

Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council
Compiled Declarations of Finding

- Illinois
- Indiana
- Michigan
- Minnesota
- New York
- Ohio
- Ontario
- Pennsylvania
- Québec
- Wisconsin

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-1

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
State of Illinois

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

E. While certain provisions of the Compact do not apply to the State of Illinois (see Section 4.14 of the Compact), Illinois is subject to the requirements of Section 4.2 of the Compact, entitled “Water Conservation and Efficiency Programs.”

The Agreement

F. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan,

Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

G. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

H. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

I. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

J. While certain provisions of the Agreement do not apply to the State of Illinois, which is governed by the United States Supreme Court Decree in *Wisconsin, et al., v. Illinois, et al.*, Illinois is subject to the requirements of Article 300 of the Agreement, entitled "Water Management Program Review," and Article 304 of the Agreement, entitled "Water Conservation and Efficiency Program."

II. SUBMISSIONS BY STATE OF ILLINOIS

A. To the Compact Council. The Compact Council has received the State of Illinois' report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the State of Illinois' report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the State of Illinois, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

A. Based on the report submitted by the State of Illinois, the Water Management Program presented by the State of Illinois meets or exceeds the current requirements of the Compact and the Agreement.

Draft—For Discussion Purposes Only
November 6, 2020

- B. Based on the report submitted by the State of Illinois, the Water Conservation and Efficiency Program presented by the State of Illinois meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management and Conservation and Efficiency Programs—
Report to the Compact Council and Regional Body
Dated October 30, 2019



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

JB Pritzker, Governor
Colleen Callahan, Director

Five Year Review of Illinois' Water Management and Conservation and Efficiency Programs - Report to the Compact Council and Regional Body

October 30, 2019

Lead Agencies and Contact Persons:

Illinois Department of Natural Resources, Office of Water Resources
Loren Wobig, Director
Loren.wobig@illinois.gov

Illinois State Water Survey
Illinois Water Inventory Program
Conor Healy, Coordinator
Healy19@illinois.edu

Water Management Program Report

The construction (circa 1900) of the Chicago Area Waterway System (CAWS) resulted in the reversal of the direction of flow of the Chicago and Calumet Rivers away from Lake Michigan. This project created a diverted watershed area of around 673 square miles, leaving a very small (around 75 square miles) area in Illinois that still drains to Lake Michigan. In both the diverted watershed and the watershed that still drains to Lake Michigan in Illinois, Lake Michigan water is the predominant water supply source.

No regional organization, municipality, political subdivision, agency or instrumentality, or any other organization, association or individual desiring to use water from Lake Michigan shall divert or use any such water unless it has previously obtained from the IDNR/OWR a valid allocation permit. In addition, since January 1, 2010, the State Water Survey's water use inventory program has required all high capacity (100,000 gpd or greater) surface intakes and groundwater wells to annually report water withdrawn to the State Water Survey.

Laws and Regulations

A U.S. Supreme Court Decree [Wisconsin v. Illinois, 388 U.S. 426 (1967), as modified, 449 U.S. 48 (1980)] limits Illinois' diversion of Lake Michigan water to an annual average of 3200 cubic feet per second (cfs) or 2.1 billion gallons per day. The Illinois law regulating this diversion is the "LEVEL OF LAKE MICHIGAN ACT" (615 ILCS 50). The Department of Natural Resources, Office of Water Resources (IDNR/OWR) implements this law using its Part 3730 Rules "ALLOCATION OF WATER FROM LAKE MICHIGAN". These rules can be found at <http://www.dnr.illinois.gov/adrules/documents/17-3730.pdf>.

The Illinois State Water Survey (ISWS) operates a surface and groundwater use reporting program. The "WATER USE ACT OF 1983" (525 ILCS 45/1) as amended by Public Act 096-0222, effective January 1, 2010 requires high capacity well owners and high capacity intake owners, defined as a withdrawal in excess of 100,000 gallons per day (gpd) to participate in the State Water Survey's Water Inventory Program.

Together these two statutes and the programs that implement them ensure that Illinois collects all the water withdrawal and diversion data needed to demonstrate compliance with the water use reporting protocols required under the Compact and Agreement (Compact Section 3.4/Agreement Article 300, and Compact Section 4.3/Agreement Article 301). In addition, the Level of Lake Michigan Act and implementing rules provide the necessary authority to establish a water conservation and efficiency program for all diverters of Lake Michigan water (Compact Sections 4.2(2), 4.2(4) and 4.2(5)/Agreement Article 304). Per Compact Section 4.14/Agreement Article 207(paragraphs 10-14), Compact Sections 4.3, 4.8, 4.9, 4.10, 4.11 and 4.13/Agreement Articles 200, 201, 206, 207 and 208 do not apply to Illinois and its' water management program.

Allocation Process

Illinois' Lake Michigan water allocation process consists of the following key elements:

- Applicants evaluate water supply options. Northeastern Illinois has three primary water supply sources – Lake Michigan, deep aquifer groundwater and shallow aquifer groundwater (and very limited other surface water supply). The administrative rules designate applicants who demonstrate that Lake Michigan water is the most cost-effective water supply source as a high priority.
- Evaluate water demands throughout the entire forecast period. This can include the use of a regression equation that utilizes historical water use and three primary variables – population, household size and employment. Applicants also develop their own water demand forecast. The forecast period currently extends out to the year 2030.
- Hold formal allocation hearings for all applicants. This process is administrative in nature, and a formal record is established for all applicants. The IDNR/OWR's decision is based on the record.
- Allocation permits are based on an annual average use for a given year, along with conditions/requirements that promote efficient use of the Lake Michigan water allocated.
- This process includes provisions for adjustments in water allocations. For most public water supplies, the primary data (population and employment projections) used to develop long-term demand forecasts carries a high degree of

uncertainty. The allocation program needs to be flexible to accommodate shifts in water demand as time goes on and conditions change.

- All applicants must submit annual water use audit reports to monitor compliance with allocation limits and track compliance with the Department's standard on water loss.

Lake Michigan water allocation applicants are divided into the following categories:

- **Category IA** – Applicants whose primary water needs are residential, commercial or industrial and whose future or continued use of Lake Michigan water is the most economical source of supply.
- **Category IB** – Applicants whose primary water demands are residential, commercial and industrial and whose use of Lake Michigan water would reduce regional use of the deep aquifer.
- **Category IIA** – Applicants whose primary water demands are for the minimum flows necessary to meet navigation requirements and minimum discretionary dilution flows necessary to maintain the CAWS in a reasonably satisfactory sanitary condition.
- **Category IIB** – Applicants whose water demands are for the minimum discretionary dilution flows necessary to meet water quality standards in the CAWS.
- **Category III** – Applicants whose water demands do not fall into Categories IA, IB, IIA, or IIB. Category III applicants do not qualify for an allocation of water from Lake Michigan.

In determining priorities within Categories IA and IB, the IDNR/OWR considers the following items:

- Adequacy of supply from sources other than Lake Michigan.
- Economics of alternative supplies.
- For new applicants, priority will be given to allocations for domestic purposes.
- For new applicants, the allocation of Lake Michigan water will be made with the goal of reducing the withdrawals from the Cambrian-Ordovician Aquifer (deep aquifer).

In determining priorities within Categories IIA and IIB, the Department will consider the following items:

- A limitation of 220 cubic feet per second for discretionary dilution for water quality purposes in the CAWS.
- The need to meet navigation requirements in the CAWS.
- The minimum discretionary diversion needed to meet water quality standards in the CAWS in a reasonable satisfactory sanitary condition.

The IDNR/OWR will normally make allocations to meet the full water needs of any category as determined by the Department before any water is allocated to applicants in categories of a lower priority.

In determining the amount of water available for allocations to Categories IA, IB, IIA and IIB, the Department will consider the amount of water that must be reserved for storm

water runoff, lockage and leakage and a reserve for future increases in demands and storm water runoff.

Sectors

- 1) **Public Water Supply:** All public water supplies which use Lake Michigan as their water supply are required to have a Lake Michigan water allocation permit, regardless of the amount needed (i.e. there is no minimum threshold). Currently, there are 217 public water supply systems using Lake Michigan water as their source of supply, serving over 7 million Illinois residents. In Calendar Year 2017, public water supply systems in Illinois withdrew and diverted approximately 803 million gallons per day (mgd).

There are no public water supplies within the Lake Michigan watershed utilizing a groundwater supply. If there were, and they withdrew at least 100,000 gpd, they would be required to report this water use to the ISWS.

- 2) **Self-Supply Commercial and Institutional:** Like public water supply, any self-supply commercial or institutional user requires a Lake Michigan water allocation permit if they are diverting Lake Michigan water. Currently there is only one active Lake Michigan water allocation permit in this sector, with an average water use of less than 10,000 gpd. There is also a military facility that withdraws and diverts Lake Michigan water (2017 reported use was 1.864 mgd). As a federal facility which directly withdraws Lake Michigan water, they are not covered by the U.S. Supreme Court Decree and are not included as an Illinois diversion.

There was no reported self-supply commercial/institutional users within the Lake Michigan basin that withdraw groundwater.

- 3) **Self-Supply Irrigation (Lake):** There are no Lake Michigan water allocation permits issued for this water use sector (irrigation water use is not a diversion). The ISWS collects data from one self-supply irrigation water user using Lake Michigan water for irrigation. In 2017 they reported a use of 4,000 gallons/day.

Self-Supply Irrigation (Ground): The ISWS collects data from two self-supply irrigation water users using ground water from the Lake Michigan Basin for irrigation. In 2017 they reported a total use of 52,000 gallons/day.

- 4) **Self-Supply Livestock:** There are no self-supplied livestock facilities in the Lake Michigan watershed either utilizing groundwater or Lake Michigan water.
- 5) **Self-Supply Industrial:** Requires a Lake Michigan water allocation permit if they are diverting Lake Michigan water. There is only 1 permit issued in this sector. They reported a 2017 diversion of 0.570 million gallons per day (mgd).

The ISWS lists 3 industries withdrawing Lake Michigan water for cooling/consumptive use. Total withdrawal in 2017 was 27.975 mgd.

- 6) **Self-Supply Thermoelectric Power Production (once through cooling):** This water use sector, by definition, does not result in a diversion; hence no Lake Michigan water allocation permit is required. The ISWS data base list includes 4 power

facilities that withdraw Lake Michigan water for once-through cooling. Total withdrawal in 2017 was 460.675 mgd.

- 7) Self-Supply Thermoelectric Power Production (recirculated cooling): There are no self-supply thermoelectric power production facilities that utilize recirculated cooling in the Lake Michigan watershed.
- 8) Off-Stream Hydroelectric Power Production: There are no off-stream hydroelectric facilities within the Lake Michigan drainage basin in Illinois.
- 9) In-Stream Hydroelectric Power Production: There are no in-stream hydroelectric facilities within the Lake Michigan drainage basin in Illinois.
- 10) Other: The Metropolitan Water Reclamation District of Greater Chicago has a Lake Michigan water allocation to divert Lake Michigan water to maintain navigation and water quality in the CAWS. Water is diverted into the CAWS at three lakefront locations. In 2017 a total of 179.667 mgd was withdrawn and diverted into the CAWS for these purposes. Water is also diverted into the CAWS to operate two lakefront locks. These locks are operated by the U.S. Army Corps of Engineers and thus don't have a Lake Michigan water allocation permit. However, this water is included in Illinois' allowable diversion. In 2017 the amount of Lake Michigan water diverted to operate the two lakefront locks was 52.993 mgd.

Reporting and Database

All Lake Michigan water allocation permittees are required to submit annual reports (LMO-2 Report) accounting for how Lake Michigan water is used within a public water supply system. In addition, all permittees with an intake structure on Lake Michigan or who are the first Illinois user of water diverted from Lake Michigan outside Illinois must report their water use both annually and monthly (LMO-3 Report) to the IDNR/OWR. The Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) submits monthly (LMO-6) reports for Lake Michigan water they divert for maintaining the Sanitary and Ship Canal. The IDNR/OWR maintains a database which stores this information going back to 1989 and has hard copies going back to the 1970s. The IDNR/OWR produces an annual report which summarizes water use by all permittees. This is distributed to all Lake Michigan water allocation holders with an annual newsletter. All pumpage numbers provided on the LMO-2 and LMO-3 reports are metered numbers. The MWRDGC diverts water into the Sanitary and Ship Canal using sluice gates and by opening the Chicago River Controlling Works and the O'Brien Locks. Therefore, the numbers they report on their LMO-6 reports are not metered but calculated.

For many years, the ISWS has maintained a voluntary reporting program for surface and ground water use. On January 1, 2010, that program became mandatory for all surface and groundwater withdrawals averaging 100,000 gallons/day or greater. The ISWS has its information in a database.

Initiatives

The ISWS and the IDNR/OWR have also been involved with the Chicago Metropolitan Agency for Planning in their ongoing work on the “Northeastern Illinois Regional Water Supply Plan”.

Water Conservation and Efficiency Program Review

A. 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.

B. Program Objectives

Illinois’ first report to the Compact Council and Regional Body (dated December 8, 2009) reviewed the water conservation requirements that all domestic users of Lake Michigan water must comply with as a condition of receiving a Lake Michigan water allocation permit. 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.

C. Program Activity – Updated Administrative Rules

On November 18, 2014 the Department's updated Part 3730 administrative rules "ALLOCATION OF WATER FROM LAKE MICHIGAN" took effect.

The updated Lake Michigan water allocation rules will improve Illinois' water conservation and efficiency program. Here is a very brief summary of the substantive changes to the rules.

- Since 1977 the Department has had an 'Unaccounted-For-Flow' standard for all domestic Lake Michigan water supplies. This standard will be replaced with a 'Non-Revenue Water' standard, which will allow public water supplies to utilize the water audit methodology recommended by the American Water Works Association (AWWA M36 water audit methodology), and to better track the value of water loss.
- Water systems not in compliance with the non-revenue standard will be required to prepare and submit a water system improvement plan.
- Local/Municipal plumbing codes/ordinances will be updated to require that new and replacement plumbing fixtures be a labeled WaterSense product.
- The classification system has been revised so that a water applicant that utilizes deep aquifer groundwater is a higher priority use than the use of water from Lake Michigan to meet navigation requirements and minimum discretionary dilution flows necessary to maintain the CAWS in a reasonably satisfactory sanitary condition.
- Additional guidelines for lawn sprinkling have also been included, as well as recommendations for sub-metering in new multi-family building construction where practicable and feasible and setting water rates to reflect full cost pricing.

D. Program Activity – Develop Linkages with other Conservation Organizations

Over the past 5 years the Department's has developed several new partnerships with other groups/organizations to further our water conservation program efforts. These include:

- Becoming a USEPA 'WaterSense Partner' and updating our rules to require the use of 'Water Sense' labeled plumbing fixtures in our standard for water efficient plumbing fixtures.
- Working with regional organizations such as the Chicago Metropolitan Agency for Planning, the Northwest Water Planning Alliance, the Northeastern Illinois Regional Water Supply Planning Group, the Center for Neighborhood Technology and the Metropolitan Planning Council to further our outreach to communities in the areas of water supply planning, drought management, water

- loss control and sustainable water resource management.
- Work with the AWWA - Illinois Section to develop and hold water loss control workshops in Northeast Illinois.

E. Program Activity – Water Rate Survey

The Department recommends that Lake Michigan water providers adopt water rate structures that 1) are based on metered water use, 2) discourage excessive water use, and 3) reflect the full cost of water, including the long-term cost to properly maintain and operate the water supply distribution system in such a manner as to keep system losses to a minimum.

Our long-term practice has been to undertake a water rate survey of all Lake Michigan water providers every 5 years. Our last water rate survey was published in 2015. Our next 5-year water rate survey will be in 2020.

F. Program Activity – Water Use and Water Loss Monitoring

Throughout the last 5 years we have continued to collect, analyze and regulate the reported water loss of all our domestic Lake Michigan water suppliers. In Water Year 2015 (October 1, 2014 – September 30, 2015) the Department modified its LMO-2 form to reflect the AWWA's Water Loss Audit Software which measures water loss in the form of Non-Revenue Water (NRW). Since Water Year (WY) 2015 the Department's regulatory threshold for NRW to Water Supplied is 12%, reducing to 10% in WY 2019. All Category IA and IB permittees that exceed the Department's NRW threshold are required to submit a Water System Improvement Plan that outlines actions the permittee plans to undertake, along with a timeframe, to reduce NRW to less than the Department's threshold. In WY 2017 93 permittees had a percent NRW at or above 12%. In WY 2017, the average NRW in the Lake Michigan water service region was about 12.8%.

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

The total amount of Lake Michigan water diverted into the Chicago Waterway System for discretionary diversion and navigation makeup flow was 176.493 cubic feet per second (cfs) in water year 2017. At the end of the 2017 water year, the five-year running average of these two components of direct diversion stands at 240.707, or 64.294 cfs below the combined allocation (305 cfs) for these two components of direct diversion. The Metropolitan Water Reclamation District of Greater Chicago (MWRD) holds the Lake Michigan water allocation for both discretionary diversion and navigation makeup. In February of 2018 MWRD's combined allocation for discretionary diversion and navigation makeup was reduced to 255 cfs.

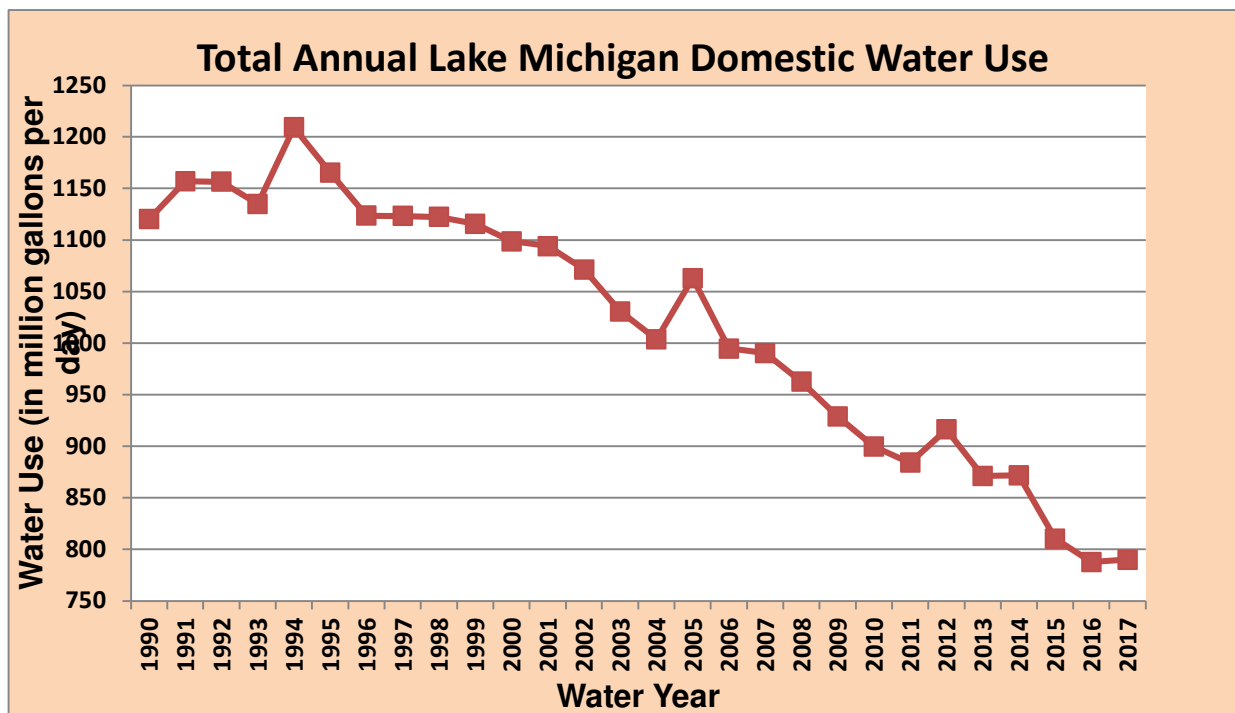
The other primary use of Lake Michigan water diverted directly into the Chicago Waterway System is to operate the navigation locks at the mouth of the Chicago River and on the Calumet River. Both lock facilities are operated and maintained by the U.S. Army Corps of Engineers. Illinois does not have any control over the amount of water diverted for lockage or for leakage through these structures, 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.

H. 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 the year 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 will begin a new comprehensive water allocation review in mid-2019. This re-allocation will extend allocations out to at least the year 2050.

Over the last 5 years, the Department has issued a total of four new water allocations.

Water use summaries for the 2010 through 2017 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). In Water Year 2017 total domestic Lake Michigan water use was 790 million gallons per day (mgd).



This table clearly shows the long-term decline in total domestic use of Lake Michigan water. While the drought years of 1994, 2005 and 2012 are clearly visible, this downward trend in water use that has occurred over the last 20 years is significant, a 330 mgd reduction since 1992. In 2017 the annual precipitation was 34.03 inches, 3.53 inches below 2016's 37.56 inches.

I. Project Activity - Water Infrastructure

In WY 2017, the City of Chicago continued to pursue several initiatives to upgrade their water, wastewater and stormwater infrastructure. In 2016 the City of Chicago reported the installation of approximately 15,000 new water meters and proposes to replace an additional 15,000 meters in 2018. Since the inception of Chicago's Volunteer Metering Program in 2009 the City has installed over 118,000 new water meters. This is a great accomplishment and shows Chicago's commitment to conserving Lake Michigan water. In the last 10 years Chicago has terminated 24,749 unused water services (1,892 in 2017) and replaced 647 miles of old water main (90 miles in 2017).

Several other Lake Michigan communities have also developed or are working on conservation/sustainability initiatives. The northeastern Illinois region has several organizations who work with local 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.

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-2

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
State of Indiana

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs: (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

The Agreement

E. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

F. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

G. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs: (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

H. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

II. SUBMISSIONS BY STATE OF INDIANA

A. To the Compact Council. The Compact Council has received the State of Indiana's report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the State of Indiana's report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the State of Indiana, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

- A. Based on the report submitted by the State of Indiana, the Water Management Program presented by the State of Indiana meets or exceeds the current requirements of the Compact and the Agreement.
- B. Based on the report submitted by the State of Indiana, the Water Conservation and Efficiency Program presented by the State of Indiana meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

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November 6, 2020

ATTACHMENT A

Water Management Program Review
State of Indiana
December 20, 2019

State of Indiana
Five-Year Water Management and Conservation and Efficiency
Program Review
December 20, 2019

1. Lead Agency and Contact Persons

Indiana Department of Natural Resources; Chris Smith, Deputy Director, IDNR.

2. Implementing Laws, Rules, Regulations and Policies

The following statutory provisions, Rules and Policies are applicable to the Water Management and Conservation and Efficiency Programs in the State of Indiana:

- [Great Lakes-St. Lawrence River Basin Water Resources Compact under IC 14-25-15](#): The State of Indiana's implementation of the Interstate agreement on the use of water resources in the Great Lakes-St Lawrence River Basin.
- [Rule 312 IAC 6.2](#): Assists with the implementation of the Great Lakes-St. Lawrence River Basin Water Resources Compact (IC 14-25-15) for the registration and permitting of water withdrawal facilities; a voluntary conservation and efficiency program for water withdrawal facilities; and mandatory conservation and efficiency programs for new and increased withdrawals, diversions and consumptive uses. Rule 312 IAC 6.2 is applicable to the Water Management and Regulation provisions set forth in Article 4 of the Compact.
- [Water Resource Management Act under IC 14-25-7](#): Section 13 requires that an inventory of the water resource in Indiana be conducted and include an assessment of the following: 1) The capabilities of streams to support instream and withdrawal uses and of aquifers to support withdrawal uses; 2) Low stream flow characteristics; 3) Existing uses and projections of beneficial use requirements; 4) The potential in watersheds for managing flood water for beneficial uses; 5) Potential sources and amounts of surplus water for transfers; 6) Other assessment and information considered necessary to properly define water resource availability. Section 14 Allows for the determination and establishment of minimum flows of streams and minimum level of ground water in aquifers. Section 15 requires that every person who owns a significant water withdrawal facility (SWWF) shall register it within three (3) months after the facility is completed. A "significant water withdrawal facility" is defined in the act to mean "the water withdrawal facilities of a person that, in the aggregate from all sources and by all methods, has the capability of withdrawing more than one hundred thousand (100,000) gallons of ground water, surface water, or ground and surface water combined in one (1) day". Owners of a SWWF must also report annual water use within three (3) months after the end of each calendar year. Approved methods of measuring the amount of water withdrawn by a SWWF are specified in the [Nonrule Policy Document Information Bulletin #40](#). Water withdrawals from temporary construction dewatering operations must also be reported in

accordance with IC 14-25-7. IC 14-25-7 is applicable to the Water Management and Regulation provisions set forth in Sections 4.1 and 4.2 of the Compact.

- Sale of Water ([IC 14-25-2](#) and [Rule 312 IAC 6.3](#)): Conservation planning required in application for the sale of water from reservoir financed fully or in part by the State. IC 14-25-2 and 312 IAC 6.3 are applicable to the Water Management and Regulation provisions set forth in Section 4.2 of the Compact.
- Emergency Regulation of Ground Water Rights ([IC 14-25-4](#) and [Rule 312 IAC 12](#)): Owners of small capacity water wells are protected against the impacts of high capacity ground-water pumpage if it substantially lowers water levels, resulting in the failure of a small capacity well. Restrictions of high capacity pumping can occur when it is believed that discharge exceeds the recharge capability of the source aquifer. IC 14-25-4 and 312 IAC 12 are applicable to the Water Management and Regulation provisions set forth in Section 4.1 of the Compact.
- Emergency Regulation of Surface Water Rights ([IC 14-25-5](#) and [Rule 312 IAC 11.5](#)): Freshwater lake owners are protected against the impacts of high capacity pumping if it substantially lowers the level of the freshwater lake, resulting in significant environmental harm to the lake or adjacent property. Restriction of high capacity pumping can be required in order to restore lake level. IC 14-25-5 and 312 IAC 11.5 are applicable to the Water Management and Regulation provisions set forth in Section 4.1 of the Compact.
- Water Well Drillers and Pump Installers Licensing ([IC 25-39](#) and [Rule 312 IAC 13](#)): Requires licensing of water well drillers and water well pump installers and the submittal of water well records providing information regarding geology and ground water availability. Water well records are made available to the public on the IDNR, Division of Water webpage. IC 25-39 and 312 IAC 13 are applicable to the Water Management and Regulation provisions set forth in Section 4.1 of the Compact.
- Indiana's Water Management Policy: Developed by Indiana's Water Shortage Task Force under IC 14-25-14 (since repealed) declaring that *"Indiana's water resources are public goods that generate benefits for all citizens of the State. The wise use of water through environmentally sound and economically feasible water management practices is essential to maximize the benefits obtained from water resources and sustain them for future generations. To achieve these goals, Indiana promotes the following:*
 - 1) *Public Education and outreach that identifies appropriate water management practices and water conservation methods;*
 - 2) *Appropriate water pricing and incentives;*
 - 3) *Identification and dissemination of water management practices, such as demand and supply analyses, that will increase water use efficiency;*

- 4) *The application and sharing of available science and research regarding water management, water conservation, and water use efficiency; and*
- 5) *Funding of a water management and water use efficiency program by user fees established by legislative directive.*

The State of Indiana's Water Management Policy is applicable to the Water Management and Regulation provisions set forth in Section 4.2 of the Compact.

Water Management Program Report

1) Summary Description of the State of Indiana's Water Management Program Scope and Thresholds

- [Reports on the Water Resource Availability in the Great Lakes Basin within the State of Indiana](#) (St. Joseph River Basin-1987; Lake Michigan River Basin-1994; Maumee River Basin-1996) have been completed by the IDNR, Division of Water. The reports were completed in accordance with the Water Resource Management Act (IC 14-25-7) requiring that an inventory of the water resource (ground water and surface water) in Indiana be conducted and include an assessment of the following: 1) The capabilities of streams to support instream and withdrawal uses and of aquifers to support withdrawal uses; 2) Low stream flow characteristics; 3) Existing uses and projections of beneficial use requirements; 4) The potential in watersheds for managing flood water for beneficial uses; 5) Potential sources and amounts of surplus water for transfers; 6) Other assessment and information considered necessary to properly define water resource availability. Section 14 Allows for the determination and establishment of minimum flows of streams and minimum level of ground water in aquifers.
- [Maps of Unconsolidated and Consolidated Aquifer Systems](#) of all counties located within the Great Lakes Basin in Indiana have been completed by the Department of Natural Resource, Division of Water, and are available on the IDNR webpage.
- [Maps of the Potentiometric Surface of Bedrock and Unconsolidated Aquifers](#) of all counties located in the Great Lakes Basin in Indiana have been completed by the Department of Natural Resources, Division of Water, and are available on the IDNR webpage.
 - a. [Indiana's Water Shortage Plan](#) (updated in 2009 by Water Shortage Task Force) provides an effective and systematic plan to assess and manage the State's water resources during a water shortage or potential water shortage to respond, to the maximum extent practicable, to the needs of its water users while protecting its environment.
- [Significant Water Withdrawal Facilities](#) (SWWF) shall be registered within three (3) months after the facility is completed in accordance with IC 14-25-7. Owners of a SWWF must also report annual water use within three (3) months after the

end of each calendar year. Approved methods of measuring the amount of water withdrawn by a SWWF are specified in the Nonrule Policy Document Information Bulletin #40. Water withdrawals from temporary construction dewatering operations must also be reported. Water use data, identified as ground water or surface water, is reported in the following categories:

- Agricultural and Irrigation (IR)—Crop and golf course irrigation, farm field drainage, agricultural services, etc;
 - Industry (IN)—Process water, cooling water, mineral extraction (except coal), quarry dewatering, waste assimilation;
 - Public Supply (PS)—Public water supply, drinking water and sanitary facilities;
 - Energy Production (EP)—Power generation, cooling water, coal mining, geothermal, oil recovery;
 - Rural Use (RU)—Watering of livestock, barn facilities, fisheries, etc.; and
 - Miscellaneous (MI)—Fire protection, amusement parks, construction dewatering, dust control, pollution abatement, hydrostatic testing, recreational field drainage, etc.
- In accordance with Section 7 of Indiana’s implementation of the Great Lakes-St. Lawrence River Basin Water Resources Compact ([IC 14-25-15](#)), a person must obtain a permit from the IDNR for a daily withdrawal in excess of any of the following, calculated on average over any 90 day period: 1) five million (5,000,000) gallons from Lake Michigan surface water; 2) one hundred thousand (100,000) gallons from a salmonid stream; or 3) one million (1,000,000) gallons from any other surface water or groundwater source. Section 8 of the statute provides an exemption from the permit requirements if a withdrawal does not exceed the amount of baseline status determination.
 - [Rule 312 IAC 6.2](#) assists with the implementation of the Great Lakes-St. Lawrence River Basin Water Resources Compact (IC 14-25-15) for the registration and permitting of water withdrawal facilities; a voluntary conservation and efficiency program for water withdrawal facilities; and mandatory conservation and efficiency programs for new and increased withdrawals; ; an exception to the prohibition on diversions for a straddling community, a community within a straddling county, and an intra-basin transfer; and the regulation of consumptive uses.
- 2) Water Withdrawal Management**
- [Significant Water Withdrawal Facilities](#) (SWWF) shall be registered within three (3) months after the facility is completed in accordance with IC 14-25-7. Owners of a SWWF must also report annual water use within three (3) months after the end of each calendar year. Approved methods of measuring the amount of water withdrawn by a SWWF are specified in the Nonrule Policy Document Information Bulletin #40. Water withdrawals from temporary construction

dewatering operations must also be reported. Water use data, identified as ground water or surface water, is reported in the following categories:

- Agricultural and Irrigation (IR)—Crop and golf course irrigation, farm field drainage, agricultural services, etc;
- Industry (IN)—Process water, cooling water, mineral extraction (except coal), quarry dewatering, waste assimilation;
- Public Supply (PS)—Public water supply, drinking water and sanitary facilities;
- Energy Production (EP)—Power generation, cooling water, coal mining, geothermal, oil recovery;
- Rural Use (RU)—Watering of livestock, barn facilities, fisheries, etc.; and
- Miscellaneous (MI)—Fire protection, amusement parks, construction dewatering, dust control, pollution abatement, hydrostatic testing, recreational field drainage, etc.

3) Application of the Decision Making and Exception Standards for Withdrawals, Consumptive Uses and Diversions

- [Rule 312 IAC 6.2](#) assists with the implementation of the Great Lakes-St. Lawrence River Basin Water Resources Compact (IC 14-25-15) for the registration and permitting of water withdrawal facilities; a voluntary conservation and efficiency program for water withdrawal facilities; and mandatory conservation and efficiency programs for new and increased withdrawals; an exception to the prohibition on diversions for a straddling community, a community within a straddling county, and an intra-basin transfer; and the regulation of consumptive uses. Provisions of 312 IAC 6.2 provide for compliance to the Decision Making and Exception Standards specified for new or increased withdrawals and consumptive uses under the Compact.
- Section 15 of [IC 14-25-7](#) requires that every person who owns a significant water withdrawal facility (SWWF) shall register it within three (3) months after the facility is completed. A "significant water withdrawal facility" is defined in the act to mean "the water withdrawal facilities of a person that, in the aggregate from all sources and by all methods, has the capability of withdrawing more than one hundred thousand (100,000) gallons of ground water, surface water, or ground and surface water combined in one (1) day". Owners of a SWWF must also report annual water use within three (3) months after the end of each calendar year. Previous three years of reported SWWF annual water use available for review at <http://www.in.gov/dnr/water/4841.htm>.

4) Overview of the State of Indiana's Reporting and Database of Withdrawals, Consumptive Uses and Diversions

Annual reports of withdrawals are required from each SWWF in accordance with [IC 14-25-7-15](#). The IDNR provides hard copy report forms to each facility previously reporting by hard copy, and provides email notification to facilities previously submitting data electronically. Annual water use data must be

submitted by March 31st of the following year. Approved methods of measuring withdrawals are specified in NRC Bulletin #40. Upon receipt by hard copy or electronic submittal, annual water use reports are reviewed for accuracy and subsequently entered into a database. Digital data is reviewed by edit reports and corrections are made when necessary. Previous three years of reported SWWF annual water use available for review at <http://www.in.gov/dnr/water/4841.htm>.

5) Water Withdrawal Application Form

- [Significant Water Withdrawal Facilities](#) (SWWF) shall be [registered](#) within three (3) months after the facility is completed in accordance with IC 14-25-7. Owners of a SWWF must also report annual water use within three (3) months after the end of each calendar year. Approved methods of measuring the amount of water withdrawn by a SWWF are specified in the Nonrule Policy Document [Information Bulletin #40](#). Water withdrawals from [temporary construction dewatering](#) operations must also be reported.

6) State of Indiana's Initiatives to Support an Improved Scientific Understanding of the Waters of the Great Lakes Basin

- [Maps of Unconsolidated and Consolidated Aquifer Systems](#) of all counties located within the Great Lakes Basin in Indiana have been completed by the IDNR, Division of Water, and available on the Division of Water's webpage.
- [Maps of the Potentiometric Surface of Bedrock and Unconsolidated Aquifers](#) of all counties located in the Great Lakes Basin in Indiana have been completed by the Department of Natural Resources, Division of Water, and are available on the IDNR webpage.
- [Reports on the Water Resource Availability in the Great Lakes Basin within the State of Indiana](#) (St. Joseph River Basin-1987; Lake Michigan River Basin-1994; Maumee River Basin-1996) have been completed by the IDNR, Division of Water. The reports were completed in accordance with the Water Resource Management Act (IC 14-25-7) requiring that an inventory of the water resource (ground water and surface water) in Indiana be conducted and include an assessment of the following: 1) The capabilities of streams to support instream and withdrawal uses and of aquifers to support withdrawal uses; 2) Low stream flow characteristics; 3) Existing uses and projections of beneficial use requirements; 4) The potential in watersheds for managing flood water for beneficial uses; 5) Potential sources and amounts of surplus water for transfers; 6) Other assessment and information considered necessary to properly define water resource availability. Section 14 allows for the determination and establishment of minimum flows of streams and minimum level of ground water in aquifers.
- [Indiana's Voluntary Monitoring Network](#) authorized under HEA 319 in 2015 currently includes 58 ground water monitoring wells throughout the state, and 11 wells located within the Great Lakes Basin in Indiana. The monitoring well

network is maintained and operated by the IDNR, Division of Water with water level data posted by the USGS. Siting of VMN observation wells based upon past water rights issues or the potential for ground water discharge to exceed recharge capability of source aquifer.

Water Conservation and Efficiency Program Report

1) Status of Water Conservation and Efficiency Goals and Objectives

The State of Indiana's Great Lakes Basin water conservation and efficiency goals are consistent with the goals and objectives of the Compact, and are provided by Section 4.2.1 of Indiana's implementation of the Compact under IC 14-25-15 [www.in.gov/dnr/water/5216.htm] that includes the following basin-wide goals:

- a. Ensure the improvement of the waters and water dependent natural resources of the Basin;
- b. Protect and restore the hydrologic and ecosystem integrity of the Basin;
- c. Retain the quantity of surface water and groundwater in the Basin;
- d. Ensure sustainable use of waters of the Basin; and
- e. Promote the efficiency of use and reduce losses and waste of water in the Basin.

The State of Indiana's water conservation and efficiency objectives are consistent with Indiana's Water Management Guidelines that "*recognizes that Indiana's abundant resources are a public good for all citizens of the State, and promotes the efficient use of this water by encouraging environmentally sound and economically feasible conservation measures to ensure availability for future generations*".

2) Water Conservation and Efficiency Program Overview;

Also Available at: www.in.gov/dnr/water/6364.htm

The following statutory provisions applicable to the Water Conservation and Efficiency program in the State of Indiana are as follows:

- Great Lakes-St. Lawrence River Basin Water Resources Compact (IC 14-25-15 and Rule 312 IAC 6.2) - Interstate agreement on the use of water resources in the Great Lakes-St Lawrence River Basin.
- Indiana legislation for Voluntary Conservation and Efficiency (14-25-15-5) - Enacts and implements the Compact, and calls for the Indiana Natural Resources Commission to adopt rules that implement a voluntary water conservation and efficiency program and water conservation and efficiency planning required as part of a permit application for a new or increase in withdrawal or consumptive use in the Great Lakes Basin. Rule 312 IAC 6.2 that assists with the implementation of the Compact for water conservation and efficiency programs became effective September 3, 2014 and may be found here: www.in.gov/dnr/water/5216.htm]

- Significant Water Withdrawal Facility Registration (IC 14-25-7-15) - Requires that an inventory of significant uses of water withdrawn from the surface or ground be taken and maintained. Section 15 of the act requires that every person who owns a significant water withdrawal facility (SWWF) shall register it within three (3) months after the facility is completed. A "significant water withdrawal facility" is defined in the act to mean "the water withdrawal facilities of a person that, in the aggregate from all sources and by all methods, has the capability of withdrawing more than one hundred thousand (100,000) gallons of ground water, surface water, or ground and surface water combined in one (1) day". Owners of a SWWF must also report annual water use within three (3) months after the end of each calendar year. Approved methods of measuring the amount of water withdrawn by a SWWF are specified in the Non-Rule Policy Document Information Bulletin #40. Water withdrawals from temporary construction dewatering operations must also be reported in accordance with IC 14-25-7. [www.in.gov/dnr/water/4847.htm]
- Sale of Water (IC 14-25-2 and Rule 312 IAC 6.3) - Conservation planning is required in the application for the sale of water from any reservoir financed fully or in part by the State. [<http://iga.in.gov/legislative/laws/2017/ic/titles/001>]
- Emergency Regulation of Ground Water Rights (IC 14-25-4 and Rule 312 IAC 12) - Owners of small capacity water wells are protected against the impacts of high capacity ground-water pumping if it substantially lowers water levels, resulting in the failure of a small capacity well. Restrictions of high capacity pumping can occur when it is believed that discharge exceeds the recharge capability of the source aquifer. [www.in.gov/dnr/water/4849.htm]
- Emergency Regulation of Surface Water Rights (IC 14-25-5 and Rule 312 IAC 11.5) - Freshwater lake owners are protected against the impacts of high capacity pumping if it substantially lowers the level of the freshwater lake, resulting in significant environmental harm to the lake or adjacent property. Restriction of high capacity pumping can be required in order to restore lake level. [www.in.gov/dnr/water/4840.htm]
- Water Shortage Plan (Authorized by IC 14-25-14, enacted in 2006) - Ten-member Water Shortage Task Force was charged with updating and implementing Indiana's Water Shortage Plan that provides an effective and systematic plan to assess and manage the State's water resources during a water shortage or potential water shortage to respond, to the maximum extent practicable, to the needs of its water users while protecting the environment. Indiana's Water Shortage Plan update was completed in 2009. [www.in.gov/dnr/water/files/watshplan.pdf]

3) Promotion of Environmentally Sound and Economically Feasible Water Conservation Measures, Consistent with Regional Objectives.

- **Measures that guide programs toward long-term sustainable use.**
 - Statewide registration and water use reporting program under IC 14-25-7-15 of over 4,100 facilities under the water use categories of Energy Production, Industrial, Irrigation, Public Water Supply, Rural and Miscellaneous. [www.in.gov/dnr/water/4847.htm]
 - Detailed river basin studies for the Indiana portion of the Great Lakes Basin (Lake Michigan Region, St. Joseph River Basin, Maumee River Basin) by the Indiana Department of Natural Resources, Division of Water. These studies provide detailed information regarding the availability, development, protection and projected use of ground water and surface water resources of each river basin. [www.in.gov/dnr/water/2454.htm]
 - Best Management Practices (BMPs) for each water use category have been developed and distributed to all registered SWWFs within the Great Lakes Basin and statewide. The identification of applicable BMPs was completed with the use of industry standards and input from SWWF representatives, area water user groups, environmental groups, private sector water management firms, academia, and area planning commissions. [www.in.gov/dnr/water/6364.htm]
 - The Water Management Planning Framework is a live, fill in the blank style document that was drafted for use by each of the water use categories in the SWWF registration program. The document is available online to assist water users with their conservation planning efforts, especially those registered as SWWFs. The framework is directed to those facilities that may not currently have conservation strategies as part of daily operating procedures as a guidance document to help develop those strategies. It encourages facilities to more readily develop & implement conservation and efficiency programs on a voluntary basis by walking them through the water audit process to identify areas where potential water savings exist. The document is also intended to aid in development fundamental conservation and efficiency strategies, and the selection of applicable BMPs. [www.in.gov/dnr/water/6364.htm]
 - Provision of a summary of the BMP checklist survey results to all SWWFs located in the Great Lakes Basin, as well as statewide. The survey's purpose was to: 1) to gather data on conservation and efficiency efforts of all Indiana SWWFs; and 2) share information on BMPs, water management practices, new technology, and other pertinent topics relevant to conservation and efficiency efforts. [www.in.gov/dnr/water/6364.htm]

- A 2011 survey sought to acquire more specific information about ‘planned’ conservation and efficiency within a facility. Since education was the most commonly indicated future or ‘planned’ strategy by SWWFs who responded to the 2010 survey, it was relevant to find out how these educational strategies would be implemented. The survey also asked facility representatives to indicate what was felt to be a reasonable voluntary reduction goal, and to identify any previously achieved reduction in water use resulting from implementation of conservation and efficiency strategies or BMPs. Email addresses were also requested as part of the responses to improve communication efficiency with registered facilities. The mailer also included information on the implementation of LSA Document # 13-532(E) (the original rule package) regarding the permitting of water withdrawals within the Great Lakes Basin that exceed the established thresholds set forth in IC 14-25-15-7.
 - 2012 water use mailing provided summary of results of previous year’s survey to registered SWWFs, both in the Indiana portion of the Great Lakes Basin as well as Statewide, on the progress toward permanent rule adoption of LSA Document #13-335(F) regarding the permitting of water withdrawals and on voluntary water conservation and efficiency programming within the Great Lakes Basin that exceed the established thresholds set forth in IC 14-25-15-7. [www.in.gov/dnr/water/6364.htm]
 - The 2013 water use mailing helped to gather data on current conservation and efficiency practices by SWWFs. An electronic version of the checklist survey was made available online to gather a comparison dataset to the results from the original surveys, and to gather data on status of the previously ‘planned’ conservation and efficiency BMPs utilized by SWWFs. The data analysis provided a means to identify trends existing among the voluntary participants. [www.in.gov/dnr/water/6364.htm]
 - In 2016 the annual SWWF water use mailing was utilized to provide a newsletter specific to water use type that included a list of Best Management Practices to continue to draw attention to potential new strategies available to facilities.
- **Promote the efficient use and conservation of water.**
 - Implementation of educational mailings to registered SWWFs to communicate the importance of water use efficiency and conservation practices. The educational mailings are ongoing, utilizing the long established correspondence for SWWF annual water use reporting as a vehicle for providing information on conservation and efficiency.

- Encouraging use of universal water metering programs, including water audits, to identify leaks, waste, and opportunities for water savings in all educational items.
- *Indiana's Water Management Guidelines* recognize that Indiana's abundant water resources are a public good for all citizens of the State, and promote the efficient use of this water by encouraging environmentally sound and economically feasible conservation measures to ensure availability for future generations.
[www.in.gov/dnr/water/6364.htm]
- *Development of a Statewide Water Management Plan* that promotes improvements in water management practices, such as watering lawns, gardens, and farm fields efficiently, using water efficient fixtures in homes and businesses, using drought resistant landscape practices, and using reclaimed or lower quality water for irrigation, industrial, and other appropriate non-potable uses. [www.in.gov/dnr/water/6364.htm]
- *Suggested Model Ordinance*—The Model Conservation Ordinance describes a suite of measures including good water management practices at all times, potential price increases for water during times of shortage, and enforced rationing during periods of extreme water shortage. While some of the measures in the ordinance may not apply in all situations or locations, the purpose of the measures is to encourage wise use of the resource and to minimize the impacts of seasonal or short-term water shortages.
[http://www.in.gov/dnr/water/files/Model_ordinance_Final_Draft_7-2-07.doc]
- Conservation and efficiency programming is required as part of a permit application for any new or increase in withdrawals or diversions under the Compact by Rule 312 IAC 6.2.
- Promotion of water conservation and efficiency utilizing the EPA *Water Sense* and *We're for Water* programming at area water related conferences, seminars, and for the three weeks of the Indiana State Fair where a substantial number of fairgoers picked up conservation materials at the Division of Water display. Reported attendance for the Indiana State Fair was approximately 730,000 in 2016, and 907,000 in 2017.
[www.epa.gov/watersense/]
- Promotion of water conservation and efficiency under the GLC in partnership with area agricultural extension offices and county Soil and Water Conservation Districts. Meetings take place particularly in the Northern & Northwestern regions of the State where predominant use of water is for agricultural purposes. Meetings are typically attended by area

irrigators, potential irrigators, members of the public and county officials.
[<http://msue.anr.msu.edu/program/info/irrigation>]

- **Develop water conservation education programs and information sharing.**
 - ‘Water Conservation and Efficiency Clearinghouse’ available online [www.in.gov/dnr/water/6364.htm] which outlines the historical process of implementation of the Great Lakes and St. Lawrence River Basin Water Resources Compact, corresponding permit rule and conservation and efficiency rule development, and subsequent posting of permanent rules once adopted.
 - Educational and printable material available and made conveniently accessible to public, water users, SWWFs, and various stakeholders on Indiana’s water conservation and efficiency clearinghouse website.
 - Significant Water Withdrawal Facility (SWWF) data is accessible from and linked to conservation and efficiency clearinghouse. [www.in.gov/dnr/water/4841.htm]
 - Website clearinghouse includes links to other conservation programs, including the EPA’s *Water Sense* program. [www.in.gov/dnr/water/6364.htm]
 - Indiana registered SWWFs surveyed on current water conservation and efficiency efforts and water management practices and those that are planned for implementation in the future. Included with the 2011 annual water use report form, the survey received a 54% response rate from facilities within the Great Lakes Basin. (Acquired data accessible from website clearinghouse.)
 - The program continues to build on the success of surveys and communications associated with annual water use reporting. Use of the ongoing process of surveying facilities and building the database to track the implementation of new or revised conservation strategies by SWWFs. The survey program will show the movement of conservation and efficiency strategies and BMPs formerly indicated as ‘planned’ and moving to the ‘current’ category in a facility. Additional water conservation communication anticipated with 2019 SWWF water use reporting process.
 - Utilizing social media to promote conservation and efficiency. A series of “Talk with an Expert” events on the Indiana DNR Facebook page to discuss water use issues in Indiana, focusing on providing information about agricultural irrigation, including historical use and generalized location data, general conservation and efficiency practices suggested for

managing water used for irrigation purposes, & Indiana’s water use laws and protections provided for owners of domestic (home) wells when they are impacted by high capacity pumping. General conservation and efficiency practices were presented in 2013 and 2014 using social media. In 2016, total reach for “Talk with an Expert” was 107,451 Facebook users, 3,657 engaged users (those that directly interacted with the material or asked questions), and 191,933 total impressions. “Talk with an Expert” was conducted in 2017 during NGWA’s Ground Water Awareness Week with a total reach of 73,721 Facebook users, 2,067 engaged users and 99,612 total impressions. Conservation and efficiency practices were also presented and discussed in 2017 during a Facebook “Theme Week” with a total reach of 78,067 users, 1,993 engaged users, and 107,647 total impressions. A 2018 Facebook “Theme Week” that presented water well construction requirements, SWWF registration and water use data, water rights provisions and ground water availability information had a total reach of 77,563 users, 6,318 engaged users, and 101,235 total impressions. A Groundwater Awareness Facebook Week presented information regarding water rights programs, water use data, water well construction criteria and water conservation information and had a total reach of 80,640 users, 108,223 total impressions and 4,025 engaged users.

- A GIS-based map has been added to the Division of Water’s website that shows the locations of Significant Water Withdrawal Facilities (SWWFs) and their associated withdrawal sources (groundwater wells and/or surface water intakes). Users can zoom to a specific county and see the locations of registered SWWFs. The interactive map allows users to click on a facility point to quickly view information regarding the facility, including the owner name, total capacity (MGD), and a count of withdrawal sources. As the user scrolls in further, the withdrawal sources associated with each facility become visible, allowing users to easily see the specific locations of the sources. The wells and intakes are also color-coded based on the Major Water Use category the facility falls under (Energy Production, Industry, Irrigation, Public Supply, Rural Use, or Miscellaneous). As with the facility points, when a user clicks on an individual source point, they can quickly view the features of each source, including depth, diameter, and capacity (GPM) for wells and water body source and capacity (GPM) for intakes. The SWWF registration information (along with the last three years of reported water use data) is also available for download either by county or for the entire state in Excel spreadsheet format on the Division of Water’s website.

