.C.S. § 3120. • Safe Drinking Water Act, 35 P.S. § 721.7.

b. Policies

- i. Susquehanna River Basin Commission's (SRBC's) *Guidelines for Using and Determining Passby Flows and Conservation Releases for Surface-Water and Ground-Water Withdrawal Approvals* (SRBC Policy No. 2003-01). This policy is being applied by DEP statewide. However, policy based on research by The Nature Conservancy (TNC) is being implemented by SRBC during low-flow conditions in the Susquehanna River basin, and similar policies based on TNC's study are under development in other basins, including the Great Lakes.
- ii. DEP *Water Quality Antidegradation Implementation Guidance* (DEP document 391-0300-002) states that it is the policy of DEP to protect the existing uses of all surface waters, and the existing quality of High Quality (HQ) and Exceptional Value (EV) waters.
- iii. DEP *Public Water Supply Manual - Part II, Community System Design Standards* (DEP document 383-2125-108).
- iv. DEP *Aquifer Testing Guidance for Public Water Systems* (DEP document 394-2125-001) establishes guidelines for aquifer testing for new or expanded Public Water Systems and replaces the corresponding procedures included in Part II of the Public Water Supply Manual pertaining to aquifer testing guidance.
- v. DEP *Guidelines for Identification of Critical Water Planning Areas* (DEP document 392-2130-014) provides for identification of Critical Water Planning Areas (CWPAs) as part of the State Water Plan. It defines a CWPA as a significant hydrologic unit where existing or future demands exceed or threaten to exceed the safe yield of available water resources.

WATER MANAGEMENT PROGRAM REPORT

1. Summary description of the State's or Province's water management program scope and thresholds, including current status of program implementation and a description of which New or Increased Withdrawals, Consumptive Uses and Diversions are subject to the program.

DEP's Water Management Program implements the *Great Lakes–St. Lawrence River Basin Water Resources Compact (Compact)* and the *Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement)*. The Water Management Program is responsible for guiding sustainable water use policy throughout the Commonwealth, though special practices and reporting for the Great Lakes Basin are incorporated into the general practices of the Program. The information included in this report is specific to the Great Lakes Basin.

Pennsylvania accomplishes water management activities through several statutes, regulations, and supporting case law. Providing a broad, contextual basis for water quantity

management is The Water Rights Act of 1939, which governs the acquisition of water rights by public water supply agencies to divert water from rivers, streams, natural lakes, and ponds, and/or other surface waters within the Commonwealth in the interest of securing an adequate and safe supply of water for the public. Section 3 of this statute assures that acquisitions of water rights for diversions made by public water supply agencies allow for existing and future needs of the agencies as well as other entities requiring the procurement and use of water.

The Water Resources Planning Act of 2002 (Act 220) and its implementing regulations, 25 Pa. Code Chapter 110 (Chapter 110), establish registration, monitoring, recordkeeping and reporting requirements for purposes of obtaining accurate information to guide existing and future planning for water resources. Act 220 and Chapter 110 provide the contemporary framework for water management in Pennsylvania and created the Pennsylvania State Water Plan and avenues for registration and reporting of water withdrawals for all public water supply agencies, hydropower facilities, and other entities withdrawing greater than an average rate of 10,000 gallons per day.

Act 43 of 2008 implementing the Great Lakes–St. Lawrence River Basin Water Resources Compact in Pennsylvania establishes the threshold for management and regulation as follows: any new or increased withdrawal from the basin in an amount that equals or exceeds 100,000 gallons per day averaged over any 90-day period; any new or increased consumptive use of water withdrawn from the basin in an amount which equals or exceeds 5,000,000 gallons per day averaged over any 90-day period; or any new or increased diversion of water from the basin.

Water Use Registration and Reporting

Act 220, Chapter 110, and Act 43 of 2008 set the registration and reporting requirements for water withdrawals, consumptive uses, and diversions in Pennsylvania.