[www.in.gov/dnr/water/4841.htm]

- **Improve monitoring and standardize data reporting:**

- SWWF water use data was first made available online in 2005 that provides annual summaries and withdrawal data for the previous five

years. The data is updated on an annual basis. [www.in.gov/dnr/water/4841.htm]

- Best Management Practices developed specifically for each SWWF water use category will allow standardized comparisons of implemented and planned conservation and efficiency efforts, with input from SWWF representatives, area water user groups, environmental groups, private sector water management firms, academia, and area planning commissions. [www.in.gov/dnr/water/6364.htm]
- The online submittal portal for Indiana SWWF annual water use data has been successfully deployed. The electronic water use reporting system is currently being used by facilities in the effort to facilitate and standardize data reporting. The online reporting system was tested initially for 2012 water use reporting, with very few issues encountered. The deadline to submit 2018 water use data for all categories is March 31, 2019. Annual reporting compliance is generally at 98%. [<https://secure.in.gov/apps/dnr/dowos/Main.aspx>]
- In 2017, Indiana DNR staff participated on the expert panel for the Council of Great Lakes Industries (CGLI) Water Stewardship project to develop tools that may be utilized by Great Lakes industries to optimize internal water use and management, demonstrate good water stewardship, and support efforts to utilize a transparent process to disclose water use to complement other tools used for regulatory water use reporting and implementation of the Great Lakes Compact.
- Senate Bill 347 enacted by the 2016 Indiana Legislature instructed the IDNR to collaborate with the Indiana Geological and Water Survey (IGWS) to “*perform a quality review of the water resources data compiled from the reports submitted by owners of significant water withdrawal facilities for all calendar years since 1985*”. The IGWS completed their review of existing SWWFs in 2018 and provided the IDNR, Division of Water with detailed well and intake locations as well as identifying approximately 3,500 potential unregistered facilities within Indiana. IDNR staff will rectify existing SWWF locations and is currently conducting field investigations of potential unregistered facilities in the Great Lakes Basin. About 500 unregistered SWWFs have been visited by DNR staff and 50 new SWWFs have been registered within the basin.
- Standardized forms for the “Application for Individual Permit for a New Water Withdrawal” and the “Notification of Sale or Transfer of Baseline Volume of Significant Water Withdrawal Facility” within the Great Lakes Basin were completed and approved in 2019 and available for use

on the IDNR, Division of Water webpage at
<https://www.in.gov/dnr/water/2450.htm>

4) The State of Indiana’s timeline for implementation of voluntary Water Conservation and Efficiency Program.

- Indiana has met its obligations under Section 4.2 of the Compact, including development of water conservation and efficiency goals and objectives consistent with the basin wide goals and objectives by December 8, 2010 (two years from the effective date of the Compact). The goals and objectives outlined in the Compact have been incorporated by reference within Rule 312 IAC 6.2.
- Public outreach and input regarding development of Indiana’s voluntary Water Conservation and Efficiency Program has been utilized, and feedback from SWWF’s will continue to shape the program through the coming year(s).
- Meetings continue with the Michiana Irrigation Association, the Indiana Ground Water Association, Northwest Indiana Regional Plan Commission, Indiana Steel Producers Environmental Working Group, Indiana Mineral Aggregate Association and the Indiana Rural Water Association for available outreach opportunities and input as the conservation and efficiency program continues to develop and evolve.
- The Department of Natural Resources completed work with the Natural Resources Commission for the final adoption of amendments to Rule 312 IAC 6.2 as LSA Document #13-335(F) which implements permitting and voluntary water conservation and efficiency programs for facilities applying for new or increased withdrawals, diversions, and consumptive uses. Permanent Rule 312 IAC 6.2 became effective September 3, 2014.
- The Department of Natural Resources completed work with the Natural Resources Commission for the final adoption of amendments to Rule 312 IAC 6.2 under Administrative Cause #15-076W in response to a “Petition to Change Great Lakes Compact Implementation Permanent Rule (LSA #12-1335)” submitted by the membership of Save the Dunes, Natural Resources Defense Council, National Wildlife Federation and the Alliance of the Great Lakes. Amendments include voluntary conservation and efficiency objectives currently set forth in Rule 312 IAC 6.2 to be listed in full rather than by reference. The rule package received final adoption by the Natural Resources Commission on March 20, 2018, and amendments became effective on June 8, 2018.

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-3

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
State of Michigan

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs: (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

The Agreement

E. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

F. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

G. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs: (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

H. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

II. SUBMISSIONS BY STATE OF MICHIGAN

A. To the Compact Council. The Compact Council has received the State of Michigan's report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the State of Michigan's report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the State of Michigan, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

- A. Based on the report submitted by the State of Michigan, the Water Management Program presented by the State of Michigan meets or exceeds the current requirements of the Compact and the Agreement.
- B. Based on the report submitted by the State of Michigan, the Water Conservation and Efficiency Program presented by the State of Michigan meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management Program Review
State of Michigan
December 6, 2019



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

EGLE
MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LIESL EICHLER CLARK
DIRECTOR

December 6, 2019

VIA EMAIL AND REGULAR MAIL

Mr. David Naftzger, Executive Director
Great Lakes-St. Lawrence River Basin Water Resources Council
Secretary, Great Lakes-St. Lawrence River Water Resources Regional Body
Conference of Great Lakes and St. Lawrence Governors and Premiers
20 North Wacker Drive, Suite 2700
Chicago, Illinois 60606

Dear Mr. Naftzger:

SUBJECT: 2019 Five-Year Program Review Report

On behalf of the State of Michigan, enclosed is the 2019 Five-Year Program Review Report sent pursuant to and in satisfaction of the obligations included in Section 3.4 of the Great Lakes-St. Lawrence River Basin Water Resources Compact and in Article 300 of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement. Please note that these reports are subject to revision and update during the Compact Council and Regional Body program review process.

If you have any questions, please do not hesitate to contact me.

Sincerely,



James Clift
Deputy Director

Enclosure

cc (via Email):

Liesl Clark, Director, EGLE

James Milne, EGLE

Peter Johnson, Conference of Great Lakes St. Lawrence Governors and Premiers

**Great Lakes-St. Lawrence River Basin Water Resources Compact
Five-Year Program Review Report
State of Michigan**

This report fulfills the State of Michigan's obligation under Section 3.4 of the Great Lakes-St. Lawrence River Basin Water Resources Compact (Compact), and under Article 300 of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement).

General Information

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

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is the lead agency responsible for Michigan's water management and water conservation and efficiency programs.

Compact Contact: Mr. James Clift, Deputy Director, Executive Division;
517-284-6871, CliftJ@Michigan.gov.

Program Contact: Mr. James F. Milne, Supervisor, Water Use Assessment Unit,
Permits Section, Water Resources Division; 517-284-5559, MilneJ@Michigan.gov.

2. Laws, statutes, rules, regulations, executive orders, administrative orders or other similarly enforceable documents that establish or implement programs meeting the requirements of the Compact.

The Compact is enacted into law in Michigan under Part 342, Great Lakes-St. Lawrence River Basin Water Resources Compact, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA).

Additional legislation enabling specific aspects of Michigan's water management and water conservation and efficiency programs is enacted in

- Part 327, Great Lakes Preservation, of the NREPA, 1994 PA 451, as amended;
- The Safe Drinking Water Act, 1976 PA 399, as amended; and
- The Safe Drinking Water Act Administrative Rules.

Specific provisions from the Compact and Agreement for water management and water conservation and efficiency program elements and their corresponding legal citations are provided below:

a. Compact Section 3.4/Agreement Article 300

Michigan Compiled Laws (MCL) 324.34201

b. Compact Section 4.1/Agreement Article 301

MCL 324.34201, 324.32702, 324.32705, 324.32707, 324.32708, 324.32710, 325.1004, Michigan Administrative Rules 325.11502, 325.11504

- c. **Compact Sections 4.2(2), 4.2(4) and 4.2(5)/Agreement Article 304**
MCL 324.34201, 324.32707, 324.32708a, 324.32723, 325.1004
 - d. **Compact Section 4.3/Agreement Article 200**
MCL 324.34201, 324.32704a, 324.32705, 324.32706a-e, 324.32723, 325.1004
 - e. **Compact Section 4.8, 4.9 and 4.13/Agreement Articles 200, 201, and 208**
MCL 324.34201, 324.32701, 324.32702, 324.32703, 324.32703a, 324.32704, 324.32704a, 324.32727
 - f. **Compact Section 4.10/Agreement Article 206**
MCL 324.34201, 324.32704a, 324.32705, 324.32706a-e, 324.32723, 325.1004
 - g. **Compact Section 4.11/Agreement Article 207**
MCL 324.34201, 324.32723
- 3. Major changes from Michigan’s 2014 Five-Year Program Review Report.**
2018 PA 209 amended Part 327, Great Lakes Preservation, of NREPA, 1994 PA 451, as amended (Part 327). This amendment created an alternative analysis process for proposed large quantity withdrawals (LQW) up to 1,000,000 gallons per day (gpd; 1 MGD) where the property owners can hire a qualified consultant to submit an analysis of the proposed LQW to EGLE. EGLE has 20 business days (or 25, under limited circumstances) to decide whether to authorize the proposed LQW. If EGLE does not make its decision within that timeframe, the proposed LQW is authorized under operation of law. Proposed LQWs between one and two MGD that can’t be authorized by the Water Withdrawal Assessment Tool must be authorized by the conventional site-specific review process, which is also available to property owners as an option for proposed LQWs < 1 MGD.

Water Management Program Report

1. Water management program scope and thresholds.

Michigan’s Water Use Program was established in 2008 to ensure Michigan continues to meet its obligations under the Compact and the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement. The program uses an online assessment tool to estimate the impact of proposed withdrawal by modelling the relationships between groundwater withdrawals, nearby stream flows, and fish populations. The purpose of the Water Use Program is to help Michigan fulfill its duty under MCL 324.32702 to effectively manage the waters of the state for the use and enjoyment of present and future residents and for the protection of the environment.

Michigan’s water management program includes registration and water use reporting requirements for virtually all large quantity withdrawals¹ (LQWs), as well as an authorization process for new or increased LQWs which requires that an environmental impact standard must be met prior to registration².

¹ MCL 324.32705, 324.32707, 324.32708, 324.32723

² MCL 324.32706

LQWs include all water withdrawals with the capacity to withdraw over 100,000 gallons per day (gpd) average in any consecutive 30-day period³. New or increased LQWs > 100,000 gpd that cannot be authorized by the on-line Water Withdrawal Assessment Tool must be authorized by a site-specific review or an alternative analysis of the proposed LQW⁴. New or increased LQWs > 2,000,000 gpd (2 MGD) require a permit⁵. Exceptions to the registration and reporting requirements include LQWs undertaken for groundwater contamination remediation, small residential properties, and hydroelectric power generation⁶.

Registered LQW facilities annually report their monthly withdrawal volumes, consumptive use, and return flow discharge information on forms provided by EGLE or the Michigan Department of Agriculture and Rural Development (MDARD)⁷. Before new or increased LQWs can begin operating, they must be authorized based on an assessment of their predicted, cumulative impact along with other new LQWs to nearby river or stream flows. Large quantity withdrawals that are likely to exceed this environmental standard are restricted to a lesser amount, or they may be prohibited in order to protect local streamflow⁸. Michigan's management of withdrawals and water resources at the sub-watershed level ensures the protection of the waters of the Great Lakes Basin.

The [Water Use Advisory Council](#) (WUAC) is an integral part of the program in that it provides a platform for raising water withdrawal related issues and establishes an integrated framework of roles and responsibilities for all stakeholders in managing Michigan's water resources. This framework creates opportunities for the public, university researchers, industry professionals, advocacy groups, and other interested parties to be involved and to work directly with state agency personnel to set policy and shape the program's direction. This promotes better understanding and cooperation to the benefit of the program, and results in shared investment in the management and sustainability of Michigan's streams, lakes, wetlands, and groundwater.

2. Management of Water Withdrawals by:

- a. **Sector [public water supply, commercial and institutional, irrigation, livestock, industrial, electric power production (once-through and recirculated cooling), hydroelectric power production (off-stream and in-stream), voluntary, and other].**

With the exception of hydroelectric power generation, LQWs in all the above-mentioned water use sectors are subject to the Michigan water management program. Off-stream and in-stream hydroelectric water uses are exempt from

³ MCL.324.32701

⁴ MCL 324.32706c

⁵ MCL 324.32723

⁶ MCL 324.32727

⁷ MCL 324.32707, 324.32708

⁸ MCL 324.32706

management under Michigan law⁹. All sectors are managed in essentially the same way, and the specific sector of water use is captured in the annual water use reporting.

b. Water source [groundwater, Great Lakes-St. Lawrence River surface water, and other surface water];

Large quantity withdrawals from all water sources including groundwater, the Great Lakes and their connecting waters, and other surface water are subject to the Michigan water management program. The specific water source is captured in the annual water use reporting. New LQWs are assessed based on the environmental impact to their source if they are from the Great Lakes or other surface water, or to nearby rivers or streams if the source is groundwater¹⁰.

c. Quantity [regulatory thresholds, volumes, rates, and reporting requirements];

The Michigan water management program regulates the quantity, volume, and/or rate of new or increased LQWs by tracking their cumulative impact to river and stream flows at a sub-watershed scale, or to fish populations or other uses of the lake for a direct withdrawal from a lake. The environmental impact standard is scaled to the size of the impacted stream or river and is dependent on its ecological classification. The regulatory limits are, therefore, variable across sub-watersheds¹¹ but are all based on the capacity of each system to support withdrawals. When the cumulative impact to a sub-watershed reaches the environmental impact standard limit, new or increased LQWs are restricted to a lesser amount, or they may be prohibited in order to preserve the local water resources¹². Large quantity withdrawals that withdraw less than 1,500,000 gallons of water in a given year are not required to report specific water use volumes, but they are required to file an annual report stating the water usage was less than 1,500,000 gallons¹³.

d. Location [Statewide/Province-wide or Great Lakes-St. Lawrence River Basin];

The Michigan water management program applies statewide.

e. Any specific exemptions as allowed in the Agreement and the Compact.

Michigan law includes exemptions from its water management program for LQWs undertaken for groundwater contamination remediation, small residential properties, and hydroelectric power generation¹⁴. Large quantity withdrawals

⁹ MCL 324.32727

¹⁰ MCL 324.32706, 324.32723, 325.1004

¹¹ MCL 324.32701

¹² MCL 324.32706b, 324.32723

¹³ MCL 324.32707

¹⁴ MCL 324.32727

utilized solely for fire suppression are exempt from the environmental impact standard, but they are required to register and report their annual water use¹⁵.

3. Application of the Standard of Review and Decision.

a. Decision Making Standard for Withdrawals and Consumptive Uses.

[MCL 324.32723](#): The Michigan water management program applies the Compact's Standard of Review and Decision to all new or increased withdrawals greater than two million gallons per day (MGD) capacity. An application for these withdrawals requires each criterion of the Decision-Making Standard to be addressed by the applicant and is evaluated by EGLE during the application review. Most criteria are evaluated on a scientific basis, with the exception of 4.11.5.c (the balance between economic development, social development, and environmental protection for the existing and proposed LQWs). For this criterion some deference is granted to the weight of public comments received on the proposed withdrawal to aid in EGLE's evaluation.

In addition to the Compact's Standard of Review and Decision, EGLE must also determine whether permit applications are reasonable under Michigan's common law for water uses. Michigan uses the "reasonable use balancing test" that evaluates: the purpose of the proposed use; the suitability of the proposed use to the location; the extent and amount of harm caused by the proposed use; the extent, duration, necessity, and application of the use, including any effects on the quantity, quality, and level of the water; and any other factor relevant under the circumstances of the particular case.

Large quantity withdrawals subject to Michigan's water management program, but less than two MGD capacity are required to meet an environmental impact standard. They are not evaluated by the Decision-Making Standard criteria.

b. Exception Standard for Diversions.

[MCL 324.32701](#): The Michigan water management program applies the Exception Standard and evaluates each criterion for any proposed Diversion. Under Michigan law, a diversion does not include the supply of ballast for vessels; use in a noncommercial project on a short-term basis for firefighting, humanitarian, or emergency response purposes; a transfer of water from a Great Lakes watershed to the watershed of its connecting waterways; or a transfer of water out of the Great Lakes Basin in a container 5.7 gallons or less.

4. Reporting and database of Withdrawals, Consumptive Uses, and Diversions.

Michigan's water management program requires annual water use reporting for virtually all LQWs. Separate databases of Withdrawals, Consumptive Uses, and Diversions are maintained by the agencies responsible for each branch of the

¹⁵ MCL 324.32721

Michigan water management program: EGLE Community Water Supply Program for public water supplies, the MDARD for agricultural water uses, and EGLE Water Use Program for all other LQWs. Large quantity withdrawal owners have the option of reporting using paper forms provided by the agency or directly to EGLE's or MDARD's databases using an online reporting system.

EGLE's Water Use Program staff compiles the annual water use reporting data for community water supplies, agricultural water uses, and all other water uses under EGLE's jurisdiction and submits the annual water use data to the Great Lakes Commission and others upon request. All methods of measurement of water use volumes are approved, as are acceptable estimation methods in lieu of a measurement device. A separate database is also maintained by the EGLE Water Use Program to track the cumulative impact of new or increased LQWs relative to the environmental impact standard for each sub-watershed in the state¹⁶. In 2019, MDARD instituted a new online water use reporting data base for agricultural reporting. The new system will continue to require all reporting criteria, but it will also allow for greater administrative functions.

Regional notice is only required under the Compact when a proposed consumptive use (or the consumptive use portion of a proposed LQW) exceeds five million gallons per day (five MGD).

5. Withdrawal application forms.

Michigan's water management program utilizes an online application, the Water Withdrawal Assessment Tool (WWAT; <http://www.deq.state.mi.us/wwat>) to process all applications for new or increased LQWs up to two MGD capacity. Also, MCL 324.32706c provides for a site-specific review by EGLE or an alternative analysis of the proposed withdrawal submitted by a qualified hydrologist or hydrogeologist for any proposed withdrawals that cannot be authorized by the WWAT. A water withdrawal permit is required for new or increased LQWs greater than two MGD capacity.

6. 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.

- WUAC Recommendations: Michigan's Quality of Life Agencies (EGLE, MDARD, and the Department of Natural Resources (DNR) prioritized the recommendations in the Water Use Advisory Council's December 12, 2014, final report and are implementing key recommendations.
- Temperature Logging Sensor Studies: The DNR, Fisheries Division, deploys temperature loggers to study stream temperatures and conduct fish population surveys in Michigan's lakes and streams.

¹⁶ MCL 324.32706e

- USGS Monitoring Partnerships: EGLE and the U.S. Geological Survey (USGS) have a joint funding agreement for operating stream gages and monitoring wells, as well as collecting miscellaneous stream flow measurements. The USGS also conducted a study of the interactions between high-capacity wells in shallow groundwater and streamflow in nearby streams in two watersheds in the west-central portion of Michigan's Lower Peninsula (their final report is under internal agency review).
- Groundwater Modeling Study: The three Quality of Life agencies also partnered with external stakeholders to co-fund a three-year study in Cass County in southwest Michigan. The Cass County study collected geologic, groundwater, and stream data, evaluated multiple methods for field data collection, and developed groundwater models for several sub-watersheds in Cass County. The study ended on September 30, 2019, with the final deliverables submitted on October 7, 2019. EGLE and USGS reviewers cited several problems with the construction and calibration of the models but the geologic, groundwater, stream flow, and sediment characterization sample data will be useful for evaluating future LQWs. Each of these monitoring and data collection efforts have been stepped-up and focused in areas of the state where groundwater LQWs are most prevalent to increase understanding of groundwater-surface water interaction, and the effects of groundwater use on stream ecology especially.
- Geologic and Groundwater Research: The glacial geology of Michigan is quite complex and varied, and it is one of the major challenges in gaining a better understanding of Michigan's groundwater resources. Research is continually ongoing by state, federal, and academic institutions. Examples of current research include a joint project with EGLE and the Michigan State University Department of Civil and Environmental Engineering to develop innovative ways of using technology to process and analyze existing information in Michigan's extensive groundwater database. In addition to these data collection and monitoring efforts, the Michigan Geological Survey (MGS) and USGS perform surveys and sample collections to map Michigan's glacial geology in three dimensions on a county-by-county basis. By December 2019, MGS and USGS will have completed 19 three-dimensional glacial geology maps and two county bedrock geology maps. Approximately 8% of the glacial geology in Michigan has also been mapped in three dimensions.

Water Conservation and Efficiency Program Report

1. Water conservation and efficiency goals and objectives.

Michigan adopted goals and objectives consistent with the basin-wide conservation and efficiency goals and objectives set forth in Section 4.2(1) of the Compact on December 8, 2010 (Appendix 1). These goals and objectives were developed by the former Water Resources Conservation Advisory Council (WRCAC), a stakeholder forum of executive and legislative appointees that was established for collaborative study, evaluation, and advisement for Michigan's water management and water

conservation and efficiency programs. The WRCAC was eliminated by executive order of the Governor in October 2009. In 2013, the Michigan Department of Environmental Quality (DEQ, now EGLE) established a similar forum, WUAC, to convene discussions and evaluate Michigan's water management and water conservation and efficiency programs, including the conservation and efficiency program's goals and objectives. The WUAC was formally codified into Michigan law with the passage of Public Act 509 of 2018.

Michigan's water conservation and efficiency goals and objectives continue to be met through the program that was initiated with the adoption of the Compact. Public comments on how to enhance Michigan's water conservation and efficiency program have been sought by EGLE, and a major theme of these comments was the importance of a collaborative council to advise on technical issues, assist in implementation, and monitor overall progress of Michigan's program. This issue was addressed by the formation of the WUAC. The WUAC's charge includes these general issues. Other public comments on the program are being addressed through the proceedings of the WUAC and its work groups.

[Michigan Water Strategy](#): During the same time period, Michigan developed a 30-year Water Strategy, an all-inclusive 30-year vision and blueprint to ensure Michigan's water resources continue to support healthy ecosystems, communities, and economies for current and future generations. The plan was collaboratively developed by state agencies and refined as a result of extensive engagement and input from nongovernmental organizations, environmental groups, communities, industry leaders, tribal governments, and others. Appendix 2 provides a full list of water conservation and efficiency recommendations from the Water Strategy, as well as a link to the WUAC water conservation and efficiency recommendations.

2. Water Conservation and Efficiency Program Overview.

The foundation of Michigan's water conservation and efficiency program is the water withdrawal assessment required of all new or increased LQWs¹⁷. The assessment process evaluates proposed water withdrawals relative to environmental impact standards set for conserving and protecting the water resources of the Great Lakes Basin. Through the assessment process, the likely resource impacts of a proposed withdrawal are predicted in advance of withdrawing water and a proposed withdrawal must meet the environmental impact standard before the withdrawal can occur¹⁸.

To gain authorization to make an LQW, water users consider conservation and efficiency of use as a means to reduce their impact. Large quantity withdrawals are cumulatively tracked and accounted for against the environmental standard at a sub-watershed scale, ensuring that the water resources of the basin are conserved even at a small scale¹⁹.

¹⁷ MCL 324.32705

¹⁸ MCL 324.32706, 324.32723

¹⁹ MCL 324.32706e

Michigan's water conservation and efficiency program goes beyond the assessment process to comprise a comprehensive program of water use management. This program establishes an integrated framework of roles and responsibilities for private and public water users and governmental agencies in managing Michigan's water resources. Further, this framework creates opportunities for involvement by the public (e.g., local committees and volunteer efforts such as stream monitoring); universities (e.g., research and technical assistance); and other interested parties resulting in a latticework of shared investment in the sustainability of Michigan's lakes, streams, and groundwater.

In conjunction with annual water use reporting, all LQW owners are required to review water conservation measures applicable to their water use sector. Implementation of conservation measures is voluntary²⁰. In sub-watersheds that are approaching the environmental impact standard, as a condition of approval an applicant must implement the water conservation measures they deem to be reasonable²¹. For applications greater than two MGD capacity the approval condition requires that all sector or withdrawal-based conservation measures are complied with²².

3. Water conservation and efficiency program consistency with regional objectives, and promotion of Environmentally Sound and Economically Feasible Water Conservation Measures.

a. Guide programs toward long-term, sustainable water use.

Michigan's LQW assessment process, environmental impact standard and cumulative impact tracking system have produced significant changes in the planning and development of LQWs. This process has driven the integration of long-term, sustainable water use concepts into water management decisions. It has raised the awareness of water use and resource impact implications²³. Additional hydrologic data, being collected on a continuous basis, is used with refined models for better decision-making. As a result, the LQW assessment methods and policies keep up with current understanding to ensure long-term, sustainable water use.

b. Adopt and implement supply and demand management to promote efficient use and conservation of water resources.

EGLE works with many water users and industry contractors through the assessment process on an individual basis to help implement withdrawals in an efficient manner that reduces the impact to water resources²⁴. This

²⁰ MCL 324.32707, 324.32708

²¹ MCL 324.32706c, 325.1004

²² MCL 324.32723

²³ MCL 324.32708, 324.32708a

²⁴ MCL 324.32708, 324.32708a

assessment process incorporates both supply-side management of the water resources using a specialized database that tracks cumulative impact of withdrawals at the sub-watershed level, and demand-side management by notifying all affected water users when withdrawal limits begin to be approached in an area. Michigan's common law reasonable use doctrine is the legal foundation underlying the assessment process, and also promotes the conservation and efficient use of water in its own way when conveying to water users that water is a shared, finite resource under this doctrine. Users are encouraged to conserve up front, rather than when required to in the event of a conflict situation when supplies are limited or overtaxed. The LQW assessment process is designed to be adaptive and able to respond to changing environmental conditions.

c. Improve monitoring and standardize data reporting within water conservation and efficiency programs.

Measurement and evaluation of water conservation and water use efficiency is difficult to track in Michigan on a statewide basis particularly from an agency perspective. This is because reporting of water conservation and efficiency practices is voluntary. However, ongoing improvements in water use data collection and QA/QC measures are resulting in better, standardized data that improve the ability to monitor water conservation.

Michigan's Water Strategy also includes a recommendation to create a coordinated strategy for groundwater data collection, including a data management system. Such data is a critical measurement and indicator of the effects of water use as well as water conservation and efficiency practices. State and federal agencies, research institutions and stakeholders continue to assess available groundwater data and develop strategies for effective data integration to advance coordinated water monitoring programs and improve decision making.

Additionally, Executive Directive 2017-1 launched an asset management pilot program, which provided recommendations for the development of a comprehensive, statewide strategic framework for water infrastructure asset management. Recommendations emphasized standardizing and streamlining data collection, storage, and analysis. In 2018, the Michigan Infrastructure Council and the Michigan Water Asset Management Council were created in statute to develop and direct implementation of a statewide strategy. EGLE has provided financial support for asset management planning for water utilities, awarding \$9.5 million in grants under its drinking water asset management pilot program, in addition to providing SAW grants and technical assistance.

d. Develop science, technology and research.

Michigan is actively developing science, technology, and research on an ongoing basis through the efforts of various projects by state, federal, and

academic institutions. Significant investments have been made as funding is available to further these developments. The WUAC convenes scientific and policy discussions amongst stakeholders and technical experts to evaluate Michigan's water management and water conservation and efficiency programs, and to identify where improvements and updates could be made.

EGLE is also supporting research on innovative, real-time sensor network in the Clinton River. The goal of this work is to develop an open-source technology to assess and manage stormwater through hydrologic modeling that is accessible at a local scale. Dissemination and use of similar sensor networks would increase the availability of real-time data about Great Lakes water conditions and improve the state of knowledge about water quantity and quality.

The Michigan Great Lakes Protection Fund exists as a dedicated funding program to support research to improve scientific understanding of Great Lakes issues. The fund is administered by the Michigan Office of the Great Lakes.

e. Develop education programs and information sharing for all water users.

EGLE and MDARD staff make educational presentations and share information at various conferences and upon request to a variety of interested parties. The WUAC and its subcommittee meetings are open to the public and information from their proceedings is posted on EGLE's website.

Michigan State University Extension also convenes several meetings and focus group sessions around the state—primarily with agricultural water users, but also with other sectors to provide information and education on Michigan's water use. EGLE also collaborates with the Michigan Farm Bureau and the Michigan Ground Water Association on education and outreach activities for the Water Use Program. In 2016, MSU Water Resources Institute, MSU Extension, and Michigan Sea Grant developed and launched the Michigan Water School focused on educating local appointed and elected officials about water management and the impact of their decisions on water resources including water quantity and quality. The two-day program provides science-based information in the areas of water quantity, water quality, water economics and water policy.

Additionally, EGLE is developing an initiative to integrate water literacy principles in K-12 school curriculum, in partnership with the Michigan Departments of Labor and Economic Opportunity, Department of Education, Natural Resources and numerous community partners. This effort, called From Students to Stewards Initiative, is intended to develop a life-long culture of stewardship by integrating Great Lakes and freshwater literacy principles into standards-based school curricula through place-based, authentic-experience approaches to improve stewardship behavior and provide an

engaging context to motivate school performance. This initiative will teach STEM/STEAM concepts using place-based, problem based, and project-based approaches with a focus on Great Lakes literacy principles to foster the next generation of water stewards, leaders, skilled workers, and decision-makers needed to solve complex water issues in a changing world.

Other efforts are ongoing to promote water stewardship through outreach, education, and development of effective statewide communication strategies to improve the public's understanding of their impact on water resources and actions and behaviors that support responsible water use.

4. Water conservation and efficiency program implementation timeline and status.

All components of Michigan's water conservation and efficiency program have been implemented. The foundation of the program, the water withdrawal assessment process, has been fully in effect since July 2009. Sector-based water conservation measures have been developed and are in use. Additional state funding resources have recently been allocated to bolster program areas of need. From the beginning, it has been acknowledged that the program would continually adapt and that the staff would be open to changes necessary for improvement and enhancement. Michigan has shown strong commitment to this forward-looking approach and seeks to remain vigilant for the betterment of the program and to uphold the ideals of the Compact.

APPENDIX 1: MICHIGAN WATER CONSERVATION AND EFFICIENCY PROGRAM

Water Conservation and Efficiency Goals and Objectives

Goals

1. Ensuring improvement of the waters and water dependent natural resources;
2. Protecting and restoring the hydrologic and ecosystem integrity of the Basin;
3. Retaining the quantity of surface water and groundwater in the Basin;
4. Ensuring sustainable use of waters of the Basin; and,
5. Promoting the efficiency of use and reducing losses and waste of water.

Objectives

1. Utilize Michigan's Water Use Program and Water Withdrawal Assessment Process to guide long-term sustainable water use.
 - a. The programs will be adaptive, goal-based, accountable, and measurable.
 - b. Continue to develop and implement programs openly and collaboratively with local stakeholders, Tribes and First Nations, governments, and the public.
 - c. Prepare and maintain long-term water demand forecasts.
 - d. Develop long-term strategies that incorporate water conservation and efficient water use practices.
 - e. Review and build upon existing planning efforts by considering practices and experiences from other jurisdictions.
2. Adopt and implement supply and demand management to promote efficient use and conservation of water resources.
 - a. Maximize water use efficiency and minimize waste of water.
 - b. Promote appropriate innovative technology for water reuse.
 - c. Conserve and manage existing water supplies to prevent or delay the demand for and development of additional supplies.
 - d. Provide incentives to encourage efficient water use and conservation.
 - e. Consider water conservation and efficiency in the review of proposed new or increased uses.

- f. Promote investment in and maintenance of efficient water infrastructure.
3. Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.
 - a. Improve the measurement and evaluation of water conservation and water use efficiency.
 - b. Encourage measures to monitor, account for, and minimize water loss.
 - c. Track and report program progress and effectiveness.
 4. Develop science, technology, and research.
 - a. Encourage the identification and sharing of innovative management practices and state of the art technologies.
 - b. Encourage research, development, and implementation of water use and efficiency and water conservation technologies.
 - c. Seek a greater understanding of traditional knowledge and practices of Basin First Nations and Tribes.
 - d. Strengthen scientific understanding of the linkages between water conservation practices and ecological responses.
 5. Develop education programs and information sharing for all water users.
 - a. Ensure equitable public access to water conservation and efficiency tools and information.
 - b. Inform, educate, and increase awareness regarding water use, conservation, and efficiency and the importance of water.
 - c. Promote the cost-saving aspect of water conservation and efficiency for both short- and long-term economic sustainability.
 - d. Share conservation and efficiency experiences, including successes and lessons learned across the Basin.
 - e. Enhance and contribute to regional information sharing.
 - f. Encourage and increase training opportunities in collaboration with professional or other organizations to increase water conservation and efficiency practices and technological applications.
 - g. Ensure that conservation programs are transparent, and that information is readily available.

h. Aid in the development and dissemination of sector-based best management practices and results achieved.

i. Seek opportunities for the sharing of traditional knowledge and practices of Basin First Nations and Tribes.

APPENDIX 2: WATER CONSERVATION AND EFFICIENCY RECOMMENDATIONS FROM MICHIGAN'S WATER STRATEGY

Goal 1: Michigan citizens are stewards of clean water and healthy aquatic ecosystems.

Recommendations:

1-2: The State, working with stakeholders, will develop a public outreach campaign that highlights stewardship practices and encourages actions that sustain water resources.

Goal 2: Michigan's aquatic ecosystems are healthy and functional.

Recommendations:

2-8: Incorporate planning for wet weather extremes, droughts, and increased seasonal variability of precipitation into state, regional, and community planning to mitigate impacts to ecological, economic, social, and cultural resources.

2-11: The State, working with tribal governments and stakeholders, will establish new partnerships to develop innovative strategies to enhance wetland restoration and green infrastructure efforts in Michigan. The Tribes will work with the State to elevate the recognition, protection, and restoration of native wild rice stands throughout the state.

2-14: Refine and improve the water withdrawal assessment process and model to ensure sustainable use of water resources and that high priority is given to incorporating existing and new data to better represent local and regional water resources and surface water/groundwater interactions.

2-15: Provide technical and financial support to communities and their partners to plan and implement green infrastructure techniques and low-impact development while preserving natural spaces that contribute to water quality, including application of these techniques in the design of new developments, redevelopments, and road projects to ensure storm water management, improved hydrology, and overall water quality.

2-16: Modernize road and highway planning and infrastructure and integrate with watershed planning to effectively accommodate storm water runoff and infiltration needs, thereby reducing the costs and impacts of flooding.

2-17: Enhance financial and technical support of local stakeholder efforts to develop and implement watershed management plans to restore impaired waters, protect high quality waters, and develop and utilize local water resource assets.

Goal 3: Michigan communities use water as a strategic asset for community and economic development.

Recommendations:

3-1: Emphasize water resources as assets in state, regional, and community planning efforts to provide appropriate, sustainable protection and to fully leverage community-based economic opportunities.

Goal 5: Michigan has a strategic focus on water technology and innovation to grow sustainable water-based economies.

Recommendations:

5-3: Establish voluntary water efficiency targets for all major water sectors to reduce water use impacts and costs.

5-4: Promote innovative technologies that reduce cost and water loss or convert waste products to usable materials.

5-5: Develop a water conservation and reuse strategy for the State, local governments, and public and private facilities that incorporates the use of green infrastructure, grey water systems, and energy production that includes recognition programs.

5-6: Fund a pilot project, through a competitive bid process, for the initiation and evaluation of a new model for wastewater management. This pilot program will assess the opportunities and barriers to creating a “Water Resources Utility of the Future,” focused on:

- Reclaiming and reusing water
- Extracting and finding commercial uses for nutrients and other constituents
- Capturing waste heat and latent energy in biosolids and liquid streams
- Generating renewable energy using its land and other assets
- Using green infrastructure to manage storm water and improve urban quality of life

5-7: Define measures of agriculture water conservation and establish voluntary targets for utilizing best management practices (BMPs) that reflect conformance with the Irrigation Water Use Generally Accepted Agricultural and Management Practices in areas of existing or potential water stress.

5-8: Enhance voluntary water conservation measures through technology and outreach for agriculture to optimize water use while reducing impacts and costs.

Goal 8: Michigan has integrated outcome-based monitoring systems that support critical water-based decisions.

Recommendations:

8-1: Develop a coordinated, comprehensive monitoring strategy for groundwater quantity and quality, including a data management system.

8-2: Secure a long-term, sustainable funding source for groundwater and surface water quality and quantity monitoring that is continually improved with new technologies.

8-3: Implement a pilot decision-support framework that includes monitoring, data and information, and analytical tools. This framework will assess ecological, economic, social, and cultural values and outcomes at local and regional watershed scales.

Goal 9: Michigan has the governance tools to address water challenges and provide clean water and healthy aquatic ecosystems.

Recommendations:

9-3: Uphold the Great Lakes Compact and Agreement by actively participating in the Great Lakes-St. Lawrence River Regional Body and Great Lakes-St. Lawrence River Compact Council including financial support of these entities entrusted to govern the Compact and Agreement.

9-4: State and Tribal governments will meet on an ongoing basis to discuss and develop strategies to support management of Michigan's shared water resources. The State and Tribal governments will jointly develop agendas reflecting the priorities of all parties involved.

The [Water Use Advisory Council Conservation and Efficiency Recommendations](#) are available online.

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-4

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
State of Minnesota

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs: (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

The Agreement

E. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

F. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

G. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs: (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

H. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

II. SUBMISSIONS BY STATE OF MINNESOTA

A. To the Compact Council. The Compact Council has received the State of Minnesota's report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the State of Minnesota's report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the State of Minnesota, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

- A. Based on the report submitted by the State of Minnesota, the Water Management Program presented by the State of Minnesota meets or exceeds the current requirements of the Compact and the Agreement.
- B. Based on the report submitted by the State of Minnesota, the Water Conservation and Efficiency Program presented by the State of Minnesota meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management Program Review
State of Minnesota
December 9, 2019

Five-Year Program Review Report

Water Management Program Report & Conservation and Efficiency Program

State of Minnesota, December 9, 2019



This report fulfills the State of Minnesota’s obligation under 3.4 of the Great Lakes- St. Lawrence River Basin Water Resources Compact and under Agreement Article 300 of the Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement.

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Cover photo by: Gary Alan Nelson

Lake Superior Watershed in Minnesota

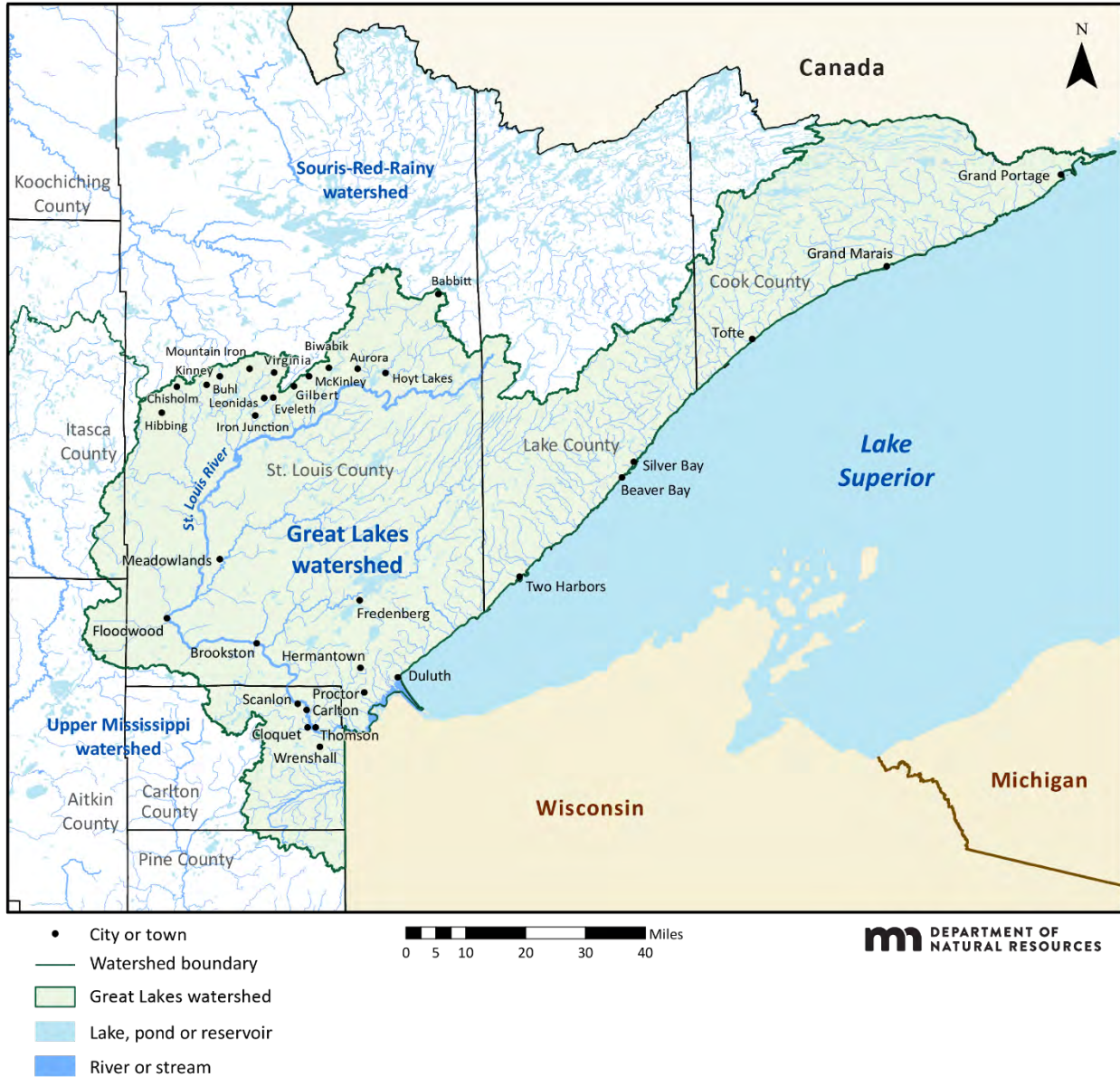


Figure 1. Detailed Minnesota portion of the Lake Superior Watershed.

Water Management Program Report & Conservation and Efficiency Program Report Purpose:

Pursuant to Compact Section 3.4. Program Review and Findings.

Each Party shall submit a report to the Council and the Regional Body detailing its Water Management Program and Water Conservation and Efficiency Program to satisfy obligations included in the Great Lakes-St. Lawrence River Basin Water Resources Compact. The report shall set out the manner in which water withdrawals are managed by sector, water source, quantity or any other means, and how the provisions of the standard of review and decision and conservation and efficiency programs are implemented. The first report shall be provided by each Party one year from the effective date of this Compact and thereafter every five years.

Minnesota Highlights:

The report format requires a listing of laws, regulations and policies. During 2014 -2019 there were two major legislative changes that impacted water management and water conservation: a new *Demand Reduction Law* and the *Riparian Buffer Law*.

Major water management and water conservation accomplishments and innovations include: the new DNR Water Conservation Reporting system, improving the Minnesota Water Permitting and Reporting System, completing the Ecological and Water Resources Strategic Plan, forming and organizing the Lake Superior Collaborative, securing major funding and implementing projects to improve the St. Louis River, creating and hiring two new positions in the DNR, the Water Conservation Consultant and the Water Policy Consultant, launching the initial phases of an update and revision of the statewide drought response and mitigation plan, and completing the Minnesota Water Reuse Report. Water conservation metrics have recently been added to the GreenSteps City voluntary challenge, assistance and recognition program. In the past five years, the Minnesota Technical Assistance Program (MnTAP) at the University of Minnesota has increased focus on industrial water conservation. With the increased focus on industrial water efficiency technical assistance, Minnesota companies have implemented 800 million gallons of water efficiency measures recorded as first year savings.

This report includes new actions that were started or accomplished during the calendar years from 2014-2019. For previous water management, water conservation and sustainability programs please see earlier reports.

This plan is submitted by the Minnesota Department of Natural Resources (DNR). We have captured some of the highlights from our cooperating partners including other governmental and non-governmental groups involved in managing and conserving Lake Superior and other Minnesota water resources.

Note: All underlined items are linked to the referenced Websites

GENERAL INFORMATION

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

Minnesota Department of Natural Resources (DNR), [Division of Ecological and Water Resources](#) (EWR) is the lead agency responsible for Minnesota's water quantity management and water conservation and efficiency programs. Contacts are:

- Tim Walz, Governor of Minnesota
- Jess Richards, DNR Assistant Commissioner jess.richards@state.mn.us 651-259-5025
- Randall Doneen, Conservation Assistance and Regulations Section Manager
Randall.doneen@state.mn.us 651-259-5674
- Carmelita Nelson, Water Conservation Consultant Carmelita.nelson@state.mn.us 651-259-5034
- Darrell Schindler, NE Region Ecological and Water Resources Manager
darrell.schindler@state.mn.us 218-328-8822
- Pooja Kanwar, Water Policy Consultant pooja.kanwar@state.mn.us 651-259-5677
- Dan Miller, Water Use Program Consultant dan.w.miller@state.mn.us 651-259-5731

2. Water management program implementing laws, regulations and policies.

Minnesota ratified the Compact in February 2007 via legislation codified at Minn. Stat. § 103G.801, which enacts the terms of the Compact verbatim. Minnesota's Department of Natural Resources (MDNR) is tasked with administering the use, allocation and control of waters of the state. In 2014, Minnesota submitted its Water Management Program Five-Year Report and its 2014 Water Conservation and Efficiency Program Review, pursuant to Compact § 3.4.1. Following review of the report pursuant to Compact § 3.4.2, the Compact Council and Regional Body issued Resolution No. 2015-4 finding that, based on the report submitted by the State, the Minnesota water management and water conservation and efficiency programs meet or exceed the current requirements of the Compact.

The laws, statutes, rules, regulations or similarly enforceable documents that establish or implement programs to meet the requirement of the Compact are listed below. The primary and related statutes and rules are available at: www.leg.state.mn.us.

Primary:

[Minnesota Statutes, sections 103A.001-103A.301 Water policy](#)

[Minnesota Statutes, sections 103G.001-103G.101 Water law, definitions, develop water conservation program](#)

[Minnesota Statutes, sections 103G.255 -103G.315 Water allocation priorities, assurance of water supply, management & permit procedures](#)

[Minnesota Statutes, section 103G.801, Great Lakes – St. Lawrence River Basin Water Resources Compact](#)

[Minnesota Rules, parts 6115.0010-6115-0120 Permit, inspection and monitoring](#)

[Minnesota Rules, parts 6115.0600 – parts 6115.0600 – 6115.0810 Water appropriations and use permits and use management plans.](#)

Related:

[Minnesota Statutes, section 103B.235 Local water management plan](#)

[Minnesota Statutes, chapter 103H. Groundwater Protection](#)

[Minnesota Statutes, chapter 103I. Wells, Borings, and Underground Uses](#)

[Minnesota Statutes, section 116B.01 Environmental Rights](#)

[Minnesota Statutes, chapter 116D. Environmental Policy](#)

3. Major Law Changes from Minnesota’s 2014 Five-Year Program Review Report

During 2014-2019 there were several major legislative changes that impacted water management and water conservation.

NEW 2015 [Minnesota Statutes, section 103G. 291, Subd. 4 Demand Reduction & Rates](#)

To encourage water conservation, a new Demand Reduction Law went into effect January 1, 2015 requiring every public water supplier serving more than 1,000 people to implement demand reduction measures. Demand reduction measures must include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction.

NEW 2015 [Minnesota Statutes, Chap.4, Article 3, sec.143](#) Negative Surface Water Impacts

The Negative Surface Water Impacts legislation directed the DNR to consult with interested stakeholders and develop recommendations for statutory or rule definitions and thresholds for negative impacts to surface waters.

NEW 2017 [Minnesota Statutes, Chap.103G, Subd.1](#) Appropriation or use of storm water that is used to reduce runoff volume, treat storm water or sustain groundwater supplies is exempt from a DNR appropriations permit.

NEW 2018 [Minnesota Statutes, chapter 103E.021 Planting Ditches with Perennial Vegetation](#)

The Riparian Buffer Law ([103F.48](#)), or “Riparian Protection and Water Quality Practices” law, states: “it is the policy of the state to established riparian buffers and water quality practices”. The law requires perennial vegetative buffers of up to 50 feet along public water lakes, rivers, and streams, and buffers of 16.5 feet along public ditches. These buffers help filter out phosphorous, nitrogen, and sediment. The deadline for implementation for buffers on public waters was November 1, 2017 and November 1, 2018 for public ditches.

AMENDED [Minnesota Statutes, section 103.G287, Subd. 4 Groundwater management areas](#) The Groundwater Appropriations law has existed for some time, however, there have been several revisions between 2014-2019. The DNR has significantly expanded monitoring, planning, and management in the state’s designated groundwater management areas where there are concerns with sustainability or water conflict.

WATER MANAGEMENT PROGRAM REPORT

1. Water management program scope and thresholds.

The Great Lakes basin in Minnesota consists of approximately 6,200 square miles of the Lake Superior basin in the northeastern portion of the state. Minnesota applies an adaptive approach to its water management, so that expanding scientific knowledge and improvements in technology lead to improvements in natural resource use and protection. The Minnesota DNR is the primary state agency responsible for water quantity management. [State-wide programs](#) that monitor and protect water resources are managed by several Minnesota agencies, including the DNR, the Pollution Control Agency, the Department of Health, the Department of Agriculture, and the Board of Water and Soil Resources.

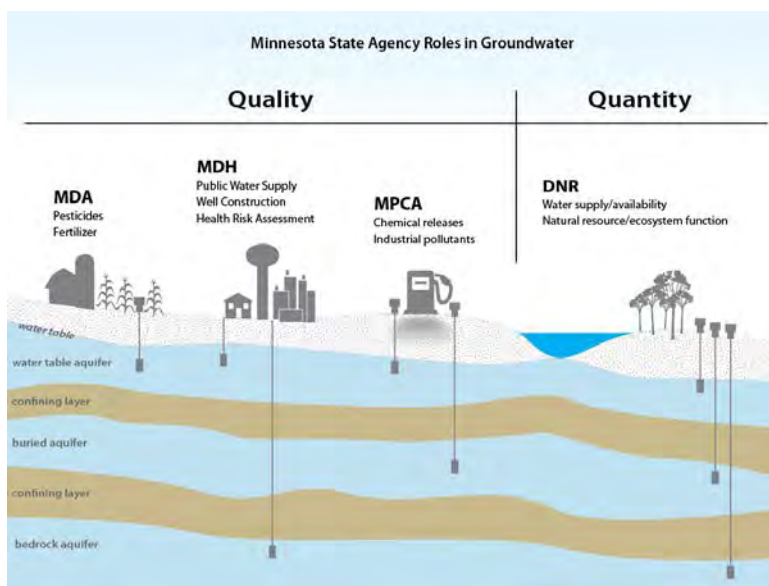


Figure 2. Several agencies manage water resources in Minnesota. BWSR, not depicted here, provides indirect benefits for both groundwater quality and quantity.