Registration

Chapter 110, Subchapter B, Section 110.201 requires the following persons to register with DEP within 30 days following the initiation of a water withdrawal or withdrawal use:

- Each owner of a public water supply agency.
- Each owner of a hydropower facility.
- Each person whose total withdrawal from a point of withdrawal, or from multiple points of withdrawal operated as a system either concurrently or sequentially, within a watershed exceeds an average rate of 10,000 gallons per day in any 30-day period.
- Each person who obtains water through an interconnection with another person in an amount that exceeds an average rate of 100,000 gallons per day in any 30-day period.
- Within an area designated as a critical water planning area, each person who obtains water through interconnection with another person in an amount that exceeds an

average rate of 10,000 gallons per day in any 30-day period.

Registrants are required to supply the following information by completing DEP's Water Source Registration Form (DEP document 0420-FM-PC0048) and submitting a hard copy by mail to the Office of Water Resources Planning, P.O. Box 8555, Harrisburg, PA 17105-8555 or by submitting the following information via email to epwaterreporting@pa.gov:

- Registrant identification and description information.
- For each source: Name, description, location, amount of water withdrawn or obtained through interconnection with another person, or instream hydropower use.

Reporting

Chapter 110, Subchapter C, 110.304 states that each person subject to registration in Chapter 110.201 shall provide an annual report to DEP describing water use during the previous calendar year. Reports include industry-specific information as well as:

- The amount of consumptive and non-consumptive uses reported as monthly totals and number of days used.
- Locations and amounts of any waters returned or discharged reported as annual total.
- Amounts of water transferred between public water supply agencies by means of interconnections reported as monthly totals and number of days used.

All Chapter 110 and Water Management Plan (required for oil and gas operators) reporting is accomplished through an online data submission portal, DEP Greenport (www.depgreenport.state.pa.us). Public water suppliers are required to report by March 31 following the report year, and all other registrants are required to report by June 30.

Withdrawals

'Withdrawal' is defined in Act 43 of 2008, Article I as "the taking of water from surface water or groundwater." Act 43 of 2008, Section 6 sets the threshold for management and regulation as follows: any new or increased withdrawal from the basin in an amount that equals or exceeds 100,000 gallons per day averaged over any 90-day period; any new or increased consumptive use of water withdrawn from the basin in an amount which equals or exceeds 5,000,000 gallons per day averaged over any 90-day period; or any new or increased diversion of water from the basin.

The permitting of withdrawals is accomplished through multiple DEP permitting programs that focus on the type of activity and industry proposing the withdrawal. Public water supplies are governed by the Pennsylvania Safe Drinking Water Act which requires stringent source water quality standards and provides guidelines on water quantity, either surface or ground water, through the DEP *Public Water Supply Manual - Part II, Community System Design Standards*, Section III: Source Development and

Construction (DEP document 383-2125-108) and the DEP *Aquifer Testing Guidance for Public Water Systems* (DEP document 394-2125-001).

Water withdrawals associated with unconventional oil and natural gas well drilling and development activities are subject to approval requirements of Section 3211(m) of Pennsylvania's 2012 Oil and Gas Act and its implementing regulation in 25 Pa. Code Chapter 78a which requires the creation and approval of a water management plan and quarterly reporting of daily withdrawals and purchases.

Certain activities that involve surface water withdrawals and intake structures may require permitting through Pennsylvania's Dam Safety and Encroachments Act of 1978 and its implementing regulations in 25 Pa. Code Chapter 105.

Consumptive Use

'Consumptive Use' is defined in Act 43 of 2008, Article I as "that portion of the Water Withdrawn or withheld from the Basin that is lost or otherwise not returned to the Basin due to evaporation incorporation into Products, or other processes." Water withdrawal registrants under Act 220 and 25 Pa. Code §110.304 are required to report the amounts of consumptive and non-consumptive uses by a means or method accurate to within 10% of actual flow or through established scientific means as defined by Chapter 110.501.

Diversions

'Diversion' is defined in Act 43 of 2008, Article I as "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 water course, a tanker ship, tanker truck or rail tanker but does not apply to Water that is used in the Basin or a Great Lake watershed to manufacture or produce a Product that is then transferred out of the Basin or watershed." Currently in Pennsylvania, there are no existing or proposed diversions. Any proposed diversion would be reviewed through existing water withdrawal permitting programs.

2. Specific description of how water withdrawals in Pennsylvania are managed by sector, water source, quantity, and location.

Water withdrawals in Pennsylvania are regulated in a varying manner depending on sector, source, quantity and location.

a. Regulation by Sector

Under the registration process of 25 Pa. Code §§ 110.201-110.206, withdrawal sources in the Great Lakes-St. Lawrence River Basin are assigned codes within Pennsylvania's Water Use Data System (WUDS) that identifies a source use (sector) type consistent with Great Lakes-St. Lawrence River Regional Water Use Database. Other data collected include, but are not limited to, facility type and client-level information related to

ownership and location.

Public water supply (statewide)

Under the authority and provisions of Pennsylvania's Water Rights Act, 32 P.S. §§ 636-637, public water suppliers obtain water rights from DEP for all surface water withdrawals, with no rate or volume thresholds, through the application of and approval of water allocation permits. Public water suppliers are also regulated by the Pennsylvania Safe Drinking Water Act, 35 P.S. § 721.7. Public water suppliers are also subject to registration, recordkeeping, monitoring, and reporting requirements as described in 25 Pa. Code §§ 110.201-110.402.

Gas well development in unconventional formations (statewide)

Under Pennsylvania's Oil & Gas Act, 58 Pa.C.S. § 3211(m) and its implementing regulation in 25 Pa. Code Chapter 78a, any person withdrawing or using water from a water source in the Commonwealth, for drilling or completing an unconventional gas well, are to obtain approval of a Water Management Plan from DEP prior to the withdrawal or use of water, with no quantity or rate minimums. Water Management Plan approvals identify the maximum rate and volume of water that may be withdrawn, and if applicable, passby flow conditions. Holders of these approvals are required to measure water withdrawals and purchases using continuous-recording devices or flow meters. Daily records of withdrawal volumes, in-stream flow measurements or water source purchases, or both, are submitted quarterly.

Other sectors

The management and regulation of all other sectors within the Great Lakes-St. Lawrence River Basin (e.g., mineral, industrial, agricultural, commercial, and electric) fall under the provisions of Act 43, 32 P.S §§ 817.22.4.10, including: any new or increased withdrawal from the basin in an amount that equals or exceeds 100,000 gallons per day averaged over any 90-day period; any new or increased consumptive use of water withdrawn from the basin in an amount which equals or exceeds 5,000,000 gallons per day averaged over any 90-day period; or any new or increased diversion of water from the basin.

As with public water supply and oil and gas operations, water withdrawals for other sectors are subject to the registration, recordkeeping, monitoring, and reporting requirements of 25 Pa. Code §§ 110.201-100.402.

b. Regulation by Water Source

Groundwater:

Groundwater withdrawals are managed and regulated within the Great Lakes-St. Lawrence River Basin under the provisions of Act 43, 32 P.S §§ 817.22.4.10, including: any new or increased withdrawal from the basin in an amount that equals

or exceeds 100,000 gallons per day averaged over any 90-day period; any new or increased consumptive use of water withdrawn from the basin in an amount which equals or exceeds 5,000,000 gallons per day averaged over any 90-day period; or any new or increased diversion of water from the basin.

Groundwater withdrawals for public water suppliers, with no minimum thresholds, are regulated under the authority of the Pennsylvania Safe Drinking Water Act, 35 P.S. § 721.7, the DEP *Water Supply Manual - Part II, Community System Standards*, and the registration, recordkeeping, monitoring, and reporting requirements of 25 Pa. Code §§ 110.201-110.402.

Groundwater withdrawals for unconventional gas well development are regulated under Pennsylvania's Oil and Gas Act, 58 Pa.C.S. § 3211(m), requiring DEP approval of Water Management Plans developed by unconventional gas well operators. Holders of these approvals generally follow the recordkeeping, monitoring, and reporting procedures of 25 Pa. Code §§ 110.201-110.402.