Tribes are sovereign nations and some reservations are located within the Lake Superior basin in Minnesota. Bands also have reserved treaty rights to hunt, fish, and gather. The Bois Forte, Fond du Lac, and Grand Portage bands continue to exercise treaty rights in the 1854 Ceded Territory encompassing present-day northeastern Minnesota. Bands manage resources within reservation boundaries. The DNR works collaboratively with the bands in managing resources within ceded territories. Natural resources are cultural resources to the bands, and the availability and health of these resources continue to be of high importance.

Minnesota maintains a water resources inventory including withdrawals, diversions, and consumptive uses in the Lake Superior basin as required by Compact § 4.1.1. Minnesota accomplishes this inventory of location of type and quantity of withdrawals, diversions and consumptive uses through required annual water use reporting by all water appropriation permittees via the Minnesota DNR Permitting and Reporting System (MPARS). When reporting water use, the source of water, use of water, and location of appropriation are all recorded statewide, including the Lake Superior Basin. Minnesota has been maintaining a statewide inventory of “public water resources” since about 1970. This inventory has been codified as a requirement in Minn. Stat. § 103G.201.

A water appropriation permit from the DNR is required for groundwater and surface water withdrawals, diversions and consumptive uses that exceed 10,000 gallons per day or one million gallons per year. This permit applies to all users, not just new or increased withdrawals or diversions. Minnesota’s threshold level for permitting withdrawals and consumptive uses is considerably lower than the Compact’s default threshold of 100,000 gpd per 90-day period.

New, since 2014, is the [DNR preliminary well construction assessment](#) process. Those proposing to use groundwater, in excess of permitting thresholds, are required to submit a request to the DNR before well construction. Proposed water users must submit a request so that DNR staff can evaluate the proposed project while taking into consideration aquifer water levels, other water users, and groundwater dependent natural resources. DNR staff communicate to the requestor the likelihood of having to invest additional resources and money after submitting an application in order for permitting staff to make an informed decision (i.e., aquifer test, monitoring wells, etc.). By Minnesota Statute, “appropriating” is defined as “withdrawal, removal, or transfer of water from its source regardless of how the water is used,” (Minn. Stat. § 103G.005(4)). The term includes consumptive uses and diversions, as well as withdrawals.

A permit to appropriate or transport any amount of infested water is required to take and transport water from a designated infested water, even if the amount of water to be taken is less than the amount that triggers a water use permit. Permit requirements apply statewide to all water use sectors. Permit holders annually report monthly water use volumes to the DNR.

There are several exemptions to DNR water appropriation permit requirements:

- domestic uses serving less than 25 persons for general residential purposes,
- test pumping of a ground water source,

- reuse of water already authorized by a permit (e.g., water purchased from a municipal water system), or
- certain agricultural drainage systems

Although the Minnesota Department of Health (MDH) and the DNR have different missions, both agencies are committed to good water supply management and public health protection. The DNR permitting system (similar to a registration) captures all diversions over 10,000 gal./day or 1 million gal./year in the Lake Superior basin as required by Compact § 4.1.3.

Minnesota Department of Health (MDH) assures the proper construction of all new wells and borings, and the proper sealing of unused wells and borings. The MDH [Well Management Program](#) oversees special well and boring construction areas, (such as flowing well areas or areas of contaminant concern), water quality testing, well disinfection and property transfers. The MDH webpage also has links to laws and rules that apply to their department and a Rules Handbook.

Critical Ecological Thresholds

Beyond gallons per day or gallons per year, the Minnesota DNR is monitoring, researching, and setting guidelines for critical ecological thresholds. In 2015 the DNR initiated a project with a number of stakeholders and published the [Groundwater Threshold Project](#) to examine the effects of groundwater use on streams, lakes, and wetlands. In 2016 a project report was submitted to the Minnesota legislature that includes recommendations for statutory definitions, as well as recommendations for thresholds for negative impacts to surface waters from groundwater use. Groundwater plays a critical role for rivers, lakes, and wetlands and the fish and wildlife that depend on those cool waters for survival.

Related Statutes

- MS 103G.287 - Groundwater appropriations that will have negative impacts to surface water are subject to provisions of MS 103G.285
- MS 103G.285 - Quantity threshold – ½ acre foot per acre of surface area; Establish Protection Elevation below which appropriation is not allowed; Aquatic plant habitat; Surface water recreational uses; Changes in basin shape
- MS 103G.261 - Discourage appropriation and use in lakes < 500 acres in size.

2. Management of Water Withdrawals in the State

a. Sector (public water supply, commercial, industrial, institutional, agricultural, and other)

All water use sectors are subject to water use permitting and annual reporting requirements. Water appropriation permits specify the authorized source of water, withdrawal rates, annual water volumes, allowable uses, and withdrawal exclusion dates. Permit applications are evaluated to determine adequacy of water supplies, natural resource impacts, impacts on other

users, water conservation practices, and consistency with Minnesota Rules and Statutes. At the time the permit application is evaluated, all restrictions are considered, such as requirements of the Decision-Making Standard of the Compact, Section 4.11. Water appropriation permits in Minnesota do not relieve the permittee of local, regional or state regulatory obligations.

Permits are permissive only and subject to modification, suspension or termination for violation of permit terms or to protect public interests and natural resources. Self-supply domestic uses for less than 25 persons for general residential purposes and agricultural drainage that does not impact Public Waters are exempt from permit requirements. Permits have not been required for in-stream uses for run-of-the-river hydroelectric power production where the water is not removed from its source.

Minnesota law sets priorities for water use in circumstances when there is a water shortage. From highest to lowest priority these uses are: 1. Domestic water supplies and power production with contingency water use plans 2. Uses of water consuming less than 10,000 gallons/day 3. Agricultural irrigation and processing of agricultural products 4. Power production without contingency water use plans 5. Consumptive uses in excess of 10,000 gallons/day. 6. Nonessential uses of water.

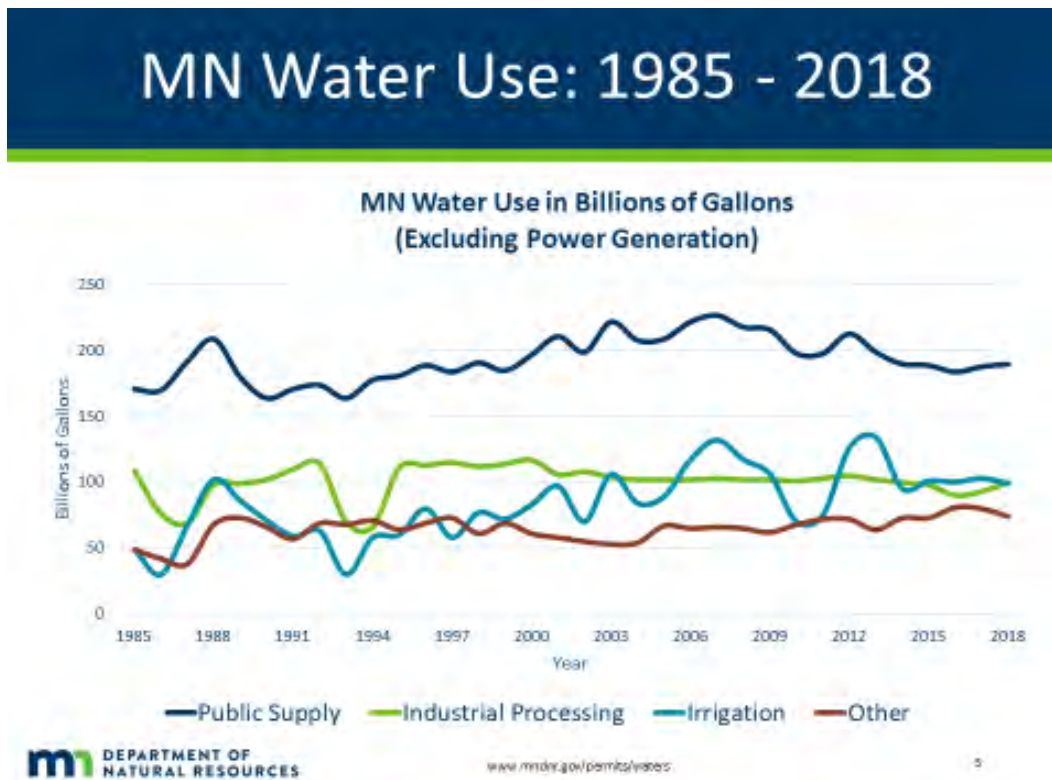


Figure 3. This graph shows overall water use from 1985-2018. Four of the five major water use sectors are depicted. Power generation is not shown. Despite a growing population, water use has remained relatively stable.

b. Water source (groundwater, Great Lakes-St. Lawrence River surface water, and other surface water).

Permit requirements apply to “waters of the state”, which include surface and underground waters. Applications and permits identify the source of water and the withdrawal location. Separate applications are required for each source of water (groundwater, water basin, watercourse). Annual water use reporting is required for all water sources.

c. Quantity (regulatory thresholds, volumes, rates, and requirements).

Permits are required for water withdrawals that exceed 10,000 gallons per day or one million gallons per year. Authorized water volumes and withdrawal rates are specified on permits. Permit holders submit an annual report of water use that includes monthly volumes. The surface and groundwater monitoring unit tracks the cumulative impacts to rivers and stream flows and aquifers as needed, with special emphasis on the designated Groundwater Management Areas (GWMA) in the state. “The commissioner may designate groundwater management areas and limit total annual water appropriations and uses within a designated area to ensure sustainable use of groundwater that protects ecosystems, water quality, and the ability of future generations to meet their own needs...” [MS 103G.287, Subd. 4](#)

d. Location (statewide or Great Lakes-St. Lawrence River Basin).

Minnesota water management is a statewide program under the authority of the DNR. Withdrawal proposals are evaluated in accordance with the law, by location, sector, and by water source in order to assess individual and cumulative impacts. Permits identify authorized withdrawal locations.

e. Specific exemptions as allowed in the Agreement and the Compact.

Transportation and emergency use exemptions in the Agreement and Compact are exempt from permit requirements or are covered by a general permit.

3. Application of the Standard of Review and Decision.

a. Decision Making Standard for Withdrawals, Consumptive Uses.

Minnesota Statutes and rules cited under General Information, Item 2 define the standards for review and decisions on Water use proposals. All applications must consider alternatives, including conservation, and are evaluated for impacts to natural resources and other water users. Minnesota’s existing program and regulations meet or exceed the Standard of Review.

b. Exception Standard for Diversions.

Diversions are subject to provisions in the Compact, which has been codified in Minnesota Statutes 103G.801 and the provisions in Minnesota Statutes, section 103G.265.

4. Overview of Database of Withdrawals, Consumptive Uses and Diversions.

Minnesota Permitting and Reporting System - MPARS

Reporting

Water appropriation permittees (i.e. registrants) are required to report annually their water use including monthly water volumes and other information. Minn. Stat. § 103G.801 incorporates this Compact reporting requirement. There has been a 99.9% compliance rate with water use reporting requirements (failure to report can result in permit termination).

Water use reporting is now mostly done online through the Minnesota DNR Permitting and Reporting system ([MPARS](#)). MPARS is an online system for water use reporting, permit applications, permit change requests, and preliminary well construction assessment requests. MPARS is designed to benefit DNR's permit holders and applicants with a simple, convenient and easy-to-use system. All permit records are maintained online, allowing permit holders to access their permit file at any time. The system includes a map of permitted projects that enables evaluation of cumulative impacts.

The information collected from the permitting and reporting process is made available to the public on the MDNR website with links to searchable databases, maps and water use report summaries.¹ Minnesota's statewide reporting system complies with the registrant reporting requirement of Compact § 4.1.4.

Compact § 4.1.5 requires each state to annually report information gathered per Compact § 4.1 to the regional water use database repository. Minnesota annually reports on withdrawals, consumptive uses and diversions from the Lake Superior basin to the Great Lakes Regional Water Use Database, and the aggregated information is available to the public online.

Minnesota Statutes require flow meters to measure water use, but other methods of measurement can be approved by the DNR. Permit and water use data are stored within the MPARS database. The data is available from DNR's website at [Water Resources Main Page](#). Consumptive use data are reported to the Great Lakes Commission using factors that estimate water losses by sector.

New or Increased Withdrawals and Consumptive Uses

For new or increased withdrawals and consumptive uses in the Lake Superior basin, permits are first reviewed to see if they meet state law. Then, specifically in the Lake Superior basin, no permits for water appropriation will be granted unless the proposal meets the Decision-Making Standard of Compact § 4.11. Minnesota, through MPARS, requires a project proposer to provide

¹ MNDNR, Water Use Data, [Minnesota Water Use Data](#)

the location, type, quantity, and the rate of water use throughout the state, including the Lake Superior basin. Permitted water users are then required to report monthly water use totals on an annual basis. The water use information reported in MPARS can be retrieved based on a geographic area, like the Lake Superior basin, for example. This method of gathering information fulfills Compact § 4.11.

Minnesota also has set two other thresholds which trigger additional requirements. First, a permit application for a consumptive use of 2 million gpd or greater in a 30-day period requires further consideration before approval regarding the sustainability of the use in balance with the water resource needs of the source basin over the life of the use, Minn. Stat. § 103G.265(3). Second, notice must be given to the governors, premiers, and water management agencies of the Great Lakes region and the international joint commission for any application for a consumptive use over 5 million gpd in a 30-day period, Minn. Stat. § 103G.265(4).

Decision-Making Standard

A [preliminary well construction assessment](#) from the DNR is required before drilling a well that will need a water appropriation permit (required to withdraw more than 10,000 gallons of water per day or 1 million gallons per year). The DNR informs the applicant whether the anticipated water use request is likely to meet the applicable requirements in law. This process helps prospective well owners to make informed decisions by providing relevant information prior to their financial investment in equipment and well construction. Once an application for a water appropriation permit is submitted, DNR staff begin reviewing and evaluating the application materials prior to issuing a permit.

Special Decision-making Guidance in Basin

For new or increased withdrawals and consumptive uses in the Lake Superior basin, no permits for water appropriation will be granted unless the proposal meets the Decision-Making Standards of the Compact § 4.11 and the requirements of Minn. Rule 6115.0670.

The Decision-Making Standard of the Great Lakes Compact lists five criteria that must be met in the basin are:

1. all water withdrawn shall be returned to the source watershed less an allowance for consumptive use;
2. the use will result in no significant adverse impacts to the quantity or quality of the waters or water dependent natural resources of the applicable source watershed;
3. the use will incorporate environmentally sound and economically feasible water conservation measures;
4. the use will comply with all applicable municipal, state, federal laws as well as regional interstate and international agreements; and
5. the use is reasonable. Compact § 4.11.

The term “reasonable” is based on consideration of six specific factors. : (1) efficient use, minimize waste of water; (2) for increased withdrawal or consumptive use, efficient use of existing water supplies; (3) balance economic, social and environmental aspects of proposed use with those of existing uses sharing the water source; (4) supply potential of the water source; (5) degree and duration of any adverse impacts caused by proposed use to other lawful uses of water or to the waters and water dependent natural resources of the basin; and (6) if applicable, restoration of hydrologic conditions and functions of the source watershed. Compact § 4.11.5.

By virtue of adopting the Compact verbatim at [Minn. Stat. § 103G.801](#), Minnesota law includes the Compact § 4.11 Decision-Making Standard.

A Minnesota regional staff guidance document on the Decision Making Standard of the Great Lakes Compact provides additional criteria for all permit requests in the Lake Superior basin. Basically, for appropriation permit requests within the basin, DNR staff first apply Compact Decision-Making Standards and then apply Minnesota administrative rule. Some sections of the compact and the rule are duplicative, making review easier.

[Minn. Rule 6115.0670](#) identifies ten factors MNDNR shall “consider” when reviewing all permit applications, and then lists additional factors for consideration for appropriations from watercourses, basins, and groundwater. The rule stipulates that no permit shall be granted:

1. for application involving diversion of any waters of the state, surface or ground water, to a place outside the state, the remaining waters in the state will not be adequate to meet the state water resources needs during the specified life of the diversion (Minnesota Statutes, section [103G.265](#), subdivision
2. there is no conflict between competing users but the quantity of available waters of the state, in the area involved, are inadequate to provide the amounts of water proposed to be appropriated;
3. the appropriation is not reasonable, practical, and does not adequately protect public safety and promote the public welfare (Minnesota Statutes, section 103G.315);
4. the appropriation is not consistent with approved state, regional, and local water and related land resources management plans, provided that regional and local plans are consistent with statewide plans (Minnesota Statutes, section [103G.271](#), subdivision
5. there is an unresolved conflict between competing users for the waters involved and the conflict has not been resolved pursuant to provision of part [6115.0740](#).

The administrative rule also subjects permit approval to further criteria depending upon whether it is a surface water or groundwater appropriation. Minn. Rule 6115.0670 says that permit decisions also shall be based on other applicable provisions of Minn. Stat. chapter 103G, which includes the codified Compact.

Diversions and Exceptions

Compact § 4.8 generally prohibits all new or increased diversions, except as provided in Article

4. Compact § 4.9 sets forth three exceptions to the general ban on new or increased diversions:

straddling communities, intra-basin transfers, and straddling counties. Minnesota adopted the Compact verbatim, and therefore all proposed new or increased diversions from the Lake Superior basin are prohibited unless they meet one of the three exceptions recognized in the Compact.

New Supplemental Conservation Reporting

In early 2018, the DNR initiated the [Water Conservation Reporting System](#) supplemental to MPARS. This system tracks compliance with the new Demand Reduction Law for the 348 Minnesota utilities required to complete Water Supply Plans. By 2021 the system will provide water conservation measures for all permit holders except for dewatering permits. Water conservation reporting is voluntary, however many permittees that have reported conservation and efficiency improvements during the first 2 years have realized the benefits of the web-based water use, efficiency and conservation tracking and reporting tool. See the Water Conservation section of this report for more details.

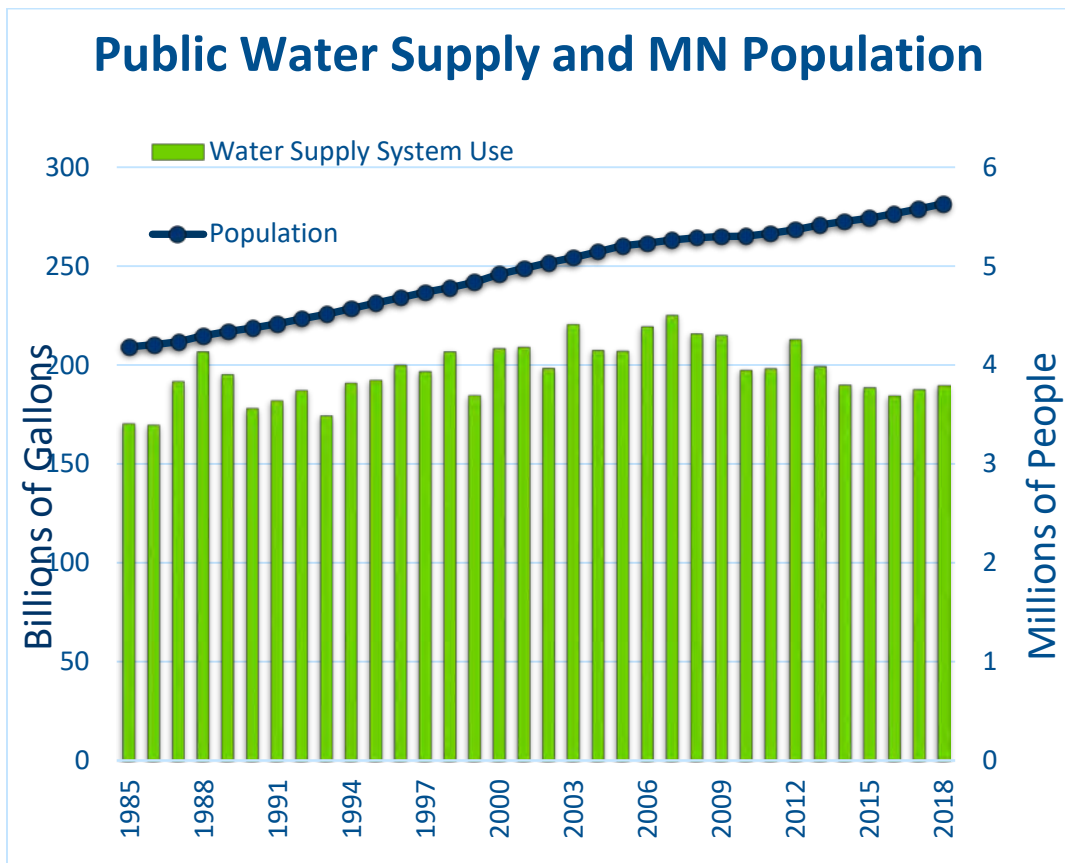


Figure 4. Although population continues to grow in Minnesota, water supply system use has generally declined in the past 5 years.

The chart above demonstrates total water use from public water supply systems (groundwater and surface water) and includes the population in Minnesota in millions of people from 1985 to 2018. Over the last 5 years, approximately 65% of the total water use for public water supply is from groundwater sources. Although state population continues to increase, water efficiency has decreased the total amount of water used in the state over the past 5 years.

5. Permit applications and other program information.

Potential water users apply for a permit online using MPARS. Additional program information is available at [DNR Water Permits](#) Minnesota Rules 6116.600 – 6115.0810 define standards for evaluating water appropriation permit requests.

6. Initiatives to support scientific understanding of the surface and ground waters of the Basin and impacts from Withdrawals, Consumptive Uses, and Diversions.

a. Ballot Measures.

Beyond the General Funding, Minnesotans are fortunate that voters approved a constitutional amendment that dedicates proceeds from 3/8's of one percent of sales tax to provide for clean water, natural resource protection, recreation and cultural heritage protection for 25 years. This was approved by a vote of the people in Minnesota in 2008. Thirty-three percent of the sales tax revenue from the Legacy amendment is allocated to the [Clean Water Fund](#) resulting in over \$971.5 million for Clean Water projects. Those funds may only be spent to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation. At least five percent of the clean water fund must be spent to protect drinking water sources. Over 60 projects have direct implications to Lake Superior water management.

Protecting Minnesota's waters is a joint effort between seven partner agencies, who collaborate and partner on Minnesota's water resource management activities under the Clean Water Fund. With these funds we have been able to embark on new efforts toward the implementation of the Water Conservation and Efficiency goals adopted by the Council and Regional Body.



Figure 5. Clean Water Land & Legacy were approved by tax payers.



Figure 6. Environmental Trust Funds is generated by the MN State Lottery.

The Environment and Natural Resources Trust Fund (ENRTF) was established following voter approval of a constitutional amendment in 1988. The money in the Trust Fund is generated by the **Minnesota State Lottery**. The Trust Fund holds assets that can be appropriated, "for the public purpose of protection, conservation, preservation, and enhancement of the state's air, water, land, fish, wildlife, and other natural resources." Since 1991, the ENRTF has provided approximately \$500 million to approximately 1,000 projects around the state. Some of the projects [recently funded by ENRTF](#) specific to Lake Superior include: Evaluation of Lake Superior Water Quality Health; Developing Membrane Filtration System to Treat Lake Superior Ballast Water and two other ballast water research projects; and management of North Shore Trout Stream, and many others.

b. Tribal Partnerships

The Fond du Lac Band has partnered with the USGS, with support from the Minnesota Chippewa Tribe, the Bois Forte Band, the Leech Lake Band, and the Mille Lacs Band, to develop a regional groundwater flow model of the upper St. Louis River watershed ([Simulation of the Regional Groundwater-Flow system in the St. Louis river Basin, Minnesota](#); Scientific Investigations Report 2019-5033). This modeling effort characterizes groundwater movement in the watershed, and includes more detailed local, high-resolution steady-state groundwater models of selected land use change areas, particularly areas affected by historic and current mining activity, and extreme hydromodification resulting from extensive ditching in vast peatlands of the watershed. This model will provide useful background information to help understand hydrologic changes in mining regions.

c. One Watershed One Plan

The vision of One Watershed, One Plan is to align planning with major watershed boundaries for prioritized, targeted, and measurable watershed plans developed and implemented locally. Lake Superior North One Watershed One Plan is now complete: [Lake Superior North: One Watershed, One Plan](#) This plan is highly focused on ecosystem protection, which feeds indirectly into sustaining the surface water sources that most people use for drinking water in the region. The Board of Water and Soil Resources leads this planning effort.

d. Lake Superior Collaborative: A DNR Initiative for Collaborative Water Governance.

Water governance has always required cooperation, but as demand for water and water-based resources increases the need for integrated water resource management has never been greater. Millions of dollars of federal money are brought into Minnesota annually for Lake Superior management. The objectives of this collaborative effort are to enhance DNR direct participation in Great Lakes programs, responsibilities and initiatives, coordinate lake-wide activities with cross-jurisdictional programs, coordinate Lake Superior activities with internal State programs, and advance Lake Superior restoration and protection priorities through a variety of means.

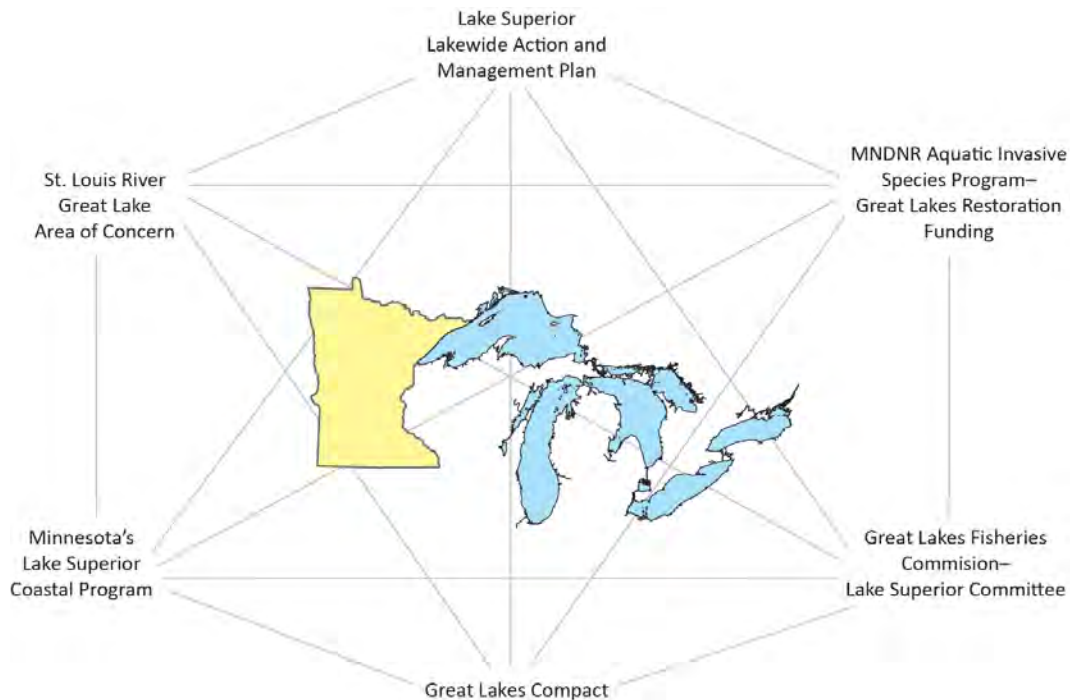


Figure 7. Graphic of the MN Department of Natural Resources programs involved in the Lake Superior Collaborative.

The Six DNR Programs in Great Lakes Management

- **The Great Lakes Fishery Commission** - The Great Lakes Fishery Commission was established in 1955 by the Canadian/U.S. Convention on Great Lakes Fisheries. The commission coordinates fisheries research, controls the invasive sea lamprey, and facilitates cooperative fishery management among the state, provincial, tribal, and federal management agencies.
- **Minnesota's Lake Superior Coastal Program** - Minnesota's Lake Superior Coastal Program is a federal-state partnership dedicated to the comprehensive management of our coastal resources. The Program provides technical and financial resources for the local community, by bringing federal dollars into Minnesota for the Lake Superior coastal area.
- **Lake Superior Lakewide Action and Management Plan** - Each Great Lake has a Lakewide Action and Management Plan (LAMP). LAMP provides a management framework for a binational, watershed-based approach to the overall restoration, protection and maintenance of the Lake Superior ecosystem.
- **St. Louis River Restoration Initiative (SLRRI)** - Minnesota DNR is leading habitat restoration projects in the estuary to address degradation of fish and wildlife populations, and to restore fish and wildlife habitat. For each project, DNR and its partners identify ecological targets to guide selection, design, construction and monitoring projects. Some SLRRI restoration projects are also designated management actions within the Remedial Action Plan for the St. Louis River Area of Concern (SLRAOC) program. The SLRAOC is a bi-state

initiative that has identified 78 management actions to address nine of the International Joint Commission's fourteen Beneficial Use Impairments.

- **Great Lakes Compact Council** - The Great Lakes–St. Lawrence River Basin Water Resources Compact Council implements the Compact. The Compact is state and federal law that details how the states will work together to manage and protect the Great Lakes Basin. The governors of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin are members of the Council. In addition to Compact Council, the Great Lakes–St. Lawrence River Water Resources Regional Body, that includes the premiers of Ontario and Quebec along with the eight Great Lakes governors, is guided by the Great Lakes Agreement for management and protection of the Great Lakes Basin water resources.
 - **Aquatic Invasive Species Program** - The Great Lakes Restoration Initiative (GLRI) was launched in 2010 to accelerate efforts to protect and restore the Great Lakes. The GLRI Action Plan II summarizes the actions that federal agencies plan to implement during FY15-19. The purpose of the MNDNR AIS program is to prevent the introduction of new invasive species, curb the spread and minimize harmful effects of nonnative species.
- a. **Groundwater Management Areas** - The framework for improved scientific understanding and sustainable management of Minnesota's water resources is centered in three program areas: mapping; monitoring; and managing. DNR has drafted a [strategic plan](#) for improving its groundwater management. Three pilot areas in the state (none are within the Great Lakes Basin, however) have been designated as [groundwater management areas](#) (GWMA) where the strategic plan's objectives and strategies will be written into a GWMA Plan for DNR implementation.
 - b. **Minnesota Sea Grant Work** – Minnesota Sea Grant continues to partner with the DNR and other organizations to help prevent the spread of aquatic invasive species. Minnesota Sea Grant provides leadership and support in sharing the best available science to improve ballast water policy, and assists in timely and effective implementation of ballast water management and control systems on vessels. The Minnesota Sea Grant is part of the National Oceanic and Atmospheric Administration's (NOAA) Sea Grant Program, which supports 33 similar programs in coastal states throughout the United States and Puerto Rico. It receives funding through the NOAA-Office of Oceanic and Atmospheric Research and the University of Minnesota. The program partners with local, regional and national organizations and is an integral member of the Great Lakes Sea Grant Network.
 - c. **Climate Change Impacts** – The DNR state climatologists, the University of Minnesota and others are closely monitoring Lake Superior in terms of a changing climate.
 - One of the most remarkable changes has been the speed with which the lake changes. In 2013, the water levels on Lake Superior were nearing historic lows and the shipping industry was concerned about navigation. Now, just six years later in 2019, Lake Superior is setting record high levels. The three-foot rise in such a short time span is remarkable for a lake the size of Lake Superior, the largest lake in the world by surface area. This has happened only once before in historic records, from approximately 1926-1932.



Figure 8. Heavy rainfall and waves have caused flooding in Duluth and North Shore communities

- Various storms between 2017-2019 produced significant shoreline erosion and damage to the existing city infrastructure. These storms produced sustained winds at 40-50 mph, with waves of 15.7 feet and storm surges over 1.3 feet.
 - These and other rain events have caused significant damage to communities resulting in large plumes of sediment-rich water surging into the lake, turning the water a pinkish-iron color. In an effort to mitigate the impact of intense rains, the DNR provided tours and training on rain gardens in Duluth.
 - North Shore rivers and streams from the Knife River to the Pigeon River are all susceptible to impacts from climate change. However, certain rivers are at greater risk than others. DNR fisheries staff are developing and implementing strategies. Changes are occurring faster than anticipated with air temperature and precipitation greatly impacting fish habitat. Warmer temperatures may reduce the number of streams that support brook trout because they are the most thermally-sensitive species.
 - Around the Great Lakes we can expect to see more harmful algal blooms, warmer water temperatures and declining ice cover, more rain storms flushing runoff from farm fields and parking lots, and more coastal erosion and beach closures.
 - Future resilient coastal and watershed habitat restoration strategies and infrastructure-hardening continue to be planned and implemented.
 - Experts from the University of Minnesota contributed to a report titled, ["An Assessment of the Impacts of Climate Change on the Great Lakes"](#).
- d. **Mining** - The DNR Division of Lands and Minerals manages mining activities through permitting, provides technical expertise, and collects information to support and inform permitting decisions. Water resources related to mining are managed through the regulation and monitoring of water appropriation permits. There are five active taconite mines pits (or portions of pits) in the Lake Superior Watershed. The taconite mines appropriating within the watershed may use groundwater and/or nearby surface waters, including the reuse of water for operations. Northshore Mining Company is the only operation that appropriates water directly from Lake Superior for plant operations.

In late 2018, the DNR issued permits for the PolyMet NorthMet project, a copper-nickel-precious metals mine located in the Lake Superior Watershed. Mining activities have not begun

at the NorthMet project site. For all mines, ambient and permit required monitoring networks provide data on groundwater levels, surface water levels and flows, precipitation, and water use that are used to evaluate individual and cumulative impacts.

- e. **Preliminary well construction assessment** - Recent changes to Minnesota water laws now require potential well owners to request a preliminary well construction assessment from DNR before constructing a well that will need a water use permit. DNR provides information on water resources in the area, the likelihood that their project could receive a water use permit, and alerts the applicant to resource concerns and additional monitoring and aquifer testing that they may be required to perform at their expense during the water use permit application process. The potential well owner can then make an informed decision on whether to invest in a well and other equipment.
- f. **County Groundwater Atlas Program** – Due to the complex hydrogeology of Minnesota, and the states dependence upon groundwater, the DNR and the Minnesota Geological Survey (MGS) are collaborating to create tools to assist in the long term management of these valuable resources. Detailed maps and reports of the geology and hydrogeology of Minnesota are available or underway for resource managers, industry, agriculture, researchers and others. A County Geologic Atlas prepared by the MGS provides information about the geology of a county. The DNR prepares the County Groundwater Atlas based on the work of the MGS. A Groundwater Atlas characterizes flow systems, aquifers, groundwater chemistry, relative age of groundwater and sensitivity to pollution. The following two figures provide the status of the county atlas programs as of 2019:

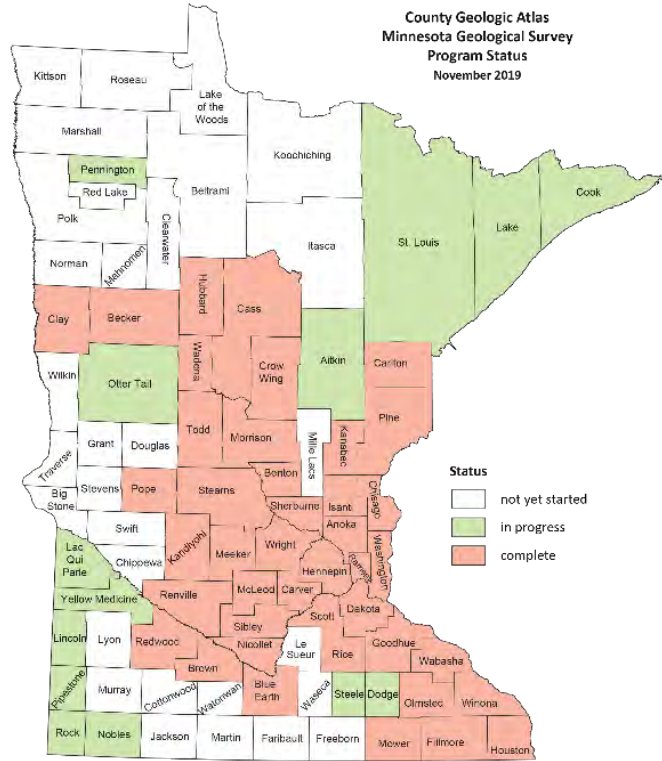


Figure 9 County Geologic Atlas Part A

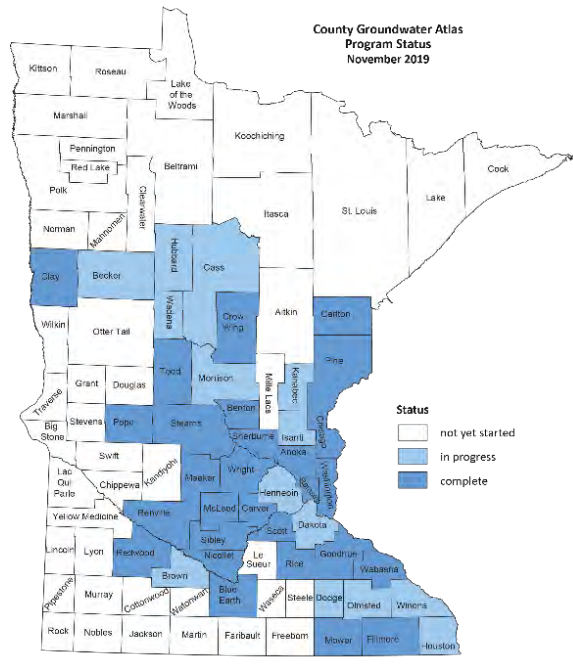


Figure 10 County Geologic Atlas Part B

- g. Community-based Aquifer Management Partnership (CAMP) is a process that combines social and groundwater sciences so communities can take a greater leadership role in managing their shared aquifers. A CAMP Dashboard consisting of their aquifer cross-section, water users, reported water use volumes, use trends, and observation well data provides the starting point. The local community determines the direction and extent of the next steps based on these initial conversations about water use, users and availability.

7. Additional information

- a. **Strategic Planning.** The Ecological and Water Resources Division is one of seven divisions in the Minnesota Department of Natural Resources. In 2018, the division released its [Ecological and Water Resources Division Strategic Plan 2018-2028](#). This plan provides the division's strategic direction for the next 10 years and is designed to communicate the division's goals, describe some important trends and issues facing the division as it pursues those goals. The eight strategic issues for the division to focus on are: biological diversity; water resources; invasive species; climate change; communication and collaboration; data; workforce health; and sustainable funding. One of the primary goals is: "Minnesota water resources will be managed and used sustainably and the water quality will be improved and protected." The plan recognized that 100 non-native species are living in Lake Superior and the wetlands in the basin. It highlighted the effort of Minnesota's Lake Superior Coastal Program, The Water Conservation Reporting System, and Project WET's water conservation educational efforts.

WATER CONSERVATION AND EFFICIENCY PROGRAM REPORT

1. Status of Minnesota's water conservation and efficiency goals and objectives.

Compact § 4.2.2 calls for each state to develop goals and objectives. Minnesota's water conservation goals and objectives are the same as the Compact's goals and the Council's objectives and satisfy this aspect of Compact § 4.2.2.

Water conservation goals in Compact Section 4.2.1 have been adopted in Minnesota Statutes 103G.801. These goals include:

1. Ensuring improvement of the Waters and Water Dependent Natural Resources;
2. Protecting and restoring the hydrologic and ecosystem integrity of the Basin;
3. Retaining the quantity of surface water and groundwater in the Basin;
4. Ensuring sustainable use of Waters of the Basin; and
5. Promoting the efficiency of use and reducing losses and waste of Water.

Water conservation objectives in Compact Section 4.2.1 have been adopted in Minnesota policy. These objectives include:

1. Guiding programs toward long-term sustainable water use;
2. Adopting and implementing supply and demand management to promote efficient use and conservation of water resources;
3. Improving monitoring and standardizing data reporting among state and provincial water conservation and efficiency programs;
4. Developing science, technology, and research; and
5. Developing educational programs and information sharing for all water users.

Minnesota is actively moving forward with an increased emphasis on water conservation, not only with current water law, rules, policies, and their implementation, but also with improvement plans for laws, rules and approaches that further both state and Compact goals. During the past five years there has been growing momentum in Minnesota around water conservation and efficiency, and the partnerships and innovations continue to expand. While our current laws, rules and policies address the goals and objectives identified in the Compact, Sustainable Water Resources Agreement, and of the Basin-wide Conservation and Efficiency Initiative, Minnesota is facing water resource management challenges and is developing additional management tools to enable the state to achieve a more sustainable use of its

limited water resources. The laws cited and programs described below provide a framework for sustainable water management that promotes efficient use of the state's water resources

2. Water Conservation and Efficiency Program Overview

- a. Citations to implementing laws, regulations and policies. The statutes and rules listed below are available at <http://www.leg.state.mn.us>

Primary:

- [Minnesota Statutes, chapter 103A. Water Policy and Information](#)
- [Minnesota Statutes, chapter 103G. Waters of the State \(primary regulatory statute\)](#)
- [Minnesota Statutes, chapter 103G.271 Appropriation and Use of Water](#)
- [Minnesota Statutes, section 103G.801, Great Lakes – St. Lawrence River Basin Water Resources Compact](#)
- [Minnesota Rules, parts 6115.0600 – parts 6115.0600 – 6115.0810. Water Appropriations and Use Permits and Use Management Plans](#)
- *NEW 2015* [Minnesota Statutes, section 103G. 291, Subd. 4 Demand Reduction & Rates](#)
To encourage water conservation, a new Demand Reduction Law went into effect January 1, 2015 requiring every public water supplier serving more than 1,000 people to implement demand reduction measures. Demand reduction measures must include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction.

Related:

- [Minnesota Statutes, section 103B. Water Planning and Project Implementation](#)
- [Minnesota Statutes, section 103F. Protection of Water Resources](#)
- [Minnesota Statutes, chapter 103H. Groundwater Protection](#)
- [Minnesota Statutes, chapter 103I. Wells, Borings and Underground Uses](#)
- [Minnesota Statutes, section 116B.01 Environmental Rights](#)
- [Minnesota Statutes, chapter 116D. Environmental Policy](#)

- b. **Summary of program elements both mandatory and voluntary.**

Since 2015, the DNR has had a full-time Water Conservation Consultant developing and implementing the statewide water conservation program consistent with laws, the Great Lakes Compact, policies and management objectives. Minnesota's water conservation program is integrated with permitting and planning requirements.

Mandatory:

- **Permits:** A water appropriation (use or withdrawal) permit is required for all users withdrawing more than 10,000 gallons of water per day or 1 million gallons per year. The

efficient use of water is required through the permitting process ([Minnesota Rules, part 6115.0770](#)). Applicants may be required to provide alternatives to proposed actions, including conservation measures to improve water use efficiencies and reduce water demand [[Minnesota Statutes, section 103G.301](#), Subd. 1 (b)(3)].

- **Accuracy:** Water users must measure water volumes appropriated within 10% accuracy. Flow meters are required but other methods, such as timers or electrical use meters, can be approved for smaller water users.
- **Demand reduction measures:** Public water suppliers serving more than 1,000 people are required to prepare a [Water Supply Plan](#) every ten years that is approved by the DNR. In these plans, suppliers identify water demand projections, development plans, water sources, and demand reduction and conservation measures. The 2016 - 2018 plan template has a stronger emphasis on water conservation and efficiency. All Water Supply Plans for public water utilities along Lake Superior and from the inland communities within the basin were due October 15, 2018. The DNR held workshops with these communities with training that included an emphasis on water conservation and efficiency. Some plan requirements include:
 - [Loss Control Audits](#) for public water suppliers were developed in consultation with the Minnesota Section of the American Water Works Association [M36 Guidelines](#). The benchmarks, which include standards for unaccounted water, per capita use, rate structure and peak demand are used in reviewing water supply plans and for water appropriation permit review.
 - Before requesting approval to construct a public water supply well or to increase authorized water volumes, demand reduction measures must be employed by the public water suppliers. A [demand reduction measure](#) serves to reduce water demand, water losses, peak water demands, and nonessential water uses. Demand reduction measures must also include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction. Conservation rate structures, or a uniform rate with a conservation program that achieves demand reduction, are required for public water suppliers in the Basin which serve more than 1,000 people. These rate structures are reviewed and approved as part of the Water Supply Planning process.
- **Critical Water Deficiency Ordinance** the development of a model Critical Water Deficiency Ordinance. While this ordinance has been required for many years, the DNR realized that no city in Minnesota had yet implemented one. Working cooperatively with the League of Minnesota Cities (LMC) and the MN Rural Water Association, a [model ordinance](#) was developed by the LMC attorney that cities are now adopting and customizing for their individual circumstances.
- [Landscape irrigation systems](#) that operate automatically are required to have technology that inhibits or interrupts operation during periods of sufficient moisture.

- *Minnesota Statutes* establish water use priorities for the allocation of waters during periods of limited supplies. Non-essential uses are the lowest priority and are subject to restrictions prior to other higher priority uses [[Minnesota Statutes, section 103G.261](#)].
- [Minnesota's Statewide Drought Plan](#) provides a framework for preparing for and responding to droughts, including steps for public water suppliers to take for water conservation. DNR began the preliminary planning phases of the drought plan revision in 2018, and will continue to collaborate with numerous stakeholders in the state – including those representing the Great Lakes Basin.
- **Once-Through HVAC:** Groundwater withdrawals for large once-through HVAC systems have been prohibited since December 31, 2010 and remaining systems have been converted to water efficient systems.
- [Minnesota's Riparian Buffer Law](#) establishes new perennial vegetation buffers of up to 50 feet along rivers, streams and ditches that will help filter out phosphorus, nitrogen and sediment. While the riparian buffer law will likely achieve the greatest benefit to surface water quality in agricultural lands, there may be some improvements in the water quality of tributaries entering into Lake Superior. Buffers also ensure some protection of water quality into the future, everywhere they are installed.
- **Wastewater:** Applicants for wastewater discharge permits are required to evaluate potential reuses of the discharged wastewater [[Minnesota Statutes, section 115.03, subdivision 1, item \(e\), sub. item \(10\)](#)].
- **Low Flow Suspensions:** Surface water use can be and has been suspended during low flow periods in Minnesota. [Published procedures](#) lay out when surface water users will be suspended. The current standard is that when flow in streams and rivers reach or fall below a flow rate that is exceeded 90% of the time (the Q90) for that watercourse, all direct appropriation must be suspended. Ecologically-based low flow thresholds can and have been developed for some surface waters.

Voluntary:

- The new Water Conservation Reporting system is voluntary, with 94% of municipalities reporting their conservation efforts and 56% of commercial, industrial and institutional users reporting their efforts.
- Many public water suppliers provide water conservation information to customers. For example, [City of Cloquet](#) has a simple, but concise water conservation webpage. The city of [Woodbury](#) has been actively reducing demand through a variety of water conservation and efficiency programs. Cities are encouraged to become US EPA WaterSense Partners.
- *Minnesota Statutes* that require demand reduction measures for new public water supply wells or increased water volumes also provide consideration for voluntary programs to retrofit water fixtures. Some local governments have partnered with private industry to offer water-saving fixtures and other items such as soil moisture sensors.
- *Minnesota Statutes* encourage the reuse of non-consumptive water and the evaluation of reuse options as part of applications for water discharge permits.

- All public water suppliers and the general public are referred to [the water conservation toolbox developed by the Metropolitan Council](#), in cooperation with the DNR, which contains water conservation tips and resources for individual water users and program guidance for public water suppliers.

3. Identify how the State/Provincial program is consistent with the regional objectives:

Many efforts are underway in all levels of government, educational institutions, nonprofit organizations, business and industrial sectors, and the grassroots level to guide Minnesota toward long-term sustainable water use. As shown below, Minnesota’s program is consistent with the regional objectives in the promotion of environmentally sound and economically feasible water conservation measures.

Significant Water conservation accomplishments in the past 5 years:

1. The new statewide Water Conservation Reporting System was initiated in 2018. All water suppliers serving over 1,000 people completed water accounting data entry and reported their water conservation actions completed in 2017 and 2018. During a 4-year rollout period, all water permit holders will be reporting their water conservation and efficiency improvements.
2. Approximately 340 municipalities have submitted their Water Supply Plans to the DNR over the past 3 years. These plans have stronger water conservation goals than in past decades due to the new Demand Reduction Law.
3. Nationally, Minnesota’s water conservation score improved two steps to a “B” according to the 2018 [Alliance for Water Efficiency \(AWE\) Water Efficiency and Conservation State Scorecard: An Assessment of Laws](#).
4. Communities, businesses, and sporting organizations have been installing water reuse systems. To simplify and encourage stormwater reuse, the DNR determined that an appropriations permit was not needed for reusing stormwater for turf irrigation. Some of these practices have reduced the use of potable groundwater resources for lawn and landscape irrigation. As a result, there has been a significant expansion of stormwater reuse projects in Minnesota in the past 5 years. An Interagency Work Group examined opportunities and obstacles for reuse of treated wastewater, graywater, stormwater, and rainwater, as well as subsurface water discharged for dewatering purposes. [The Interagency Report - Advancing Safe and Sustainable Water Reuse in Minnesota](#) report was published in 2018.
5. The Metropolitan Council is offering [Water Efficiency Grants](#) of up to \$50,000 to municipal water suppliers to help increase water efficiency in their communities. Grants can be used for rebates to residents and commercial properties that replace inefficient water-using devices with approved devices that use substantially less water, or for irrigation system audits. A total of \$750,000 will be available for spending through June 2022. The 2019 Minnesota Legislature designated the monies from the Clean Water Fund of the Minnesota Clean Water, Land and Legacy Amendment. Local governments are responsible for designing their own rebate/grant program.

OBJECTIVE 1: Guide programs toward long-term sustainable water use.

- **Water Supply Planning 2015-2018.** For 30 years Minnesota water suppliers have submitted 10-year water supply plans that include long-term demand forecasts, develop long-term strategies that incorporate water conservation and efficient water use. This round placed greater emphasis on reducing distribution losses by investing in ongoing infrastructure maintenance programs. Over three years, efforts focused on providing workshops to the 350 water suppliers around the state serving over 1,000 people. Water conservation training includes municipal leak detection and repairs, encouraging improved local ordinances, incentive programs, rate review, peak demand reduction and smart irrigation, and educational efforts. Water conservation goals have been set for all water suppliers. Completed water supply plans were due October 15, 2018.
- **Water Availability and Climate.** DNR Climatologists have evaluated the climate's impact on [water availability](#) and also provide information on [drought, floods and other climate data](#).