Withdrawals for groundwater withdrawals by other sectors (e.g., mineral, industrial, agricultural, commercial, and electric) are subject to the registration, recordkeeping, monitoring, and reporting requirements of 25 Pa. Code §§ 110.201-110.402.

Surface Water:

In the Great Lakes Basin portion of Pennsylvania, all surface water withdrawals by public water suppliers are regulated under the Water Rights Act, 32 P.S. §§ 636-637 and, for all withdrawals of 10,000 gallons per day or more over a 30-day average, under 25 Pa. Code §§ 110.201-110.402.

Surface water withdrawals for unconventional gas well development are regulated under Pennsylvania's Oil and Gas Act, 58 Pa.C.S. § 3211(m), requiring DEP approval of Water Management Plans developed by unconventional gas well operators. Holders of these approvals generally follow the recordkeeping, monitoring, and reporting procedures of 25 Pa. Code §§ 110.201-110.402.

c. Regulation by Quantity

Withdrawals are managed and regulated within the Great Lakes-St. Lawrence River Basin under Act 43, 32 P.S. §§ 817.22.4.10, including: any new or increased withdrawal from the basin in an amount that equals or exceeds 100,000 gallons per day averaged over any 90-day period; any new or increased consumptive use of water withdrawn from the basin in an amount which equals or exceeds 5,000,000 gallons per day averaged over any 90-day period; or any new or increased diversion of water from the basin.

Act 220, 27 Pa.C.S. § 3118, and its implementing regulations at 25 Pa. Code §§ 110.201-110.402 require registration, reporting, and recordkeeping for water

withdrawals if an owner of a public water supply agency, hydropower facility, or any person whose total withdrawal exceeds an average rate of 10,000 gallons per day in any 30-day period or exceeds an average rate of 100,000 gallons per day in any 30-day period if obtaining water through interconnection with another person. Reports are to be submitted to DEP yearly. Depending on the sector, different user-specific contents are required in these reports.

d. Regulation by Location

In Pennsylvania, regulation of water withdrawals varies somewhat between withdrawals and uses within and outside of the Great Lakes-St. Lawrence River Basin. While all the provisions of Act 220, 27 Pa.C.S. § 3118, 25 Pa. Code §§ 110.1-110.603, the Oil and Gas Act, 58 Pa.C.S. § 3211(m), and 25 Pa. Code § 78a.69 apply statewide, the provisions of Act 43 regarding the prohibition of new or increased diversions, new or increased withdrawals, and consumptive uses apply only within Pennsylvania's portion of the Great Lakes-St. Lawrence River Basin.

e. Exemptions as allowed in the Agreement and Compact

Act 43, 32 P.S §§ 817.22.4.9 and 817.22.4.13 provide for the full exemptions allowed in the Agreement and Compact.

i. Section 4.9 Exceptions to the prohibition of diversions

- Provisions for certain transfers of water to areas within “straddling communities”; and
- Provisions for certain transfers of water to communities within a “straddling county”.

ii. Section 4.13 Exemptions

- To supply vehicles, including vessels and aircraft, whether for the needs of the persons or animals being transported or for ballast or other needs related to the operation of the vehicles.
- To use in non-commercial project on a short-term basis for firefighting, humanitarian, or emergency response purposes.

3. Description of how the provisions of the Standard of Review and Decision are applied, including information on how each criterion of the Decision-Making Standard and Exception Standard is addressed.

The Standard of Review and Decision was codified in Pennsylvania in Act 43 of 2008 and is applied when DEP permits or regulates water withdrawals within the Great Lakes-St. Lawrence River Basin in accordance with the statutes, regulations, and/or policies described in the General Information section above. No additional standards have been incorporated in the withdrawal review process in Pennsylvania.

a. Decision making standard for withdrawals, consumptive uses.

Section 4.11 of Act 43 details the requirements for proposals subject to the threshold level for management and regulations of all new or increased withdrawals of 100,000 gallons per day or greater average in any 90-day period.

- i. All water withdrawn shall be returned, either naturally or after use, to the source watershed less an allowance for consumptive use;
 - ii. The withdrawal or consumptive use will be implemented to ensure that the proposal will result in no significant individual or cumulative adverse impacts to the quantity or quality of the waters and water dependent natural resources and the applicable source watershed;
 - iii. The withdrawal or consumptive use will be implemented to incorporate environmentally sound and economically feasible water conservation measures;
 - iv. The withdrawal or consumptive use will be implemented to ensure that it is in compliance with all applicable municipal, State and Federal laws as well as regional interstate and international agreements, including the Boundary Waters Treaty of 1909;
 - v. The proposed use is reasonable, based upon consideration of factors including efficiency, balance between economic development, social development and environmental protection, supply potential of the water source, and adverse impacts expected to be caused by the proposed withdrawal.
- b. Exception standard for diversions
- i. Section 4.8 of Act 43 provides for the prohibition of new or increased diversions with Section 4.9 providing an exception standard for proposals subject to management and regulation under the Act as previously described above in item 2.e.
 - ii. The following diversion proposals are subject to more stringent standards as well as separate review and approval by the eight Great Lakes states who are members of the Compact Council and review by the Regional Body composed of the Compact Council members plus representatives of the Canadian provinces of Ontario and Quebec, in accordance with the Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement and the Compact:
 - Proposals to divert Great Lakes water to a community within a county that straddles the Great Lakes Basin; and
 - Proposals to transfer water from the basin of one Great Lake to that of another that result in more than 5,000,000 gallons per day consumptive use.

4. Overview of Pennsylvania’s reporting and database of Withdrawals, Consumptive Uses, and Diversions including implementation status and database elements and capabilities and reporting mechanisms as well as methods of measurement.

Pennsylvania’s water withdrawal and use requirements are outlined in 25 Pa. Code §§ 110.1-110.603.

a. § 110.201.

Registration of a water source is required of: (1) each owner of a public water supply agency, with no minimum threshold; (2) each owner of a hydropower facility, with no minimum threshold; (3) each person whose total withdrawals exceeds an average rate of 10,000 gallons per day in any 30-day period; (4) each person who obtains water through interconnection with another person that exceeds an average rate of 100,000 gallons per day; and (5) each person within an area designated as a critical water planning area who obtains water through interconnection with another person that exceeds 10,000 gallons per day.

- Registration is accomplished through submission of forms that identify ownership, source, use type, sector, location, source details, and measurement of water. Once accepted, the registration information is retained within the Commonwealth’s Water Use Data Management System (WUDS). From this information, consumptive use coefficients are applied by sector based on published values or computed using a balancing equation when discharge volume is reported at a facility.

b. § 110.302-110.305.

Each person subject to the registration under § 110.201 is required to submit a report of their withdrawals or purchases. This is accomplished electronically through the DEP Greenport, a web-based application, <https://www.depgreenport.state.pa.us>.

- Monthly water withdrawals and use are reported on an annual basis by March 31 for public water suppliers and June 30 for all sectors except for public water suppliers. Public water suppliers with surface water sources report daily withdrawal values on a monthly basis and unconventional gas operator sources report daily withdrawal values on a quarterly basis.
- A database of Pennsylvania Great Lakes water withdrawals, diversions, and associated quantities by year is found on DEP’s Great Lakes Program website: <https://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Great%20Lakes%20Program/Pages/default.aspx>

c. § 110.401-110.402

Each person subject to registration and reporting is to retain supporting data for at least five years.

d. § 110.501-110.503

A public water supplier is to measure its withdrawals and transfers by means of a continuous recording device or flow meter accurate to within 5% of actual flow. A hydropower facility is to measure its withdrawals or in-stream uses by continuous recording device, by flow meter, or by calculation based on electrical generation or turbine flow rates accurate to within 5% of actual flow. Each person whose total withdrawals equals or exceeds an average rate of 50,000 gallons per day in any 30-day period or obtains water by interconnection in excess of an average of 100,000 gallons per day in any 30-day period is to measure or calculate: (1) withdrawals and interconnection flows by a continuous recording device or meter accurate to within 5% of actual flow; and (2) consumptive use by means accurate to within 10% of actual flow. DEP may grant exceptions if standards are not technically feasible or economically practical. Withdrawals and uses are to be recorded daily with water obtained by interconnection recorded on a weekly basis. Voluntary registrants may record monthly. Provision is made for more accurate measurement or calculations in Critical Water Planning Areas designated through State Water Plan planning processes.