Lake Superior Drainage Basin

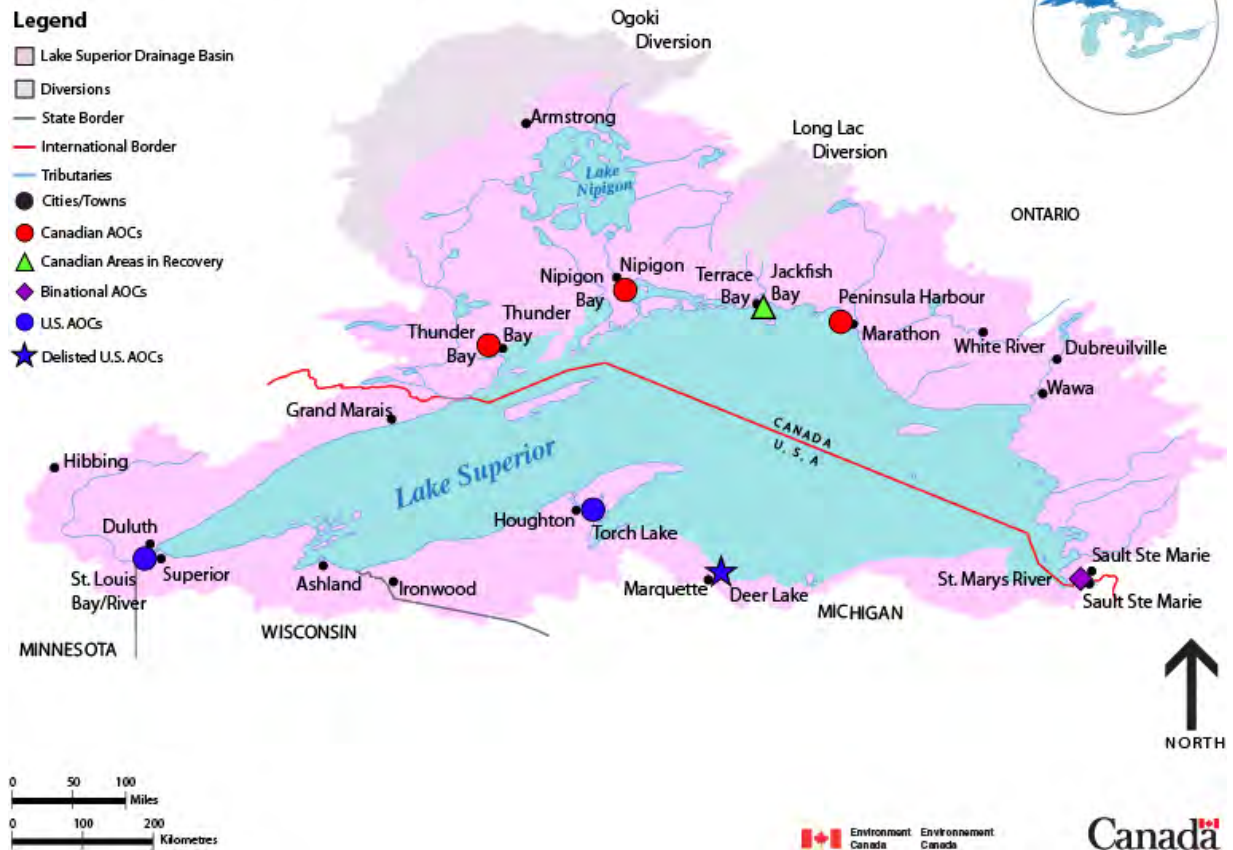


Figure 11. Lake Superior Drainage Basin showing Areas of Concern (AOC) in the US and Canada. Minnesota has one AOC on the St. Louis River. Map used with permission from Environment and Climate Change Canada.

- **St. Louis River Area of Concern Program.** [The St. Louis River Area of Concern \(SLRAOC\)](#) is one of 43 AOCs across the Great Lakes basin that, as designated by the Great Lakes Water Quality Agreement in 1987. AOCs represent the most severely impacted areas around the Great Lakes Basin and are required to develop remedial action plans. The process incorporates a systematic and comprehensive ecosystem approach and has shown much progress along the way. Today, through the hard work of partners and stakeholders in the St. Louis River estuary, well-defined lists of Beneficial Use Impairments, removal targets, management actions, and timelines for restoring habitat and removing contaminant are described in the 2018 Remedial Action Plan. The Minnesota Pollution Control Agency and the Wisconsin Department of Natural Resources are the lead regulatory agencies designated by the U.S. Environmental Protection Agency to administer this AOC. The Fond du Lac Band is also an implementing agency within the AOC, as is the DNR. Progress is being made implementing management actions with 46.8% completed as of October 1, 2019. Primary funding for Minnesota’s work is provided through the U. S. EPA Great Lakes Restoration Initiative, Minnesota’s Clean Water and Outdoor Heritage Funds, the Natural Resources Damages Assessment fund, and contributions from responsible parties.

Several construction projects to restore aquatic habitat and remediate contaminated sediments in the SLRAOC were initiated or completed in 2018-2019:

- **Kingsbury Bay/Grassy Point Habitat Restoration Projects** – Construction began at these two integrated projects in 2019. An estimated cost of \$15 million dollars will be needed to complete aquatic habitat restoration at those two locations by 2021. [WDIO Kingsbury Bay/Grassy Point](#) and [KBJR 6 Kingsbury Bay/Grassy Point](#).
- **Wild Rice Restoration in the SLR Estuary** – Efforts are underway to restore wild rice habitat, which has been significantly reduced, by seeding stands to restore 275 acres. No seeding was completed in 2018, but 9,100 pound of seed was dispersed over 96 acres in 2019. Additionally, efforts are underway to find effective ways to reduce depredation by geese. The team is working with the 1854 Treaty Authority, the Natural Resources Department of the Fond du Lac Band of Lake Superior Chippewa, and other partners.
- **Sediment Remediation sites** – Three sediment remediation projects were completed in Minnesota, under the direction of the Minnesota Pollution Control Agency, in 2019: Minnesota Slip, Slip C and Slip 3.
- **St. Louis River Interlake/Duluth Tar Site (SLRIDT)** - The Fond du Lac Band is a Natural Resource Trustee for both the SLRIDT site and the [US Steel site](#).
- **Invasive Species Management.** Minnesota has an active and aggressive [Aquatic Invasive Species Management Program](#). Invasive species have the potential for serious economic, environmental and recreational impacts in Minnesota.

- Since 2014 the MN DNR has significantly ramped up efforts to prevent the spread of aquatic invasive species and manage invasive aquatic plants and wild animals. All DNR staff have made a commitment to include invasive species prevention measures in their work under Operation Order 113.
- A new invasive organism, the Bloody Red Shrimp (*Hemimysis anomala*) was recently reported in the Duluth/Superior Harbor near the Superior ore docks on the Wisconsin side of the harbor and later confirmed on the Minnesota side of the harbor. Until the discovery in Duluth Superior the Bloody Red Shrimp had not been found in Lake Superior. US Fish and Wildlife Service biologists have the specialized equipment for early detection and monitoring of Bloody Red Shrimp and were instrumental in the initial discovery and sampling of the species. The Fond du Lac Natural Resources biologists and the 1854 Treaty biologists are also involved in sampling.
- Non-native Phragmites effort on the MN side of the St. Louis River are underway. Control efforts are sponsored by the St. Louis River Alliance and include mechanical knock down and herbicide application.
- Lake Superior, the St. Louis River estuary and other Superior tributaries are listed as infested with Viral Hemorrhagic Septicemia (VHS), round goby, ruffe and white perch. Viral hemorrhagic septicemia (VHS) affects 34 species of fish, including walleye and bass. Its emergence has resulted in large-scale mass mortality events throughout the eastern Great Lakes and cost millions of dollars in management efforts. The virus is considered to be the most significant freshwater fish health threat in the world and has a history of large-scale fish kills. It is transmitted fish-to-fish from close contact of contaminated water or reproduction.
- **Great Lakes Restoration Initiative (GLRI) Action Plan.** [GLRI Action Plan III](#) (FFY 2020-FFY 2024) was released in October 2019. The plan was developed openly and collaboratively, involving local stakeholders, Tribes, governments and the public. The Plan describes the non-regulatory program to accelerate efforts to protect and restore the largest system of fresh surface water in the world. Action Plan III sets goals in five Focus Areas:



DNR has resource management programs that intersect all five Focus Areas and DNR routinely seeks GLRI funding to support initiatives in each area.

- **Western Lake Superior Sanitary District Success Story.** In September 2018, Western Lake Superior Sanitary District (WLSSD) celebrated 40 years of improving water quality in the St. Louis River and Lake Superior. To mark the milestone, WLSSD held an open house event to [celebrate their success](#). For decades, communities and industries in and around Duluth and Cloquet — from lumber and paper mills to slaughterhouses and steel mills, food processing plants and much more — discharged their minimally-treated wastewater directly to the St. Louis River. Once the WLSSD treatment plant began operations in September 1978, the treatment plant met federal quality regulations from day one; the results were stunning and quick. The St. Louis River, free from most domestic and industrial sewage and other pollution, transformed almost immediately. Over the years, more nearby areas connected into WLSSD’s effective treatment system including small communities on the north shore of Lake Superior, Pike Lake, the City of Rice Lake (formerly a township), and Oliver, Wisconsin. In all, WLSSD now treats all of the sewage that was once discharged from 17 different points along the lower St. Louis River. WLSSD has continually improved and upgraded its treatment system to ensure ongoing effectiveness, reliability, efficiency and ensuring valuable resources are recovered from the waste treatment processes. In 2001, WLSSD opened a \$33 million anaerobic digestion facility that recovers nutrients from wastewater solids and turns them into valuable fertilizer. The process also creates a methane-rich gas that is used for heat. Now, the district is working to build systems to recover heat and otherwise wasted energy from the sewage treatment process to heat and power their facility.
- **Drinking Water Protection** - In partnership with MDH and with support from the Citizens League, Environmental Initiative staff are exploring needs and perspectives to inform the development of a statewide [Source Water Protection Collaborative](#) to protect sources of drinking water in Minnesota.

OBJECTIVE 2: Adopt and implement supply and demand management to promote efficient use and conservation of water resources.

Municipal Water Efficiency

State government and partner organizations encourage municipalities to maximize water use efficiency and minimize waste of water. Minnesota has 19 water suppliers in the Lake Superior Watershed that are required to complete a Water Supply Plans. Ten cities have approved water supply plans, including Duluth, the largest city. Only two communities have not submitted a water supply plan yet, Chisholm and Lutsen. The remaining communities are in the final editing phase.

Status of review and approval of 10-Year Water Supply Plans for the Lake Superior Watershed

City	Approved Y/N	Date of last action or approval
Grand Marais, City Of	Y	6/14/17
Silver Bay, City Of	N	Edits sent back 8/22/19
Two Harbors, City Of	Y	12/19/16
Duluth, City Of - Public Works Dept.	Y	1/30/17
Lutsen Mountains Corporation	N	Nothing received yet. Reminder sent 8/8/19
Superior Water Light & Power Co.	N	Draft received 1/22/19 and review pending
Cloquet, City Of	Y	6/22/18
Carlton, City Of	Y	12/19/16
Aurora, City Of	N	Edits sent back 9/18/2019
Babbitt, City of	N	Edits sent back 10/15/2019
Biwabik Public Utilities	Y	Exempt
Chisholm, City Of	N	Nothing received yet. Reminder sent 8/8/19
Eveleth, City of	N	2 nd draft received 10/2/19
Gilbert, City Of	N	2 nd draft received 11/14/18
Buhl, City of	Y	Exempt
Virginia Public Utilities	Y	5/22/19

City	Approved Y/N	Date of last action or approval
Hibbing Public Utilities	N	Edits sent July 2018
Hoyt Lakes, City of	Y	8/20/19
Mountain Iron, City Of	Y	10/15/19

As part of monitoring implementation of Water Supply Plan water conservation objectives, municipalities serving over 1,000 people began reporting their conservation efforts in 2018 through the Minnesota Water Conservation Reporting System (see Objective 3 below for more detail on this new water accounting system). Duluth is the largest municipality in the watershed. Historically, Duluth has had significant water loss due to aging infrastructure, frigid weather, and pressure problems below the cliffs. The highest unaccounted water loss was in 2008 with a 27.24% loss, and the city averages [140 water main breaks per year](#). After several years of focused efforts, the City has reduced their water loss tremendously. Below is a summary of Duluth’s Water Conservation and Efficiency efforts:

Summary of Duluth’s 2017-2018 Water Conservation Report

	2017 Data	2018 Data	Statewide Goal
Total water pumped	4,901,210,000 gallons	4,662,150,000	
Population	103,541 (this includes the adjacent communities of Hermantown, Proctor and Rice Lake)	103,541 (this includes the adjacent communities of Hermantown, Proctor and Rice Lake)	
Residential GPCD	36.6	36.7	< 75
Total Peaking Factor	1.81	1.8	<2.6
Water Loss	13%	9.3%	< 10%
Annual % Reduction - nonresidential	n/a	2.08%	>=1.0%
Residential vs. Non-Res. Use	1,381,792,368 gallons vs. 2,869,929,392 gallons	1,389.8 million gal. vs. 2,814.2 million gal.	
# of Residential connections	26,221	26,304	

	2017 Data	2018 Data	Statewide Goal
# of Non-Res. connections	2,022	2,041	

In the next ten years Duluth is committed to the following actions:

- b. The City will develop and implement tracking mechanisms to document water loss through Department uses, water main breaks, and municipal uses.
- c. The City will conduct water audits on a more regular basis.
- d. The City will develop and propose regulations to the City Council in regards to water conservation, water use and emergency operations.
- e. The Department will increase educational efforts.

Water Loss Training

To conserve and manage existing water supplies, a free Water Loss Control Workshop was provided in 2019 in collaboration with the Water Research Foundation, the MN AWWA and the DNR. Over 75 municipal staff attended the event to learn how to design efficient and sustainable leakage control programs. The presentations showed how the DNR Water Conservation Reporting system and the AWWA Water Audits and Loss Control Program (M36) provide utilities with the tools to better understand their real water losses and analyze their economic intervention strategies.

Water Conservation Rates

The Metropolitan Council has completed innovative research and [publications](#) to assist municipalities with setting effective water conservation rates and other water supply tools. The Bill Assessment Tool and the [Twin Cities Regional Water Billing Analysis](#) build upon existing conservation rate efforts and consider practices and examples from various municipalities to learn what works and is most effective.

Resilience Planning and Adaptation Training

In 2019, MN Rural Water Association in collaboration with MDH, EPA, and PCA provided Resilience Planning and Adaptation Training for 50 Water and Wastewater Utilities. The purpose was to help cities build resilience for extreme weather events such as floods, droughts and tornadoes in Minnesota.

State Government Buildings Water Conservation Initiative

In 2016 the Office of Enterprise Sustainability (OES) was established to help state agencies make choices that will improve outcomes through the implementation of best practices in their agency. Enterprise Sustainability methods have been identified to achieve a 15% goal of water conservation for all state government buildings (i.e., irrigation, leak detection, efficient appliances).

Water Efficiency Grant Program

The Metropolitan Council's [Water Efficiency Grant Program](#) provides incentives to encourage efficient water use and conservation. From 2015-2017 the Metropolitan Council was awarded \$500,000 from Minnesota Clean Water, Land and Legacy Amendment funds for a Water Efficiency Grant Program. Nineteen communities participated in this program, with the Council grants covering 75% of the program cost and each participating municipality providing the remaining 25% as a match. Through this grant 4,514 devices were replaced, including 2,380 toilets, 1,190 irrigation controllers, 940 clothes washers, and 4 irrigation system audits. Approximately 52,000,000 gallons per year will be saved each year by these replacements. The Metropolitan Council was awarded a second water efficiency grant of \$375,000 for 2020-2022. Cities have responded enthusiastically and have submitted over \$790,000 in requests.

Water Reuse

Water reuse will be an increasingly important part of managing water resources as demands on water supplies continue to grow due to population increases, urbanization, climate change, and changes in water use. The DNR participated in an interagency workgroup led by the Minnesota Department of Health (MDH) to consider methods to reuse water and identify barriers and opportunities for implementation. The workgroup researched a variety of topics and published a comprehensive [MDH Water Reuse Report](#). The report summarizes existing policies, guidance and regulations from states and municipalities throughout the nation as well as internationally. The workgroup examined opportunities and obstacles for reuse of treated wastewater, graywater, stormwater, and rainwater, as well as subsurface water discharged for dewatering purposes. The Report was published in 2018. DNR and MDH are working with hospitals to determine which types of water conservation and reuse efforts are safe for vulnerable populations.

Agricultural Sector Water Efficiency

The University of Minnesota Extension Service has an [Irrigation Specialist position](#) that provides direct support to irrigators on irrigation scheduling and soil water monitoring. The specialist also conducts applied research on irrigation technology, develops BMPs, and provides educational programs and publications to improve water use efficiency, sustain agricultural production, and enhance protection of water resources.



Figure 12. MN Dept. of Agriculture has a voluntary Water Quality Certification Program.

The Minnesota Department of Agriculture (MDA) has established a [Water Quality Certification Program](#). The program is a voluntary opportunity for farmers and agricultural landowners to take the lead in implementing conservation practices that protect our water. In 2019 over 540,000 acres of Minnesota farmland are now enrolled. Since its statewide launch in 2016, over 800 farms have been certified. Conservation practices have kept over 36,000 tons of sediment out of Minnesota rivers while saving nearly 102,000 tons of soil and 45,000 pounds of phosphorous on farms each year. The conservation practices have also reduced nitrogen loss up to 49% and cut greenhouse gas emissions by more than 36,000 tons per year. MDA is currently working with DNR, the Irrigators Association of Minnesota, BWSR, SWCDs and other farm organizations to develop and implement a Water Efficiency Endorsement as part of the Certification Program. A Wildlife Habitat Endorsement is also being developed.

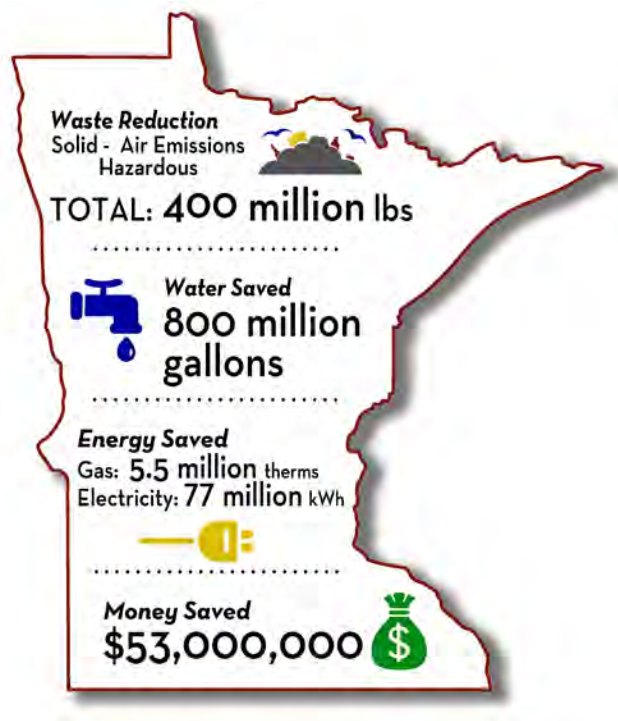


Figure 13. The University of Minnesota Technical Assistance Program (MnTAP) helps businesses conserve water and energy. Through this program, Minnesota businesses have conserved over 800 million gallons of water annually.

Efficiency in the Commercial, Industrial and Institutional Sector

The [Minnesota Technical Assistance Program](#) (MnTAP) is an outreach program at the University of Minnesota that for 35 years has helped Minnesota businesses develop and implement industry-tailored solutions that reduce water use, prevent pollution, and reduce energy use and cost to improve public health and the environment. Through this program, Minnesota businesses have conserved over 800 million gallons of water annually. Established in 1984, MnTAP is funded in part by a pass-through grant from the Minnesota Pollution Control Agency. Other grants come from partners including Minnesota

Department of Commerce, Division of Energy Resources, Metropolitan Council, counties and other local units of government, EPA Region 5, and energy utilities.

[The Minnesota Sustainable Growth Coalition](#) is a business leadership group of nearly 30 organizations advancing a circular economy through collaboration. Individually, each organization is committed to sustainability, and recognize that together they can have a larger, societal-level systemic impact on their operations, industries, environment and community. The organizations include 3M, Best Buy, Ecolab, General Mills, Target, Xcel Energy and others. The Coalition focuses on energy, water and materials issues to optimize use of resources, minimize waste and conserve resources. In the water area, the Coalition developed a [Corporate Guide to Sustainable Landscaping Guide](#) on “greening grey infrastructure” or promoting infrastructure and practices designed to mimic the natural water cycle and add value to corporate landscapes. Individually and together they have the opportunity to substantially impact Minnesota’s water resources to ensure a thriving economy, and healthy, equitable communities across the state.

OBJECTIVE 3: Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.

New Water Conservation Reporting System

The Minnesota DNR has significantly improved the measurement and evaluation of water conservation and water use efficiency through a contract with Energy Systems Platform (ESP) to develop a [new Water Conservation Reporting System](#). To our knowledge, it is the first and only statewide water conservation reporting system in the nation. This system is similar to the existing Minnesota energy conservation reporting program. The system is cloud-based for easy data entry and record management.

The DNR, in January 2018, launched a new Water Conservation Reporting System for water appropriation permit holders. The reporting system is goal-based, accountable and measurable. Public water suppliers were the first group of permittees to use this web-based reporting system. The goal of this effort is multi-pronged and will inform the state of water efficiency and conservation efforts at a statewide level. This new web-based tool is designed to:

- Provide an annual report and a quick dashboard of information for each utility to understand their performance for achieving water efficiency and conservation;
- Identify trends in water use efficiency and conservation efforts over time;
- Allow utilities to learn from their peers about effective water efficiency and conservation strategies and minimize water loss;
- Over the course of four years all water use sectors will be included in this voluntary reporting system as a supplement to the annual MPRS water use report.

2018 was the first year for Commercial, Industrial and Institutional (CII) permittees to voluntarily report their water conservation efforts and the second year for water suppliers serving over 1,000 customers. In just one year, there have been some remarkable voluntary improvements with municipal water conservation efforts.

Some of the 2018 and 2019 Water Conservation Report findings include:

- 94% of the 348 invited water suppliers participated in submitting data.
- **Improvement in Water Loss** - In total utilities have a water loss of 8.4%, a .48% improvement from last year number of 8.88% and meeting the DNR conservation goal of 10%.
- **Improved Residential GPCD** – In 2018, 92% of the utilities met the goal of 75 GPCD. This is an improvement from 2017, when 90% of the utilities met the goal of 75 GPCD.
- **Improved peaking factor** – In 2018, 80% of utilities met the peaking factor goal of 2.6. This is an improvement from 2017, when 75% of utilities met the peaking factor goal.
- **Over 1.5 billion gallons** of water were saved by leak repairs. Billions of gallons were also saved by meter repair and replacement, hydrant repair, increasing treatment efficiency, meter testing and reducing unauthorized water use and installing non-irrigation meters.
- There was a fairly substantial drop in the number of utilities reporting customer water conservation projects, this is likely due to the end of the Metropolitan Council Water Efficiency Grant program. In 2018 there were 7,679 customer water conservation projects around the state for a water savings of over 52 million gallons. Last year there were 8,773 projects saving over 70 million gallons of water. The grant program was renewed for 2019-2021.
- Over 40% of the CII water appropriation permittees completed the Water Conservation Report.
- 26% reported having a formal water conservation plan and 11% reported having one in development.
- The #1 reason for conserving water was to reduce operation costs for water and wastewater. Other reason for conserving water were for regulatory compliance and to reduce energy costs.
- 58% of CII reported that the main factor limiting water conservation water was operation necessity.
- Only 65 (27%) of CII reported completing a water audit. And 11 businesses reported participating in the University of Minnesota MnTAP audits.

Water Monitoring and Surveys Data

The DNR Water [Monitoring and Surveys Unit](#) collects data and provides information about climate, stream flow, lake levels and groundwater levels in Minnesota. This information helps the DNR and others carry out statutory responsibilities and water management strategies and programs. The Water Monitoring and Surveys Unit uses a unique database and processing software known as WISKI for storage and management of the data from the networks.

The team accesses and interprets data that is collected at varying intervals and served to the public via the following websites.

- [Stream gage sites](#) from 275 locations
- [Groundwater level sites](#) more than 2,000 sites from groundwater observation wells and permit required monitoring wells
- [Volunteer rain gage network](#) approximately 1,500 volunteers read precipitation gages
- [Lake level sites](#) approximately 930 volunteers read lake level gages
- [Climate mesonet sites](#) 40 climate mesonet sites; data will soon be via the stream gage webpage

Products produced by the Water Monitoring and Surveys Unit include:

- Production and distribution of weekly statewide [stream flow conditions reports](#) during the open water season (typically April through October)
- Production and distribution of monthly statewide [hydrologic conditions report](#) (includes: climatology, stream flow, lake levels and groundwater levels) during the open water season (typically April through October).
- A variety of [climate and weather](#) related products from the State Climatology Office.
- Determination of Ordinary High Water Level for public water basins.
- Production of stream discharge and elevation hydrographs.
- Technical reports analyzing hydrology for special projects.
- Technical guidance materials explaining stream flow measurement techniques.
- Production and distribution of daily stream flow conditions reports during severe drought or floods.

Cooperative Groundwater Monitoring Program

The purpose of the cooperative environmental research program is to continuously improve the Lands and Minerals Division's foundation of scientific knowledge to support environmental review and permit decisions for metallic minerals and peat mining and reclamation in Minnesota. The Lands and Minerals Cooperative Environmental Research Program performs objective research studies that evaluate the environmental effects of mining in the State of Minnesota, and provide science-based guidance for environmentally sound mining practices that are protective of natural resources. The research program collaborates with the mining industry and their representatives, academic and research institutions, and other State agencies to enhance the scope and capability of the research conducted. Research results are made readily accessible to provide assurance to the public that environmental review and permitting decisions are science-based. The research program strives to continuously educate and improve staff knowledge to remain current, fill knowledge gaps, and grow with advancing methods and technology.

Additional DNR Monitoring & Reporting

Minnesota tracks water use and the effectiveness of water conservation measures through two web-based databases, MPARS and the Water Conservation Reporting System. DNR staff use this information to communicate to a variety of audiences about annual water use volumes, trends over time, and changes among various water use types. The DNR is pursuing an effort to improve the way we communicate about water use, conservation and types of water users. This new data visualization strategy will help all Minnesotans understand how the DNR manages water resources throughout the state and how different types of activities use the state's water. Other DNR water monitoring programs include: fish population and habitat surveys, fish contaminant monitoring program, exotic species, rare and endangered species monitoring; precipitation monitoring; Mississippi River and stream and river flow, lake levels and other lake attributes.

Pollution Control Agency Water Monitoring

The MPCA works closely with the DNR on many monitoring efforts and monitors and assesses ambient groundwater and stream water quality and stream biological integrity, mercury in fish, toxics in streams,

and specific lakes and streams. They also coordinate the Citizens Lake and Streams Monitoring Program, Lake Assessments Program, and Lake Studies Program

Department of Health Water Monitoring

The MDH conducts research and analyzes results to determine health risk limits and health based values for drinking water and ground water contaminants. They are national leaders in investigating contaminants of emerging concern, especially in the area of developing health risk guidance for contaminants for where there is not a federal drinking water standard. The MDH continues to work with national health agencies to research the cause and prevention of Legionella.

Department of Agriculture Water Monitoring

The MDA monitors agricultural chemical incidents as well as pesticide and nutrients in groundwater and surface water.

Environmental Quality Board Water Monitoring

The EQB works with PCA, MDA, and DNR to coordinate a biennial assessment and analysis of water quality and quantity, groundwater degradation trends, and efforts to reduce, prevent, minimize, and eliminate degradation of water; including an analysis of relevant monitoring data.

OBJECTIVE 4: Develop science, technology and research.

Metering Technology

The DNR encourages the identification and sharing of innovative management practices and state of the art technologies. According to the 2018 Water Conservation Report, 77% of the Minnesota water suppliers report using Mobil Read Meters (also called Automatic Meter Reading/AMR). This allows utility workers to automatically read meters from the safety of their vehicle and transfer the data to a central database for billing and analysis. Over 13% of water suppliers' use Networked meters (also called Advanced Metering Infrastructure/AMI). Although there are expenses associated with changing meters, there are good reasons for a utility to upgrade to networked meters: fast alerts to problems, behavioral feedback to consumers, and Real-time diagnostics for customer service. Some cities are now notifying customers when they suspect there is a toilet leak or other unusual water loss. Only 5% of Minnesota communities serving over 1,000 customers use manual read meters.

Invasive Aquatic Species Research

The DNR works with the Minnesota Aquatic Invasive Species Research Center ([MAISRC](#)) at the University of Minnesota. In partnership with MAISRC, the DNR, UMN Extension, county and local partners organize special events to search waters for new infestations of invasive species. One such event known as Starry Trek, is conducted at various locations around Minnesota each year has resulted in the discovery of small infestations of starry stonewort and in many cases led to successful management.

Turfgrass Irrigation Efficiency Research

The [University of Minnesota Turfgrass Science](#) program has been conducting extensive research with the Golf Course Superintendents Association and the Minnesota Department of Transportation to develop best turfgrass management practices for reducing irrigation in various turfgrass systems throughout the state. This research includes [utilizing low-input turfgrass species](#) and implementing precision-management protocols at high-end facilities (golf courses, sports fields, etc.) and establishing and maintaining [sustainable turfgrasses for roadsides](#). They also work with the Metropolitan Council to promote the use of drought-resistant turfgrass species in residential and commercial properties, and the importance of implementing improved sprinkler system technologies like smart irrigation controllers and soil moisture sensors which are able to significantly reduce water use. The UMN turfgrass science program conducts extensive public outreach and have a popular exhibit at the [Minnesota State Fair](#).

Energy Sector Aiding Water Conservation Technology

The DNR assists with and encourages research, development and implementation of water use and efficiency and water conservation technologies. In Minnesota, the energy sector is the largest water user, however, most of the use is once-through cooling where water is taken from the river and returned to the environment. At the same time, Municipal water and wastewater treatment facilities are often the largest energy user in a city. In the past five years there has been greater collaboration on finding new ways to decrease energy and water demand.

- **Power Generation at Wastewater Facilities** – The [Wastewater Treatment Plant Project: Energy Efficiency and Renewable Energy Generation](#) final report and action plan aimed to increase energy efficiency (E2) in Minnesota municipal wastewater treatment plants (WWTP) and scope opportunities for onsite power generation. The project was completed in 2017 by Minnesota Department of Commerce, Minnesota Pollution Control Agency and MnTAP, and funded through a grant from the U.S. Department of Energy.
- **Energy Providers and Water Suppliers** - In 2019, the [Minnesota Department of Commerce](#) awarded MnTAP a \$70,000 Conservation Applied Research Development grant to research and provide recommendations on how energy providers can help water utilities conserve energy. The report is not yet available.
- **Wastewater/Energy Efficiency Training Model** – A Conservation Applied Research and Development (CARD) Grant funded project was completed 2019 on [“Driving Wastewater Treatment Energy Efficiency through a Cohort Training Model”](#).
- **Water Conservation Kits** - Minnesota Energy Resources, Xcel Energy, and other Minnesota energy suppliers are offering residential customers free water conservation kits. The kits typically include low-flow showerheads, kitchen and bathroom faucet aerators, and pipe insulation. These items are easy to install and conserve water, energy, and water heating costs.
- [Xcel Energy](#) voluntarily reports to the DNR Water Conservation Report and posts additional water use reports on their webpage.

2018 Water Use by Source at Xcel Energy Owned Thermal Plants (Billions of Gallons)

Source	Withdrawn	Consumed	Returned
St. Croix River	112.31	0.0	112.31
Lake Superior	9.83	0.0	9.83
Mississippi River	459.87	7.18	452.69
Minnesota River	36.47	0.0	36.47
Upper Midwest Total	**618.48	7.18	611.30

**Does not include groundwater

Cooperative Environmental Research

The Lands and Minerals [Cooperative Environmental Research Program](#) performs objective research studies that evaluate the environmental effects of mining in Minnesota. The DNR is working collaboratively with others to improve mineland reclamation and mitigation techniques to improve water quality. Based on this research, new reclamation procedures have been developed to successfully reclaim coarse taconite tailings. Mitigation techniques include methods to prevent mine drainage problems as well as treatment methods for water impacted by mining operations. The DNR Division of Lands and Minerals has also studied passive systems including wetland treatment, sulfate reducing bioreactors, alkaline treatment beds and the use of covers and liners to control the quantity of water entering or leaving mine waste facilities.

Tribal Science, Technology and Research

- **The 1854 Treaty Authority** participates in a variety of activities within the 1854 Ceded Territory and Lake Superior basin. Participation is ongoing in environmental review of projects impacting water quality, remediation and restoration of sites within the St. Louis River Estuary, wild rice management and restoration, invasive species management (aquatic and terrestrial species) including boat inspections, fisheries monitoring including lake sturgeon in the St. Louis River estuary, and climate change initiatives.
- **Fond du Lac Environmental Program monitoring:** The FDLEP has conducted comprehensive water quality monitoring and stream gaging for the lakes, streams and reservation reach of the St. Louis River for 20 years, in support of its federal water quality standards program. The Band uses this monitoring data to assess the quality and condition of reservation waters, and reports to the community and U.S. EPA. The monitoring program has also identified nonpoint source impacts, climate change impacts, and has led to several lake and stream restoration projects. The Band has also conducted hydrologic investigations related to wild rice waters, and has done some limited groundwater monitoring.

- **Wild rice** and its harvesting are fundamental to Minnesota’s tribal nations. Minnesota has more acres of natural wild rice than any other state in the country. The [Fond du Lac Band of Lake Superior Chippewa](#) Natural Resources Program is responsible for management and restoration of five primary wild rice lakes on the Reservation and is a partner with the St. Louis River Area of Concern and the restoration work being conducted as part of that program. Tribal work includes research on environmental contaminants such as sulfate, mercury, lead, and PCBs. Statewide, more than 2,000 lakes and rivers in 64 Minnesota counties contain wild rice. The DNR, tribal communities, Ducks Unlimited, and others work cooperatively to manage wild rice resources. Tribes and others are concerned about the impact of sulfate and climate change on wild rice.
- **Grand Portage Band of Minnesota Chippewa Tribe** has adopted an Antidegradation Policy as part of their [Grand Portage Reservation Water Quality Standards](#). The Policy states that: The Tribe's existence has been dependent on the ability of the land and waters to provide natural resources for consumption, subsistence, cultural preservation, religious practice and sustainable economic development. Areas within the Reservation serve as a refuge for Tribal members to continue to practice a life that exemplifies sustainable economic development, and that preserves the resources critical to cultural integrity and survival of the Tribe. The policy also outlines protection of existing designated areas and decision-making standards.
- **Traditional Knowledge:** Minnesota continues to seek a greater understanding of traditional knowledge and practices of Basin First Nations and Tribes. For example, the DNR participated on the steering committee for a recent collaborative tribal Health Impact Assessment (HIA) that the Fond du Lac Band led in partnership with MN Department of Health. This HIA ([Expanding the Narrative of Tribal Health: The Effects of Wild Rice Water Quality Rule Changes on Tribal Health, 2018](#)) connected the health of manoomin, or wild rice, to the health of the tribal community, and provided recommendations for sustaining wild rice for future generations. The DNR Water Policy Consultant is actively exploring collaborating with tribal partners on water policy issues. Minnesota PCA maintains a [water permit contact list](#) for the 12 federally recognized tribes in Minnesota and 11 reservations.
- **AIS Prevention:** The DNR can enter into agreements with tribal and local governments that are interested in implementing an aquatic invasive species (AIS) prevention program that includes watercraft inspectors at accesses. The DNR provides training, testing, and authorizations to inspectors working for tribal governments. Tribal inspectors authorized by the DNR have the authority to require watercraft inspections and can deny launching of watercraft that do not comply with AIS laws.
- The [Shakopee Mdewakaton Sioux Community](#) (SMSC) follows the tradition of planning seven generations ahead. The SMSC has a state-of-the-art Water Reclamation Facility, their own water supply system that uses reverse osmosis and is available as a backup source for neighboring communities. The Community has also installed several recycled water systems for irrigating the golf course and other green space on the reservation. The Community has also collaborated with the City of Prior Lake to develop a joint water treatment plant.

Innovative Water Science and Management Practices

DNR encourages innovative management practices by promoting aquifer [water use management planning](#). This concept involves the definition of a management area and the involvement of a wide range of interests in the development of these plans. Funding has been provided to ramp up efforts associated with nonpoint and point source implementation, including Great Lakes restoration.

Minnesota continues to strengthen scientific understanding of the linkages between water conservation practices and ecological responses. The DNR provides GIS data for watershed health scores, and spatial source data via the [Watershed Health Assessment Framework \(WHAF\)](#). The WHAF provides an organized approach for understanding natural resource conditions and challenges, and for identifying opportunities to improve the health and resilience of Minnesota's watersheds. The goal is to advance improved ways to display existing conservation plan priorities in a GIS format and to link data to an outcome-optimizing tool that can lead to land management choices that best optimize multiple conservation objectives. Those choices are specific to the given landscape location and are fine-tuned to reflect priorities among multiple conservation needs (e.g., habitat protection, water quality restoration, etc.).

OBJECTIVE 5: Develop education programs and information sharing for all water users.

There are numerous educational programs dedicated to water conservation education and outreach for all water users in Minnesota.

Promoting Water Conservation Partnership

Since 2015, the DNR water conservation consultant has convened an interdisciplinary Promoting Water Conservation Partnership to share educational resources, plan events, and develop a statewide communication plan based on community-based social marketing. The Partnership seeks to: ensure equitable public access to water conservation and efficiency tools and information; educate and increase awareness regarding water use, conservation and efficiency, and the importance of water; promote the cost-saving aspect of water conservation and efficiency for both short-term and long-term economic sustainability. The members share conservation and efficiency experiences, including successes and lessons learned across the Basin. To aid in the development and dissemination of sector-based best management practices, most information is contained within the Water Conservation Reporting System.

We are Water MN Traveling Exhibit

The most successful way that Minnesota has found opportunities for the sharing of traditional knowledge and practices of Basin First Nations and Tribes is with the We Are Water MN program. [We Are Water MN](#) is a popular statewide traveling exhibition and community engagement project that invites visitors to come to a deeper understanding of what taking care of water means. Science and history are also included via this 1,000-square foot, hands-on exhibit created by the Minnesota Humanities Center, MPCA, Minnesota Historical Society and Departments of Health, Agriculture and Natural Resources. Each local host community uses this traveling exhibit to help tell their local water

stories: the history; sacredness to Minnesota’s first people, the Dakota and Ojibwe; current stresses on water; and how water affects every element of life. The partnership was initially formed to support Minnesota hosting of the Smithsonian Institution’s Water/Ways exhibit, a national initiative of the Museum on Main Street program. The Humanities Center and its partners built a companion exhibit, We Are Water MN, that shares information and stories about water in Minnesota. After the Smithsonian exhibit left, feedback showed that the Minnesota exhibit was the most interesting for visitors. The exhibit was updated and has been hosted by 14 Minnesota communities, from 2016 to 2019. Much of the exhibit changes for each site. The exhibit and programming reach over 1,200 people per site. The program encourages new partnerships, for example, Fond du Lac Band of Lake Superior Chippewa and the Great Lakes Aquarium co-hosted March and April 2019. They had never worked together, but feel that lasting relationships were built between their organizations. Four out of five visitors said they were more knowledgeable about water issues after attending the exhibit and were more likely to take action after attending the exhibit.



Figure 14. We Are Water MN Guides are published in Native languages, Spanish, Hmong and English.



Figure 15. We Are Water MN is a traveling water education exhibit

Minnesota Project Wet

[Minnesota Project WET](#) trains teachers and other educators in hands-on, interactive lessons that are focused on water and encourage critical thinking. By providing training, materials, and support, MN Project WET works to improve Minnesotans' understanding of our water resources. There is a specific unit on water conservation and educators from the Basin have participated in these lessons.

Presentations and Conferences

Minnesota DNR and our partners are continually providing training opportunities in order to increase water conservation and efficiency practices, technological applications, water loss control, and water accounting. The DNR, Minnesota Rural Water Association, the Metropolitan Council, the University of Minnesota Water Resources Center, the Minnesota chapter of American Water Works and other organizations help promote conservation with dozens of presentations at annual conferences, workshops, forums, and other events.

Water Educational Resources

To ensure that conservation programs are transparent, most information is readily available on public websites. Sources of [water conservation information](#) are available through DNR's website. DNR's website devotes [a page for Great Lakes Compact](#) information and links. The Minnesota DNR is a Promotional Partner in [EPA's WaterSense Program](#), which seeks to promote water efficiency and water efficient products. The [Metropolitan Council](#), [Minnesota Pollution Control Agency](#) and [Minnesota Rural Water](#) also have webpages dedicated to water conservation. Minnesota Rural Water provides free water conservation ads and bill stuffers that can be customized for water suppliers.

Other DNR Water Education and Outreach

- **Public Handouts** -The DNR distributes free water conservation materials to cities, at the state fair, and at various conferences. Over 10,000 educational pieces were distributed in 2018-2019 including free toilet leak detection kits and Saving Water coloring and activity books.
- **Aquatic Quest** - Minnesota State Parks have [Aquatic Quest](#) geocaching programs and events in all 75 state parks. Visitors are invited on a geocaching quest from April 22, 2018 to October 31, 2020. They may check out or use their own GPS unit to find hidden caches while discovering the fascinating plants and animals that live in our waters.
- **Staff Training** - Staff training on water conservation has been provided to the MN DNR Information Center staff. The Info Center receives more than 100,000 calls and emails annually. Water Conservation training to DNR field staff has been provided through the Water Appropriation staff meetings and the Field Hydrologist monthly meetings. Additional training has been provided to the Department of Health staff.
- **Imagine a Day Without Water and Fix a Leak Week** – DNR, PCA, and MDH participate in a variety of national water conservation campaigns primarily through social media.

Water Works! A Drinking Water Institute for Educators

The Minnesota Department of Health and Minnesota Section of the American Water Works Association have been conducting a series of ["Drinking Water Institutes"](#) for Minnesota teachers since 2001. The overall goal of this program is to have an ongoing group of middle-school and high-school graduates in the state who are well versed on the drinking water. The agenda covers three days of instruction on both drinking water and ways to teach it as well as a follow-up session for teachers to report on what they have done with education on drinking water in their classrooms. DNR staff are frequent instructors. This project is done in conjunction with the Hamline University Center for Global Environmental Education.

Freshwater Society Water Conservation Advisors

The [Minnesota Freshwater Society](#) has long had a volunteer water quality education program known as the Master Water Steward program. In 2018 they developed a new Water Conservation Advisor program to train volunteers who want a deeper understanding of Minnesota's groundwater issues and water conservation best practices. Water Conservation Advisors will be equipped to engage landowners and businesses in water conservation best practices and implement projects to lower water use.

Examples include conducting home water audits for residents, developing water conservation plans for small businesses, and providing guidance on plantings and irrigation best practices for landowners. In 2019 the first 30 Water Conservation Advisor candidates shared the results of independent research and decided on actions to address them.

Great Lakes Aquarium

The mission of [Great Lakes Aquarium](#) is to inspire people to explore their connection with Lake Superior and the waters of the world. Minnesota is fortunate to have this 501 (c) 3 non-profit organization that provides nationally acclaimed exhibits, professional development, a teacher resource center and outreach materials. They partner with the DNR to offer Project WET training and partner with NOAA on professional development opportunities.

H₂O for Life

In Minnesota, 144 schools have participated in the national program [H2O For Life](#). H2O for Life offers a service-learning program designed to engage, educate and inspire youth to become global citizens. U.S. students learn about the global water crisis and take action by raising funds for water, sanitation and hygiene education projects at schools in the developing world.



Figure 16. Water Education is required in 4th and 8th grade. H2O for Life is becoming increasingly popular.



RACE 2 REDUCE
BECAUSE WATER MATTERS

Figure 17. Race 2 Reduce is a Minnesota-based K-12 water education curriculum.

Race2Reduce K-12 Curriculum Development

One metro community, White Bear Lake, has supplemented H2O for Life with a Minnesota-specific water sustainability curriculum. [Race 2 Reduce](#) is a community-wide education and action effort focused on preserving our water resources now and into the future. They are partnering with the Minnesota Department of Education and others to complete k-12 curriculum that can be used statewide.

Fix-A-Leak Week and Water Week School Poster Contest

The Minnesota Rural Water Association (MRWA) [Poster Contest](#) is held annually for 4th grade students to showcase their artwork through a poster drawing of water conservation practices. In 2018, MRWA partnered with the [MN Department of Health](#) MN Department of Health and H2O for Life. In collaboration with the EPA WaterSense program, the DNR, Department of Health, the Minnesota Rural Water Association and many local communities participate in the annual Fix-A- Leak Week campaign.

Local Community Water Conservation Efforts

Many Minnesota communities have their own water conservation programs and educational efforts.

- Two Harbors hosted a series seven of Community Education events in 2018 to help homeowner create more efficient homes, one session focused on water efficiency. The classes were organized by Minnesota [GreenCorps](#).
- The [City of Shoreview](#) was the first city in Minnesota to adopt the WaterSmart Home Water Reporting program that helps residents analyze how water is used within their home. Customers receive paper or e-mail reports three times a year and have access to monthly portal updates and customized water-saving recommendations.
- The [City of Eden Prairie](#) has an Environmental Learning Center within the City’s Water Treatment Plant. Hundreds of students, scouts, and other groups learn about water conservation and safe drinking water through the interactive exhibits and tours of the treatment plant water. Eden Prairie also offers rebates for [native landscaping](#) and [smart irrigation controllers](#). Further information can be found at the link below.
- [Rochester Public Utilities](#) has one of the longest running and most successful water rebate programs in the state. Since it is a world medical center with plans to expand, these efforts will continue into the future. The City of Rochester has also has developed their own Water Cycle and Conservation Primers for 4th grade teachers.

Lake Superior Coastal Program

[Minnesota's Lake Superior Coastal Program](#) is a voluntary federal-state partnership dedicated to the comprehensive management of our coastal resources. The Program provides technical and financial resources for local communities in the Lake Superior coastal area.

4. Description of Minnesota’s conservation and efficiency program implementation timeline

Minnesota continues to explore opportunities to expand our water conservation efforts, empower people to save water, and seek new ways to conserve water in all sectors of society. Water conservation in Minnesota is built on a holistic foundation of knowledge about comprehensive water use. The DNR partners with other organizations to promote sustainable water use and provide clear information about how much water we have, how much water is used, and thresholds.

The state has water conservation measures that are currently in place and integrated with the water appropriation permit program. Water supply plans for public water suppliers serving over 1,000 people have just been updated and include new and improved water conservation, monitoring and management standards. Water conservation rate structures for public water suppliers within the Basin are required by state law.

Ecological and Water Resources Division Strategic Plan 2018-2028

The Division’s recently completed 10-year plan has a **water resources goal** of: “Minnesota water resources will be managed and used sustainably and the water quality will be improved and protect.”

Relevant strategies to accomplish our water resources goal include:

- Collect, analyze and share important data on the status and trends of Minnesota’s waters and their use to support decision-making, permitting and awareness.
- Engage water users and other stakeholders to address challenges and opportunities in water use, watershed function and impaired waters.
- Use a systems-based approach for water management and conservation.
- Ensure our permitting responsibilities are carried out efficiently, effectively, and consistently with regulatory authority.

Minnesota Water Conservation and Efficiency Program Strategies

Timeline is until 2025 unless noted otherwise.

Strategies for Municipal Water Suppliers serving over 1,000 people

- Expand Water Loss Control education and outreach
- Encourage improved metering and advanced metering infrastructure (AMI)
- Investigate time-based rates during peak demand periods
- Adopt additional building codes and irrigation ordinances that promote demand reduction
- Promote education and behavioral water efficiency strategies

Strategies for Commercial, Industrial, and Institutional Sector

- Advocate for advance metering and additional sub-metering
- Encourage technology upgrades to most water efficient technology – greening the grey infrastructure
- Improve building and water management operations to capture water efficiency opportunities.
- Increase adoption of commercial building water BMPs and benchmarking
- Expand and improve water efficiency and water reuse options
- Integrate water storage and demand response where practical

Strategies for Smaller public water suppliers

- Participate in the Water Conservation Reporting System in 2019-2020
- Expand Water Loss Control education and outreach
- Provide water conservation educational resources

Strategies for Agriculture, Irrigation, and Other Sectors

- Participate in the Water Conservation Reporting System in 2020-2021
- Promote agricultural water efficiency best practices and provide education and outreach
- Promote golf course, sod production, and other irrigation efficiency practices and reuse
- Encourage technology upgrades to most water efficient technology

Strategies for Local Planning, Collaboration and Action

- Coordinate and promote water efficiency – showcase best practices

- Continue to define local thresholds for surface and groundwater resources
- Leverage sources of funding for implementation
- Resilience Planning, Adaptation Training, and increased understanding of the implications of the Water-Energy Nexus and climate change
- Advance local water conservation planning and implementation
- Pursue near-term actions at the local level – rebate programs, etc.

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-5

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
State of New York

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs: (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

The Agreement

E. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

F. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

G. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs: (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

H. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

II. SUBMISSIONS BY STATE OF NEW YORK

A. To the Compact Council. The Compact Council has received the State of New York's report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the State of New York's report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the State of New York, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

- A. Based on the report submitted by the State of New York, the Water Management Program presented by the State of New York meets or exceeds the current requirements of the Compact and the Agreement.
- B. Based on the report submitted by the State of New York, the Water Conservation and Efficiency Program presented by the State of New York meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management Program Review
State of New York
December 8, 2019

QUESTIONNAIRE FOR PRELIMINARY SUBMITTALS BY STATES AND PROVINCES

This Questionnaire is provided as a guide to assist the States and Provinces in gathering the information necessary to prepare their Five-Year Reports and to enable the Compact Council and Regional Body to undertake their required review, declaration of findings and recommendations under the Compact and the Agreement.

General Information

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

Lead agency: NYS Department of Environmental Conservation (NYS DEC)
DOWinformation@dec.ny.gov

Contact person:

Diane English, P.E Chief, Water Quantity Management Section
New York State Department of Environmental Conservation
Bureau of Water Resource Management
Division of Water
625 Broadway, Albany NY 12233-3508
diane.english@dec.ny.gov

2. Identify all laws, statutes, rules, regulations, executive orders, administrative orders or other similarly enforceable documents (collectively, “Laws”) that establish or implement programs meeting the requirements of the following provisions of the Compact or Agreement. In particular, ensure that all such citations address the following sections and articles of the Compact and Agreement. Include a brief lay person description for each section of the program and weblink for more information (registration, reporting, diversion, decision making standard for water use permits, water conservation program, science and research, etc.)

Weblinks:

- NYS Environmental Conservation Law (NYS ECL):
<http://public.leginfo.state.ny.us/lawssrch.cgi?NVLWO:>
- 6 NYCRR §601:
[https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRegulations?guid=If8c9ea40b5a011dda0a4e17826ebc834&originationContext=documenttoc&transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRegulations?guid=If8c9ea40b5a011dda0a4e17826ebc834&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default))

a. Compact Section 3.4/Agreement Article 300

Statute:

- New York State Environmental Conservation Law (NYS ECL) §21-1001: adopts Compact into New York State’s Environmental Conservation Law;
- NYS ECL §15-1501: sets forth New York's statewide water withdrawal permit program and water conservation and efficiency program with specified goals.