5. Application Form(s) and related regulations, policies, and manuals

Water allocation permit form and instructions for public water supply surface water withdrawals

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4042>

Water withdrawal registration and use forms and instructions of all withdrawals under 25 Pa. Code Chapter 110

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3541>

Water Management Plan form and instructions for unconventional gas water withdrawals

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3908>

Public Water Supply Permit Applications

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=3928>

25 Pa. Code Chapter 110

<http://www.pabulletin.com/secure/data/vol38/38-46/2057.html>

The Water Resources Planning Act of 2002 (Act 220)

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

Act 43, the Great Lakes-St. Lawrence River Basin Water Resources Compact

<http://www.legis.state.pa.us/WU01/LI/LI/US/HTM/2008/0/0043..HTM>

Water Rights Act of 1939

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

Oil and Gas Act, 58 Pa.C.S. § 3211(m)

<http://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/OilGasReports/2012/act13.pdf>

25 Pa. Code Chapter 78a

<https://www.pacode.com/secure/data/025/chapter78a/chap78atoc.html>

DEP Public Water Supply Manual

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4556>

DEP Aquifer Testing Guidance for Public Water Systems

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4643>

DEP Guidelines for Identification of Critical Water Planning Areas

<http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4670>

- 6. Summary description of the State’s or Province’s initiatives to support an improved scientific understanding of the Waters of the Basin and an improved understanding of the groundwater of the Basin and the role of groundwater in Basin water resource management including a description of initiatives or mechanisms to support an improved understanding of individual or cumulative impacts of withdrawals, consumptive uses and diversions of the Basin.**
- a. Pennsylvania completed the Pennsylvania Lake Erie Integrated Water Resources Management Plan in coordination with Pennsylvania Sea Grant, Erie County Conservation District, and the Regional Science Consortium at Presque Isle. Released in December 2015, this document consolidated much of the scientific data and attributes associated with Pennsylvania tributaries in the Lake Erie Basin. It is available for viewing and download at <https://seagrant.psu.edu/topics/pennsylvania-lake-erie-watershed-integrated-water-resources-management-pale-iwrm-plan-now>.
 - b. In 2018, Pennsylvania and Pennsylvania Sea Grant launched the Water and Land Technical Resource website as a “one-stop, web-based center” to access and integrate Pennsylvania Great Lakes related information, data, services, and guidance. The website includes an extensive interactive geospatial mapping application that allows the viewing and downloading of watershed, water quality, and land use data to help water management understanding and inform policy decision-making.
 - c. DEP implemented a series of trainings in 2016 specifically developed for public water supply operators within the Lake Erie Basin that focused on reducing system-wide public drinking water losses. These trainings educated over 50 Lake Erie Basin water supply operators and topics included: 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. DEP anticipates offering additional trainings to basin water supply operators in 2020.
 - d. Pennsylvania Coastal Resources Management Program staff continue work on a Marine Spatial Plan that will provide baseline information on the waters of Lake Erie. Current field research involves new information pertaining to sediment transport and sediment quality, habitat, and shipwrecks in Pennsylvania waters.

WATER CONSERVATION AND EFFICIENCY PROGRAM REPORT

The following information summarizes Pennsylvania’s efforts regarding the Commonwealth’s Water Conservation and Efficiency Program. This information 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. 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 statewide regulatory requirements.

Pennsylvania's Act 43 of 2008, 32 P.S. § 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 the Commonwealth's 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.