Regulation:

- 6 NYCRR §601(1): provides that 6 NYCRR Part 601 implements New York's obligation under the Compact to create a regulatory program for water withdrawals in the Great Lakes St. Lawrence River Basin (Basin) pursuant to NYS ECL 21, title 10;
- 6 NYCRR §601.5: provides annual reporting requirements for water withdrawals;
- 6 NYCRR §601.10(k): requires applicants for water withdrawal permits to submit a project justification that shows, among other things, why increased water conservation and efficiency measures cannot negate or reduce the need for the proposed water withdrawal;
- 6 NYCRR §601.10(n): provides that diversions of any quantity out of the Basin are prohibited by the Compact, subject to limited exceptions and that an applicant for an exception must provide NYS DEC with information in a timely manner to respond to requests by the Council and Regional Body;
- 6 NYCRR §601.11(c): requires, among other things, that in making a determination to grant or deny a water withdrawal permit or to grant a permit with exceptions, NYS DEC determine whether the need for all or part of the proposed water withdrawal cannot reasonably be avoided through the efficient use and conservation of existing water supplies;
- 6 NYCRR §601.11(d): states that when a proposed water withdrawal for public water supply also constitutes a diversion out of the Basin that is subject to the Compact, NYS DEC will determine whether all withdrawn water that is not lost to reasonable consumptive use will be returned to the Basin.

b. Compact Section 4.1/Agreement Article 301**Statute:**

- NYS ECL §21-1001: adopts Compact into New York State's Environmental Conservation Law;
- NYS ECL §15-1501(4): directs NYS DEC to promulgate regulations regarding monitoring, reporting and recordkeeping requirements for water withdrawals equal to or greater than the threshold volume;
- NYS ECL §15-1502(14): establishes regulatory threshold volume of water for potable and non-potable withdrawals subject to permit and registration/reporting consistent with Compact;
- NYS ECL §15-1501(6): sets forth the annual water withdrawal reporting requirement;
- NYS ECL §15-1503(4): authorizes NYS DEC to set permit conditions, including reporting requirements;

- NYS ECL §15-1504: establishes water withdrawal requirements for agricultural withdrawals;
- NYS ECL §15-1505(6): prohibits diversions from the Basin with limited exceptions when in compliance with the Compact.

Regulation:

- 6 NYCRR §601.1: states that 6 NYCRR Part 601 implements New York’s obligations under the Compact;
- 6 NYCRR §601.5: implements statewide annual water withdrawal reporting requirements;
- 6 NYCRR §601.12: set forth provisions of water withdrawal permits, including a requirement that the permittee comply with all terms and conditions of the permit;
- 6 NYCRR §601.17: describes statewide requirements for annual registration of agricultural withdrawals;
- 6 NYCRR §601.18(j): prohibits diversions from the Basin with limited exceptions when in compliance with the Compact;
- 6 NYCRR §601.20(a)(1): requires water withdrawal permittees statewide to comply with all monitoring, recording and reporting requirements specified in the permit.

c. Compact Sections 4.2(2), 4.2(4) and 4.2(5)/Agreement Article 304

Statute:

- NYS ECL §21-1001: adopts Compact into New York State’s Environmental Conservation Law;
- NYS ECL §15-1501(6): mandates annual reporting of water conservation measures;
- NYS ECL §15-1501(8): sets forth New York's statewide water conservation and efficiency program with specified goals;
- NYS ECL §15-1503(1)(f): delineates elements of mandatory water conservation program that incorporates environmentally sound and economically feasible water conservation measures;
- NYS ECL §15-1503(2): sets forth determinations for NYS DEC to make when deciding whether or not to issue a water withdrawal permit, including whether all or part of the proposed withdrawal cannot be reasonably avoided through the efficient use and conservation of existing water supplies and whether the proposed withdrawal

incorporates environmentally sound and economically feasible water conservation measures.

Regulation:

- 6 NYCRR §601.5(5): mandates annual reporting of consumptive use;
- 6 NYCRR §601.7(e): establishes 10-year term for permits and incorporates a requirement for environmentally sound and economically feasible water conservation measures;
- 6 NYCRR §601.10(e): requires permit applications to include an engineer's report that, among other things, evaluates all practicable alternatives to a proposed source, including analysis of increased water conservation measures as a means to reduce or eliminate the need for the proposed source;
- 6 NYCRR §601.10(f): describes required measures and use of statewide reporting form for a water conservation plan;
- 6 NYCRR §601.10(k)(2): requires permit applications to include a project justification showing why increased water conservation or efficiency measures cannot negate or reduce the need for the proposed water withdrawal;
- 6 NYCRR §601.10(k)(4): requires permit applications to include a project justification showing why the proposed water conservation measures are environmentally sound and economically feasible;
- 6 NYCRR §601.11(c): sets forth determinations for NYS DEC to make when granting or denying a permit application, including, but not limited to, determining whether the need for all or part of the proposed withdrawal cannot reasonably be avoided through the efficient use and conservation of existing water supplies and whether the proposed water withdrawal will be implemented in a manner that incorporates environmentally sound and economically feasible water conservation measures;
- 6 NYCRR §601.11(d): states that when a proposed water withdrawal for public water supply also constitutes a diversion out of the Basin that is subject to the Compact, NYS DEC will determine whether all withdrawn water that is not lost to reasonable consumptive use will be returned to the Basin;
- 6 NYCRR §601.12(g): provides that if a withdrawal originates within the jurisdiction of a compact basin commission, the withdrawal must comply with applicable water withdrawal standards or requirements of that compact basin commission.

d. Compact Section 4.3/Agreement Article 200

Statute:

- NYS ECL §21-1001: adopts Compact into New York State's Environmental Conservation Law;

- NYS ECL §15-1503: describes authority to regulate new and increased withdrawals by permit;
- NYS ECL §15-1504: outlines authority to manage existing agricultural withdrawals by registration and provides an exemption from reporting requirements for registered withdrawals;
- NYS ECL §15-1505(6): delineates the prohibition on diversions from the Basin subject to exceptions in compliance with the Compact.

Regulation:

- 6 NYCRR §601.4(a): implements prohibition on diversions consistent with Compact;
- 6 NYCRR §§601.6 through 601.10: delineates water withdrawal permit requirements;
- 6 NYCRR §601.10(n): sets forth the prohibition on diversions from the Basin other than in accordance with exceptions in compliance with the Compact;
- 6 NYCRR §601.16(a)(6): authorizes NYS DEC to deny a permit application that has not been approved by the Council;
- 6 NYCRR §601.16(b)(6): authorizes NYS DEC to suspend or revoke a water withdrawal permit if the permittee is out of compliance with the requirements of the Compact or any other compact basin commission;
- 6 NYCRR §§601.19 and 610.20: set forth monitoring, recording and reporting requirements.

e. Compact Section 4.8, 4.9 and 4.13/Agreement Articles 200, 201 and 208

Statute:

- NYS ECL §21-1001: adopts Compact into New York State’s Environmental Conservation Law;
- NYS ECL §15-1501(7): provides exemptions from water withdrawal permits consistent with the Compact;
- NYS ECL §15-1505(6): prohibits diversions, subject to exceptions in compliance with the Compact.

Regulation:

- 6 NYCRR §601.4(a): implements the prohibition on withdrawals and diversions that are not in compliance with the Compact;
- 6 NYCRR §601.9: establishes permit exemptions;

- 6 NYCRR §601.10(n): implements prohibition on any new or increased diversions, subject to exceptions in compliance with the Compact;
- 6 NYCRR §601.11(d): establishes return flow requirement for all unused water if diverted from the Basin;
- 6 NYCRR §601.18(j): prohibits interbasin diversions unless an exception is authorized in compliance with the Compact.

f. Compact Section 4.10/Agreement Article 206

Statute:

- NYS ECL §21-1001: adopts Compact into New York State’s Environmental Conservation Law;
- NYS ECL §15-1502(14): defines threshold volume for management and regulation;
- NYS ECL §15-1503: authorizes regulatory permit program.

Regulation:

- 6 NYCRR §601.2(p): defines threshold volume in regulations;
- 6 NYCRR Part 601: sets forth implementing measures consistent with the Compact.

g. Compact Section 4.11/Agreement Article 207

Statute:

- NYS ECL §21-1001: adopts Compact into New York State’s Environmental Conservation Law;
- NYS ECL §15-1503(2): sets forth the decision-making standard, consistent with the Compact;

Regulation:

- 6 NYCRR §601.2: provides definitions consistent with Compact;
- 6 NYCRR §601.5: implements mandatory reporting requirements for water withdrawals;
- 6 NYCRR §601.10(k): incorporates elements of decision-making standard into permit application process;
- 6 NYCRR §601.11: implements process for taking action on permit applications.

h. Agreement Article 304

Statute:

- NYS ECL §21-1001: adopts Compact into New York State’s Environmental Conservation Law;
- NYS ECL §15-1501(6): mandates annual reporting of water conservation measures for all permitted withdrawals;
- NYS ECL §15-1501(8): establishes goals of water conservation and efficiency program;
- NYS ECL §15-1503(1)(f): delineates elements of mandatory water conservation program.

Regulation:

- 6 NYCRR §601.5(a)(5): provides for annual reporting of consumptive use;
- 6 NYCRR §601.7(e): establishes 10-year term for permits and incorporates requirement for environmentally sound and economically feasible water conservation measures;
- 6 NYCRR §601.10(f): describes required measures and use of statewide reporting form for water conservation plan.

- 3. Identify any changes from the 2014 report, highlighting in particular major changes from 2014 throughout the response. If there are no changes, please indicate accordingly.**

Both houses of the New York State Legislature have recently passed two new bills that will further the goals of the Compact and Agreement. The first will amend NYS ECL §15-0314 to raise standards for water-efficient plumbing and appliances to align with federal standards issued by the Environmental Protection Agency (EPA). The second, recently signed into law, will amend NYS ECL §15-1503 to require NYS DEC to post information regarding public water supply permits to the DEC website including information on water usage and water conservation.

Water Management Program Report

- 1. Summary description of the State’s or Province’s Water management program scope and thresholds, including the current status of program implementation and a description of which New or Increased Withdrawals, Consumptive Uses and Diversions are subject to the program. The summary should include information on registration (if applicable), management and regulation, and reporting elements of the program.**

New York State was among the first states to adopt the Compact into state Environmental Conservation Law (NYS ECL) on March 4, 2008. The NYS ECL was updated in 2011 to further protect New York's waters, incorporating the obligations of the Compact into a statewide regime, by requiring a NYS DEC permit for any type of water withdrawal system having the maximum capacity to withdraw 100,000 gallons per day (gpd) or more of surface water or groundwater. By basing the threshold on system capacity of at least 100,000 gpd rather than volume withdrawn,

New York's threshold encompasses a greater number of withdrawals and consumptive uses. Previously, this law applied only to public water supplies. The law covers the following areas:

- Non-agricultural water withdrawal reporting and permitting
- Agricultural water withdrawal reporting, registration, and permitting
- Water well contractor program
- Drought information
- Scientifically sound and economically feasible water conservation and efficiency plans including a Water Conservation Manual and Certification Information For NYS Water Saving Plumbing Fixtures law
- Interbasin diversions and registration including the Compact's prohibition and exceptions for diversions.

Because the law expanded management and regulation of water withdrawals to a broader number of facilities having existing permits or registrations and to all new or increased withdrawals, it established two types of permits:

- "New Permits" are required before a new water withdrawal system, or an increase in taking at an existing system, can be put into operation; or if the facility did not previously report its withdrawal above the threshold volume. Some currently operating facilities that previously did not require a permit may fall under the "New Permits" definition.
- "Initial Permits" were required of *any type* of existing water withdrawal having the capacity to withdraw 100,000 gallons per day or more where the withdrawal was previously reported. Consequently, a large number of existing water withdrawals that were not previously required to obtain permits needed to do so. In order to manage permitting of all these existing facilities in a coordinated fashion, the regulations contained a 5-year schedule for application submissions to DEC, beginning with the largest (greater or equal to 100 million gallons per day) due in 2013 and the smallest by February 15, 2017. The Initial Permit Program has been successfully concluded.

The law also requires statewide registration and reporting of existing (in existence before February 15, 2012) agricultural withdrawals that are greater than 100,000 gpd (30 day average) and major basin water diversions of greater than 1,000,000 gpd. The law became effective on February 15, 2012 and final implementing regulations became effective on April 1, 2013.

In addition, all water withdrawal permits require annual reporting of the following information:

- The water source, the location of the water source and the source capacity;
- The amount of water withdrawn for the calendar year including the average and peak withdrawals;
- A description of the use of the water withdrawn;
- The estimated amounts of water returned, if any, the locations of such returns, and the method of such returns;
- The actual or estimated average monthly and annual volumes and rates of water lost or consumptively used from the withdrawal;
- The water conservation and efficiency measures undertaken during the reporting period; and
- Any water user that purchased water from the facility during the previous year.

2. Describe specifically how Water Withdrawals in the State or Province are managed by:

- a. Sector (public water supply, self-supply commercial and institutional, self-supply irrigation, self-supply livestock, self-supply industrial, self-supply thermoelectric power production (once-through cooling), self-supply thermoelectric power production (recirculated cooling), off-stream hydroelectric power production, in-stream hydroelectric power production (voluntary), and other self-supply;**

As described above, NYS DEC's Division of Water regulates by permit and registration, all water withdrawals (with some exceptions) within the Basin greater than or equal to 100,000 gpd.

A typical permit application must include, but is not limited to:

- General and Detailed Maps
- Contract Plans
- Engineer's Report
- Water Conservation Program
- Latest Annual Water Reporting Form
- Project Justification
- Compliance with the Compact

In making its decision to grant or deny a permit or to grant a new permit with conditions, the Department shall determine whether:

- the proposed water withdrawal takes proper consideration of other sources of water supply that are or may become available;
- the quantity of supply will be adequate for the proposed use;
- the proposed project is just and equitable to all affected municipalities and their inhabitants with regard to their present and future needs for sources of potable water supply;
- the need for all or part of the proposed water withdrawal cannot be reasonably avoided through the efficient use and conservation of existing water supplies;
- the proposed water withdrawal is limited to quantities that are considered reasonable for the purposes for which the water use is proposed;
- the proposed water withdrawal will be implemented in a manner to ensure it will result in no significant individual or cumulative adverse impacts on the quantity or quality of the water source and water dependent natural resources, including aquatic life, this determination may include an evaluation of whether all withdrawn water that is not lost to reasonable consumptive use will be returned to its source New York major drainage basin;
- the proposed water withdrawal will be implemented in a manner that incorporates environmentally sound and economically feasible water conservation measures; and
- the proposed water withdrawal will be implemented in a manner that is consistent with applicable municipal, state and federal laws as well as regional interstate and international agreements.

Permit exemptions, listed 6 NYCRR §601.9 and paragraph (e), below, include an exemption for withdrawals by hydropower facilities operating under a valid Federal Energy Regulating Commission license. Such facilities are subject to the requirements of a 401 Water Quality Certification which may include conditions such as the incorporation of conservation releases to protect downstream habitat. The Division annually monitors and reports water use by this sector

to the Great Lakes Commission for incorporation into the Great Lakes Regional Water Use Database.

b. Water source (groundwater, surface water (Great Lakes-St. Lawrence River), surface water other than Great Lakes-St. Lawrence River);

New York specifically considers the source of all water withdrawals (groundwater, surface water (Great Lakes-St. Lawrence River), surface water other than Great Lakes-St. Lawrence River).

All water withdrawal applications for new or increased withdrawals must submit hydrological data to confirm dependable water supply yields while adequately protecting water levels and in-stream flows for habitat. Such applications must include, among other things:

- a general description of the project and the engineering features of the existing or proposed water withdrawal system;
- a listing of all existing sources of water supply, including wells, surface withdrawals, and any purchases, sales or transfers of water;
- the general character and extent and essential design features of proposed controlling, diverting or regulatory works;
- the proposed instantaneous and maximum daily rates of withdrawal; the existing and projected daily average, daily maximum, and 30-day maximum water demands of the water withdrawal system;
- for groundwater sources: well drilling logs, monitoring well locations and pump test data and analyses of results; and
- for surface water sources: information on rainfall, stream flows and classifications, contributing watershed size, location of the nearby USGS stream gages, other upstream water withdrawals, safe yield analyses or passby flow calculations and proposed withdrawal methods including intake structure design and screening.

c. Quantity (regulatory thresholds, volumes, rates, and reporting requirements);

New York specifically considers the quantity of all water withdrawn (regulatory thresholds, volumes, rates, and reporting requirements).

Any person who is engaged in, or proposes to engage in, the construction, operation or maintenance of a water withdrawal system that withdraws water of a volume equal to or greater than the threshold volume must obtain a permit or agricultural registration. ‘Threshold volume’ means the withdrawal of water of a volume of one hundred thousand gallons or more per day, determined by the limiting maximum capacity of the water withdrawal system; except that for withdrawals for agricultural purposes the threshold volume shall mean the withdrawal of water of a volume in excess of an average of one hundred thousand gallons per day in any consecutive thirty-day period.

An annual report must be submitted on a form available from NYS DEC, based on the water withdrawals for the previous calendar year, and shall include all information requested by the Division of Water. See response in item 1 of the Water Management Program Report section, above, for reporting requirement details. Monthly and annual volumes are reported, and the Division has the authority to request more detailed information on a case-by-case basis.

d. Location (Statewide/Province-wide or Great Lakes-St. Lawrence River Basin); and

Permitting and registration requirements are applicable throughout New York State's portion of the Great Lakes-St. Lawrence River Basin.

e. Any specific exemptions as allowed in the Agreement and the Compact.

All New York State Exemptions are compliant with the Compact and Agreement. A complete listing of these exemptions can be found at: <http://www.dec.ny.gov/permits/6379.html>.

The following exemptions are valid within the Basin:

- Withdrawals for agricultural purposes that have been registered or their annual water usage reported pursuant to the requirements of ECL 15, title 16 or title 33 as of February 15, 2012;
- Withdrawals of hydropower facilities operating under a valid Federal Energy Regulating Commission license;
- Withdrawals from the New York State Canal System, as defined by Subdivision 1 of Section 2 of the Canal Law, that are used by the New York State Canal Corporation for purposes authorized by law;
- Closed loop, standing column or similar non-extractive geothermal systems;
- On-site water withdrawal systems for approved inactive hazardous waste remedial site programs conducted pursuant to state or federal court order or state or federal government agency agreement or order;
- Withdrawals used for fire suppression or other public emergency purposes;
- The extension of supply or distributing mains or pipes within a previously-approved water service area that remains within the amount authorized in a water supply permit or water withdrawal permit for the purpose of supplying potable water;
- The reconstruction of facilities in an existing water withdrawal system when the capacity of such system is in no way altered (reconstruction does not include constructing an adjacent withdrawal structure);
- The construction of filtration or other treatment facilities that will not in any way alter the amount of water which can be made available from the present source of supply;
- Water withdrawals to supply ballast water necessary for lawful and normal vessel activity;
- Water withdrawal directly related to routine maintenance and emergency repairs of dams;
- Temporary water withdrawals for the purposes of construction, dewatering, hydrostatic testing, or aquifer testing, where the volume withdrawn is less than an average of 100,000 gallons per day in any consecutive thirty-day consecutive period (3 million gallons during a 30-day period).

Note: Address all sectors and sources in your descriptions even if one or more sector or source is not currently managed by your State or Province.

3. Description of how the provisions of the Standard of Review and Decision are applied. The description should include information on how each criterion of the Decision-Making Standard and Exception Standard is addressed.

a. Decision Making Standard for Withdrawals, Consumptive Uses.

NYS ECL 15-1503 specifies the requirements of an application for a water

withdrawal permit and the criteria that must be met. These criteria include consideration of other sources of supply, the implementation of water conservation measures, limiting the withdrawal to a reasonable usage and protection against adverse environmental impacts on the quality and quantity of the water source.

Furthermore, 6 NYCRR Part 617 implements the New York's **State Environmental Quality Review Act** (SEQR) (NYS ECL 8) and specifically states in 6 NYCRR §617.1(d) that:

"[i]t was the intention of the Legislature that the protection and enhancement of the environment, human and community resources should be given appropriate weight with social and economic considerations in determining public policy, and that those factors be considered together in reaching decisions on proposed activities. Accordingly, it is the intention of this Part that a suitable balance of social, economic and environmental factors be incorporated into the planning and decision-making processes of state, regional and local agencies."

In addition, 6 NYCRR §601.11(c) specifically addresses Section 4.11 of the Compact by requiring that:

- the proposed water withdrawal takes proper consideration of other sources of water supply that are or may become available;
- the quantity of supply will be adequate for the proposed use.
- the proposed project is just and equitable to all affected municipalities and their inhabitants with regard to their present and future needs for sources of potable water supply;
- the need for all or part of the proposed water withdrawal cannot reasonably be avoided through the efficient use and conservation of existing water supplies
- the proposed water withdrawal is limited to quantities that are considered reasonable for the purposes for which the water use is proposed;
- the proposed water withdrawal will be implemented in a manner to ensure it will result in no significant individual or cumulative adverse impacts on the quantity or quality of the water source and water dependent natural resources, including aquatic life; this determination may include an evaluation of whether all withdrawn water that is not lost to reasonable consumptive use will be returned to its source New York major drainage basin;
- the proposed water withdrawal will be implemented in a manner that incorporates environmentally sound and economically feasible water conservation measures; and
- the proposed water withdrawal will be implemented in a manner that is consistent with applicable municipal, state and federal laws as well as regional interstate and international agreements.

New York has recently issued two policy documents in the Division of Water's Technical and Operational Guidance Series (TOGS) that provide guidance for consistent implementation of the standards for issuance.

- TOGS 3.2.1 Processing Water Withdrawal Permit Applications (issued May 25, 2017) provides procedures for staff to follow in the review of water withdrawal permit applications filed in accordance with NYS ECL §15-1501 and 6 NYCRR Part 601. It provides updated guidance on the amended statute, its applicability, and its implementation within the revised regulatory framework. (See http://www.dec.ny.gov/docs/water_pdf/togs321.pdf.)

- TOGS 1.3.12 Incorporation of Flow-Related Conditions in Water Withdrawal Permits (issued April 12, 2017) describes the policies and procedures for incorporating flow-related conditions when issuing Water Withdrawal Permits. In particular, the policy addresses the procedures that should be followed to ensure that the proposed water withdrawal will be implemented in a manner to ensure it will result in no significant individual or cumulative adverse impacts on the quantity or quality of the water source and water dependent natural resources, including aquatic life. (See http://www.dec.ny.gov/docs/water_pdf/flowtogsfinal.pdf.)

b. Exception Standard for Diversions.

NYS ECL 15-1505(6) states that diversions from the Basin are prohibited except for limited public water supply projects that are in compliance with the Compact. 6 NYCRR §601.10(n) also sets forth this prohibition.

4. Overview of State/Provincial reporting and database of Withdrawals, Consumptive Uses and Diversions including implementation status and database elements and capabilities, and reporting mechanisms (e.g., electronic submission, etc.). The overview should include methods of measurement (e.g., flow volume or rate meters, flow gauging, timing devices, etc.) approved by the State/Province for measuring Water volumes.

6 NYCRR §601.5 requires any individual or legal entity whatsoever submit an annual water withdrawal report to the NYS DEC's Division of Water if its water withdrawal system has a capacity to withdraw 100,000 gpd or more. These reports include withdrawal locations, average and peak day amounts, the usage sector, the location and amounts of water returned and the resulting consumptive losses. <http://www.dec.ny.gov/lands/86940.html>. Annual reports may be submitted electronically or in hardcopy.

The annual report shall be submitted on a form available from NYS DEC, based on the water withdrawals for the previous calendar year, and shall include all information requested by NYS DEC including, but not be limited to, the following:

- the water source, the location of the water source and the source capacity if known;
- the amount of water withdrawn for the reporting period, including the average and peak withdrawals, for monthly or other intervals specified by NYS DEC;
- a description of the use of the water withdrawn;
- the estimated amounts of water returned, if any, the locations of such returns, and the method of such returns;
- the actual or estimated average monthly and annual volumes and rates of water lost or consumptively used from the withdrawal; and
- the water conservation and efficiency measures undertaken during the reporting period.

The NYS DEC's Division of Water, in turn, annually reports water use by sector to the Great Lakes Commission for incorporation into the **Great Lakes Regional Water Use Database**.

The NYS DEC's Division of Water maintains databases of Water Withdrawal Permits, annual reports, and water wells. All permitted and registered water withdrawals are included

in a Google Earth data layer within the NYS GIS Clearinghouse and are available to the public at <http://www.dec.ny.gov/pubs/42978.html#waterwith>. Preparations are also underway to post annual reports on NYS DEC's new InfoLocator, an online, interactive map that provides access to many DEC documents, permits, and public data related to the environmental quality of specific sites in New York State. With more than 50 data layers available, this application shows both environmental quality monitoring and natural resource information together in one place. InfoLocator can be found on NYS DEC's public website at <http://www.dec.ny.gov/pubs/109457.html>.

- 5. Include a web link to the State or Province's Withdrawal application form(s). In addition, include a section on web access to additional information on the program, link to any application forms and links to tools for improving the management of water resources or sharing information about water withdrawals.**

Copies of the related regulations, policies and manuals with the various permit application form, annual reporting form and related forms can be found on NYS DEC's public website at: <http://www.dec.ny.gov/lands/94327.html>. Additional information on water withdrawals, conservation, interbasin diversions, water wells, drought management, and NYS DEC's Water Management Programs can be found on NYS DEC's public website at <http://www.dec.ny.gov/lands/313.html> and pages linked therefrom.

- 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. A description of State or Provincial initiatives or mechanisms to support an improved understanding of individual or cumulative impacts of Withdrawals, Consumptive Uses and Diversions on the Basin ecosystem should also be provided.**

New York State is working to improve the scientific basis for water management on numerous programmatic levels. Examples include:

- Across New York's portion of the Basin, stakeholders are working collaboratively under an *Interim Great Lakes Action Agenda* that includes the goal, "Conserve Great Lakes water supplies in a manner that recognizes the renewable but finite supply of waters of the Basin for the long-term sustainable use and enjoyment of the public." A cross-cutting objective to implementing this goal is to enhance coordinated science, monitoring and information management. Opportunities for water users, researchers and other stakeholders to annually pursue competitive small grants for related scientific research, demonstration and applications are now available through New York Sea Grant. (See <http://www.dec.ny.gov/lands/91881.html>)
- New York has established the *Climate Smart Communities Guide to Local Action* that contains overviews of possible community actions, how-to's, and case studies to help communities adapt to the risks posed by climate change. Many of these risks affect vulnerable water supplies, water conveyance infrastructure systems and increased water demands especially during drought periods. A clearinghouse of climate and water-based scientific materials, methods and technologies has been developed to assist local communities in adaptation planning. (See <https://www.dec.ny.gov/energy/50845.html>.)
- New York is also promoting ecosystem-based management approaches for more informed decision-making processes regarding groundwater withdrawals. In partnership with the U.S.

Geological Survey's New York Office, an innovative aquifer quantity and quality characterization study focusing on the very high quality and threatened Tug Hill Aquifer near eastern Lake Ontario was conducted to test aquifer vulnerabilities and re-charge capabilities.

- New York State is improving the scientific understanding of the groundwater resources of the Basin in cooperation with the USGS. Detailed aquifer mapping projects are ongoing in the following Basin locations: Fairport Lyons Glacial Drainage Channel Aquifer (Wayne, Ontario, and Seneca Counties); Owasco Inlet Valley (Cayuga and Tompkins Counties); Malone (Franklin County); and Springview (Erie County).
- New York State continues its partnership with USGS in the operation and expansion of a statewide groundwater monitoring network. The USGS continues to collect, process, and disseminate groundwater level data from the Cooperative Network that currently includes 103 observation wells statewide. As part of the network expansion, bedrock wells in Monroe, Erie, and Yates Counties have been added to the network since 2014. USGS is currently investigating potential bedrock wells in Wayne and Washington Counties.
- All water withdrawal applications for new or increased groundwater withdrawals require the submittal of a long-term pumping test. Each test is assessed for potential impacts to other water users and the surrounding resources. 6 NYCRR §601.11(c) states that in making its decision to grant or deny a permit or to grant a permit with conditions, NYS DEC shall determine whether (6) the proposed water withdrawal will be implemented in a manner to ensure it will result in no significant individual or cumulative adverse impacts on the quantity or quality of the water source and water dependent natural resources, including aquatic life; this determination may include an evaluation of whether all withdrawn water that is not lost to reasonable consumptive use will be returned to its source New York major drainage basin.
- Water conservation and efficient use measures and methods vary considerably between different types of users, facilities, seasons, and locations. New York believes no “one size fits all” water conservation plan can apply universally. Consequently, the NYS DEC has devised an innovative guidance to assist potable and non-potable water permit applicants in developing their water conservation plans through an online tool that seeks to match possible methods to water uses. As permitted water users gain experience with the water conservation and efficient use methods, the tools can be adapted to enhance efficiency and effectiveness of future plans. (See <http://www.dec.ny.gov/lands/86945.html>.)
- New York State's Water Quality Rapid Response Team, national experts, and local stakeholders collaboratively developed Harmful Algal Bloom (HAB) Action Plans for twelve priority lakes that are vulnerable to HABs and are critical sources of drinking water. Each action plan supports an improved scientific understanding of the Waters of the Basin by identifying contributing factors fueling HABs and immediate actions that can be taken to reduce the sources of pollution that spark algal blooms. In the Great Lakes Basin, Action Plans have been developed for Cayuga Lake, Conesus Lake, Honeoye Lake, Owasco Lake, Skaneateles Lake, Lake Champlain, and Lake George.

7. Additional information.

Water Conservation and Efficiency Program Report

- 1. Status of the State or Province's Water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives. If developed, include State or Provincial goals and objectives or link to electronic version.**

Since 1989, New York State has required all public water supply systems in the Basin to

develop and submit water conservation programs when applying for new or increased water withdrawals. Each conservation program must specifically address:

- Source and customer metering;
- System water auditing to identify water losses and inefficiencies;
- System leakage and repair, and;
- Water use reduction particularly during the summer and drought conditions.

Based upon these programs, water withdrawal permits implement environmentally sound and economically feasible water conservation practices.

In 2011, New York's program was expanded to cover other sectors of water withdrawal in addition to public water supply. Again, water conservation programs are required to discuss and implement the best management practices for water conservation and reuse measures that apply to that sector of usage. These programs, in turn, lead to permit conditions in each water withdrawal approval.

In the spring of each year, water withdrawers are required to submit an annual report for the previous calendar year that includes a discussion and questions regarding compliance and progress with water conservation programs and conditions.

2. Water Conservation and Efficiency Program Overview.

DEC regulates water withdrawals, interbasin diversions, collects and evaluates water withdrawal data, registers water well contractors, monitors and reports on regional drought conditions and provides technical guidance on water conservation. All permit applicants are required to have a water conservation plan consistent with goals and objectives of the Compact (See <http://www.dec.ny.gov/lands/86945.html>.)

a. Citations to State/Provincial Water Conservation and Efficiency Program implementing laws, regulations and policies.

The Water Withdrawal, Conservation and Drought program page references the Water Resources Law, which is part of NYS ECL 15, Title 15, and is derived from the Compact. (See <http://www.dec.ny.gov/lands/313.html>.)

Both houses of the New York State Legislature have recently passed two bills that will promote water conservation and efficiency. The first will amend NYS ECL §15-0314 to raise standards for water-efficient plumbing and appliances to align with federal standards issued by the Environmental Protection Agency (EPA). The second, recently signed into law, will amend NYS ECL §15-1503 to require NYS DEC to post information regarding public water supply permits to the DEC website including information on water usage and water conservation.

b. Summary description of the State's or Province's Water Conservation and Efficiency Program including what elements are voluntary and mandatory.

All applications for water withdrawal permits require a Water Conservation Program that demonstrates an applicant's water conservation and efficiency measures. These must be environmentally sound, economically feasible and minimize inefficiencies and water losses.

Such measures must include, but are not limited to: source and customer metering; frequent system water auditing; system leak detection and repair; recycling and reuse, and reductions during drought. (See <http://www.dec.ny.gov/lands/86945.html>.)

3. For each of the regional objectives, identify how the State/Provincial program is consistent with the regional objective, and a description of how the State or Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures. More details for each objective are available at http://www.glsregionalbody.org/Docs/Resolutions/GLSLRWRRB_Resolution_6-Conservation-Efficiency.pdf and can be provided in the table below.

OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
<p>➤ Guide programs toward long-term sustainable water use.</p>	<p>NYS ECL §1501(8) requires the NYS DEC to establish a water conservation and efficiency program based on the Compact’s five water conservation goals to assure consistency; NYS ECL §1503(2) enacts the Compact’s decision-making criteria for permit approval, including implementation in a manner that incorporates environmentally sound and economically feasible water conservation measures; and 1503(3) requires the DEC to publish a water conservation manual. Guidance (TOGS 3.2.1) for consistent implementation of these statutes was issued May 25, 2017 (See http://www.dec.ny.gov/docs/water_pdf/togs321.pdf.)</p> <p>Flow-related guidance (TOGS 1.3.12) considering pass-by flows and reservoir releases to ensure that water withdrawals will result in no significant or cumulative adverse impacts to the quantity and quality of the water source and water dependent natural resources was issued April 12, 2017. (See http://www.dec.ny.gov/docs/water_pdf/flowtogsfinal.pdf.)</p>
<p>➤ Adopt and implement supply and demand management to promote efficient use and conservation of water resources.</p>	<p>Water Conservation Manuals [NYS ECL §15-1503(3)] have been developed by NYS DEC to address various components of this objective which will be incorporated into conservation plans developed by all new water permit applicants.</p> <ul style="list-style-type: none"> - Water conservation plans are required to provide annual water audit data which compares produced water to metered usage. - All water withdrawal permit applications for new or increased groundwater withdrawals must submit the results of a pumping test. - All water withdrawal applications for new or increased surface withdrawals must submit hydrological data to confirm dependable water supply yields while adequately protecting water levels and in-stream flows for habitat.
<p>➤ Improve monitoring and</p>	<p>All water withdrawers with the capacity to withdraw 100,000 gallons per day or more are required to report their</p>

<p>standardize data reporting among State and Provincial water conservation and efficiency programs.</p>	<p>average monthly water withdrawals and types of use on an annual basis. Standard reporting forms for the submittal of this data have been developed. (See http://www.dec.ny.gov/lands/86940.html.) Information required is consistent with guidance developed by Compact Council/Regional Body. The NYS DEC's Division of Water annually reports this information to the Great Lakes Commission for incorporation into the Great Lakes Regional Water Use Database.</p> <p>New York's Great Lakes Action Agenda, an ecosystem-based management strategy for protecting, restoring and conserving natural resources, includes a goal to "Conserve Great Lakes Water Supplies" with nine specific priority actions designed to focus state policies, programs and ongoing funding opportunities. (See https://www.dec.ny.gov/lands/91881.html.)</p>
<p>➤ Develop science, technology and research.</p>	<p>In developing an additional Water Conservation Manual for non-potable uses, the DEC has worked to identify best management practices (BMPs) and state of the art technologies for consideration by various water user categories. This manual will continue to be updated as additional technologies and efficiencies are learned through consultation with entities such as AWWA.</p> <p>New York's Great Lakes Action Agenda, an ecosystem-based management strategy for protecting, restoring and conserving natural resources, includes a goal to "Conserve Great Lakes Water Supplies" with nine specific priority actions designed to focus state policies, programs and ongoing funding opportunities. (See https://www.dec.ny.gov/lands/91881.html.)</p>
<p>➤ Develop education programs and information sharing for all water users.</p>	<p>NYS DEC's current public guidance information is available on NYS DEC's website:</p> <ul style="list-style-type: none"> - Annual Water Withdrawal Reporting: http://www.dec.ny.gov/lands/86940.html - Water Conservation Tips for the Public: http://www.dec.ny.gov/lands/5009.html <p>The Water Conservation Manuals have been designed specifically to enhance public understanding and user access to best management practices for assisting various water users in developing their required plans. The manuals can be found at: http://www.dec.ny.gov/lands/86945.html</p>

	<p>All permitted and registered water withdrawals are included in a Google Earth data layer within the NYS GIS Clearinghouse and are available to the public at: http://www.dec.ny.gov/pubs/42978.html#waterwith</p> <p>Preparations are underway to post annual reports on NYS DEC's new InfoLocator, an online, interactive map that provides access to many NYS DEC documents, permits, and public data. InfoLocator can be found on NYS DEC's public website at http://www.dec.ny.gov/pubs/109457.html.</p> <p>New York's Great Lakes Action Agenda, an ecosystem-based management strategy for protecting, restoring and conserving natural resources, includes a goal to "Conserve Great Lakes Water Supplies" with nine specific priority actions designed to focus state policies, programs and ongoing funding opportunities. (See https://www.dec.ny.gov/lands/91881.html.)</p>
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4. Description of the State or Provincial Water conservation and efficiency program implementation timeline and status.

NYS DEC's Division of Water currently regulates by permit or registration all water withdrawal systems with the capacity to withdraw 100,000 gallons per day or more within the Basin. Since 1988, NYS ECL §15-1503 has required the submittal of a water conservation plan with each new application for a permit for a public water supply system. The main objective of the plans is to promote implementation of the most environmentally sound and economically feasible water conservation measures. Components of these plans must include, at a minimum, 1) customer and source metering, 2) water auditing, 3) leak detection and repair and 4) outdoor water use management.

Amendments to NYS ECL §15-1501, et seq. were passed into law in 2011 and became effective on February 15, 2012. The new law extended NYS DEC's permitting and registration authority throughout the state and includes registration of existing agricultural withdrawals that are greater than 100,000 gpd (30-day average) and of major basin water diversions outside of the Basin of greater than 1,000,000 gpd. Implementing regulations (6 NYCRR Part 601) took effect on April 1, 2013 that included a five-year schedule, completed in 2017, to permit all existing withdrawals that meet the threshold volume. The statute and regulations strengthen the existing water conservation and efficient use provisions by including two objectives in addition to those stated above: (1) recycling and reuse, and (2) reductions during drought. On May 25, 2017, NYS DEC issued Technical & Operational Guidance Series (TOGS) 3.2.1 to promote consistent implementation of these statutes and regulations. (See http://www.dec.ny.gov/docs/water_pdf/togs321.pdf.) On April 12, 2017, the NYS DEC issued Technical & Operational Guidance Series (TOGS) 1.3.12 that includes procedures to ensure that water withdrawals will result in no significant or cumulative adverse impacts to the quantity and quality of the water source and water dependent natural resources. (See http://www.dec.ny.gov/docs/water_pdf/flowtogsfinal.pdf.)

In the final report, please provide an overview of any public outreach activities undertaken, as well as a summary of any comments received and changes made in response to comments received.

NYS DEC Division of Water conducted an outreach effort targeting golf courses and water parks to ensure that they are aware of their potential reporting requirements. The Division also provides reminders of annual report deadlines and regularly assists permittees improve the quality, accuracy, and timeliness of their reports. Additional outreach activities have been focused on increasing the volume and variety of water management information available to the public on the Department's website. Specific examples have been cited above.

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-6

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
State of Ohio

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs: (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

The Agreement

E. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

F. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

G. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs: (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

H. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

II. SUBMISSIONS BY STATE OF OHIO

A. To the Compact Council. The Compact Council has received the State of Ohio's report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the State of Ohio's report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the State of Ohio, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

- A. Based on the report submitted by the State of Ohio, the Water Management Program presented by the State of Ohio meets or exceeds the current requirements of the Compact and the Agreement.
- B. Based on the report submitted by the State of Ohio, the Water Conservation and Efficiency Program presented by the State of Ohio meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management Program Review
State of Ohio
December 11, 2019

STATE OF OHIO

WATER MANAGEMENT PROGRAM REPORT

December 11, 2019

The following Water Management Program Report is submitted by the State of Ohio to the Compact Council pursuant to the requirements contained in Section 3.4.1 of the Great Lakes-St. Lawrence River Basin Water Resources Compact (“the Compact”) and to the Regional Body pursuant to the commitments made in Article 300 of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“the Agreement”).

1. Lead agency/agencies and contact person(s). The lead agency for administering the Compact/Agreement is the Ohio Department of Natural Resources (“ODNR”). The authority to enforce the Compact and take appropriate actions to effectuate its purposes and intent rests with the Chief of the ODNR Division of Water Resources (“the Division”). The lead contact person is Rodney J. Tornes, Chief of the Division (phone: 614-265-6737; email: Rodney.Tornes@dnr.state.oh). An alternative contact is Michael Hallfrisch, Manager of the Division’s Water Inventory & Planning Program (phone: 614-265-6745; email: Mike.Hallfrisch@dnr.state.oh.us).

2. Implementing laws, regulations, and policies. Ohio’s implementing laws, regulations, and policies are contained in the Compact, codified in §1522.01 of the Ohio Revised Code (ORC), and its state implementing provisions, codified in ORC §§1522.02–.40. Provisions to administer and enforce specific sections of the Compact and/or articles of the Agreement are authorized as follows: Section 3.4 of the Compact/Article 300 of the Agreement by §1522.01 and §1522.03 of the ORC; Section 4.1 of the Compact/Article 301 of the Agreement by §1522.01, §1522.03, §1521.03(B), and §§1521.15–.16 of the ORC; Sections 4.2(2), 4.2(4) & 4.2(5) of the Compact/Article 304 of the Agreement by §1522.01, §1522.03, and §1522.05 of the ORC; Section 4.3 of the Compact/Article 200 of the Agreement by §1522.01, §1522.03, and §§1522.10–.40 of the ORC; Sections 4.8, 4.9 and 4.13 of the Compact/Articles 200, 201 and 208 of the Agreement by §1522.01, §1522.03, §1522.06, and §1522.11 of the ORC; Section 4.10 of the Compact/Article 206 of the Agreement by §1522.01, §1522.03, §§1522.12-.15, §1522.17, §1522.19 and §§1522.23–.25 of the ORC; Section 4.11 of the Compact/Article 207 of the Agreement by §1522.01, §§1522.03-.04, §1522.101, §§1522.13–.131, and §1522.17 of the ORC; and Article 304 of the Agreement by §1522.01 and §1522.03 of the ORC.

The State of Ohio is in compliance with the provisions of the Compact by virtue of §§1522.02–.40 of the ORC, which became effective in their present form on October 17, 2019. The promulgation of Administrative Rules, anticipated to commence in 2020, will further aid in the administration and enforcement of the Compact by clarifying procedures and processes associated with the management and regulation of water withdrawals and diversions.

3. Summary description of the water management program. The Compact’s prohibition on diversions out of the Great Lakes Basin has been enforced since December 8, 2008. A permit program for new or increased diversions that meet the criteria required to qualify as exceptions to the Compact’s prohibition on diversions has been in place since September 4, 2012. A

separate permit program for diversions larger than 100,000 gallons per day both out of and into the Great Lakes Basin, enacted subsequent to the 1985 Great Lakes Charter, has been in place since 1986. A permit program for new or increased withdrawals and consumptive uses within the Great Lakes Basin pursuant to the Compact has been in place since March 3, 2013. Revisions to this permit program requiring detailed groundwater flow modeling and a water replacement process for large ground water withdrawals went into effect on October 17, 2019. A separate permit program for withdrawals resulting in new or increased consumptive uses larger than two million gallons per day, enacted subsequent to the 1985 Great Lakes Charter, has been in place since 1988. This permit program was also updated to require detailed groundwater flow modeling and a water replacement process for large groundwater withdrawals on October 17, 2019.

Diversions & Withdrawals Subject to Regulation:

All new or increased diversions are subject to the prohibition on new or increased diversions (Section 4.8 of the Compact) except those that qualify as exceptions to the prohibition (Section 4.9 of the Compact) under a permit program authorized by §1522.11 of the ORC. New or increased water withdrawals above established threshold quantities and not specifically exempt from regulation require a permit from the Chief of the Division under authority of §§1522.12–.13 of the ORC.

Withdrawals Exempt from Regulation:

Under §1522.14 of the ORC, the following are exempt from the permit requirement: [1] a new facility whose proposed withdrawal & consumptive use capacity is below the applicable threshold quantity; [2] an existing facility whose proposed increase in withdrawal & consumptive use capacity is below the applicable threshold quantity; [3] a new facility whose actual maximum daily withdrawal will be less than the applicable threshold quantity when averaged over any 90-day period (45-day period if the withdrawal is from a high quality river or stream and the drainage area at the withdrawal point is between 50 and 100 square miles); [4] an existing facility whose increase in actual maximum daily withdrawal will be less than the applicable threshold quantity when averaged over any 90-day period (45-day period if the withdrawal is from a high quality river or stream and the drainage area at the withdrawal point is between 50 and 100 square miles); [5] an existing electric generating facility that increases its consumptive use due to a requirement imposed by federal regulation that is unrelated to an increase in electricity production; [6] a facility that is making a withdrawal for purposes other than industrial use or public water supply from an impoundment collected primarily from diffused surface water sources, including a farm pond, golf course pond, nursery pond, storm water retention pond, or other private pond; [7] a facility that is making a withdrawal for purposes other than industrial use or public water supply from a river or stream to augment the water supply of an impoundment used for firefighting purposes; [8] a facility that must temporarily establish a new or increased withdrawal and consumptive use capacity as a result of an emergency (for the duration of the emergency) that, without the new or increased capacity, would result in imminent harm to human health and property; [9] a facility that is establishing a new or increased withdrawal & consumptive use capacity in compliance with an experimental use permit; [10] a facility that must temporarily establish a new or increased withdrawal & consumptive use capacity in order to respond to a humanitarian crisis (for the duration of that crisis) if the new or increased capacity is necessary to assist in the management of that crisis; [11] a major utility facility that is subject to regulation under Chapter 4906 of the ORC or a facility that is increasing its withdrawal & consumptive use capacity directly related to supplying such a major utility facility; [12] a public water system whose increase in withdrawal & consumptive use capacity is proposed and reviewed in accordance with the requirements of §1521.23 (c) and (D) of the ORC; [13] a facility that is subject to regulation under Chapter 1514 of the ORC; [14] a facility that purchases all of its water from

a public water system; and [15] a facility that is withdrawing or consumptively using water from an off-stream impoundment that has been substantially filled with an existing stream withdrawal or a new or increased stream withdrawal that is subject to a withdrawal & consumptive use permit.

New or increased withdrawals and consumptive uses subject to regulation pursuant to the Compact (i.e., §§1522.10–.40 of the ORC) include only those withdrawals and consumptive uses within the Great Lakes Basin portion of the state. New or increased withdrawals and consumptive uses subject to regulation pursuant to §§1521.23–.29 of the ORC include those withdrawals and consumptive uses from any waters of the state.

Exemptions as allowed in the Compact are also included as exemptions to permit requirements pursuant to the Compact (i.e., §§1522.10–.40 of the ORC) but are not exempt from permit requirements pursuant to §§1521.23–.29 of the ORC.

New or increased withdrawals and consumptive uses that are exempt from regulation by §1522.14 of the ORC remain subject to the permit requirement contained in §§1521.23–.29 of the ORC, which requires a permit from the director of the ODNR prior to withdrawing waters of the state that would result in a new or increased consumptive use of an average of more than two million gallons per day in any thirty-day period. The following are exempt from this permit requirement: [1] a major utility facility that is subject to regulation under Chapter 4906 of the ORC; [2] a facility that is subject to regulation under Chapter 1514 of the ORC; [3] a public water supply that was in operation on June 29, 1988 and for which no substantial changes are proposed; [4] a public water supply that encompasses only water distribution facilities; [5] a facility that is required to obtain a withdrawal & consumptive use permit under §§1522.12–.13 of the ORC.

Registration & Reporting:

All existing diversions out of the Great Lakes Basin are registered consistent with Section 4.1.3 of the Compact and are required to annually report the monthly quantity of water diverted, as required by Section 4.1.4 of the Compact. All diversions permitted under §1522.11 of the ORC would also be required to annually report the monthly quantities of water diverted. All existing withdrawals with a capacity to withdraw greater than 100,000 gallons per day are registered consistent with Section 4.1.3 of the Compact and are required to annually report the monthly quantity of water withdrawn, as required by Section 4.1.4 of the Compact. All withdrawals permitted under §§1522.12–.13 of the ORC would also be required to annually report the monthly quantities of water withdrawn. A separate registration and reporting requirement for all existing withdrawals with a capacity to withdraw greater than 100,000 gallons per day, enacted subsequent to the 1985 Great Lakes Charter and codified in §1521.16 of the ORC, has been in place since 1988. Water withdrawal registration and reporting data can be obtained from the Division's Water Inventory & Planning Program by calling (614) 265-6620 or emailing a request to DSWC@dnr.state.oh.us.

Regulation by Water Use Sector & Source Type:

New or increased withdrawals and consumptive uses for all use sectors and all source types are subject to permit requirements pursuant to §§1522.12–.13 or §§1521.23–.29 of the ORC, except major utility facilities subject to regulation under Chapter 4906 of the ORC, facilities subject to regulation under Chapter 1514 of the ORC, and certain public water systems subject to regulation under Chapter 6109 of the ORC, which are subject to criteria identical to those in §§1521.23–.29 of the ORC.

Quantity Thresholds for Regulation:

All new or increased diversions that qualify for an exception to the prohibition on diversions are subject to the regulation regardless of quantity. New or increased withdrawals not otherwise exempt are subject to the permit requirement if they meet the following threshold quantities, established by §1522.12(A) of the ORC: [1] for withdrawals from Lake Erie or a recognized Lake Erie navigation channel, if the new or increased capacity for withdrawal or consumptive use is 2.5 million gallons per day or greater; [2] for withdrawals from any high quality river or stream, if the new or increased capacity for withdrawal or consumptive use is 100,000 gallons per day or greater; [3] for withdrawals from other surface water and ground water, if the new or increased capacity for withdrawal or consumptive use is 1.0 million gallons per day or greater.

Implementation and Enforcement:

Pursuant to §1522.03(B) of the ORC, the Chief of the Division is required to “enforce the great lakes–St. Lawrence river basin water resources compact and take appropriate actions to effectuate its purposes and intent.” Pursuant to §1522.12(A) of the ORC, the Chief of the Division is responsible for the review and consideration of permit applications for the withdrawal and consumptive use of water within the Lake Erie watershed.

The Division’s responsibilities include: collecting and analyzing water withdrawal, diversion, and consumptive use data; developing permit applications; reviewing permit application submittals; making recommendations to the Chief for enforcement action for noncompliance with the Compact and Compact-related regulations; and recommending the approval or denial of permits. The Division works closely with other state, federal and local agencies to gather information on water users in the Lake Erie Basin and to ensure that these agencies are aware of the requirements of the Compact.

Enforcement of the Compact is authorized by §§1522.20–.21 of the ORC, under which the Chief of the Division may issue an order to a person that the Chief determines has violated, is violating, or is threatening to violate any provisions of Chapter 1522 of the ORC, rules adopted under it, or permits or orders issued under it. The order shall be effective upon issuance and shall identify the facility where the violation has occurred, is occurring, or is threatened to occur, the specific violation, and actions that the owner or operator of the facility must take to comply with the order. The order shall establish a reasonable date by which the owner or operator must comply with the order. The Chief may, by order, propose to suspend or revoke a permit issued under Chapter 1522 of the ORC if the chief determines that any term or condition of the permit is being violated. The order shall identify the facility where the violation allegedly occurred, describe the nature of the violation, and prescribe what action the permittee may take to bring the facility into compliance with the permit. The Chief shall fix and specify in the order a reasonable date or time by which the permittee must comply. The order shall state that the Chief may suspend or revoke the permit if the permittee fails to comply with the order by that date or time. If on that date or time the Chief finds that the permittee has not complied with the order, the Chief may issue a new order suspending or revoking the permit.

Before issuance of a final order, the Chief shall issue a proposed order indicating the Chief’s intent to issue a final order. If the Chief receives a written objection from a person who is or will be aggrieved or adversely affected by the issuance of the final order, the Chief shall conduct an adjudication hearing with respect to the proposed order. A person who is or will be aggrieved or adversely affected by the issuance of the final order and who submitted a written objection under this division may be a party to the adjudication. Any person who is

issued a proposed order or a final order by the Chief shall be a party in any administrative or legal proceeding in which the proposed order or final order is at issue.

After the issuance of a final order, a person who is or will be aggrieved or adversely affected by the issuance of the order may appeal the order to the court of common pleas of Franklin County or the court of common pleas of the county in which the facility that is the subject of the order is located. The filing of an appeal does not automatically suspend the order that is the subject of the appeal. Upon application by the appellant, the court may suspend or stay the order, pending an immediate hearing on the appeal. If the court finds that the order was lawful and reasonable, it shall issue a written order affirming the order. If the court finds that the order was unreasonable or unlawful, it shall issue a written order vacating or modifying the order. The judgment of the court is final unless reversed, vacated, or modified on appeal.

The Ohio Attorney General, upon written request of the Chief, shall bring an action for an injunction or other appropriate legal or equitable action against any person who has violated, is violating, or is threatening to violate any provision of this chapter, any rule or order adopted or issued under it, or any term or condition of a permit issued under it. The Attorney General shall bring the action in the court of common pleas of Franklin County or the county where the applicable facility is located.

A person who violates any provision of Chapter 1522 of the ORC, any rule or order adopted or issued under it, or any term or condition of a permit issued under it is liable to the Chief for any costs incurred by the Division in investigating, mitigating, minimizing, removing, or abating the violation and conditions caused by it. Upon the request of the Chief, the Attorney General shall bring a civil action against the responsible person to recover those costs in the court of common pleas of Franklin County.

4. Description of how the Standard of Review and Decision is applied.

For application of the decision making standard for withdrawals & consumptive uses, §1522.101 of the ORC specifies that for the Ohio program “source watershed” (as used in Section 4.11 of the Compact) means the Lake Erie watershed considered as a whole.

In addition, §1522.13 of the ORC indicates that a withdrawal & consumptive use permit will be issued for a facility if the Chief of the Division determines that the facility meets all the criteria established in Section 4.11 of the Compact. It specifies that in applying Section 4.11.2 of the Compact, the Chief will require that a withdrawal or consumptive use be implemented so as to ensure that it will result in no significant individual or cumulative adverse impacts on the quality or quantity of the waters and water dependent natural resources of the Great Lakes Basin considered as a whole or of the Lake Erie source watershed considered as a whole and that as part of the evaluation, the Chief will: (1) rely on the best generally accepted scientific methods appropriate for this state derived from professionally accepted resources and practices, (2) consider the long-term mean annual inflow and outflow of the Lake Erie source watershed, and (3) consider the withdrawal and the portion of the withdrawal that is not returned to the Lake Erie source watershed. It also specifies that impacts of a withdrawal or consumptive use on the quantity or quality of waters and water dependent natural resources of more localized areas that affect less than the Great Lakes Basin considered as a whole or the Lake Erie source watershed considered as a whole shall be considered as a part of the evaluation of whether a proposed withdrawal or consumptive use is reasonable as provided in Section 4.11.5 of the Compact.

Legislation to provide additional instruction for applying the decision making standard is anticipated, and administrative rules are being developed that may also provide instruction in the application of the decision-making standard as well as the exception standard for diversions.

5. Overview of reporting and database of Withdrawals, Consumptive Uses & Diversions.

Ohio has required the registration and annual reporting of water withdrawals and permitted diversions since 1990, including the location and source of the withdrawal or diversion and the purpose for which it is used. Monthly withdrawal data for each well and/or surface water intake is reported annually. Monthly diversion data for registered diversions has also been reported annually, beginning in 2013. Electronic submission is not available. Data are entered and stored in MS Access format, and can be queried as needed by the Division staff. Metering is not required; reports based on flow gauging and timing devices are also accepted, and technical assistance in generating water withdrawal and diversion reports is available. Experience has demonstrated that consumptive use quantities cannot generally be accurately measured; instead, consumptive use coefficients are employed. Data described in this section can be obtained from the Division's Water Inventory & Planning Program by calling 614-265-6620 or emailing a request to DSWC@dnr.state.oh.us.

6. Attach a copy of the withdrawal application forms.

Application forms for water diversion permits pursuant to §1522.11 of the ORC and water withdrawal & consumptive use permits pursuant to §1522.12–.13 of the ORC have been developed and are available upon request. The Water Withdrawal Facility Registration and Annual Permit forms, pursuant to §1521.16 of the ORC and Section 4.1 of the Compact, are available online at [water withdrawal facility registration forms](#).

7. Summary description of initiatives to support an improved scientific understanding of the waters of the Basin.

The Division has completed county aquifer yield and pollution potential maps for the entire state, which are available online at [ground water maps](#). The Division has also undertaken river basin water quantity assessments for all the river basins within the Ohio portion of the Great Lakes Basin, which quantify the impacts of water withdrawals (from ground water, Lake Erie, and other surface water sources), consumptive uses, and diversions on streams at various streamflow levels, and provide useful information in estimating individual and cumulative impacts of Basin withdrawals, consumptive uses, and diversions. The water quantity assessments are not available online, but can be obtained from the Division's Water Inventory & Planning Program by calling 614-265-6620 or emailing a request to DSWC@dnr.state.oh.us.

8. Additional information.

Nothing additional.

STATE OF OHIO

WATER CONSERVATION & EFFICIENCY PROGRAM REVIEW

(December 8, 2019)

The following Water Conservation & Efficiency Program Review is submitted by the State of Ohio to the Compact Council pursuant to the requirements contained in Section 3.4.1 of the Great Lakes-St. Lawrence River Basin Water Resources Compact (“the Compact”) and to the Regional Body pursuant to the commitments made in Article 300 of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“the Agreement”).

1. Lead Agency. The lead agency for Ohio’s water conservation & efficiency program is the Ohio Department of Natural Resources (“ODNR”). The lead contact person is Rodney J. Tornes, Chief of the ODNR Division of Water Resources (“the Division”) (phone: 614-265-6737; email: Rodney.Tornes@dnr.state.oh). An alternative contact is Michael Hallfrisch, Manager of the Division’s Water Inventory & Planning Program (phone: 614-265-6745; email: Mike.Hallfrisch@dnr.state.oh.us).

2. Status of Ohio Goals & Objectives. Ohio’s water conservation & efficiency goals are those contained in Section 4.2.1 of the Compact. Ohio’s water conservation & efficiency objectives have been developed and can be viewed online at [water conservation goals & objectives](#).

3. Water Conservation & Efficiency Program Overview. Ohio’s implementing laws, regulations and policies are contained in the Compact, codified in §1522.01 of the Ohio Revised Code (ORC), and its state implementing provisions, codified in §§1522.02–.40 of the ORC. Specifically, §1522.05 of the ORC requires the Chief of the Division to adopt voluntary watershed-wide goals, objectives, and standards for water conservation and efficiency consistent with Section 4.2 of the Compact. In addition, §1522.17 of the ORC requires an applicant for a water withdrawal & consumptive use permit to submit a facility water conservation plan that, if it reasonably incorporates environmentally sound and economically feasible water conservation measures applicable to the facility, will be considered to be in compliance with Section 4.11.3 of the Compact. All other elements of Ohio’s water conservation & efficiency program are voluntary, except those that are authorized by pre-existing statutes, regulations, or programs. The only such program that provides for mandatory use reductions is the Ohio Emergency Management Agency’s Drought Contingency Plan, and then only when the Governor declares a Level Four Drought Emergency. The Emergency Operations Plan-Drought Incident Annex can be viewed online at [Ohio Drought Incident Annex](#).

Ohio’s water conservation & efficiency program consists of education on the value of water conservation & efficiency and promotion of voluntary conservation practices. Such efforts are undertaken individually by state agencies pursuant to general education authorities and programs, and without centralized coordination by the lead agency under the Compact.

4. Consistency with Regional Objectives.

Objective	Legislative or Program Citation
Guide programs toward long-term sustainable water use	<p>A program to coordinate existing state & local government water conservation programs under the leadership of the Division is underway; existing state & local programs are being inventoried</p> <p>Water management plans have been completed for the Lake Erie Basin watersheds, including water resource inventory & assessment, analysis of water use trends and formulation of water use forecasts, and identification of potential water shortage areas</p>
Adopt and implement supply and demand management to promote efficient use and conservation of water resources	<p>A report has been prepared for the Ohio Lake Erie Commission and ODNR by a study team from the Cleveland State University entitled "Water Resources Shaping Ohio's Future: Water Efficiency Manual for Industrial, Commercial, and Institutional Facilities". The full report can be viewed on the water conservation webpage on ODNR's Compact website at CSU-Full Report; the Technical Report can be viewed at CSU-Technical Report.</p> <p>Programs are being developed that encourage water conservation practices and provide incentives for water users who voluntarily implement strict conservation practices</p>
Improve monitoring and standardize data reporting among state and provincial water conservation & efficiency programs	<p>Water use information for registered withdrawals continues to be collected, analyzed, and reported for the various categories of water use</p> <p>A program is being developed to improve the measurement & evaluation of water conservation practices; identify & encourage programs to monitor, account for, and minimize water loss</p>
Develop science, technology, and research	<p>Opportunities for research & development related to water conservation & efficiency are being investigated that are consistent with the recently updated Science Strategy. The updated Science Strategy will continue to be used as a tool to aid decision making by sharing scientific activities on the local and regional levels. Research & monitoring needs related to the interaction of ground water & surface water are being identified</p> <p>Funding sources are being investigated to identify how recognized modeling programs can be used in water conservation planning</p>
Develop education programs and information sharing for all water users	<p>A water conservation & efficiency education program is being developed to:</p> <p>Develop a website & printed material conveniently accessible to the public containing information on water conservation & efficiency (a water conservation webpage has been placed online on ODNR's Compact Water Conservation & Efficiency Webpage)</p> <p>Project WET (Water Education for Teachers) Educator's workshops were conducted by Ohio EPA. These workshops include water conservation as part of the curriculum.</p> <p>Develop a "Planning Guide for Water Conservation & Efficiency" publication for the various water use sectors.</p>

5. Program Implementation Timeline & Status. Ohio's water conservation & efficiency program, which does not include any mandatory conservation requirements on water users (except those who have obtained water withdrawal and consumptive use permits), is currently being implemented as indicated, with further developments underway.

Great Lakes-St. Lawrence River Water Resources Regional Body

RESOLUTION NO. 2020-9

ADOPTING DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
Province of Ontario

I. BACKGROUND AND PURPOSE

A. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

B. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State’s or Province’s Water management and conservation and efficiency programs.

C. Following the Regional Body’s review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province’s programs: (1) meet or exceed the provisions of the Agreement; or (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

D. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s and Province’s goals and objectives.

II. SUBMISSIONS BY PROVINCE OF ONTARIO

The Regional Body has received the Province of Ontario’s report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the Province of Ontario and the terms of the Agreement, the Regional Body finds that:

- A. Based on the report submitted by the Province of Ontario, the Water Management Program presented by the Province of Ontario meets or exceeds the current requirements of the Agreement.
- B. Based on the report submitted by the Province of Ontario, the Water Conservation and Efficiency Program presented by the Province of Ontario meets or exceeds the current requirements the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management Program Review
Province of Ontario
Draft Response Dated December 19, 2019

Province of Ontario Ontario Water Management Program Report

The following information is submitted by the Province of Ontario to the Great Lakes Regional Body Secretariat in response to the Questionnaire for Preliminary Submittals by States and Provinces, in fulfillment of the five-year review of Ontario's Water Management Programs, pursuant to the requirements in Article 300 of the *Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement* (Agreement).

General Information

1. Lead agencies and contact(s):

The Ontario Ministry of Natural Resources and Forestry (MNRF) and the Ontario Ministry of the Environment, Conservation and Parks (MECP) share primary responsibility for water management at the provincial level. Generally, MNRF is responsible for certain aspects of Provincial water quantity management, including the administration of the *Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement* (Agreement). MECP is responsible for water quality management and for the Permit to Take Water and the Water Taking Registration Programs.

Key Contacts:

Ala Boyd, Director
Natural Resources Conservation Policy Branch
Ontario Ministry of Natural Resources and Forestry

Ling Mark, Director
Great Lakes and Inland Waters Branch
Ontario Ministry of the Environment, Conservation and Parks

2. Provincial water management program implementing laws, regulations and policies –

The commitments of the Agreement are implemented in Ontario primarily through the Permit to Take Water Program under the *Ontario Water Resources Act* (OWRA), with contributions from a number of additional statutes, regulations and policies, as highlighted in the following table. A description of Ontario's key legislative and policy tools for water management follows the table.

Agreement Commitments (Articles)	Ontario Water Resources Act, Water Taking and Transfer Regulation (O. Reg. 387/04)	Additional Legislation, Regulation, Policy
Prohibition of diversions, regulation of exceptions based on Exception Standard (Article 200, 201).	<input checked="" type="checkbox"/> Ban on diversions out of Ontario's major water basins, including the Great Lakes Basin (OWRA s. 34.3). <input checked="" type="checkbox"/> Regulation of intra-basin transfers (OWRA s. 34.5-34.11; O. Reg 387/04).	<input checked="" type="checkbox"/> <i>Environmental Assessment Act</i> - Technical Bulletin provides guidance for municipalities undertaking water, wastewater projects to meet Agreement

Agreement Commitments (Articles)	Ontario Water Resources Act, Water Taking and Transfer Regulation (O. Reg. 387/04)	Additional Legislation, Regulation, Policy
	<input checked="" type="checkbox"/> Environmental Compliance Approvals required for sewage works (return flow) (OWRA s. 53).	standards, criteria for class EA projects involving an intra-basin transfer. <input checked="" type="checkbox"/> <i>Lakes and Rivers Improvement Act</i> – regulation of works forwarding, holding back, diverting water (location, design approval). <input checked="" type="checkbox"/> Quality of return flow/effluent regulated under <i>Environmental Protection Act</i> , <i>Clean Water Act</i> , <i>Environmental Assessment Act</i> , Provincial Water Quality Objectives. <input checked="" type="checkbox"/> <i>Clean Water Act</i> provides for the completion of water quality and quantity risk assessments, water budgets.
Regional review of significant diversion exceptions (Article 204).	<input checked="" type="checkbox"/> Regional review for significant intra-basin transfers (OWRA s. 34.6, 34.1).	<input checked="" type="checkbox"/> <i>Environmental Bill of Rights</i> provides for public consultation on water taking proposals.
Management, regulation of withdrawals, consumptive uses based on Decision-Making Standard (Article 200, par 3; 203; 206).	<input checked="" type="checkbox"/> Permitting criteria reflect Agreement Decision Making Standard (OWRA s. 34; O. Reg. 387/04). <input checked="" type="checkbox"/> Environmental Compliance Approvals required for sewage works (return flow) (OWRA s. 53).	<input checked="" type="checkbox"/> Quality of return flow/effluent regulated under <i>Environmental Protection Act</i> , <i>Clean Water Act</i> , <i>Environmental Assessment Act</i> , Provincial Water Quality Objectives. <input checked="" type="checkbox"/> <i>Clean Water Act</i> provides for the completion of water quality and quantity risk assessments, water budgets. <input checked="" type="checkbox"/> Provincial Policy Statement and Provincial Plans under the Planning Act provide for the minimizing of negative impacts and planning for efficient, sustainable water use and conservation in planning and development decisions.
Prior Notice and Comment for significant consumptive uses (Article 205).	<input checked="" type="checkbox"/> Prior Notice and Comment required for significant consumptive uses by regulation (s. 6; O. Reg. 387/04).	<input checked="" type="checkbox"/> <i>Environmental Assessment Act</i> - Technical Bulletin provides guidance for municipalities undertaking water, wastewater projects to meet Agreement requirements for class EA projects. <input checked="" type="checkbox"/> Environmental Bill of Rights provides for public consultation on water taking proposals.
Applicability, determining new/ increased diversions, consumptive uses, withdrawals (e.g. foundation for baseline setting, Agreement exemptions, regulation of bottled water) (Article 207, 208).	<input checked="" type="checkbox"/> Exemptions from permitting for: livestock watering, household use, unless a new or increased transfer is established; wetland conservation; a weir that was constructed prior to March 29, 2016; and passive and/or active in-stream diversions for construction purposes (OWRA s. 34). <input checked="" type="checkbox"/> Exceptions to Ontario ban on diversions/ transfers out of major water basins (OWRA s. 34.3). <input checked="" type="checkbox"/> Regulation of bottled water under PTTW program, restriction of highly consumptive uses in defined high use watersheds (O. Reg.387/04).	<input checked="" type="checkbox"/> As of March 29, 2016, water takings (road construction and construction site dewatering) that meet the criteria in O. Reg. 63/16 under the Environmental Protection Act must be registered in the Environmental Activity and Sector Registry instead of requiring a Permit to Take Water.

Agreement Commitments (Articles)	Ontario Water Resources Act, Water Taking and Transfer Regulation (O. Reg. 387/04)	Additional Legislation, Regulation, Policy
	<input checked="" type="checkbox"/> Setting of a baseline (OWRA s. 34.8; O. Reg. 387/04).	
Review, possible amendment of standards based on periodic cumulative impact assessments (Article 209).	<input checked="" type="checkbox"/> Posting of cumulative impact assessments for public input, ON government response (OWRA s. 34.6).	
Judicial Review (standing to other Parties to seek judicial review of Ontario decision under Agreement) (Article 210).	<input checked="" type="checkbox"/> Reciprocating jurisdictions entitled to hearing of Environmental Review Tribunal with respect to specified decisions (OWRA s. 34.9-34.10, O. Reg. 387/04). <input checked="" type="checkbox"/> Reciprocating jurisdictions entitled to seek judicial review of specified decisions (OWRA s. 34.9, 34.11, O. Reg. 387/04).	
Submission of water management, conservation program reviews every 5 years (Article 300).	<input checked="" type="checkbox"/> Program reviews submitted voluntarily.	
Conservation goals, objectives, programs, annual assessment of conservation programs (Article 304). (Note: see Water Conservation & Efficiency Program Report for further description of contributing legislation, policies, programs).	<input checked="" type="checkbox"/> Water conservation among the criteria considered in making decisions on a Permit to Take Water (OWRA O. Reg. 387/04). <input checked="" type="checkbox"/> Permit application requires applicant to identify existing conservation measures. <input checked="" type="checkbox"/> Annual Conservation Program Assessment, 5-year program reviews submitted voluntarily.	<input checked="" type="checkbox"/> <i>Water Opportunities Act</i> , 2010 sets out a framework for water efficiency, conservation (e.g. Building Code requires regular review of water conservation standards, expand scope of Building Code Conservation Advisory Council). <input checked="" type="checkbox"/> Ontario Water Conservation and Efficiency Goals, Objectives completed 2012. <input checked="" type="checkbox"/> Broader water and ecosystem conservation commitments supported by a wide range of legislation, regulation, policies and programs e.g. Planning Act-Provincial Policy Statement, Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem, Great Lakes Strategy.
Information Management commitments (mandatory reporting by water users, annual reporting of water use data to regional database) (Article 301).	<input checked="" type="checkbox"/> O. Reg 387/04 requires annual reporting of water use by permit holders. <input checked="" type="checkbox"/> O. Reg. 63/16 under the Environmental Protection Act requires annual reporting of water takings for road construction and construction site dewatering purposes registered in the Environmental Activity and Sector Registry.	

The primary provincial legislative and policy tools that contribute to Agreement implementation are listed below. Federal legislation and management activities may also apply (e.g. Fisheries Act) but are not outlined in this report.

The *Ontario Water Resources Act* (OWRA) provides for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use. The Act provides the authority for the Permit to Take Water Program administered by the MECP. Essentially, and subject to limited exceptions, any person who takes more than 50,000 litres of water in any day by means of a well, intake, or other works (a taking includes the diversion of water) is required to obtain a Permit to Take Water from the MECP Director. In 2007 the OWRA was amended through the *Safeguarding and Sustaining Ontario's Water Act* (SSOWA) to incorporate key provisions of the Agreement. Some amendments came into force immediately (e.g. ban on out of basin diversions/transfers), others required supporting regulations before they could be brought into force (e.g. regulation of intra-basin transfers, consumptive uses in accordance with the Agreement). All remaining provisions of the Act came into force on of January 1, 2015.

- *Ontario Water Resources Act, R.S.O. 1990, c. O.40:*
www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm
- *Safeguarding and Sustaining Ontario's Water Act, S.O. 2007, c.12 – Bill 198:*
www.e-laws.gov.on.ca/html/source/statutes/english/2007/elaws_src_s07012_e.htm

The *Water Taking and Transfer Regulation* under the OWRA outlines matters that the MECP must consider when deciding upon an application for a Permit to Take Water. This regulation operationalizes key Agreement commitments (e.g. ban on intra-basin transfer and regulation of exceptions; application of decision-making standard, prior notice and comment process that is required by the Agreement for very large withdrawals, consumptive uses).

- Ontario Regulation 387/04 (Water Taking and Transfer):
www.e-laws.gov.on.ca/html/regs/english/elaws_regs_040387_e.htm

The *Permit to Take Water Manual* (April 2005) sets out the decision-making process generally followed by the Ministry when evaluating a proposed or existing water taking.

- *Permit to Take Water Manual* (April 2005):
<https://archive.org/details/permittotakewa4932ontauoft>

Other supporting Permit to Take Water application policies and guidance materials are outlined in section 5 of the Water Management Program report.

The Lakes and Rivers Improvement Act, 1990 (LRIA), administered by the MNRF, provides for the management, preservation and use of Ontario's lakes and rivers and the land under them, the protection of public rights and riparian interests, the management of fish and wildlife dependent on lakes and rivers, protection of natural amenities and the protection of people and property by ensuring that dams and diversions are suitably located, constructed and maintained.

- *Lakes and Rivers Improvement Act, R.S.O. 1990, c. L.3:*
www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90l03_e.htm
- Ontario Regulation 454/96 (Construction):
www.e-laws.gov.on.ca/html/regs/english/elaws_regs_960454_e.htm

The Clean Water Act, 2006, administered by the MECP, protects existing and future sources of Ontario's drinking water. A key component of the legislation is the preparation of locally

developed, science-based risk assessment reports (quality and quantity risks) and source protection plans.

- *The Clean Water Act, 2006*, R. S.O. 2006, c. 22:
www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_06c22_e.htm

The Ontario *Environmental Assessment Act*, 1990 (EA Act) provides for two types of environmental assessment planning and approval processes: Individual Environmental Assessments (EA) carried out and submitted to the Minister of the Environment, Conservation and Parks for review and approval, or Class Environmental Assessments which are approved subject to compliance with an approved class environmental assessment process (e.g. Municipal Engineers Association Class EA for Municipal Infrastructure projects, including water and wastewater projects)

- *Ontario Environmental Assessment Act*, R.S.O. 1990, Chapter E.18
www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e18_e.htm

Regulations under the *Environmental Protection Act* specify effluent monitoring requirements and effluent limits for nine industrial sectors: petroleum; pulp and paper; metal mining; industrial minerals; metal casting; organic chemical manufacturing; inorganic chemical manufacturing; iron and steel manufacturing; and electric power generation.

- *Environmental Protection Act*, R.S.O. 1990, CHAPTER E.19
www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e19_e.htm

Water Opportunities and Water Conservation Act, 2010 was passed on November 29th, 2010. The Act contains five schedules. Schedule 1 enacts a stand-alone act, the *Water Opportunities Act, 2010*. Schedules 2 to 5 amend existing legislation in respect of water conservation and other matters. The Act builds upon Ontario's expertise in clean water technology and sets out a framework to make the province a North American leader in water innovation to help address global water challenges. Among other things, the Act sets the framework to encourage Ontarians to use water more efficiently by creating and implementing innovative approaches to protect water resources for current and future generations.

- *Water Opportunities and Water Conservation Act*, S.O. 2010, Chapter 19
http://www.e-laws.gov.on.ca/html/source/statutes/english/2010/elaws_src_s10019_e.htm
- *Water Opportunities Act*, S.O. 2010, Chapter 19, Schedule 1
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_10w19_e.htm

The *Canada-Ontario Agreement (COA)* is the principal mechanism through which Ontario and Canada coordinate their work to address their respective and shared commitments to restore, protect and conserve the Great Lakes. Since 1971, a series of COAs have enabled both governments, together with local partners, to address the most significant challenges facing the Great Lakes region. The current COA was signed in 2014 and supports Ontario's implementation of the Great Lakes Strategy and Canada's commitments under the 2012 Canada-U.S. Great Lakes Water Quality Agreement. The current COA is comprised of a framework agreement and 14 annexes: nutrients; harmful pollutants; discharges from vessels; areas of concern; lakewide management; aquatic invasive species; habitat and species; groundwater quality; climate change

impacts; science; promoting innovation; and engaging communities, First Nations and Métis. The current COA expires in December 2019 and a new COA is being negotiated between Canada and Ontario. If a new COA is not yet in place when the current COA expires, Canada and Ontario are committed to continuing collaborative work on Great Lakes restoration while a new COA is finalized.

- *Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2014*
http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2014/011-9290_d.pdf

The *Provincial Policy Statement* (PPS, 2014), under the authority of Section 3 of the *Planning Act*, administered by the Ministry of Municipal Affairs and Housing, provides policy direction on matters relating to land use planning that are of provincial interest, including protecting and restoring water quality and quantity, promoting efficient and sustainable use of water resources, including practices for water conservation and sustaining water quality, and protection from water-related natural hazards. Planning authorities that have authority to make decisions under the *Planning Act* must ensure their decisions are consistent with the *Provincial Policy Statement*, as well as designated provincial plans including the *Growth Plan for the Greater Golden Horseshoe*.

A Place to Grow: Growth Plan for the Greater Golden Horseshoe, represents the province's long-term vision for managing the rapid growth that is forecast for this region to 2041. The Plan contains requirements for watershed planning to inform land use, water and wastewater master plans with consideration for the context of applicable inter-provincial, national, bi-national or state-provincial Great Lakes Basin agreements, the identification of water resource systems and the protection of key hydrologic features and key hydrologic areas, and policies for evaluation of water availability and assimilative capacity needed to service current and forecasted growth.

- *Provincial Policy Statement*
<http://www.mah.gov.on.ca/AssetFactory.aspx?did=10463>
- *A Place to Grow: Growth Plan for the Greater Golden Horseshoe*
<https://www.ontario.ca/document/place-grow-growth-plan-greater-golden-horseshoe>

Water Management (1994, update 1998) establishes the Policies, Guidelines and Provincial Water Quality Objectives of the MECP and is based on the guiding principles related to the protection, preservation, and sustainability of the province's water resources for future generations. To effectively implement these principles, ecosystem and watershed management, how pollutants are controlled, and the inter-relationship of air, water and land management are all important considerations.

- *Water Management (1994, update 1998)*
<https://www.ontario.ca/page/water-management-policies-guidelines-provincial-water-quality-objectives>

Ontario's Great Lakes Strategy, released in December 2012, provides a roadmap for how Ontario will focus action to protect the Great Lakes. The Strategy summarizes environmental conditions of the Great Lakes and Ontario's actions taken to date and identifies priorities for future action. Priorities for future action are described with respect to the six Great Lakes goals

of engaging and empowering communities; protecting water for human and ecological health; improving wetlands, beaches, shorelines and coastal areas; protecting habitats and species; enhancing understanding and adaptation; and ensuring environmentally sustainable economic opportunities and innovation. As required under the *Great Lakes Protection Act*, Ontario is currently reviewing its 2012 Great Lakes Strategy and working on a renewed Strategy to address Ontario's priorities for protecting the Great Lakes.

- *Ontario's Great Lakes Strategy, 2012*
<https://www.ontario.ca/page/ontarios-great-lakes-strategy>

Water Management Programs Overview (Five-Year Review)

The information is limited to the provincial water management programs which contribute to the achievement of Ontario's Agreement commitments.

1. Summary description of Ontario's Water management program scope and thresholds –

The focus of the following summary is on the water use regulation elements of Ontario's water management programs.

Water Use Regulation Overview

The *Ontario Water Resources Act* and its companion regulations are directed at the protection of the quality and quantity of Ontario's surface and groundwater resources. The purpose of the Act is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being. The legislation provides for:

- prohibitions related to the discharging of pollutants to surface or groundwater and the regulation of discharges from sewage works; and
- a permit system that governs the taking of surface or groundwater (>50,000 litres per day [over 13,000 U.S. Gallons per day]).

Water Quality (return flow) – Section 53 of the *Ontario Water Resources Act*, requires MECP approval to establish, alter extend or replace new or existing sewage works. Environmental Compliance Approvals are issued for approved works. Sewage works means any works for the collection, transmission, treatment and disposal of sewage or any part of any such works. Sewage includes drainage, storm water, commercial wastes and industrial wastes and any such other matter or substance that is specified by regulation.

It is the responsibility of the proponent to assess the assimilative capacity of the receiver, and determine the actual and potential uses of the intended receiver of the effluent from the proposed works, and derive from this analysis the effluent quality and discharge regimen criteria for the proposed works. Terms and conditions of the approval deal with the criteria for operation and performance of the sewage works, requirements for monitoring and recording of specific indicators of the environmental impact of the works, reporting on incidents, and provision of contingencies to prevent and deal with accidental spills or upsets.

Water Takings – Section 34 of the *Ontario Water Resources Act*, prohibits water takings over 50,000 litres per day without a permit subject to some specified exceptions. The Permit to Take Water Program applies to all water use sectors. Ontario does not have a separate water registration program as water use is monitored through a water use reporting mechanism under the Permit to Take Water program where permit holders are required to report annually the amounts of their takings.

Exemptions from the requirement to obtain a permit include water takings for ordinary household purposes, watering of livestock or poultry and firefighting purposes. If a new or increased transfer of water of 379,000 litres (100,000 U.S. gallons) per day or more is established for household purposes or watering of livestock or poultry, a permit would be required. In 2016 the Water Taking and Transfer Regulation was amended also to exempt water

takings for wetland conservation, a weir that was constructed prior to March 29, 2016 and passive and/or active in-stream diversions for construction purposes from the requirement to obtain a Permit to Take Water.

Also in 2016, the government passed Ontario Regulation 63/16, Registrations under Part II.2 of the Act – Water Taking, under the Environmental Protection Act, requiring that as of March 29, 2016, water takings (for road construction and construction site dewatering purposes) that meet the criteria in the regulation must be registered in the Environmental Activity and Sector Registry (EASR) instead of requiring a permit to take water. The EASR is an online self-registration system implemented by the Ministry. The following water takings are prescribed activities under Ontario Regulation 63/16:

- surface water takings that are more than 50,000 L/day and are for road construction purposes that meet specified criteria about the purpose, rate or location of the water taking; and
- construction site dewatering involving more than 50,000 L/day and less than 400,000 L/day.

Restriction:

- The taking of water must not involve transferring water out of the Great Lakes – St. Lawrence River Basin, the Nelson River Basin, or the Hudson Bay Basin, or transferring water from one Great Lake watershed to another.
- The volume of water taken daily shall be reported to the Ministry on or before March 31 in each year, for each location from which water was taken in the previous calendar year. If no water is taken, then a “no taking” report must be entered. The water takings shall be reported online through the Regulatory Self-Reporting System (RSRS).

Water withdrawals from all Ontario water sources, including withdrawals from the Great Lakes, other surface waters, and groundwater, are regulated in Ontario.

Dams and water diversions (e.g. for hydroelectric power production) are also regulated through the *Lakes and Rivers Improvement Act*, which regulates works forwarding, holding back or diverting water and is administered through the MNRF.

Water Withdrawals and Consumptive Uses

Considerations – In making decisions on an application for a Permit to Take Water the following factors are considered:

- Protection of the natural functions of the ecosystem – e.g. potential impact of the natural variability of water flow or water levels, minimum stream flow, habitat that depends on water flow or water levels, interrelationships between groundwater and surface water, and the potential to restore source watershed hydrologic conditions and functions
- Water availability – e.g. impact on water balance and sustainable aquifer yield, existing water uses, low water conditions, whether the taking is in a high use or medium use watershed (certain highly consumptive water uses are restricted in these watersheds), any planned municipal use approved under the *Environmental Assessment Act* or under a Municipal Official Plan
- Issues related to the use of water – e.g. whether water conservation is implemented in accordance with best water management standards for the relevant sector, the purpose for

the water use including the amount of water lost through consumptive use, the manner and location to which the water will be returned, and other issues, including compliance with the *Boundary Waters Treaty* and the *International Boundary Waters Treaty Act of Canada*

Water Taking Risk Classification – To assist in the evaluation of proposed water takings, permit applications are classified based on their potential risk to the environment or potential to interfere with other water users.

- Category 1 proposals have a lower risk of causing adverse environmental impacts or interference. They meet the following criteria:
 - Renewal of a previously issued permit that will expire, to allow the continuance of an existing taking with no changes and for which no past interference or impact problems have been reported.
 - Groundwater takings from dugout ponds not connected to or receiving water from surface water; the dugouts must satisfy depth and separation distance from other water sources.
 - Surface water takings from small ponds that collect only surface run-off or takings from a Great Lake or connecting channel less than 1 million litres (260,000 US gallons) per day.
- Category 2 and Category 3 proposals have a greater potential to cause adverse environmental impact or interference.
 - Applications for Category 2 takings require accreditation by a qualified person.
 - Applications for Category 3 takings are required to be supported by a detailed ecological/hydrological/hydrogeological study prepared by a qualified person. Among the water takings classified as a Category 3 are new or increased withdrawals from the Great Lakes or connecting channels which exceed 19 million litres per day consumptive use (5 million U.S. gallons per day), the threshold which triggers obligations under the Agreement.

Public Involvement – In Ontario, notifications of permit applications are required to be posted to the Environmental Registry of Ontario for public review and comment for a minimum of 30-days unless exempted from the registry posting requirement (e.g. exceptions include: proposals for which an equivalent public consultation process has been provided, such as through an Environmental Assessment, water takings that are less than one year, and agricultural irrigation, unless a new or increased water transfer is proposed). As well, municipalities and conservation authorities are given notice of Environmental Registry postings for permit proposals within their area of jurisdiction. The proponent of a water taking has the right to appeal the Ministry decision on their permit application. In addition, the public may seek leave to appeal Ministry decisions on proposals that are subject to registry posting.

Water Use Reporting – Ontario's *Water Taking and Transfer Regulation* requires every permit holder to collect and record data on the volume of water taken daily and to report the previous year's data to the Ministry before March 31 of the following year. This requirement applies to all permitted water takers in Ontario. Water use data are submitted and stored in the internet-based Water Taking Reporting System (EASR's are reported in the Regulatory Self Reporting System, PTTW will be transferring to the new system) established to facilitate compliance and to inform provincial water management.

Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement) – Ontario’s *Water Taking and Transfer Regulation* requires that Ontario’s obligations under the Agreement be met when considering a permit application. More specifically, this requirement relates to the need to ensure that Prior Notice and an opportunity to comment on the proposal is provided to Great Lakes jurisdictions before a decision is made for new or increased consumptive uses of Great Lakes – St. Lawrence River Basin water of over 19 million litres (5 million U.S. gallons) per day average over any 90-day period. In keeping with Agreement Article 205, comments will be considered from the other parties to the Agreement that address whether the proposal is consistent with the Decision-Making Standard established under Article 203 of the Agreement. A detailed analysis of how the provisions of the Decision-Making Standard are applied is provided under question 3 of the questionnaire.

To meet this requirement, estimated consumptive use associated with proposed new or increased water takings are screened using generally accepted consumptive use coefficients for 34 water use sectors/activities, developed through an MNRF commissioned study in 2009. Proposed uses that may exceed the Agreement threshold are encouraged to conduct a site-specific consumptive use evaluation to confirm whether Prior Notice is required. Additional guidance will be provided as required to assist in determining the amount of water lost through consumptive use.

In determining whether a proposed new or increased water taking from the Great Lakes – St. Lawrence River Basin would result in a consumptive use of water in an amount that triggers obligations to provide Prior Notice and an opportunity to comment under Article 205 of the Agreement, consideration is given to:

- The baseline of the existing water withdrawal approval limits, as per the Agreement; and
- The volume of the proposed new or increased water taking and the associated consumptive use, including the amount of any related water taking supplying the same facility or common distribution system, approved within the ten years prior to the application.

Water Diversions, Transfers

Ban on Out of Basin Diversions/Transfers – In 1999, Ontario introduced a regulation under the Ontario Water Resources Act banning water diversions/transfers out of the province’s three major water basins (Great Lakes – St. Lawrence River Basin, Hudson Bay Basin, and Nelson River Basin). This ban was elevated to legislation (i.e. placed into the *Ontario Water Resources Act*) through the *Safeguarding and Sustaining Ontario’s Water Act, 2007*. The only exceptions to Ontario’s ban on diversions are for transfers of water in containers 20 litres or less, water incorporated into a product that is transferred out of the basin, water required for the operation of a vehicle or vessel, water for firefighting or other emergency purposes, existing transfers commenced before January 1, 1998, and the transfer of water pursuant to the order of the Lieutenant Governor in Council dated October 2, 1913 respecting the Greater Winnipeg Water District. Therefore, in Ontario there are no exceptions to the ban on diversions for straddling communities or straddling counties.

Intra-Basin Transfers – The intra-basin transfer commitments of the Agreement is integrated into Permit to Take Water decision-making through the *Ontario Water Resources Act* in 2007 which includes a ban on intra-basin water transfers from one Great Lake watershed to another and the regulation of exceptions, consistent with the straddling community and intra-basin transfer provisions of the Agreement and the Exception Standard criteria. A detailed analysis of how the

provisions of the Exception Standard criteria are applied is provided under question 3 of the questionnaire.

In keeping with the Agreement, the intra-basin transfer provisions apply to new or increased transfers 379,000 litres (100,000 U.S. gallons) per day or more, average in any 90-day period, termed “the threshold amount” in the legislation. Permits for transfers involving a consumptive use of 19 million litres (5 million U.S. gallons) per day or more will be issued by the Minister of the Environment, Conservation and Parks (as opposed to a Director delegated authority under the *Ontario Water Resources Act*) following Regional Review, taking into consideration the declaration of finding issued by the Regional Body.

The legislation encourages municipal water uses that transfer 379,000 litres (100,000 U.S. gallons) of water per day or more to return water to the source Great Lake watershed and requires any new or increased transfers involving a consumptive use of 19 million litres (5 million U.S. gallons) per day or more to return water to the source Great Lake watershed, in keeping with the Agreement.

The legislative framework for regulating new or increased intra-basin transfers of water is outlined in the following table – all thresholds are based on a 90-day running average:

<p>19+ MLD Consumptive Use</p>	<ul style="list-style-type: none"> • Meets exception criteria, including return flow to source GL watershed. • No feasible alternatives to transfer, including conservation. • Proposal undergoes Regional Review & the Minister considers the Declaration of Finding by Regional Body before making a decision. 	
<p>379,000+ L/Day (Consumptive Use less than 19 MLD)</p>	<p><i>Municipal Drinking Water Systems:</i></p> <ul style="list-style-type: none"> • Meets exception criteria, including return flow to source Great Lake watershed 	<p><i>All Uses (including Municipal Drinking Water Systems if return flow to source watershed cannot be met):</i></p> <ul style="list-style-type: none"> • Meets exception criteria, except return flow may be to another Great Lake watershed – if demonstrated that it is not feasible, environmentally sound or cost effective to return water to the source Great Lake watershed. • No feasible, environmentally sound, cost effective alternatives to transfer, including conservation. • Ontario gives prior notice to other Parties to the Agreement.
<p>50,000 L/Day to 379,000 L/Day</p>	<ul style="list-style-type: none"> • Subject to Permit to Take Water requirements; not prohibited. 	

In determining whether a proposed new or increased intra-basin transfer requires regulation under the above framework, consideration will be given to:

- The volume of water deemed to currently be transferred (baseline), according to approval limits, as per the Agreement;
- Whether the proposed transfer is from a Great Lakes watershed to the watershed of a downstream connecting channel of that Great Lake (exempt);
- Whether the proposed transfer is from the watershed of a downstream connecting channel of a Great Lake to the watershed of that Great Lake (exempt);

- Whether the proposed transfer involves water taken from a location within 10 kilometres (approximately 6 miles) of the point at which Lake Ontario flows into the St. Lawrence River and transferred to the St. Lawrence River watershed or the Lake Ontario watershed (exempt); and
- The volumes of any new or increased water transfers by the permit holder between the same Great Lakes watersheds to which the application relates that were approved within the ten years prior to the application.

In determining whether a proposed new or increased intra-basin transfer triggers the 19 million litre per day consumptive use threshold, estimated consumptive use associated with proposed new or increased water transfers will be screened using generally accepted consumptive use coefficients for 34 water use sectors/activities, developed through an MNRF commissioned study in 2009. Proposals that may exceed the Agreement threshold will be encouraged to conduct a site-specific consumptive use evaluation to confirm whether Regional Review is required. Additional guidance will be provided as required to assist in determining the amount of water lost through consumptive use.

2. Description of how Ontario manages Water Withdrawals by sector, water source, quantity and location

Permitted water takings are managed by sector, source, quantity and location.

Sector:

The following table identifies the existing general purpose and specific purpose water taking categories under the Permit to Take Water program. Any sector-specific management requirements are noted.

Sector	Description	Management
ALL Sectors		<ul style="list-style-type: none"> • Permit to Take Water required for water takings over 50,000 litres per day by ALL water use sectors, with the exception of ordinary household purposes and watering of livestock or poultry (unless a new or increased intra-basin transfer 379,000 litres per day or more is proposed), firefighting purposes, wetland conservation, a weir that was constructed prior to March 29, 2016 and passive and/or active in-stream diversions for construction purposes.
Agriculture	Irrigation of (includes frost protection): field and pasture crop; fruit orchard; market garden/flowers; nursery; sod farm; tender fruits; tobacco	
Commercial	Aquaculture, bottled water, golf course irrigation,	<ul style="list-style-type: none"> • Highly consumptive water uses are restricted in defined “high use watersheds”. This restriction applies to bottled water. • Bottled water transported in containers 20 litres or less are exempt from the prohibition of water transfers

	mall/business; snowmaking	<ul style="list-style-type: none"> On December 16, 2016, Ontario passed Ontario Regulation 436/16 to implement a moratorium on every new or expanding water bottling facility that takes groundwater and is required to have a water taking permit under the Ontario Water Resources Act, until January 1, 2019. On December 21, 2018, Ontario extended the moratorium on new or expanded permits to take groundwater to produce bottled water for one year, until January 1, 2020. The province proposed to extend this moratorium for nine months, ending October 1, 2020, to give the ministry time to complete its analysis of the water quantity review and to publicly consult on and finalize changes to how we manage water takings before the moratorium ends. This way, we can be confident our programs, policies and science protect vital water resources while keeping Ontario open for business. Our proposal to extend the moratorium was made available for comment on the Environmental Registry from November 18 to December 18, 2019. In April 2017, the Ministry released new stricter requirements for renewals of existing bottled water permits to take groundwater, available at http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2017/012-9151_d.pdf The new rules strengthen Ontario’s permit to take water program by increasing public reporting and transparency and enhancing scientific requirements. Effective August 1, 2017, water bottling companies that take groundwater and are required to have a permit under the Ontario Water Resources Act must pay a new additional fee of \$500 per million litres.
Construction	Dredging, road building, dewatering	<ul style="list-style-type: none"> As of March 29, 2016, water takings (road construction and construction site dewatering) that meet the criteria in O. Reg. 63/16 under the Environmental Protection Act must be registered in the Environmental Activity and Sector Registry instead of requiring a Permit to Take Water.
Dewatering	Pits and quarries	
Industrial	Aggregate washing, brewing/soft drinks, cooling water, food processing, manufacturing; pipeline testing; power generation	<ul style="list-style-type: none"> Highly consumptive water uses are restricted in defined “high use watersheds”. This restriction applies to beverage manufacturing, fruit or vegetable canning, aggregate processing where water is incorporated into a slurry, product manufacturing if more than 50,000 litres/day of water is incorporated into the manufactured product(s).
Recreation	Aesthetic, fish pond	
Remediation	Groundwater	
Water Supply	Campground, communal, municipal	
Miscellaneous	Dam/reservoir, heat pump, pump test	
<i>Each sector has the option of identifying ‘other’, with a requirement to specify use</i>		

Source:

Water takings are also categorized according to the source – as surface water or ground water and by name of the source (e.g. watercourse name and tributary). Permits are required for water takings over 50,000 litres per day from a lake, stream, river, pond or groundwater.

To assist in evaluating proposed water takings, applications are classified based on their potential risk to the environment or potential to interfere with other water users. The table below outlines how applications are classified for groundwater and surface water takings. Applications for Category 2 takings would require a scoped hydrogeological (groundwater) or hydrological/ecological study (surface water), and applications for Category 3 takings would require a detailed hydrogeological (groundwater) or hydrological/ecological study due to their potential for greater environmental risk.

Classification Criteria for Categories for Groundwater and Surface Water Takings	
Groundwater	Surface Water
Category 1	Category 1
Renewal (same or lesser amount, same purpose, same location, same source, no past interference/ impacts, and no scientific study required as part of renewal).	Renewal (same or lesser amount, same purpose, same location, same source, no past interference/ impacts, and no scientific study required as part of renewal).
Ponds (e.g. irrigation and agriculture) <ul style="list-style-type: none"> • Not connected to nor receiving water from surface water; and • <4m deep and >1000m from the nearest stream or wetland; or • <7m deep and >250m from the nearest stream or wetland. 	Ponds <1,500 cubic metres in volume that collect runoff and that are not drawing from groundwater, watercourses, wetlands, other lakes or ponds.
Category 2	Category 2
Short-term, non-recurring taking less than 7 days (e.g. pumping test or hydrostatic test).	Great Lakes or connecting channels taking less than 19 million litres per day.
	Takings from sources with previous assessments (i.e. further to a previous study and implementing previously established controls).
	River and Streams (3 rd order or higher order) taking ,5% of 7Q ₂₀ .
	Transitional Permits where the Director previously required upgrades/modifications to water taking.
	Takings and Returns where water is removed for a short time only and water is returned to a nearby point with no significant change to water quantity or quality (i.e. for cooling, hydrostatic testing, hydraulic lake dredging).
	Lakes and Ponds takings < 1,000,000 L/day twice per week or less from water bodies >10ha in size that are not on-stream and not part of the headwaters of any watercourses. More frequent takings require supporting studies.
Category 3	Category 3
All groundwater takings that do not meet Category 1 or Category 2 criteria.	All surface water takings that do not meet Category 1 or Category 2 criteria and new takings from 1 st or 2 nd order watercourses, wetlands, intermittent streams, new on-stream reservoirs, impoundments and ponds, groundwater sources that potentially affect surface waters.

Quantity:

When granted, a Permit to Take Water imposes terms and conditions that limit the amount of water the person can take by specifying a maximum rate for the water taking (litres per minute), duration (hours per day), and amount (litres per day).

In support of the Agreement, thresholds requiring regulation of new or increased intra-basin transfers in accordance with Agreement criteria and standards, and thresholds for consumptive uses requiring prior notice with Great Lakes jurisdictions are based on the average consumptive use in any 90-day period (rolling 90-day average).

Proposed water taking volumes are assessed against a series of considerations relating to the protection of natural ecosystem functions, water availability, the use of water (i.e. water conservation measures, the need and purpose for the water, the amount of water that may be lost through consumptive use), the return of water after use and other interests.

The risk classification criteria for permits also reflect the quantity of water requested. For example, new or increased takings above 19 million litres/day from the Great Lakes or connecting channels are classified as a Category 3 taking, requiring more rigorous analysis than smaller takings.

Location:

The locations of takings are identified by their geographic coordinates (Datum NAD83) including UTM zone, easting and northing. An interactive map of all active Ontario permits can be found at <http://www.ontario.ca/environment-and-energy/map-permits-take-water>. An interactive map of registrations on the Environmental Activity and Sector Registry can be found at:

<https://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/GoSearch.action?search=basic&lang=en>.

To assist in meeting the requirements of the Agreement a Great Lakes Watershed locator map tool is also available and can be accessed at <http://www.ontario.ca/environment-and-energy/great-lakes-watershed-locator>.

The Water Taking and Transfer Regulation restricts new and increased water takings for highly consumptive uses (e.g. bottled water, aggregate processing) in specific watersheds identified as “high use watersheds”, where the cumulative demand for water within the watershed is high relative to available supply.

3. Description of how the provisions of the Standard of Review and Decision are applied. The description should include information on how each criterion of the Decision-Making Standard and Exception Standard is addressed.

The tables below highlight how the criteria of the Agreement Decision-Making Standard and Exception Standard are being implemented through the Permit to Take Water Program under the *Ontario Water Resources Act*.