2. Water Conservation and Efficiency Program Overview.

Pennsylvania's Water Conservation and Efficiency Program is implemented through a mix of voluntary efforts combined with statewide regulatory requirements. Pennsylvania's Act 43 authorizes the use of a voluntary water conservation and efficiency program. As noted above, 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. Most of the 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 1939 Water Rights Act, 32 P.S. §§ 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. §§ 817.21 et seq.) — Section 817.25 of the Compact states that DEP, “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. § 3120 (relating to water conservation).”

Water Resources Planning Act (Act 220 of 2002, 27 Pa.C.S. §§ 3101 et. seq.) — Act 220 authorizes DEP to build the capacity of the water use reporting system to develop a program for water users to record their voluntary water conservation and efficiency efforts.

Water Rights Act (Act 365 of 1939), Pennsylvania’s Surface Water Allocation Program — Under Pennsylvania’s Water Rights 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.

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

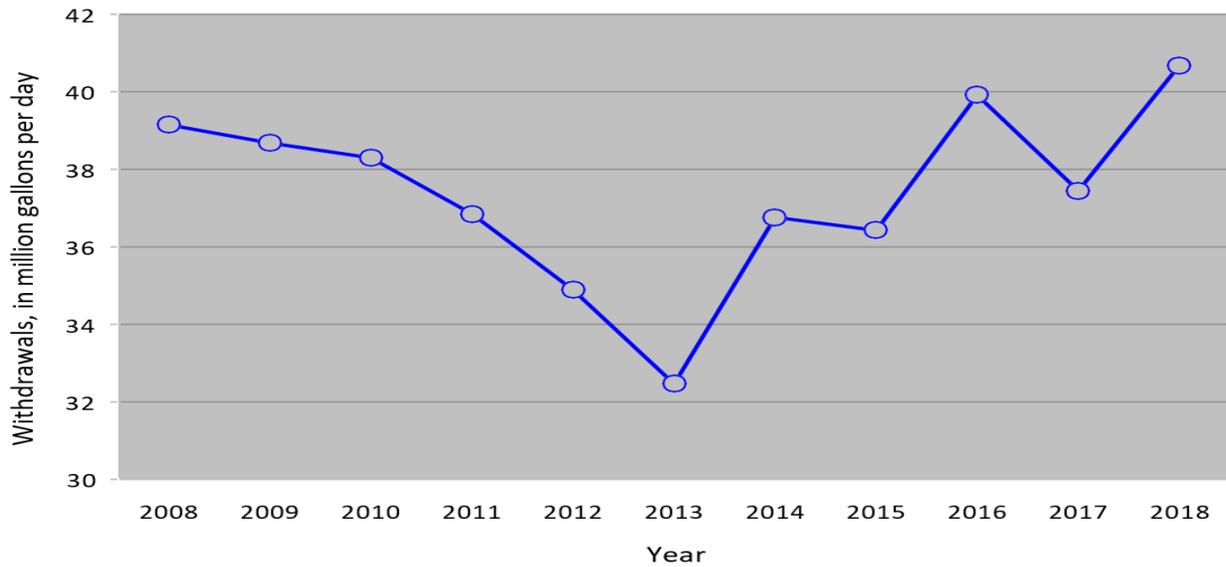
OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
<p>Guide programs toward long term sustainable water use</p>	<ul style="list-style-type: none"> <li data-bbox="558 1077 1349 1255">➤ Under the Water Rights Act, 32 P.S. §§ 636-637, public water supply agencies must obtain water allocation permits from DEP to acquire rights to surface water in Pennsylvania. In its review of the permit applications, DEP considers water conservation and use of existing water supplies. <li data-bbox="558 1297 1349 1476">➤ The Water Resources and Planning Act (Act 220 of 2002), 27 Pa.C.S. §§ 3117; 3120, authorizes DEP to build the capacity of the water use reporting system to develop a program for water users to record their voluntary water conservation and efficiency efforts. <li data-bbox="558 1518 1349 1875">➤ The Pennsylvania Public Utility Commission has provisions in the Pennsylvania 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).