In addition to the Permit to Take Water Program under the *Ontario Water Resources Act*, implementation of Agreement standards is also supported by other Ontario statutes, policies and programs, including, for example:

- Environmental impact assessment under the *Environmental Assessment Act*, which provides for the completion of individual assessments or class assessments, such as the Class Environmental Assessment for Municipal Water and Wastewater Treatment projects. The municipal class environmental assessment references compliance with the *Ontario Water Resources Act* and the Agreement and a 2009 Technical Bulletin further guides municipalities in meeting the Agreement in conducting environmental assessments for projects involving an intra-basin transfer or large consumptive use of Great Lakes – St. Lawrence River Basin water;
- Completion of water budgets and water quantity risk assessments to support the development of Drinking Water Source Protection plans under the *Clean Water Act*;
- Location and design approval for works forwarding, holding back, or diverting water in accordance with the *Lakes and Rivers Improvement Act*;
- Promotion of water conservation under the *Water Opportunities Act*.

a. Decision-Making Standard (Water Withdrawals, Consumptive Uses)

Decision-Making Standard Criteria Article 203	Permit to Take Water Program (PTTW) (Ontario Water Resources Act, As Amended by the Safeguarding & Sustaining Ontario's Water Act, 2005, Water Taking and Transfer Regulation O. Reg. 387/04)
General	<p>Under the OWRA a Permit to Take Water is required for water takings over 50,000 litres/day (over 13,000 U.S. gallons/day) (s. 34).</p> <p>The criteria which form the foundation for issuing permits to take water in Ontario (which are enshrined in the Water Taking and Transfer Regulation O. Reg 387/04) (s.4) meet the Decision-Making Standard criteria of the Agreement (Article 203) and ensure compliance with the Prior Notice provisions (Article 205) of the Agreement for new or increased consumptive uses 19 million litres (5 million U.S. gallons) per day or more (s. 6).</p> <p>The OWRA also provides a permitting Director with authority to set additional terms and conditions on a permit e.g. limiting use, related to the return of water after use (location, quantity, quality), and the conservation of water including a conservation audit and/or plan.</p>
1. Return flow to source watershed	<p>OWRA requires separate Environmental Compliance Approval (ECA) for wastewater discharge.</p> <p>No explicit requirement to return water to source Great Lake watershed, although most water uses do not remove water from a Great Lake watershed. In certain cases, the MECP may consider issues related to return flow (quality, location) when reviewing and issuing permits.</p> <p>In addition to regulation-making authority, OWRA amendments (s. 34.1 (9), (10) provide a permitting Director with authority to set additional terms and conditions on a permit governing the return of water after use (location, quantity, quality).</p> <p>Issues related to the return of water after use (i.e. manner returned, location of return) and the amount of water that may be lost through consumptive use have been added to permitting considerations in the regulation.</p>

Decision-Making Standard Criteria Article 203	Permit to Take Water Program (PTTW) (Ontario Water Resources Act, As Amended by the Safeguarding & Sustaining Ontario's Water Act, 2005, Water Taking and Transfer Regulation O. Reg. 387/04)
2. No significant adverse impacts	<p>The regulation requires the permitting Director to consider issues related to protecting the natural functions of the ecosystem, water availability (e.g. water balance and sustainable aquifer yield, existing or planned uses of water, low water conditions or whether taking is in a high use or medium use watershed). (s. 4(2), par. 1,2).</p> <p>Section 5 of the regulation restricts new or increased water takings for highly consumptive uses (e.g. bottled water, aggregate processing) in watersheds identified as “high use watersheds” where the cumulative demand for water within a watershed is high relative to available supply.</p> <p>PTTW Directors may also impose terms and conditions related to mitigating adverse impacts related to the water taking.</p> <p>PTTW Manual: Consideration of cumulative impacts of water takings is a principle of the PTTW program & water takings are classified into 3 categories according to the risk of environmental impact, with Category 3 takings subject to greater rigour including submission of supporting scientific studies. New or increased water Takings from the Great Lakes or connecting channels that exceed 19 million litres --5 million U.S. gallons per day are Category 3 takings.</p> <p>In addition to regulation-making authority, the OWRA (s. 34.1 (9), (10) provides a permitting Director with authority to set additional terms and conditions on a permit limiting use, governing the return of water after use or requiring implementation of measures to prevent or remedy interference with other uses.</p>
3. Conservation measures	<p>The regulation requires the permitting Director to consider whether water conservation is, or will be implemented, based on best management standards & practices of the sector (s. 4(2), par. 3i).</p> <p>Director may set terms and conditions on a permit requiring implementation of conservation measures.</p> <p>In addition to regulation-making authority, the OWRA (s. 34.1 (9) provides a permitting Director with authority to set additional terms and conditions on a permit e.g. limiting use, related to the conservation of water including a conservation audit and/or plan.</p>
4. Compliance with applicable laws, agreements, treaties	<p>PTTW Directors will not issue a permit if an application is not in compliance with other laws (e.g. PTTW issuance follows other processes, e.g. completion of an environmental assessment under the <i>Environmental Assessment Act</i>).</p> <p>The regulation (s. 6) requires that Ontario's obligations under the Agreement are complied with (i.e. Prior Notice to Agreement Parties and an opportunity to comment for new or increased consumptive uses 19 million litres-5 million U.S. gallons per day or more).</p> <p>The regulation also require consideration of whether a proposed water taking is in compliance with the Boundary Waters Treaty or the International Boundary Waters Treaty Act of Canada (s. 4 (4ii)).</p> <p>The regulation also requires compliance with the Prior Notice commitments of the Agreement for new or increased consumptive uses 19 million litres/day (5 million U.S. gallons/day) or more.</p>
5. Reasonable use, with consideration of:	<p>The purpose of the OWRA is to “...provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being.”</p>

Decision-Making Standard Criteria Article 203	Permit to Take Water Program (PTTW) (Ontario Water Resources Act, As Amended by the Safeguarding & Sustaining Ontario's Water Act, 2005, Water Taking and Transfer Regulation O. Reg. 387/04)
<ul style="list-style-type: none"> a. Planned to provide for efficient use b. Efficient use of existing supply c. Balance between economic, social development, environmental, protection d. Supply potential of water source (quantity, quality, reliability, safe yield) e. Degree, duration of any adverse impacts & their avoidance/mitigation f. Restoration of hydrologic conditions, functions of source watershed 	<p>The regulation requires the permitting Director to consider issues related to protecting the natural functions of the ecosystem, water availability (e.g. water balance and sustainable aquifer yield, existing or planned uses of water, low water conditions or whether taking is in a high use or medium use watershed), and issues related to the use of water (e.g. water conservation measures, plan and/or audit) (s. 4(2), par. 1,2, 3) Together, these considerations are consistent with the “reasonable use” considerations of the Agreement.</p> <p>The PTTW Manual provides further guidance in the balancing of these interests e.g. through considerations and guidance in evaluating PTTW from surface water and groundwater sources, assessing the water balance and sustainability, addressing low water conditions, addressing aquatic habitat and restricting water use in high and medium use watersheds.</p> <p>The regulation includes consideration of the potential to restore hydrologic conditions and functions of the source watershed, the amount of water that may be lost through consumptive use, issues related to the return of water after use, and compliance with the Boundary Waters Treaty and the International Boundary Waters Treaty Act of Canada to the matters a permitting Director shall consider when reviewing a PTTW application.</p>

b. Exception Standard (Water Diversions, Transfers)

Exception Standard Criteria Article 201, par. 4	Permit to Take Water Program (PTTW) (Ontario Water Resources Act, as Amended by the Safeguarding & Sustaining Ontario's Water Act, 2005, Water Taking and Transfer Regulation O. Reg. 387/04)
General	<p>Under the OWRA a Permit to Take Water is required for water takings over 50,000 litres/day (over 13,000 U.S. gallons/day) (s. 34).</p> <p>Water transfers out of the Great Lakes – St. Lawrence River Basin, or Ontario’s other major water basins, are prohibited (s. 34.3) Ontario has no exception to the ban for straddling communities or straddling counties. Therefore, Ontario is fully implementing the minimum standards in Article 201, par. 1, 3, 4 as they pertain to diversions <u>out of</u> the Great Lakes – St. Lawrence River Basin.</p> <p>Amendments to the OWRA passed in 2007 provide for the regulation of new or increased intra-basin transfers 379,000 litres/day or more, consistent with the criteria in Article 201 par. 1, 2, 4. (OWRA s.34.4-34.11), and provides authority to make regulations to support these provisions</p> <p>The regulation provides further support to the regulation of intra-basin transfers (e.g. definition of Great Lakes watersheds and connecting channels, exemptions, determination of consumptive use amounts, setting the baseline for existing transfers).</p> <p>The legislation also requires that permit applications for large transfers (i.e. with consumptive use of 19 million litres [5 million U.S. gallons] per day or more) are to be referred to the Minister of the Environment, Conservation and Parks, who shall notify the Regional Body of the proposal and consider any Declaration of Finding issued by the Regional Body following Regional Review of the proposal.(s. 34.1 (12-14).</p>

Exception Standard Criteria Article 201, par. 4	Permit to Take Water Program (PTTW) (Ontario Water Resources Act, as Amended by the Safeguarding & Sustaining Ontario's Water Act, 2005, Water Taking and Transfer Regulation O. Reg. 387/04)
1. Efficient use, conservation of existing supplies	<p>The regulation requires the permitting Director to consider whether water conservation is being implemented, based on best management standards & practices of the sector. (s. 4(2), par. 3i).</p> <p>Director may set terms and conditions on a permit requiring implementation of conservation measures.</p> <p>Exception Standard criteria explicitly referenced in OWRA s. 34.6(3) for new or increased intra-basin transfers 379,000 litres/day or more.</p> <p>The OWRA (s.34.7) provides a permitting Director with authority to set additional terms and conditions on a permit to regulate a transfer (e.g., governing return of water after use, the use and conservation of transferred water, monitoring and reporting).</p>
2. Limited to reasonable quantities for proposed purpose	<p>The regulation requires the permitting Director to consider issues related to protecting the natural functions of the ecosystem, water availability and the use of water (e.g. water conservation measures, plan and/or audit). (s. 4(2), par. 1,2, 3) Together, these considerations are consistent with the “reasonable use” considerations of the Agreement.</p> <p>The PTTW Manual provides further guidance in the balancing of these interests.</p> <p>Exception Standard criteria explicitly referenced in OWRA s. 34.6(3) for new or increased intra-basin transfers 379,000 litres/day or more.</p> <p>The OWRA (s. 34.7) provides a permitting Director with authority to set additional terms and conditions on a permit to regulate a transfer (e.g., governing return of water after use, the use and conservation of transferred water, monitoring and reporting).</p>
3. Return flow to source watershed (no water from outside basin except if part of combined system, treated to prevent invasive species)	<p>OWRA requires separate Environmental Compliance Approval (ECA) for wastewater discharge.</p> <p>The legislative framework encourages return flow for municipal transfers below the 19 million litres/day consumptive use threshold. All transfer proposals above the threshold require return flow to the source Great Lakes watershed. (s. 34.6).</p> <p>Exception Standard criteria explicitly referenced in OWRA s. 34.6(3) for new or increased intra-basin transfers 379,000 litres/day or more.</p> <p>The OWRA (s.34.7) also provides a permitting Director with authority to set additional terms and conditions on a permit to regulate a transfer (e.g., governing return of water after use, the use and conservation of transferred water, monitoring and reporting).</p> <p>The regulation also includes consideration of issues related to the return of water after use to the matters considered by a permitting Director.</p>
4. No significant adverse impacts	<p>The regulation requires the permitting Director to consider issues related to protecting the natural functions of the ecosystem, water availability (e.g. water balance and sustainable aquifer yield, existing or planned uses of water, low water conditions or whether taking is in a high use or medium use watershed). (s. 4(2), par. 1,2).</p> <p>Section 5 restricts new or increased water takings by highly consumptive uses (e.g. bottled water, aggregate processing) in watersheds identified as “high use watersheds”.</p> <p>PTTW Directors may also impose terms and conditions on a permit. OWRA amendments (s.34.7) also provide a permitting Director with authority to set additional terms and conditions on a permit to regulate a transfer (e.g., governing return of water after use, the use and conservation of transferred water, monitoring and reporting).</p>

Exception Standard Criteria Article 201, par. 4	Permit to Take Water Program (PTTW) (Ontario Water Resources Act, as Amended by the Safeguarding & Sustaining Ontario's Water Act, 2005, Water Taking and Transfer Regulation O. Reg. 387/04)
	<p>PTTW Manual: Consideration of cumulative impacts of water takings is a principle of the PTTW program & water takings are classified into 3 categories according to the risk of environmental impact, with Category 3 takings subject to greater rigour including submission of supporting scientific studies. Water transfers from the Great Lakes or connecting channels 19 million litres -5 million U.S. gallons per day or more fall under Category 3.</p> <p>Exception Standard criteria explicitly referenced in OWRA s. 34.6(3) for new or increased intra-basin transfers 379,000 litres/day or more.</p>
5. Conservation measures	<p>The regulation requires the permitting Director to consider whether water conservation is, or will be implemented, based on best management standards & practices of the sector (s. 4(2), par. 3i).</p> <p>PTTW Directors may set terms and conditions on a permit requiring implementation of conservation measures. OWRA amendments (s. 34.7) also provide a permitting Director with authority to set additional terms and conditions on a permit to regulate a transfer (e.g., governing return of water after use, the use and conservation of transferred water, monitoring and reporting).</p> <p>Exception Standard criteria explicitly referenced in OWRA s. 34.6(3) for new or increased intra-basin transfers 379,000 litres/day or more.</p>
6. Compliance with applicable laws, agreements, treaties	<p>PTTW Directors will not issue a permit if an application is not in compliance with other laws (e.g. PTTW issuance follows other processes, e.g. completion of an environmental assessment under the <i>Environmental Assessment Act</i>).</p> <p>Exception Standard criteria explicitly referenced in OWRA s. 34.6(3) for new or increased intra-basin transfers 379,000 litres/day or more, including compliance with the <i>Boundary Waters Treaty</i> and the <i>International Boundary Waters Treaty Act</i> (Canada).</p> <p>New or increased intra-basin transfers are regulated in accordance with OWRA s. 34.4-34.8 and s. 34.1 (12-14) which reflect the Agreement.</p>
7. All applicable criteria	<p>OWRA s. 34.6 (2) sets out the criteria that must be met for new or increased intra-basin transfers 379,000 litres/day or more, consistent with Article 201, par. 2 of the Agreement. Some provisions of par. 1 pertaining to straddling communities are also reflected (e.g. return flow for smaller transfers encouraged).</p> <p>The Act also provides authority to make regulations to support these provisions. The regulation further supports to the management of intra-basin transfers (e.g. definition of Great Lakes watersheds and connecting channels, exemptions, determination of consumptive use amounts, setting the baseline for existing transfers).</p> <p>The OWRA (s. 34.7) provides a permitting Director with authority to set additional terms and conditions on a permit to regulate a transfer (e.g., governing return of water after use, the use and conservation of transferred water, monitoring and reporting).</p>

4. Overview of Provincial reporting and database of Withdrawals, Consumptive Uses and Diversions

Annual Submission to Great Lakes Regional Water Use Database

(<https://waterusedata.glc.org/>)

Provincial reporting of aggregated annual withdrawals, consumptive uses and diversions to the Great Lakes Commission's *Regional Water Use Database* is coordinated by the MNRF with the support of the MECP.

To estimate water withdrawals and consumptive use in its annual data submissions, Ontario incorporates aggregated annual water withdrawal information primarily obtained from its Permit to Take Water program (see next section for more information). Estimates of consumptive water use are based on a comprehensive set of coefficients which can be found at <http://waterbudget.ca/consumptiveuse>. Aggregated withdrawal values reported for the hydropower sector were augmented by historical information collected through owner and operator surveys.

Water User Reporting under Ontario's Water Taking and Transfer Regulation

By regulation, permit to take water holders province-wide are required to report daily water taking amount. Phase-in of this requirement for all water use sectors was completed in 2008. Since then, all permit to take water holders are expected to submit daily water taking volumes, electronically to the provincial *Water Taking Reporting System* through an internet-based interface <https://www.lrcsde.lrc.gov.on.ca/wtrs/> or via hard copy prior to March 31 of the following year. The Water Taking Reporting System database represents the provincial warehouse for reported actual volumes of water taken by all permitted users in the province.

In addition, the *Permit to Take Water Database* is the primary warehouse of permit holder information (permit number, owner name, address, water taking source information: water use sector, source coordinates, taking type and source name and maximum permitted volumes). A searchable map of active permits can be found at <http://www.ontario.ca/environment-and-energy/map-permits-take-water>. Enhancements to both databases may be required to warehouse information specifically related to applications that involve intra-basin transfers, return flow, and calculated or measured consumptive uses.

By regulation, permit to take water holders are required to measure water taking/use by flow meter, or calculate it using a method acceptable to the program Director.

Permit holders are also required to comply with any additional data collection or monitoring and reporting conditions required by a permit such as specific monitoring methods, collection of information at a greater frequency, recording a daily maximum flow, and a requirement that all water taking information be analyzed by a qualified professional.

Water User Reporting under the Registrations under Part II.2 of the Environmental Protection Act

By regulation, registrants are required to report daily water taking amounts. Prior to March 31 of the following year, registrants are required to submit daily water taking volumes, electronically to the provincial Regulatory Self Reporting System (RSRS) which is accessed through the same online account used to create an EASR. The RSRS database houses reported actual volumes of water taken by all registered water takers in the province.

In addition, active EASR's can be found through Access Environment, a map-based at <https://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/GoSearch.action?search=basic&lang=en>.

Note: The MECP is transiting PTTW to the electronic platform this is currently being used for EASR's. PTTW's that are processed through the electronic system will be required to report to RSRS and if approved the permission will be accessible to the public through Access Environment. There is currently no plan to phase out paper-based PTTW applications, as such if approved the paper-based permissions will continue to report to WTRS and the permit information will continue to be housed in the publicly accessible Permit to Take Water Database.

5. Ontario's Provincial withdrawal application documents

As part of the Permit to Take Water program, Ontario's *Application for Permit to Take Water* (May 2017) collects information from applicants under the authority of the *Ontario Water Resources Act*, the *Environmental Bill of Rights Act* and is used by the Province to evaluate applications under Section 34 of the Act (Water Taking). The application can be found at: <http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/ODAGetFormDetail?openagent&language=E&env=ODA&NO=012-2167E>

Assistance is provided to applicants in completing the Application Form through local Regional Offices of the MECP, along with a published *Guide to Permit to Take Water Application Form* found at: <https://www.ontario.ca/page/guide-permit-take-water-application-form>

Information requested on the form is categorized as the application type (e.g. new, amended, or renewal), permit category classification, applicant information, water taking information (e.g. source, public consultation requirements, and water taking sector and volume information), and location mapping and supporting studies. Revisions to the form may be required to identify information specifically related to applications that involve intra-basin transfers, return flow, and consumptive uses.

The suite of permit to take water application resources can be found at: <https://www.ontario.ca/page/permits-take-water>

Links to related policies and manuals supporting permit to take water applicants, Environmental Activity Sector Registrants, proponents, and application reviewers:

- a) *Permit to Take Water Manual* (April 2005):
<https://archive.org/details/permittotakewa4932ontauoft>
This manual sets out the decision-making process generally followed by the Ministry and explains to applicants, proponents, and the public the requirements and considerations that are generally taken into account as reviewers are evaluating a proposed or existing water taking.
- b) Application guide: Permit to Take Water: <https://www.ontario.ca/page/guide-permit-take-water-application-form>
- c) *Technical Guidance Document for Surface Water Studies in Support of Category 3 Applications for Permit to Take Water* (April 2008):
<https://www.ontario.ca/page/technical-guidance-document-surface-water-studies-support-category-3-applications>
This document provides guidance and a consistent, structured approach for a surface water study (hydrological and or ecological) in support of Category 3 Permit to Take Water applications (or for Category 2 applications, where applicable).
- d) *Technical Guidance Document for Hydrogeological Studies in Support of Category 3 Applications for Permit to Take Water* (April 2008):
<https://www.ontario.ca/page/technical-guidance-document-hydrogeological-studies-support-category-3-applications>
This document provides guidance and a consistent, structured approach for a hydrogeological study in support of Category 3 Permit to Take Water applications (or for Category 2 applications, where applicable).
- e) *Great Lakes Watershed Locator Interactive Mapping Tool*:

<http://www.ontario.ca/environment-and-energy/great-lakes-watershed-locator>

The web-based mapping tool assists applicants in determining the tertiary watershed and the classification of a proposed water taking location for the purposes of the *Water Taking and Transfer Regulation*.

- f) *Water Basins Map* (November 2014): <https://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/CMID/Great%20Lakes%20St%20Lawrence%20Basin%20-%20Municipal%20Structure%20Great%20Lakes%20Basin%20Map.pdf>
Map identifies the boundaries of water basins and connecting channel watersheds to assist practitioners in identifying new or increased water transfers.
- g) *Permits to Take Water Interactive Map*:
<http://www.ontario.ca/environment-and-energy/map-permits-take-water>
Map assists users in locating water taking locations specified in active permits across Ontario.
- h) Water taking user guide for environmental activity and sector registry:
<https://www.ontario.ca/page/water-taking-user-guide-environmental-activity-and-sector-registry>
- i) Water taking and transfer user guide: clarifications and exemptions:
<https://www.ontario.ca/page/water-taking-and-transfer-user-guide-clarifications-and-exemptions>

6. Description of Provincial initiatives that support an improved scientific understanding of the Waters of the Basin (including groundwater) in basin water resource management

Initiatives supporting improved scientific understanding of basin waters:

Ontario's Provincial Surface Water Monitoring Centre (MNRF):

The MNRF administers the bi-lateral 'Canada-Ontario Agreement on Hydrometric Monitoring' which funds stream flow monitoring infrastructure, technology and data collection protocols on behalf of the province. The MNRF collects, monitors, and analyzes stream flow and climate data through a provincial network of over 650 stations. This information is used to provide early warnings for flooding and drought/low water to identify locations throughout the province where potential risks may exist. The mandate for this work is founded in Lieutenant Governor Order-in-Council under the *Emergency Management and Civil Protection Act* for the purposes of emergency planning and public safety. Additionally, this information supports a broad spectrum of water related decision-making for the management, use and sharing of water resources.

- <http://ontario.ca/page/surface-water-monitoring>
<http://www.ontario.ca/law-and-safety/flood-forecasting-and-warning-program>

Aquatic Research and Monitoring (MNRF):

The MNRF conducts research that contributes to a greater understanding of the waters of the Great Lakes – St. Lawrence basin and provides improved scientific information to support water resource decision making within the basin. Examples of research conducted or initiated over past several years include: examining flow and thermal regimes of Ontario's rivers and physical and ecological effects of alteration; investigating variability and change in water balance components of Great Lakes tributaries in response to land and water use and climate change, including changes to snow accumulation and melt; developing an aquatic ecosystem classification system;

and developing and providing software tools for practitioners to examine and assess change in flow and thermal regimes of rivers and the water balances of watersheds.

- <https://www.ontario.ca/environment-and-energy/aquatic-research>

The **Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2014** (Environment and Climate Change Canada (federal lead), and Ministries of the Environment, Conservation and Parks (provincial lead), Natural Resources and Forestry and Agriculture, Food and Rural Affairs) supports the restoration, protection and conservation of the Great Lakes Basin Ecosystem. Improved understanding of adaptive management approaches to lake level regulation, groundwater and climate change impacts are areas supporting basin water resource management and water related actions.

- <https://www.ontario.ca/page/canada-ontario-great-lakes-agreement>

The **International Joint Commission (IJC) under the Boundary Waters Treaty** carries out **periodic science-based studies** in boundary waters along Ontario's borders. The MNRF and the MECP participate as stakeholders in aspects of studies involving the IJC's review of its regulation of water levels and flows and associated water-related natural hazards and alterations along shorelines, hydroclimate, water use, and ecosystem impacts.

Mapping and Geomatics Services (MNRF):

The Mapping and Geomatics Services Section provides leadership and coordination to capture, create and maintain the province's foundation geospatial data (e.g., roads, water, utilities, wetlands, elevation and aerial imagery) and works to ensure information about Ontario's water resources is available to provincial ministries, municipalities, conservation authorities and others to create maps, conduct geographic analysis and support decisions about the province's water resources. The Ontario Hydrology Network; Ontario Integrated Hydrology; provincial elevation and imagery layers; and enhanced watershed boundaries are all examples of datasets produced by the Mapping and Geomatics Services Section that can support the implementation of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement.

Mapping and Geomatics Services Section has developed the **Ontario Flow Assessment Tool (OFAT)** to allow water professionals in the public and private sectors and academia to analyze and understand water flow. The application allows for watersheds to be generated, characterized and flows estimated for any location in Ontario. Statistics and mapping from OFAT can be used for applications such as water permitting, water use reporting and water quantity assessment.

- <https://www.ontario.ca/page/land-information-ontario>
- <https://www.ontario.ca/environment-and-energy/topographic-maps>
- <https://www.ontario.ca/page/watershed-flow-assessment-tool>

The **Conservation Authorities Act** (MECP), provides a statutory framework for establishing and governing conservation authorities. The objects of conservation authorities are to provide programs and services in their jurisdiction to further the conservation, restoration, development and management of natural resources. Ontario's 36 conservation authorities were created at the request of municipalities and are governed by municipally appointed representatives to deliver local resource management programs at a watershed scale for both provincial and municipal interests.

Conservation authorities are enabled to study and investigate the watershed(s) in their jurisdictions and some authorities have developed watershed planning documents, watershed 'report cards' and technical studies to support understanding of local resource management interests and to undertake provincial mandated programs and services for example related to the risks of natural hazards. Conservation authorities are currently involved in the delivery of several provincial programs that require data management and monitoring of water including the Provincial Flood Forecasting and Warning Program, Ontario's Low Water Response, the Provincial Groundwater Monitoring Network, and the Provincial Water Quality Monitoring Network.

The *Clean Water Act* (MECP) provides for a **source water protection program and local source water protection planning**. The MNRF with the MECP develop supporting estimates of surface and groundwater supplies, water budgets, water use demand, and water quantity risks assessments. Locally, water use impacts are considered through Ontario's water use permitting application process.

- The Science Behind Drinking Water Source Protection:
<https://www.ontario.ca/page/source-protection>
- Water Quantity Solutions in Ontario:
<http://www.waterbudget.ca/>

Ontario's Provincial Groundwater Monitoring Network (MECP) monitors ambient groundwater quantity and quality conditions in the province. Science provides an indicator of aquifer conditions and supports studies and decisions around water-taking, drought management, land use planning decisions, and water budget and cumulative impact studies. Ministry of Natural Resources and Forestry and conservation authorities are involved in the program delivery.

- <http://www.ontario.ca/environment-and-energy/provincial-groundwater-monitoring-network>

The **Ministry of Natural Resources and Forestry** integrates climate adaptation and mitigation into natural resource management across the ministry and with their partners by leading strategic projects in advance and incorporate climate considerations into policy, developing and communicating information and resources to support policy and science, and coordinating MNRF actions within broader provincial climate priorities. This includes support to aquatic and terrestrial research and adaptation initiatives in the Great Lakes basin and beyond. Recent projects that support the implementation of the Agreement include modelling the relative risks of aquatic invasive species establishing and spreading in the Great Lakes under future climate change scenarios, assessing the vulnerability of species to climate change in the Ontario Great Lakes Basin, modelling temperatures in streams throughout the Great Lakes Basin and associated impacts on cold and cool-water species and continued enhancements to climate modelling and monitoring capacity.

Ontario Geological Survey (Ministry of Northern Development and Mines) implements a **groundwater mapping program** that contributes geoscience data and information to water management initiatives, including the development of GIS-based geological maps/databases,

groundwater vulnerability maps, regional (3-D) aquifer subsurface mapping in bedrock and surficial sediments, karst mapping, watershed characterization, thematic studies, regional groundwater geochemistry studies, method/protocol and product development.

- <http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearth>
- <http://www.mndm.gov.on.ca/en/mines-and-minerals/geoscience/groundwater>

7. Additional Information

N/A

Province of Ontario Water Conservation and Efficiency Program Report

The following information is submitted by the Province of Ontario to the Great Lakes Regional Body Secretariat in response to the Questionnaire for Preliminary Submittals by States and Provinces, in fulfillment of the five-year review of Ontario's Water Conservation and Efficiency Programs, pursuant to the requirements in Article 300 of the *Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement* (Agreement).

1. Lead agency and contact person:

Ala Boyd, Director
Natural Resources Conservation Policy Branch
Ontario Ministry of Natural Resources and Forestry

2. Status of Ontario's water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives

In 2012 Ontario adopted water conservation and efficiency goals and objectives that are consistent with the Basin-wide goals and objectives. The goals and objectives were developed based on stakeholder consultation, Indigenous engagement, and public comments received.

Ontario adopted the water conservation and efficiency goals as set out in the Agreement and developed objectives consistent with the regional objectives adopted for the Basin that are tailored for Ontario to reflect the direction in the Water Opportunities and Water Conservation Act, 2010, and to address stakeholder and Indigenous community requests to emphasize the importance of taking ecological water needs into account in decision making, in keeping with the broader ecosystem protection and restoration goals of the Agreement.

Ontario's water conservation goals and objectives are available at:

<http://www.ontario.ca/environment-and-energy/ontarios-water-conservation-and-efficiency-goals-objectives-and-programs>

3. Ontario's water conservation and efficiency program overview

Ontario's water conservation and efficiency program consists of a wide variety of statutes, programs and policies administered across several Ontario ministries, as well as local governments and other organizations. See Appendix A for a detailed description of Ontario's fifty-five contributing water management and conservation statutes, programs and policies.

The foundation of the program is the *Ontario Water Resources Act* and the *Water Taking and Transfer Regulation* (Ontario Regulation 387/04). The purpose of the *Ontario Water Resources Act* is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being.

Section 34.1 (9)(h) of the OWRA provides a permitting Director with authority to set terms and conditions on a permit governing the use and conservation of water taken under the permit,

including requiring the holder to implement specified measures to promote the efficient use of the water or reduce the loss of water through consumptive use, conduct a water audit, and to prepare and implement a water conservation plan. In addition, section 76(1)(b.1) of the OWRA provides regulation making authority requiring the taking of measures by permit and non-permit holders to promote the conservation of water, including the preparation and implementation of water conservation plans and other measures to promote the efficient use of water or reduce the loss of water through consumptive use.

The *Water Taking and Transfer Regulation* outlines matters that the Director must consider when considering an application for a Permit to Take Water. Section 4(2).3.i. of the Regulation requires that the Director consider issues relating to the use of water, including whether water conservation measures are being implemented or are proposed to be implemented in the use of water, in accordance with best water management standards and practices for the relevant sector if these are available.

Provincial land use planning statutes such as the *Planning Act*, policies such as the *Provincial Policy Statement, 2014* and plans such as the *Growth Plan for the Greater Golden Horseshoe* require the consideration of water conservation in new development. The *Clean Water Act* requires that any significant threats to municipal drinking water sources from a water quantity perspective be identified through the preparation of water budgets and addressed in source protection plans such, as through policies on water conservation.

The *Water Opportunities and Water Conservation Act, 2010* builds upon Ontario’s expertise in clean water technology and sets out a framework to make the province a continental leader in water innovation to help address global water challenges. Among other things, the Act sets the framework to encourage Ontarians to use water more efficiently by creating and implementing innovative approaches to protecting and conserving water resources for current and future generations.

4. Consistency with Regional Objectives

Ontario’s program is consistent with the regional objectives in the promotion of environmentally sound and economically feasible water conservation measures. The programs (statutes, programs and policies) below may link to more than one objective. See Table 1 and Appendix A.

Table 1: Regional Objectives and Ontario’s Water Conservation and Efficiency Program

REGIONAL OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
1) Guide programs toward long-term sustainable water use and management.	<p>Ontario is implementing a range of adaptive programs and conservation and efficiency strategies that consider long-term sustainable water use taking into account the importance of water to related ecosystems – such as through the assessment of water taking applications as described above, preparation of source protection plans to protect existing and future sources of drinking water in terms of both water quantity and quality, development of water budgets to estimate surface and groundwater supplies, water use and water quantity risk assessments, and action to protect the Great Lakes.</p> <p>1. Ontario’s Environment Plan</p>

REGIONAL OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
	<ul style="list-style-type: none"> 2. <i>Ontario Water Resources Act</i> and Water Management: Policies, Guidelines, Provincial Water Quality Objectives 3. <i>Ontario Water Resources Act</i> and Regulations 4. <i>Clean Water Act, 2006</i> 5. <i>Conservation Authorities Act, 1990</i> 6. <i>Lakes and Rivers Improvement Act, 1990</i>
<p>2) Adopt and implement supply and demand management to promote efficient use and conservation of water resources.</p>	<p>Ontario has a range of programs that manage water supply and demand to achieve efficient use and conservation of water resources — including promoting innovative water technologies through WaterTAP established under the Water Opportunities and Water Conservation Act, requiring water conservation plans by municipalities in the Oak Ridges Moraine and Lake Simcoe areas, promoting green infrastructure in municipal stormwater management systems and establishing water efficiency standards in Ontario’s Building Code.</p> <ul style="list-style-type: none"> 7. <i>Water Opportunities and Water Conservation Act, 2010</i> 8. Financial Plans Regulation under the <i>Safe Drinking Water Act, 2002</i> 9. <i>Building Code Act, 1992</i> and the Building Code 10. <i>Electricity Act, 1998</i> 11. <i>Oak Ridges Moraine Conservation Act, 2001</i> and Plan 12. <i>Places to Grow Act, 2005</i> and Growth Plans 13. <i>Planning Act</i> and Provincial Policy Statement, 2014 14. Municipal Stormwater Management Systems 15. Ontario’s Water Sector Strategy
<p>3) Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.</p>	<p>A range of Ontario programs support improved monitoring and standardized data reporting related to water supply, water use and conservation/ efficiency – for example, water use information for Permits to Take Water is collected, analyzed and reported, and watershed-based teams declare low water condition based upon provincial water monitoring and varying levels of conservation are required depending upon the low water conditions.</p> <ul style="list-style-type: none"> 16. Ontario Low Water Response 17. Ontario Surface Water Monitoring 18. Provincial Groundwater Monitoring Network 19. Water Use Reporting 20. Mapping and Geomatics Services Section 21. The Ontario Geological Survey’s Groundwater Mapping Initiative

REGIONAL OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
4) Develop science, technology and research.	<p>The following programs encourage science, technology and research to implement the best in water, wastewater and stormwater technology:</p> <ul style="list-style-type: none"> 22. Ontario Clean Water Agency 23. Water Technology Acceleration Project (WaterTAP) 24. Southern Ontario Water Consortium 25. Green Focus on Innovation and Technology 26. Investment Accelerator Fund 27. Ministry of Agriculture Food, and Rural Affairs-University of Guelph Agreement Research Program 28. New Directions Research Program 29. Ontario's Cleantech Strategy
5) Develop education programs and information sharing for all water users.	<p>Ontario is implementing a range of education programs and other programs that raise awareness of the importance of water and the value of conservation, efficiency and cost-saving, and which promote the sharing of best management practices, through the following programs:</p> <ul style="list-style-type: none"> 30. Walkerton Clean Water Centre 31. Water Efficiency Labelling 32. Best Management Practices 33. Canada-Ontario Environmental Farm Plan Program and Canadian Agricultural Partnership Cost-share Funding Assistance Program
Other programs:	<p>In accordance with Ontario's water conservation and efficiency goals, objectives, the provinces water conservation and efficiency program includes a range of legislation, strategies and programs that aligns with these objectives by integrating water conservation and efficient water use with other environmental management practices and considerations such as energy use, climate change, and the protection and restoration of hydrological and ecological integrity:</p> <ul style="list-style-type: none"> 34. <i>Endangered Species Act, 2007</i> 35. Great Lakes Wetland Conservation Action Plan 36. <i>Greenbelt Act, 2005</i> and Greenbelt Plan, 2017 37. <i>Niagara Escarpment Planning and Development Act</i> and Plan 38. Ontario's Biodiversity Strategy 39. Biodiversity: It's in Our Nature – Ontario Government Plan to Conserve Biodiversity 2012-2020 40. Ontario's Great Lakes Strategy 41. Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2014 42. <i>Great Lakes Protection Act, 2015</i>

REGIONAL OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
	<ul style="list-style-type: none"> 43. Joint Strategic Plan for the Management of Great Lakes Fisheries 44. <i>Lake Simcoe Protection Act, 2008</i> and Lake Simcoe Protection Plan, 2009 and associated Subwatershed Plans and Water Budgets 45. <i>The Crown Forest Sustainability Act, 1994</i> 46. A Wetland Conservation Strategy for Ontario 2017-2030 47. Ontario’s Provincial Fish Strategy: Fish for the Future 48. Stream Water Quality Monitoring and the Multi-Watershed Nutrients Study 49. Fish Contaminant Monitoring Program 50. Great Lakes Intake Program 51. Anishinabek/Ontario Fisheries Resource Centre 52. Ontario Parks Water Conservation Initiatives 53. Species at Risk Stewardship Program 54. Invading Species Awareness Program 55. Land Stewardship and Habitat Restoration Program 56. Eastern Habitat Joint Venture

5. Ontario’s water conservation and efficiency program implementation timeline and status

Ontario’s water conservation and efficiency program is in place and is being implemented.

Appendix A: Description of Ontario's Contributing Water Management and Conservation Statutes, Programs and Policies

The following statutes, programs and policies contribute to achieving Ontario's goals and objectives for water conservation and efficiency. The statutes, programs and policies may link to more than one goal or objective.

OBJECTIVE 1) GUIDE PROGRAMS TOWARD LONG-TERM SUSTAINABLE WATER USE AND MANAGEMENT

To achieve this objective, Ontario has a range of adaptive programs and conservation and efficiency strategies that consider the importance of water to related ecosystems, working with local stakeholders, and improving water demand forecasts, and water budgets.

1. Ontario's Environment Plan

In November 2018, the Made in Ontario Environment Plan environment plan was released to help protect our air, land and water, address litter and reduce waste, support Ontarians to continue to do their share to reduce greenhouse gas emissions, and help communities and families prepare for climate change. The plan proposes to make Ontario communities resilient to help prepare for the costs and impacts of climate change and protect communities, businesses, municipalities and government in Ontario. Building resilience is about having the right information, tools and resources to adapt and respond to our changing climate.

2. Ontario Water Resources Act and Water Management: Policies, Guidelines, Provincial Water Quality Objectives

The legislative authority to manage water comes from the *Ontario Water Resources Act*, *Environmental Protection Act* and other legislation. Ontario's Water Management: Policies, Guidelines, Provincial Water Quality Objectives gives direction on how to manage the quality and quantity of both surface water and groundwater. Surface water and groundwater quantity is to be managed to ensure a fair sharing, conservation, and sustainability of the resource. Water conservation is defined as the preservation of the quantity of available water through judicious use, reuse and minimal wastage.

<https://www.ontario.ca/page/water-management-policies-guidelines-provincial-water-quality-objectives>

3. Ontario Water Resources Act and Regulations

Water takings in Ontario are governed by the *Ontario Water Resources Act* and the Water Taking and Transfer Regulation (Ontario Regulation 387/04). The purpose of the *Ontario Water Resources Act* is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, to promote Ontario's long-term environmental, social and economic well-being.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm

According to the *Ontario Water Resources Act*, any person taking more than 50,000 litres of water on any day must first obtain a Permit to Take Water from the Ministry of the Environment, Conservation and Parks. Water taken for domestic uses, watering of livestock or poultry, firefighting, wetland conservation, a weir that was constructed prior to March 29, 2016 and passive and/or active in-stream diversions for construction purposes is exempted from the requirement to obtain a permit. The Ministry's guiding policy for issuing permits is to ensure the fair sharing, conservation, and sustainable use of the surface and ground waters in the province.

The Water Taking and Transfer Regulation and Permit to Take Water Manual outlines the specific requirements related to applying for and holding a permit and identifies the matters that the Ministry must consider when reviewing a permit application.

http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_040387_e.htm

<https://ia902301.us.archive.org/25/items/permittotakewate00snsn8696/permittotakewate00snsn8696.pdf>

Among the matters considered by the Ministry when reviewing a permit application is whether water conservation measures are to be implemented in the use of water, in accordance with sector best water management standards and practices if these are available. As part of their permit application, proponents must complete and submit a "Schedule 1 – Implementation of Water Conservation in accordance with Best Management Practices and Standards for the Relevant Sector". This Schedule provides details about sector-specific best management practices (e.g., Environmental Farm Plan, Audubon Cooperative Sanctuary Program for Golf Courses) to be applied to the proposed water taking and specifies the water conservation measures and practices they are currently implementing or anticipate implementing over the duration of the permit. Applicants must also state their goals for reducing the use, loss, or waste of water, or for increasing the efficiency of their water use (e.g., litres per day per unit of production or litres per day per capita for the residential use).

Over the past year, the province has reviewed, and continues to review, the state of water resources in key areas of Ontario and the effect water takings have on these resources. This includes reviewing water quantity-related policies and programs as they apply to water takers across the province, including water bottlers taking groundwater, as well as enhancing our understanding of how we can manage water takings to ensure we have sustainable water resources in the face of changing climate and continued population growth.

The *Taking Ground Water to Produce Bottled Water Regulation (Ontario Regulation 463/16)* established a moratorium on new or increased permits for groundwater by water bottling facilities. The province proposed to extend this moratorium for nine months, ending October 1, 2020, to give the ministry time to complete its analysis of the water quantity review and to publicly consult on and finalize changes to how we manage water takings before the moratorium ends. This way, we can be confident our programs, policies and science protect vital water resources while keeping Ontario open for business. Our proposal to extend the moratorium was

made available for comment on the [Environmental Registry](#) from November 18 to December 18, 2019.

<https://www.ontario.ca/laws/regulation/r16463>

In April 2017, the Ministry released new stricter requirements for renewals of existing bottled water permits to take groundwater. The new rules strengthen Ontario's permit to take water program by increasing public reporting and transparency and enhancing scientific requirements. Effective August 1, 2017, water bottling companies that take groundwater and are required to have a permit under the *Ontario Water Resources Act* must pay a new additional fee of \$500 per million litres.

<https://www.ontario.ca/laws/regulation/r17176>

http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2017/012-9151_d.pdf

4. *Clean Water Act, 2006*

The purpose of the *Clean Water Act* is to protect existing and future sources of drinking water in Ontario in terms of both quality and quantity of water. It is part of the Ontario Government's commitment to ensure the sustainability of clean, safe drinking water for Ontario communities.

Source protection plans are in effect across Ontario and are intended to protect sources for about 450 municipal drinking water systems, covering areas where over 95 per cent of the province's population live. The plans contain a series of locally-developed policies such as prohibiting the activity or regulating it through risk management plans, provincial approvals, land use planning tools or non-regulatory approaches such as education and outreach and incentive programs. Plans may also include policies around water conservation and/or water efficiency. Municipalities, the Province, and others are implementing actions on the ground to protect the quality and quantity of sources of municipal drinking water.

As a first step, science-based assessment reports were developed to identify where sources of water are vulnerable to contamination and depletion. Through this, water budgets were developed to evaluate how much water exists both at the surface and below ground, how it moves, how much water is withdrawn, to identify potential water shortages on a subwatershed scale. Part of this process is also looking at the long-term water supply and determining current or future water availability and ecological needs. Furthermore, these water budgets consider drought climate conditions and the potential impact on supplies of drinking water.

As a requirement under the *Clean Water Act*, source protection planning also considered several federal and provincial Great Lakes agreements, including the Great Lakes Charter and the Great Lakes-St Lawrence River Basin Sustainable Water Resources Agreement.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_06c22_e.htm

5. *Conservation Authorities Act, 1990*

The *Conservation Authorities Act*, administered by the Ministry of the Environment, Conservation and Parks, provides a statutory framework for the creation, funding and the operation of conservation authorities; municipalities petition the Province to form or join a conservation authority to be able to participate in shared local resource management with other municipalities in a common watershed and in shared programs with the Province. As public-sector organizations, conservation authorities implement programs that serve both Provincial and municipal interests. Categories of conservation authority mandatory programs and services which may be prescribed in regulation include those that relate to the risk of natural hazards, conservation and management of conservation authority owned lands, the authority's duties, functions and responsibilities as a source protection authority under the *Clean Water Act*, programs and services required under the *Lake Simcoe Protection Act*, and an other programs and services as prescribed by regulation. There are 36 conservation authorities in Ontario today.

Conservation authorities currently undertake a shared program with the Ministry of Natural Resources and Forestry related to public safety and natural hazard prevention and management. Program activities include flood and erosion control operations, flood forecasting and warning, ice management, as well as hazard prevention by input into municipal planning documents. Water-related natural hazard technical information can be developed in shoreline and watershed plans. In a delegated role from the Ministry of Natural Resources and Forestry, conservation authorities review municipal plans and site plan applications made under the *Planning Act* for consistency with the natural hazards policies of the [Provincial Policy Statement, 2014](#).

Each conservation authority also has a provincially-approved 'Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses' under the Act. Conservation authorities regulate development and activities through a permitting process in areas prone to water related hazards (floodplains, shorelines, wetlands, hazardous lands) that fall within the authority's jurisdiction. The conservation authority considers the impact of a development on the control of the natural hazards (flooding, erosion, dynamic beaches, pollution or the conservation of land) and considers permits for activities that may change or interfere with the existing channel of a watercourse or with a wetland.

Conservation authorities are also key delivery partners for several government programs such as the Ontario Low Water Response Program, Provincial Groundwater Monitoring Network, Provincial Water Quality Monitoring Network, Permit to Take Water Program and Great Lakes protection.

www.ontario.ca/lowwater

<https://www.ontario.ca/environment-and-energy/conservation-authorities>

6. *Lakes and Rivers Improvement Act, 1990*

The *Lakes and Rivers Improvement Act* (LRIA), administered by the Ministry of Natural Resources and Forestry, provides the Minister with the legislative authority to govern the design, construction, operation, maintenance and safety of dams in Ontario. The definition of a dam includes a dike, diversion, channel alteration, culvert or causeway.

The purposes of the Act are to provide for:

- the management, protection, preservation and use of water in Ontario;
- the protection and equitable exercise of public rights in or over water in Ontario;
- the protection of interests of riparian owners;
- the management, perpetuation and use of the fish, wildlife and other natural resources dependent on the lakes and rivers;
- the protection of the natural amenities of the lakes and rivers; and
- the protection of people and property.

Approval may be required for the construction of new dams and for certain alterations to existing dams. The LRIA Administrative Guide and supporting Technical Bulletins outline ministry requirements and technical guidance for applicants seeking approval for dam related works. The Ministry also engages key dam owners through a Dam Owners Advisory Committee to seek advice on government policies and initiatives related to the regulation and management of dams

Dams may provide for a few objectives, including waterpower generation, municipal water supply, flood low water mitigation, wetland habitat management, navigation for commercial and recreational purposes, and other municipal, commercial and industrial use.

<https://www.ontario.ca/laws/statute/90103>

<https://www.ontario.ca/page/dam-management>

OBJECTIVE 2) ADOPT AND IMPLEMENT SUPPLY AND DEMAND MANAGEMENT TO PROMOTE EFFICIENT USE AND CONSERVATION OF WATER RESOURCES

To achieve this objective, Ontario has a range of programs that manage water supply and demand to achieve efficient use and conservation of water resources — including promoting innovative water technologies, green infrastructure and water use efficiency.

7. Water Opportunities and Water Conservation Act, 2010

The *Water Opportunities and Water Conservation Act* passed in November 2010 contains five schedules. Schedule 1 enacts a stand-alone act, the *Water Opportunities Act, 2010* (see below for details). Schedules 2 to 5 amend existing legislation in respect of water conservation and other matters. The Act builds upon Ontario's expertise in clean water technology and sets out a framework to make the province a North American leader in water innovation to help address global water challenges. Among other things, the Act sets the framework to encourage Ontarians to use water more efficiently by creating and implementing innovative approaches to protect water resources for current and future generations.

The *Water Opportunities Act, 2010* also includes authority to require municipalities and other municipal service providers to prepare municipal water sustainability plans that would include an asset management plan, a financial plan, a water conservation plan, strategies for maintaining and improving the service, a risk assessment and other prescribed information; authority to require prescribed information on or with municipal water bills to promote transparency;

authority to set aspirational targets for water conservation and other matters; and authority to require public agencies to prepare water conservation plans. This includes authority to require public agencies to achieve water conservation targets and consider technologies, services and practices that promote the efficient use of water when making capital investments or purchasing goods and services.

The Act also amended the *Ontario Water Resources Act* to enable regulations for water efficiency standards or requirements for prescribed appliances and products. No person would be permitted to offer for sale, sell or lease a prescribed appliance or product unless it meets the water efficiency standard or requirement set out in the regulations. These are tools that will enable Ontarians to use water more efficiently to conserve and protect water resources.

The Act also amended the *Building Code Act, 1992*. These changes require the Minister of Municipal Affairs and Housing to initiate reviews of the Building Code with reference to standards for water conservation every five years, rename the Building Code Energy Advisory Council to the Building Code Conservation Advisory Council, and expand the mandate of this Council to include advising the Minister on the Building Code with reference to standards for water conservation.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_10w19_e.htm

8. Financial Plans Regulation under the *Safe Drinking Water Act, 2002*

Ontario put in place a licensing framework under the *Safe Drinking Water Act* for municipal residential drinking water systems – the Municipal Drinking Water Licensing Program. Financial plans are one of the elements that the owner of a municipal drinking water system must have in place for a licence to be issued or renewed.

A Financial Plans Regulation and Financial Plans Guidance Document were prepared and put into effect by the province in 2007. The Regulation outlines requirements set out by the Minister of the Environment, Conservation and Parks for financial plans that are required to obtain a licence under the *Safe Drinking Water Act*. Taken together, the Financial Plans Regulation and Guideline are a key step in the province’s long-term strategy to ensure the financial sustainability of municipal drinking water and wastewater systems.

http://www.e-laws.gov.on.ca/html/source/regs/english/2007/elaws_src_regs_r07453_e.htm

<http://www.ontla.on.ca/library/repository/mon/18000/275984.pdf>

9. *Building Code Act, 1992* and the Building Code

Ontario’s Building Code is a regulation under the *Building Code Act, 1992* that sets out technical and administrative requirements that must be met when a building is constructed, renovated, demolished or undergoes a change of use.

One way to conserve water is to design buildings so that they use less water. Ontario's Building Code has been amended over the past 20 years to include increasingly progressive water conservation requirements.

Conservation is one of the objectives of the Building Code. Over time, water conservation requirements for plumbing fixtures have been enhanced so that today, very high-efficiency toilets (4.8 litre or 4/6 litre dual flush), urinals (1.9 litre) and showerheads (7.6 litres/minute) are required as a minimum in new construction and renovations. The Building Code has also been amended to allow for more plumbing functions to reuse storm sewage, greywater and rainwater and to remove barriers to water reuse, thereby increasing certainty in the building industry about the uses of these green technologies.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_92b23_e.htm

http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_120332_e.htm

10. *Electricity Act, 1998*

The *Electricity Act, 1998* prohibits the sale of products in Ontario that do not meet prescribed energy and water efficiency standards. Setting water efficiency standards reduces water and energy use and further lower greenhouse gas emissions. Standards are set out in O.Reg. 509/18.

As of January 1, 2019, the Large Building Energy and Water Reporting and Benchmarking program requires commercial, multi-unit residential and some industrial buildings that are 100,000 square feet or larger to annually report their energy and water consumption and GHG emissions to the Ministry of Energy, Northern Development and Mines. The information will allow building owners to benchmark their consumption data against other similar buildings. Portions of the data will be publicly disclosed. Making the information publicly available can help building owners better manage energy and water use and costs and help the market value efficiency in purchasing, leasing and lending decisions. Details of the program are set out in O.Reg. 506/18.