	<p>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>	<p>➤ A DEP regulation, which establishes water withdrawal and use registration, monitoring, recordkeeping, and reporting requirements at 25 Pa. Code §§ 110.201 and 110.301, became effective upon publication in the <i>Pennsylvania Bulletin</i> on November 15, 2008.</p> <p>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 of 2002), 27 Pa.C.S. § 3118.</p>
<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 (27 Pa.C.S. § 3117). A reporting requirement has been imposed in the Commonwealth on all water uses over 10,000 gallons per day on a 30-day average (27 Pa.C.S. § 3118; 25 Pa. Code §§ 110.201 and 110.301), and any water use for oil and gas development in the Commonwealth requires submission of a water management plan (58 Pa.C.S. § 3211(m)).</p>
<p>Develop science, technology, and research</p>	<p>➤ DEP plans to continue to seek the assistance of Pennsylvania Sea Grant, Penn State University and other governmental and non-governmental partners 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>➤ The Water Resources Planning Act (Act 220 of 2002), 27 Pa.C.S. §§ 3117; 3120, authorizes DEP to build the 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 through partnerships within the local and regional communities.</p>

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

- a. In 2020, DEP seeks to continue an initiative that extends conservation and efficiency education and training to public water suppliers in Pennsylvania's Great Lakes Basin and surrounding area. Trainings increase specific system-level understandings of water infrastructure management in addition to helping Pennsylvania meet its conservation and efficiency goals through reductions in leakage and increased efficiencies by public water suppliers.
- b. In 2020, DEP will convene the Great Lakes Water Resources Regional Committee to guide the process of making Lake Erie Basin amendments to Pennsylvania's 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. Progress on the updates can be followed at:
https://www.dep.pa.gov/Business/Water/PlanningConservation/State_Water_Plan/Pages/default.aspx
- c. In 2020, DEP will continue to work towards implementing State Water Planning Program Goal 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 award may be found at:
<http://www.dep.pa.gov/About/Awards/EnvironmentalExcellence/Pages/default.aspx>.
- d. In 2020 through 2022, DEP will dedicate segments of the semi-annual Pennsylvania Lake Erie Environmental Forum (PA LEEF) to water use in Pennsylvania and potential conservation and efficiency program initiatives. PA LEEF is a cooperative program between DEP and Pennsylvania Sea Grant that provides an opportunity for members of the public to learn about Great Lakes activities. More information about future PA LEEF meetings, as well as videos and presentations from previous meetings can be found at:
<http://seagrant.psu.edu/topics/watershed-planning-and-monitoring/projects/pennsylvania-lake-erie-environmental-forum-pa-leef>

Pennsylvania Great Lakes Reported Annual Water Withdrawals: 2008-2018



Data Source: 2018 Pennsylvania Department of Environmental Protection, Chapter 110 Water Use Reporting

Pennsylvania Great Lakes Water Withdrawals, Diversions and Consumptive Use: 2018

Sector	Withdrawals				Diversions		Consumptive Use
	GLSW	OSW	GW	Total	Intrabasin	Interbasin	
Public Water Supply	30	0	2	32	0	0	3
Self-Supply Commercial and Institutional	0	0	0	0	0	0	0
Self-Supply Irrigation	0	0	0	0	0	0	0
Self-Supply Livestock	0	2	2	3	0	0	0
Self-Supply Industrial	5	0	0	5	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	35	2	3	40	0	0	4

In millions of gallons per day; Water Sources: Great Lakes surface water (GLSW), other surface water (OSW) and groundwater (GW); totals may not sum exactly due to rounding.

Data Source: Great Lakes Commission, Annual Report of the Great Lakes Regional Water Use Database Representing 2018 Water Use Data, Table 19a, Pg. 50.

Definition of Terms Used in Table *Pennsylvania Great Lakes Water Withdrawals, Diversions and Consumptive Use: 2017*

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 § 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 § 1.2)

Mgd: million gallons per day

Principal facility: facilities withdrawing in excess of the Great Lakes Charter uniform trigger level of 100,000 gallons per day (380,000 liters per 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)

END OF REPORT