<https://www.ontario.ca/laws/statute/98e15>

11. *Oak Ridges Moraine Conservation Act, 2001 and Plan*

The *Oak Ridges Moraine Conservation Act, 2001* provides the legislative framework for the development and implementation of the Oak Ridges Moraine Conservation Plan, 2017. The Act requires all decisions under the *Planning Act* and *Condominium Act* to conform to the Oak Ridges Moraine Conservation Plan, 2017 and that municipalities bring their official plans and zoning by-laws into conformity with the Plan.

The Oak Ridges Moraine Conservation Plan, 2017 provides a long-term framework for land use designations and policies and requires that municipalities further implement these directions through their official plans and zoning by-laws. It identifies a natural heritage system comprised of Cores and Linkage Areas and goes on to define key natural heritage and hydrological features which are to be identified and protected, along with defined buffers. It also provides mapping of

landform conservation areas and highly vulnerable aquifer areas, requires watershed plans and the preparation of water conservation plans and water budgets, and requires the identification and protection of municipal well-head protection areas and restricts certain types of stormwater management facilities in order to protect the ground water resources in the Moraine's aquifers – which provide drinking water for well over 250,000 people and provide the baseflow for the vast majority of streams running north and south off the Moraine – the regional groundwater divide for central Ontario.

The Oak Ridges Moraine Conservation Plan, 2017 requires that every upper-tier municipality and single-tier municipality within the designated Oak Ridges Moraine plan area to have in place a water budget and conservation plan for every watershed whose streams originate within the municipality's area of jurisdiction. The Plan prohibits major development unless the watershed plan for the relevant watershed has been completed; the major development conforms with the watershed plan; and a water budget and conservation plan is completed and demonstrates that the water supply required for the major development is sustainable.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_01o31_e.htm

<http://www.mah.gov.on.ca/Page13788.aspx>

12. *Places to Grow Act, 2005* and Growth Plans

The *Places to Grow Act, 2005* provides the legislative framework for the development and implementation of growth plans for any part of the province. The Act clearly establishes the provincial interest in coordinated regional growth management and infrastructure investment. It sets a broad scope for growth plans, allowing for province-wide relevance and application, and gives growth plans status. The Act requires that all decisions under the *Planning Act* and *Condominium Act, 1998* must conform to a growth plan and that municipal official plans be brought into conformity within three years of the effective date of a growth plan.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_05p13_e.htm

Growth Plan for the Greater Golden Horseshoe

A Place to Grow: Growth Plan for the Greater Golden Horseshoe, represents the province's long-term vision for managing the rapid growth that is forecast for this region to 2041. The Plan contains requirements for watershed planning to inform land use and infrastructure master planning, the identification of water resource systems and the protection of key hydrologic features and key hydrologic areas, and policies for evaluation of water availability and assimilative capacity needed to service current and forecasted growth.

The Plan also includes water conservation and efficiency policies which municipalities are required to implement through official plan policies and other strategies.

<https://www.ontario.ca/document/place-grow-growth-plan-greater-golden-horseshoe>

Growth Plan for Northern Ontario

The Growth Plan for Northern Ontario, 2011 is a 25-year plan to guide decisions and investments to build a globally competitive northern economy that is resilient and sustainable. The Plan includes a chapter on the environment which sets out policies to encourage municipalities to contribute to the protection of surface water and ground water features. Additionally, Northern economic and service hubs are to identify environmental sustainability objectives and develop policies and programs to achieve water conservation.

https://www.placestogrow.ca/index.php?option=com_content&task=view&id=53&Itemid=65

13. *Planning Act* and Provincial Policy Statement, 2014

The *Planning Act* provides the legislative basis for the land use planning system in Ontario. Municipalities are the main implementers of provincial land use planning policies through their official plans and zoning by-laws and their decisions on planning applications. Their decisions and plans are required by the *Planning Act* to conform (or not conflict) with provincial plans and to be consistent with policies in the Provincial Policy Statement, 2014. A variety of other legislation may also apply when municipalities are making decisions on planning matters.

The *Planning Act* contains the process requirements for public notice and consultation rules governing municipal processing of land use proposals or documents and the framework for appeals to the Local Planning Appeal Tribunal. The planning process provides an opportunity for an inter-disciplinary assessment of matters pertaining to land use, including the integration of water-related considerations.

Issued under the authority of section 3 of the *Planning Act*, the Provincial Policy Statement, 2014 provides policy direction on matters relating to land use planning that are of provincial interest. Among other matters, it provides clear direction to protect our water. For example, policy 1.6.6.1 of the Provincial Policy Statement, 2014 states that planning for water and sewage services shall promote water conservation and water use efficiency. In addition, policy 2.2.1 states that planning authorities shall protect, improve or restore the quality and quantity of water by, among other things, “planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality” and using the watershed as the ecologically meaningful scale for planning. It calls for planning authorities to identify the water resource system, including ground and surface water features and functions necessary for ecological and hydrological integrity of the watershed, and maintain linkages among hydrologically connected water-based and terrestrial-based features. The Provincial Policy Statement is subject to an ongoing review.

Under the *Clean Water Act*, source protection plans were developed locally based on scientific assessments that identified vulnerable areas related to municipal drinking water systems that must be considered by planning authorities when implementing policy 2.2.1 of the Provincial Policy Statement, 2014. These source protection plans also identify areas where water supplies are vulnerable to depletion and may include policies to find efficiencies in the use of water including developing water conservation plans to address these water supply risks.

<http://www.mah.gov.on.ca/Page215.aspx>

<http://www.ontario.ca/laws/statute/90p3>

14. Municipal Stormwater Management Systems

The Ministry of the Environment, Conservation and Parks has created several documents for municipalities, community groups, businesses and anyone who is interested in managing stormwater and reducing pollution at its source. They include the Stormwater Management Planning and Design Manual, March 2003; Understanding Stormwater Management: An Introduction to Stormwater Management Planning and Design; and summaries of several stormwater projects completed with provincial assistance.

Preserving flow (e.g., by conserving water) is one of several objectives for stormwater management as stated in the 2003 Stormwater Management Planning and Design Manual:

- Preserve groundwater and baseflow characteristics, protect water quality;
- Reduce occurrences of undesirable geomorphic change (e.g., stream erosion);
- Reduce flood damage potential;
- Maintain appropriate diversity of aquatic life and opportunities for human uses; and
- Maintain the natural hydrologic cycle to the greatest extent possible.

<https://www.ontario.ca/document/stormwater-management-planning-and-design-manual-0>

In 2010, Ontario completed a review of the need for a new policy, act or regulation to deal with municipal stormwater management systems in Ontario municipalities considering climate change. The review identified a need for a stormwater management policy framework, with emphasis on improving stormwater management at the source through green infrastructure and low impact development practices to reuse the water or infiltrate into the ground. Further, increased collaboration for source control practices is needed between all partners including residents, businesses, conservation authorities and all levels of governments.

Ontario is in the process of drafting a low impact development guidance manual that will assist proponents in implementing their efforts.

<https://www.ontario.ca/page/policy-review-municipal-stormwater-management-light-climate-change>

15. Ontario's Water Sector Strategy

On January 9, 2013, the government released Ontario's Water Sector Strategy. Through the strategy, Ontario aims to become a North American leader in the development, demonstration, commercialization and sale of water technologies. The Strategy builds on Ontario's strong foundation of water companies, researchers, demonstration and commercialization capabilities, and supportive policies. It focuses on three key actions:

- Driving Adoption of Innovative Technologies;
- Attracting Investment and Increasing Access to Global Markets; and
- Creating a Competitive Ontario Advantage.

The strategy can be accessed at:

http://www.watertapontario.com/a/brochures/20130523230443_waterstrategyen.pdf

OBJECTIVE 3) IMPROVE MONITORING AND STANDARDIZE DATA REPORTING AMONG STATE AND PROVINCIAL WATER CONSERVATION AND EFFICIENCY PROGRAMS

To achieve this objective, Ontario has a range of programs that improve monitoring of water supply, use and conservation/efficiency and standardizing data reporting among state and provinces.

16. Ontario Low Water Response

The Ministry of Natural Resources and Forestry oversees the Ontario Low Water Response program which provides a framework to enable local response in the event of a drought/low water. The Ministry of Natural Resources and Forestry collects, monitors and analyzes stream flow and climate data to provide early warnings, and to support local drought response. The early warning framework utilizes three levels of drought/low water status, based on precipitation and stream flow deficit conditions. Local Water Response Teams are encouraged to outline voluntary contingency measures within the watershed to achieve water use reduction targets. Water permit holders may be contacted to help achieve water reduction targets and are formally regulated through the Ministry of the Environment, Conservation and Parks Permit-to-Take-Water Program. Increasing water conservation is strongly encouraged and communicated as water scarcity increases. The program is currently being modernized to streamline the response process, clarify roles and responsibilities and allow for increased autonomy in local decision making.

<http://www.ontario.ca/page/low-water-response-program>

17. Ontario Surface Water Monitoring

The Ministry of Natural Resources and Forestry administers the bi-lateral ‘Canada-Ontario Agreement on Hydrometric Monitoring’ which funds stream flow monitoring infrastructure, technology and data collection protocols on behalf of the province. The Ministry of Natural Resources and Forestry collects, monitors and analyzes stream flow and climate data through a provincial network of over 650 stations. This information is used to provide early warnings for flooding and drought/low water to identify locations throughout the province where potential risks may exist. The mandate for this work is founded in Lieutenant Governor Order-in-Council under the *Emergency Management and Civil Protection Act* for the purposes of emergency planning and public safety. Additionally, this information supports a broad spectrum of water-related decision-making for the management, use and sharing of water resources.

<http://ontario.ca/page/surface-water-monitoring>

<http://www.ontario.ca/law-and-safety/flood-forecasting-and-warning-program>

18. Provincial Groundwater Monitoring Network

The Provincial Groundwater Monitoring Network monitors and reports on ambient groundwater levels and quality in aquifers across Ontario, through a network of over 480 monitoring wells. Rain gauges established at 65 of the monitoring sites provide insight into how groundwater levels are responding to precipitation and changing weather patterns. The water level and chemistry data produced under this program support climate change detection and adaptation activities, drought response, assessment of permit to take water applications, source water protection activities, and water budget and cumulative impact studies.

<http://www.ontario.ca/environment-and-energy/provincial-groundwater-monitoring-network>

19. Water Use Reporting

Under Ontario Regulation 387/04, every holder of a Permit to Take Water is required to report daily water use for each calendar year by March 31 of the following year. This also applies to water taking activities prescribed under the Registrations Under Part II.2 of the Act – Water Taking (Ontario Regulation 63/16). These data are used to inform the broad water management programs for the province.

Provincial reporting of withdrawals, consumptive uses and diversions to the Great Lakes Commission's Regional Water Use Database is coordinated by the Ministry of Natural Resources and Forestry in collaboration with the Ministry of Environment, Conservation and Parks. Investments continue to be made to enhance the regional data processing and assessment.

<http://www.glc.org/work/water-use>

<https://waterusedata.glc.org/>

20. Mapping and Geomatics Services Section

The Mapping and Geomatics Services Section provides leadership and coordination to capture, create and maintain the province's foundation geospatial data (e.g., roads, water, utilities, wetlands, elevation and aerial imagery) and works to ensure information about Ontario's water resources is available to provincial ministries, municipalities, conservation authorities and others to create maps, conduct geographic analysis and support decisions about the province's water resources. The Ontario Hydrology Network; Ontario Integrated Hydrology; provincial elevation and imagery layers; and enhanced watershed boundaries are all examples of datasets produced by the Mapping and Geomatics Services Section that can support the implementation of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement.

Mapping and Geomatics Services Section has developed the Ontario Flow Assessment Tool (OFAT) to allow water professionals in the public and private sectors and academia to analyze and understand water flow. The application allows for watersheds to be generated, characterized and flows estimated for any location in Ontario. Statistics and mapping from OFAT can be used for applications such as water permitting, water use reporting and water quantity assessment.

<https://www.ontario.ca/page/land-information-ontario>

<https://www.ontario.ca/page/watershed-flow-assessment-tool>

21. The Ontario Geological Survey's Groundwater Mapping Initiative

The Ontario Geological Survey's groundwater mapping initiative contributes geoscience data and information to water management initiatives, including the development of GIS-based geological maps/databases, groundwater vulnerability maps, regional (3-D) aquifer subsurface mapping in bedrock and surficial sediments, karst mapping, watershed characterization, thematic studies, regional groundwater geochemistry studies, method/protocol and product development.

<http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearth>

<http://www.mndm.gov.on.ca/en/mines-and-minerals/geoscience/groundwater>

OBJECTIVE 4) DEVELOP SCIENCE, TECHNOLOGY AND RESEARCH

To achieve this objective, Ontario has a range of programs that encourage science, technology and research to implement the best in water, wastewater and stormwater technology.

22. Ontario Clean Water Agency

The *Water Opportunities and Water Conservation Act, 2010* enabled the Ontario Clean Water Agency to finance and promote the development, testing, demonstration and commercialization of technologies and services for the treatment and management of water, wastewater and stormwater. The Ontario Clean Water Agency is a Crown Agency of the province that provides clean water services to municipalities, First Nations communities, institutions and businesses.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_93c23_e.htm

23. Water Technology Acceleration Project (WaterTAP)

WaterTAP was created as a statutory corporation under Part 2 of *Ontario's Water Opportunities Act, 2010*. Operating since 2012, WaterTAP acts as Ontario's water sector champion by assisting and promoting the development of Ontario's water and wastewater sectors, expanding business opportunities for Ontario companies nationally and internationally, providing a forum for government, the private sector and academic institutions to exchange information and ideas on how to make Ontario a leading jurisdiction in the development and commercialization of innovative technologies and services for the treatment and management of water and wastewater, encouraging collaboration and co-operation among Ontario's water sector ecosystem, assisting in the development of certification, labelling and verification programs for water and wastewater technologies and services, if requested by the Minister of Economic Development, Job Creation and Trade, and providing the Minister with advice on actions the Government of Ontario should take to assist in fostering the development of Ontario's water and wastewater sectors.

WaterTAP achieves this by working directly with Ontario companies and tech developers to help them commercialize their products while offering export, investment, access to capital, sales, marketing, communications, and policy/regulatory research advice to help Ontario SMEs grow and expand into global markets. WaterTAP also plays a lead role in building/supporting Ontario's larger water sector ecosystem, which includes industry associations, NGOs, academic institutions, accelerators and incubators, testing beds, investors, end-users (e.g., municipalities) and members of the water technology supply chain.

<http://www.watertapontario.com/>

24. Southern Ontario Water Consortium

The Southern Ontario Water Consortium (SOWC) helps to advance new water technology ideas from research and bench scale through piloting and real-world demonstration.

SOWC is a network of 10 post-secondary institutions that helps companies by connecting them with relevant academic experts. Pilot and full-scale wastewater demonstration facilities anchor the unique suite of facilities offered by SOWC partner institutions. Regulatory approvals for facility use are in place, and SOWC can help its client companies obtain the necessary approvals to demonstrate innovative technologies. SOWC also provides financial support for collaborative industry-led technology development projects through its Advancing Water Technologies program (leveraged federal funding).

<https://sowc.ca/>

25. Green Focus on Innovation and Technology

To support newly commercialized innovative green technologies, the province introduced the Green Focus on Innovation and Technology. The initiative allows the Government of Ontario to use its buying power to become an early adopter and potential reference customer for new green technology solutions. By purchasing and validating new green products, GreenFIT provides direct support to innovative technology solutions and provides companies with the credibility they need to succeed. The program helps to measure and validate the unique attributes of green technology solutions which may have a higher initial purchase price than traditional items but significant longer-term operational savings, as well as notable environmental, economic, and social impacts.

<http://www.doingbusiness.mgs.gov.on.ca/mbs/psb/psb.nsf/English/GreenFIT>

26. Investment Accelerator Fund

The Investment Accelerator Fund helps accelerate the growth of new technology companies (including companies focused on water conservation technologies) being established in Ontario and positions them for further investment by angels and venture capitalists. The Fund invests up to \$750,000 in companies that have the potential to be global leaders in their field and provide sustainable economic benefits to Ontario.

<http://www.marsdd.com/aboutmars/partners/iaf/>

27. Ministry of Agriculture, Food and Rural Affairs-University of Guelph Agreement Research Program

The Ministry of Agriculture, Food and Rural Affairs invests in research in seven theme areas through a partnership with the University of Guelph. The Environmental Sustainability research theme focuses on maintaining the ability of natural resources (soil, air, water and biodiversity) to support and strengthen agriculture, food and bio-product sectors and rural communities by evaluating environmental, economic, and social perspectives. To support long-term sustainability of the agri-food sector (agro-ecosystem and food system) and address the concerns of society, the Ministry invests in this research theme to:

- understand the agriculture and food sector's potential risks and benefits to soil, water, air and biodiversity resources;
- provide science for the development of credible and evidence-based government policies, programs and new technologies and practices;
- assess the effect of environmental policies on the agri-environment, agri-food sector's economics and rural society; and
- identify opportunities for agriculture, food, and bioproducts sectors, and rural communities to provide solutions for environmental challenges.

Since 2010, the OMAFRA-University of Guelph partnership research program has funded 37 research projects related to water management in agriculture and food. Out of these, 14 projects specifically target water use efficiency (technologies for greenhouse, microbrewery and fruit processing waste water treatment, evaluation of the implications of private water supply and waste water systems for rural Ontario municipalities, groundwater recharge and modeling water use efficiency in agriculture).

<http://www.uoguelph.ca/research/omafra/index.shtml>

28. New Directions Research Program

The purpose of the New Directions Research Program administered by the Ministry of Agriculture, Food and Rural Affairs is to stimulate the sustainable growth and competitiveness of Ontario's agri-food sector through investment in innovative and high-quality research in partnership with industry, rural communities, organizations, other levels of government, and research institutions. The specific priorities for the call for proposals vary annually depending on the research need to address emerging issues. This program included water management as one of the priorities in its annual call for proposals for 3 years (2010/11, 2011/12 and 2012/13) and funded a total of 13 water management research projects across the province during that period. The 2013/14, 2014/15 and 2015/16 calls for proposal included a climate change priority that funded two water related projects (out of total 6 climate change projects) linking to climate change impacts on agri-food water use.

Altogether, since 2010, the New Directions Research Program has funded overall 16 water management research projects which focused in the areas of water use efficiency, waste water treatment and recycling, modelling ground water under a changing climate, water quality etc.

http://www.omafra.gov.on.ca/english/research/new_directions/

29. Ontario's Cleantech Strategy

Ontario is currently developing a Cleantech Strategy to help establish the province as a North American cleantech leader. This will be done by leveraging provincial areas of competitive strength to meet growing national and international demand for new technologies, while supporting climate change goals.

Water and wastewater is one of the four key sub-sectors on which the strategy will focus. The strategy will aim to help companies scale, encourage adoption of their technologies, and globally export these products and services.

The strategy is currently in its final stages of development and is expected to be publicly released in November 2017.

OBJECTIVE 5) DEVELOP EDUCATION PROGRAMS AND INFORMATION SHARING FOR ALL WATER USERS

To achieve this objective, Ontario has a range of education programs and other programs that raise awareness of the importance of water and the value of conservation, efficiency and cost-saving, and to share best management practices.

30. Walkerton Clean Water Centre

The Walkerton Clean Water Centre was established in 2004. The Centre provides training for drinking water operators across Ontario, with a focus on smaller and remote systems, including those serving First Nations. The Centre's Technology Demonstration Facility, with its leading-edge drinking water technologies, is a platform for hands-on training and research on cost-effective solutions for small drinking water systems. The Centre is also responsible for delivering education, information and advice on water treatment, equipment, technology and operational requirements, and environmental issues related to drinking water, such as a course entitled "Water Conservation" that takes participants through a step-by-step process for developing a water conservation plan.

<https://www.wcwc.ca/en/>

31. Water Efficiency Labelling

The Ministry of the Environment, Conservation and Parks has a promotional partnership agreement with the U.S. Environmental Protection Agency to be part of their WaterSense Program, a water efficiency labelling program for products such as showerheads, faucets, toilets, and pre-rinse spray valves. As a promotional partner, Ontario can share information about the

program and promote WaterSense. The WaterSense label lets consumers know they are buying products tested and proven to use 20 per cent less water and will make it easier for Ontarians to make green choices every day. WaterSense also gives tips for saving water around the house. Ontario-based manufacturers can get their water efficient products certified and promoted under the program. Retailers, municipalities and other organizations in Ontario can also participate in WaterSense and help promote the label. More information is available at:

<http://www.epa.gov/watersense>

32. Best Management Practices

For the agricultural sector, the Ministry of Agriculture, Food and Rural Affairs has released over 35 booklets and books on best management practices (BMPs), also referred to as environmentally sustainable agricultural practices. BMPs are consensus-based documents developed by multi-disciplinary and multi-agency project teams. This series offers proven, practical and affordable approaches to conserving soil, water and other natural resources in agricultural and rural areas. Four books - Irrigation Management, Water Management, Water Wells and Cropland Drainage - address, among other things, efficient use of water/water conservation, (e.g. water efficient irrigation systems and staggered irrigation schedules, water quality tile drainage installation, maintenance and outlet protection for erosion control and subsurface drainage whereby water use may be conserved). The BMP series can be found here:

<http://www.omafra.gov.on.ca/english/environment/bmp/series.htm>

For the municipal sector, the Ministry of the Environment, Conservation and Parks provided funding to the Ontario Water Works Association to prepare “Water Efficiency: Best Management Practice” as well as “Outdoor Water Use Reduction Manual” and associated seminars, with order information available at:

http://www.owwa.ca/wp-content/uploads/2012/12/Water_Efficiency_Order_Form_revised.pdf

The Ministry of Agriculture, Food and Rural Affairs developed a series of videos geared towards horticultural growers. The videos take existing Ministry print information and workshops and present information in short 2 to 3-minute videos. A series for irrigators and for greenhouses introduces water efficiency practices. The videos can be seen here:

<http://www.omafra.gov.on.ca/english/crops/hort/videos.htm>

33. Canada-Ontario Environmental Farm Plan Program and Canadian Agricultural Partnership Cost-share Funding Assistance Program

The Ontario Ministry of Agriculture, Food and Rural Affairs, in partnership with Agriculture and Agri- Food Canada supports the development and delivery of the Canada-Ontario Environmental Farm Plan program. The Environmental Farm Plan (EFP) is a confidential, voluntary self-assessment that farmers undertake to review potential environmental risks associated with their

farm operations. Farmers attend an EFP educational workshop, complete a review of their operation, and develop an individualized Action Plan to address identified concerns. Action Plans may be submitted for independent review to verify appropriateness of the actions proposed for mitigating identified areas of risk. The EFP promotes water conservation and water efficiency, raising farmers' awareness of legislative requirements, and best practices.

Participation in EFP and completion of a reviewed plan are required prior to a producer applying for cost-share funding for environmental projects under the Canadian Agricultural Partnership – Cost-share Funding Assistance program.

The Canadian Agricultural Partnership Cost-Share Funding Assistance program supports a range of best management practices project categories supporting soil health and water quality, with co-benefits to climate resilience, habitat and biodiversity.

Funding support for both programs is currently provided by the Ministry of Agriculture, Food and Rural Affairs and Agriculture and Agri-Food Canada under the federal-provincial Canadian Agricultural Partnership. Both programs are delivered locally to farmers, on behalf of government, by the Ontario Soil and Crop Improvement Association.

<http://www.omafra.gov.on.ca/english/environment/efp/efp.htm>

OTHER PROGRAMS

In accordance with Ontario's water conservation and efficiency goals, objectives, and the provinces water conservation and efficiency program includes a range of legislation, strategies and programs that aligns with these objectives by integrating water conservation and efficient water use with other environmental management practices and considerations such as energy use, climate change, and the protection and restoration of hydrological and ecological integrity.

34. Endangered Species Act, 2007

With the passage of the *Endangered Species Act in 2007*, Ontario became a North American leader in protection and recovery for the province's more than 200 species at risk and their habitats. Many species at risk and their habitats in the Great Lakes Basin are now legally protected under the Act. Some of these protected species, including the Lake Sturgeon and American Eel, are also the focus of rehabilitation efforts under the Canada – Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2014.

The key to protecting many species at risk is protecting and restoring their habitats. Effective water management helps to maintain habitat conditions for many species at risk and can aid in their recovery.

Under the Act, the Minister of the Environment, Conservation and Parks is required to ensure that a recovery strategy is prepared for each species listed as either Endangered or Threatened on the Species at Risk in Ontario list. A recovery strategy provides external science-based advice to the Ontario government with the best available scientific information on how to protect and

recover the species. Once recovery strategies are finalized, the government then develops the species-specific policy in response to the advice received, that outlines the government's goal for the recovery of the species and the prioritized actions it plans to take in a government response statement. Recovery strategies and government response statements are available to the public on the species at risk pages on the Government of Ontario's website.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_07e06_e.htm

<http://www.ontario.ca/environment-and-energy/species-risk>

35. Great Lakes Wetland Conservation Action Plan

The Great Lakes Wetland Conservation Action Plan (GLWCAP) was crafted in 1994 so government and environmental organization partners could work together more effectively to conserve remaining Great Lakes Basin wetlands. The GLWCAP is the implementation mechanism for the 25-year Strategic Plan for Wetlands of the Great Lakes Basin (1993) and complements the Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health. Prepared by a cooperative of government and non-government agencies, the GLWCAP outlines a framework for wetland conservation in the Great Lakes Basin through eight implementation strategies. The Steering Committee is co-chaired by the Ministry of Natural Resources and Forestry and Environment and Climate Change Canada, and includes representatives from Conservation Ontario, The Nature Conservancy of Canada and Ducks Unlimited Canada.

The Ministry of Natural Resources and Forestry, on behalf of Ontario, also supports international efforts to conserve and manage Great Lakes coastal wetlands through its participation in initiatives such as the International Joint Commission's Upper Great Lakes and Lake Ontario-St. Lawrence River water level studies.

<http://glwcap.ca>

36. *Greenbelt Act, 2005* and *Greenbelt Plan, 2017*

The *Greenbelt Act, 2005* provides the legislative framework for the development and implementation of the *Greenbelt Plan, 2017*. The Act sets out the objectives of the *Greenbelt Plan* including protection of the land base needed to maintain, restore and improve the ecological and hydrological functions of the *Greenbelt Area*. The *Greenbelt Act* requires all decisions under the *Planning Act* and *Condominium Act* to conform to the *Greenbelt Plan* and that municipalities bring their official plans into conformity with the *Greenbelt Plan* at the time of their next five-year official plan review.

The *Greenbelt Plan, 2017* requires municipalities to provide for a comprehensive, integrated and long-term approach to managing water resource systems and natural heritage systems comprised of key natural heritage and key hydrological features and areas which are to be identified and protected from development and site alteration, along with appropriate buffers.

The Greenbelt Plan, 2017 area contains numerous watersheds, subwatersheds and groundwater and surface water resources, and several river valleys identified in the Plan. These resources are critical to the long-term health and sustainability of water resources and biodiversity and overall ecological integrity.

Key policies which ensure the protection of water resources in the Greenbelt include those related to: requirements for watershed planning to inform development an infrastructure planning and the identification of a water resources system; and municipalities are required to protect, improve or restore the water resources system including key hydrologic areas (e.g. significant groundwater recharge areas, highly vulnerable areas) and features (e.g. wetlands, permanent/intermittent streams).

<https://www.ontario.ca/laws/statute/05g01>

<http://www.mah.gov.on.ca/Page13783.aspx>

37. *Niagara Escarpment Planning and Development Act* and Niagara Escarpment Plan

The *Niagara Escarpment Planning and Development Act* sets out the legislative framework for the Niagara Escarpment Plan (NEP) and its implementation through a system of development control that is administered by the Niagara Escarpment Commission, a regulatory agency of the Ontario Government. The purpose of the Act and the NEP is to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure that only such development occurs as is compatible with that natural environment.

The Plan identifies several land use designations which direct how land can be used throughout the NEP Area and includes policies that guide planning and development to help protect water resources. The NEP was comprehensively reviewed, and an updated NEP was in effect June 1, 2017. The updated NEP includes a new section 2.6 dedicated to development affecting water resources. The development criteria in the updated Plan established key hydrological features and restricts development in and adjacent to these features to protect, and where possible enhance, the quantity and quality of groundwater and surface water.

<https://www.escarpment.org/LandPlanning/NEP>

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90n02_e.htm

38. Ontario's Biodiversity Strategy

Ontario's Biodiversity Strategy, 2011, is the guiding framework for coordinating the management of Ontario's biodiversity. Implementation and reporting on progress towards achievement of the strategy's 15 time-bound targets is guided by the Ontario Biodiversity Council with membership from government, conservation stakeholders, Indigenous organizations and industry. Ontario's Biodiversity Strategy includes actions to reduce threats and

enhance the resilience of the Great Lakes through activities including reducing pollution, preventing the introduction and spread of invasive species, implementing legislation to better protect species at risk and their habitats, completing a system of protected areas representative of Ontario's ecosystems, and encouraging private land and water resources stewardship. On an international scale, Ontario participates in efforts to conserve the diversity of species and ecosystems of the Great Lakes Basin through binational projects that developed biodiversity conservation strategies for each of the Great Lakes.

www.ontariobiodiversitycouncil.ca/ontarios-strategy/

39. Biodiversity: It's in Our Nature, Ontario Government Plan to Conserve Biodiversity 2012-2020

Biodiversity: It's in Our Nature, Ontario Government Plan to Conserve Biodiversity 2012-2020 (BIION) is the Ontario government's implementation plan for advancing biodiversity management under Ontario's Biodiversity Strategy, 2011. The plan is an important statement of partnership and commitment across 16 provincial ministries to work together to manage and protect Ontario's biodiversity for a strong natural resource-based economy.

BIION includes actions and activities to reduce threats and enhance the resilience of the Great Lakes ecosystem including promoting land and water conservation; reducing threats to biodiversity posed by habitat loss, invasive species, pollution, population growth and climate change; enhancing habitats and ecosystem services; and supporting science, research and information management to inform biodiversity conservation.

<https://www.ontario.ca/page/biodiversity-its-our-nature>

40. Ontario's Great Lakes Strategy

Ontario's Great Lakes Strategy, released in 2012, provides a roadmap for how Ontario will focus action to protect the Great Lakes. The Strategy summarizes environmental conditions of the Great Lakes and Ontario's actions taken to date and identifies priorities for future action.

Goal 2 of Ontario's Great Lakes Strategy (protecting water for human and ecological health) includes actions to improve water quantity management such as fulfilling Ontario's commitments under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement and promoting water conservation and efficiency under the *Water Opportunities and Water Conservation Act*. As required under the *Great Lakes Protection Act*, Ontario is currently reviewing its 2012 Great Lakes Strategy and working on a renewed Strategy to address Ontario's priorities for protecting the Great Lakes.

www.ontario.ca/document/ontarios-great-lakes-strategy

<https://www.ontario.ca/page/ontarios-great-lakes-strategy-2016-progress-report>

41. Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2014

The Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health (COA) is the principal mechanism through which Ontario and Canada coordinate their work to address their respective and shared commitments to restore, protect and conserve the Great Lakes. Since 1971, a series of COAs have enabled both governments, together with local partners, to address the most significant challenges facing the Great Lakes region. The current COA was signed in 2014 and supports Ontario's implementation of the Great Lakes Strategy and Canada's commitments under the 2012 Canada-U.S. Great Lakes Water Quality Agreement.

The 2014 COA commits Ontario to improved understanding and implementation of adaptive management approaches to lake level regulation, including enhancing understanding of the water budget within the Great Lakes Basin. Ontario is also committed to improved understanding of cumulative impacts of water withdrawals, diversions and consumptive uses, and to producing and maintaining water use data that is made available to water management agencies across the Great Lakes Basin. The 2014 COA also supports enhancing understanding of climate change impacts in relation to the Great Lakes and integrating this information into Great Lakes management strategies.

The 2014 COA includes commitments to address excess nutrients and reduce harmful and nuisance algal blooms starting with Lake Erie. The Canada-Ontario Lake Erie Action Plan (LEAP), released in 2018, identifies more than 120 federal, provincial and partner actions to help achieve the goal of reducing phosphorus entering Lake Erie by 40 per cent in order to reduce algal blooms. Ontario is working with the Federal government and other partners including municipalities, agricultural organizations, conservation authorities, and non-governmental organizations to implement LEAP. Actions in the plan include encouraging effective techniques to keeping phosphorous on farmland and out of the watershed, improving wetland conservation, and upgrading municipal wastewater treatment and collection systems.

Under the *Great Lakes Protection Act, 2015* (GLPA), Ontario established its own target of a 40 per cent phosphorus load reduction by 2025 (from 2008 levels), using an adaptive management approach, for the Ontario portion of the western and central basins of Lake Erie, as well as an aspirational interim goal of a 20 per cent reduction by 2020 to address algal blooms. The GLPA also requires that the Minister prepare a plan setting out actions to be taken to achieve these targets – LEAP serves as the Minister's plan for meeting GLPA targets to help reduce algal blooms.

The current COA expires in December 2019 and a new COA is being negotiated between Canada and Ontario. If a new COA is not yet in place when the current COA expires, Canada and Ontario are committed to continuing collaborative work on Great Lakes restoration while a new COA is finalized.

www.ontario.ca/page/canada-ontario-great-lakes-agreement

<https://www.ontario.ca/page/canada-ontario-lake-erie-action-plan>

42. *Great Lakes Protection Act, 2015*

The *Great Lakes Protection Act, 2015* (GLPA) strengthens the province's ability to restore and protect the Great Lakes and St. Lawrence River, as well as the waterways that flow into them.

Ontario's Great Lakes Strategy was first released in 2012. The GLPA requires Ontario to report on progress made under Ontario's Great Lakes Strategy every three years. The first progress report was published in 2016 and the next progress report will be released in 2019. Under the GLPA, Ontario is also required to undertake a review of its Great Lakes Strategy every six years. A review of the Great Lakes Strategy is currently underway. In preparing a new Great Lakes Strategy, Ontario will explore made-in-Ontario solutions to protect the waters of the Great Lakes basin and keep the Great Lakes clean for future generations, while supporting a prosperous economy.

To help deliver on goals under the COA and the GLPA, Swim Drink Fish Canada has developed a new digital tool to raise awareness of, and appreciation for, the importance of the Great Lakes and the issues facing them. The Great Lakes Guide provides a window to Ontario's Great Lakes parks, lakes and natural areas. The Guide seeks to enhance knowledge and understanding through inclusion of Indigenous knowledge, active engagement of youth in Great Lakes issues, and interactive features to profile Ontario's parks and conservation areas.

<https://www.ontario.ca/page/protecting-great-lakes>

<https://www.ontario.ca/laws/statute/15g24>

<https://greatlakes.guide/>

43. Joint Strategic Plan for the Management of Great Lakes Fisheries

The Joint Strategic Plan for Management of Great Lakes Fisheries is a world-renowned model for ensuring that Canada and the U.S. agree on how best to manage and sustain common Great Lakes fish stocks. The Great Lakes Fishery Commission, a secretariat that coordinates fisheries management and research on the Great Lakes, coordinates implementation of this historic plan, originating in the 1950s and last revised in 1997. The Ministry of Natural Resources and Forestry represents Ontario on four out of five Great Lakes Fishery Commission lake committees and on the Council of Lake Committees. The lake committees are responsible for developing fish-community goals and objectives for each Great Lake, as well as plans for managing, preserving and restoring Great Lakes fish species and their habitats.

The Joint Strategic Plan identifies the need for an ecosystem approach to Great Lakes fishery management, recognizing the impact of water quality and water use on fish habitat. This includes the potential for large-scale water diversions to impact fish populations in the Great Lakes. As a result, the plan sets out an Ecosystem Management Strategy for the Great Lakes which has unique strategic procedures requiring the identification and resolution of environmental issues such as water uses that may impede the achievement of the individual Great Lakes Fish-Community Objectives.

www.glfc.org

44. *Lake Simcoe Protection Act, 2008* and *Lake Simcoe Protection Plan, 2009* and associated Subwatershed Plans and Water Budgets

The *Lake Simcoe Protection Act, 2008* provides the legislative framework for the development and implementation of the Lake Simcoe Protection Plan. The Lake Simcoe Protection Plan is a comprehensive roadmap for Ontario and its partners to work together to improve the health of the watershed.

A key objective of the Plan is to promote greater efforts to conserve and use water more efficiently, to meet future demands for water within sustainable limits. To advance this objective, Ontario supports a wide range of work with partners addressing water quantity changes on the landscape.

Ontario undertakes or supports monitoring and research in the Lake Simcoe watershed with the Lake Simcoe Region Conservation Authority (LSRCA) to understand the impacts of land use on water quality and quantity, and to make sure that any recommended courses of action are based on sound evidence. For example, Tier Two Water Budgets have been created for all subwatersheds in the Lake Simcoe watershed. These assessments are being used to inform municipal water conservation and efficiency plans and municipal decisions concerning growth and development; water-taking strategies and decisions concerning Permits to Take Water; and the identification of significant groundwater recharge areas.

Ontario is also supporting action from other water use sectors by encouraging the development and implementation of water conservation practices in the agricultural, tourism and construction sectors. For example, the LSRCA is encouraging low impact development to improve water quantity control, reduce flood risks, and increase resilience to climate change.

Ontario has also supported work by the University of Western of Ontario to understand more about the major groundwater recharge and discharge functions in Lake Simcoe.

45. *Crown Forest Sustainability Act, 1994*

The Ministry of Natural Resources and Forestry is the lead ministry for the management and regulation of forest management in Ontario. The *Crown Forest Sustainability Act* provides the legislative framework for the sustainable management of forests on Crown lands in Ontario. Under the Act, there are four manuals that guide various aspects of forest management in Ontario and an array of guides that provide direction on acceptable forest management practices that conserve biodiversity by emulating natural disturbances and landscape patterns while minimizing adverse effects on plant life, animal life, water, soil, air, and social and economic values.

Under the *Crown Forests Sustainability Act*, the Forest Management Guide for the Protection of Biodiversity at the Stand and Site Scales outlines standards, guidelines, and best management practices for forest operations around various water features including those within the Great Lakes watershed. For example, the guide outlines water crossing guidelines that protect water quality and fish habitat to minimize the effects of forest management on water resources. These

are intended to protect and maintain the ecological function of aquatic and wetland ecosystems, with consideration of the role of natural disturbances.

<https://www.ontario.ca/laws/statute/94c25>

<https://dr6j45jk9xcmk.cloudfront.net/documents/4816/stand-amp-site-guide.pdf>

46. A Wetland Conservation Strategy for Ontario 2017-2030

Building on over 30 years of positive achievement in conserving Ontario's wetlands, A Wetland Conservation Strategy for Ontario 2017-2030 is a framework to guide the future of wetland conservation across the province. The Strategy includes a clear vision, goals and desired outcomes, and a series of actions the government is taking, or will undertake, by 2030.

The guiding principles for the strategy recognize that wetlands are integral components of their watersheds, natural heritage and hydrologic systems, and part of the larger landscape. Included in the comprehensive suite of government actions are actions to improve wetland conservation and work towards a net gain in wetland area and function where wetland loss has been the greatest.

<http://apps.mnr.gov.on.ca/public/files/er/a-wetland-conservation-strategy-for-ontario-2017-2030.pdf>

47. Ontario's Provincial Fish Strategy: Fish for the Future

Ontario's abundant aquatic resources support a diverse range of year-round recreational, commercial and First Nation and Métis fisheries. Together, these activities and their supporting industries are estimated to contribute more than \$2.2 billion annually to Ontario's economy. The province's Provincial Fish Strategy outlines goals, objectives and tactics for the dual purposes of improving the conservation and management of fisheries and the ecosystems on which fish communities depend, and promoting, facilitating and encouraging fishing as a social, economic and cultural activity in the province.

A Key Management Approach of the Provincial Fish Strategy is the ecosystem-based approach, where all ecosystem components, including humans and their interactions, are considered. In keeping with this, one of the goals of the Provincial Fish Strategy is 'Healthy Ecosystems that Support Self-Sustaining Native Fish Communities'. There are five objectives under this goal aimed at protecting and managing native fish populations and the diversity, connectivity, structure, and function of Ontario's aquatic ecosystems, as well as restoring or rehabilitating them where they are degraded. The objectives and tactics are also aimed at mitigating or adapting to large scale environmental changes and minimizing cumulative environmental effects of multiple stressors which can be much greater than any single stressor operating alone.

This goal is supported by MNR's broad-scale monitoring program for inland lakes which aims to: describe the distribution of aquatic resources in Ontario lakes; identify stresses on these resources; track trends in indicators of the health of Ontario's fisheries, lake ecosystems and aquatic biodiversity; and assess and report on the status of fisheries in Ontario. A wide range of variables are monitored including: fish abundance, sex, length and weight; fish contaminant

levels (in collaboration with the Ministry of the Environment, Conservation and Parks, Fish Contaminant Monitoring Program); lake temperature, oxygen levels, and overall water quality; presence and abundance of invasive species; and estimated fishing effort.

Intensive monitoring occurs on each of the Great Lakes to provide information on the fish communities and fisheries they support. These monitoring programs support decision-making used in managing the sustainability of recreational fisheries resources and to inform the development of lake-specific Fish Community Objectives under the Joint Strategic Plan for Management of Great Lakes Fisheries and establish allowable harvest levels for fisheries within the lakes.

<https://www.ontario.ca/page/fishing>

48. Stream Water Quality Monitoring and the Multi-Watershed Nutrients Study

The Ministry of Environment, Conservation and Parks' Provincial Water Quality Monitoring Network measures and reports on stream water quality across Ontario with focussed studies related to pesticides, climate change, drinking water source protection, and roads. Collected data allows for the recognition of trends and correlations, informs land use planning decisions, assessments of water taking applications and wastewater discharges. The Multi-Watershed Nutrients Study was launched in 2013 to assess the interaction between agricultural land use and nutrient loadings in streams draining to the Great Lakes. The study will inform potential management actions to mitigate nutrient losses from agricultural systems.

<http://www.ontario.ca/environment-and-energy/provincial-stream-water-quality-monitoring-network>

49. Fish Contaminant Monitoring Program

The Ministry of the Environment, Conservation and Parks' Fish Contaminant Monitoring Program monitors persistent toxic contaminants (e.g., mercury, PCBs, dioxins/furans, organochlorine pesticides) in both large bodied (sport) and forage fish from the Great Lakes and inland lakes and rivers. The program started in 1967 and is an exemplary partnership between the Ministry of the Environment, Conservation and Parks and the Ministry of Natural Resources and Forestry. It is one of the largest, most comprehensive programs of its kind worldwide. The monitoring data are used for a variety of purposes including providing advice on the safe consumption of fish through the Guide to Eating Ontario Fish. The data are also used to evaluate the success of remedial measures, track long-term trends in fish contaminant levels, examine the status of Areas of Concern, support environmental assessments related to First Nations concerns, provide advice to First Nations communities, and conduct cumulative impact assessments. The program informs management and policy decisions. It also supports legislation and policies to protect Ontario's water, including the *Great Lakes Protection Act*, the *Great Lakes Water Quality Agreement* and *Canada-Ontario Agreement*, the *Clean Water Act*, the *Environmental Protection Act*, the *Ontario Water Resources Act*, the *Pesticides Act*, the *Toxics Reduction Act*, the *Far North Act*, the *Source Water Protection Act*, and the *Lake Simcoe Protection Act*.

www.ontario.ca/fishguide

50. Great Lakes Intake Program

The Great Lakes Intake Program monitors and reports on water quality and algae in the nearshore of the Great Lakes – St. Lawrence River system and in Lake Simcoe since the 1960s. Using water treatment plant intakes as collection points, untreated water samples are collected weekly or biweekly, year-round, and analyzed for water chemistry, including nutrients and planktonic algae. Program data are used to evaluate the current status of source water quality and assess long-term trends to evaluate the cumulative impacts of multiple environmental stressors such as nutrient loading, invasion by exotic species, and climate change. Data is also used to evaluate the effectiveness of broad scale pollution control measures, and to inform decision making to restore, protect and conserve the Great Lakes and Lake Simcoe. The program supports the *Great Lakes Protection Act*, the Great Lakes Water Quality Agreement and Canada-Ontario Agreement, the Canada-Ontario Lake Erie Action Plan, the *Lake Simcoe Protection Act*, the *Clean Water Act*, and the *Source Water Protection Act*.

<https://www.ontario.ca/data/lake-water-quality-drinking-water-intakes>

51. Anishinabek/Ontario Fisheries Resource Centre (AOFRC)

The Anishinabek/Ontario Fisheries Resource Centre was established in 1995 and continues to serve as an independent source of information on fisheries assessment, conservation, and management, promoting the value of both Western science and Indigenous knowledge of the land and water. Since its establishment, the AOFRC has completed over 500 fisheries projects with First Nations and government agencies across the province, including creel surveys, index netting projects, tagging studies, fish habitat inventories, and syntheses of fisheries data for formulating resource management plans. This type of information contributes to measuring the success of water conservation and fisheries management efforts.

<http://www.aofrc.org/>

52. Ontario Parks Water Conservation Initiatives

Ontario Parks is responsible for the operation and protection of over 330 parks, covering 8.2 million hectares that attract over 10.5 million visits each year. Over the last few years, Ontario Parks has undertaken several initiatives to conserve water use within parks. Initiatives include the use of low-flow fixtures in park washrooms, variable frequency driven distribution pumps, solar hot water assist and propane water heaters to reduce reliance on hydroelectric power, cold water meters in new buildings to monitor water usage, use of polyethylene piping in water distribution systems to reduce leakage, and monitor for water system leakage, identify and make repairs in a timely manner. While several of our operating parks are municipally connected to sewerage, most parks rely on septic treatment systems to safely return the water to the local environment.

Ontario Parks permanently protects over 12,000 square kilometres of water including lakes, rivers and wetlands. These areas are managed with a priority on ecological integrity, or environmental health, for the benefit of the people of Ontario and their visitors. This priority on ecological integrity is demonstrated at multiple scales; through a robust policy framework that outlines permitted activities, to park and park zone classifications that protect aquatic features (such as waterway class parks), to park-specific management plans that document park values, pressures, vision, site objectives, and management direction in the form of site specific management policies and implementation actions (e.g. wetland restoration).

www.ontarioparks.com

53. Species at Risk Stewardship Program

The Species at Risk Stewardship Program is a funding program established under the *Endangered Species Act, 2007* to encourage and support the recovery and protection of species at risk and their habitats through stewardship and research activities. Since 2007, Ontario has supported over 1000 stewardship projects including over 100 research projects through the program. The program is open to a wide variety of individuals and groups. Examples of eligible aquatic-related activities could include inventory, monitoring, research or outreach work related to aquatic species at risk, enhancing and protecting aquatic habitat of species at risk or the development and implementation of Best Management Practices to help avoid or mitigate threats to species such as Lake Sturgeon or American Eel.

<http://www.ontario.ca/page/grants-protecting-species-risk>

54. Invading Species Awareness Program

The province-wide Invading Species Awareness Program is a longstanding partnership of the Ministry of Natural Resources and Forestry and the Ontario Federation Anglers and Hunters launched in 1992. The program focuses on education and outreach to prevent the spread and or introduction of invasive species in Ontario. The ISAP also operates programs designed to monitor the occurrence and distribution of invasive species including a toll-free Invading Species Hotline, as well an online and mobile application called the Early Detection and Distribution Mapping System (**EDDMapS Ontario**).

<http://www.invadingspecies.com/>

55. Land Stewardship and Habitat Restoration Program

The Land Stewardship and Habitat Restoration Program (LSHRP) is a competitive funding program through which the Ministry of Natural Resources and Forestry supports on-the-ground efforts in habitat enhancement and ecological restoration to advance Ontario's biodiversity conservation objectives at a landscape level. The fund is open to incorporated organizations across Ontario, including Indigenous communities or organizations, conservation organizations, businesses, municipal governments and non-government organizations. Since its launch in 2013, the LSHRP has funded a variety of aquatic-related projects, including stream restoration, riparian

plantings, fencing to exclude livestock from lakes and waterways, invasive species control, wetland creation, and fish habitat restoration. The Ministry allocates \$300,000 to the fund annually to meet these biodiversity conservation objectives. Successful applicants are eligible for funding of up to \$20,000 per project, with a 1:1 match funding requirement.

Since 2013, the LSHRP fund has helped to improve, restore or create over 6,392 acres of area, supported plantings of over 119,391 trees and shrubs, and leveraged over \$3M in project partner funding.

www.ontario.ca/lshrp

56. Eastern Habitat Joint Venture

The Eastern Habitat Joint Venture (EHJV) is a collaborative partnership working together to conserve wetlands and other habitats that are important to waterfowl and other migratory birds. Since 1986, the EHJV has helped to implement habitat conservation programs that support continental waterfowl objectives identified under the North American Waterfowl Management Plan (NAWMP). The Joint Venture also supports the mission of the North American Bird Conservation Initiative (NABCI), an inter-governmental and inter-agency initiative to conserve all native birds and the habitats that support them.

The EHJV, one of 20 Joint Ventures in North America, spans the six eastern-most Canadian provinces: Ontario, Québec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador. Ontario EHJV partners include the Government of Canada (Environment Canada – Canadian Wildlife Service), the Government of Ontario (Ministry of Natural Resources and Forestry, Ministry of Agriculture, Food and Rural Affairs), Ducks Unlimited Canada, the Nature Conservancy of Canada and Bird Studies Canada. The Ministry of Natural Resources and Forestry has provided financial and/or in-kind support for wetland conservation by Ontario EHJV partners since 1994.

<http://www.ehiv.ca/>

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-7

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
Commonwealth of Pennsylvania

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs: (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

The Agreement

E. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

F. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

G. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs: (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

H. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

II. SUBMISSIONS BY COMMONWEALTH OF PENNSYLVANIA

A. To the Compact Council. The Compact Council has received the Commonwealth of Pennsylvania's report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the Commonwealth of Pennsylvania's report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the Commonwealth of Pennsylvania, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

- A. Based on the report submitted by the Commonwealth of Pennsylvania, the Water Management Program presented by the Commonwealth of Pennsylvania meets or exceeds the current requirements of the Compact and the Agreement.
- B. Based on the report submitted by the Commonwealth of Pennsylvania, the Water Conservation and Efficiency Program presented by the Commonwealth of Pennsylvania meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management Program Review
Commonwealth of Pennsylvania
December 8, 2019

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):

- Timothy Bruno, Manager, Great Lakes Program (814) 835-1477
- Michael Hill, Professional Geologist, Water Planning and Conservation Division (717) 787-0630

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 CWPAs 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.

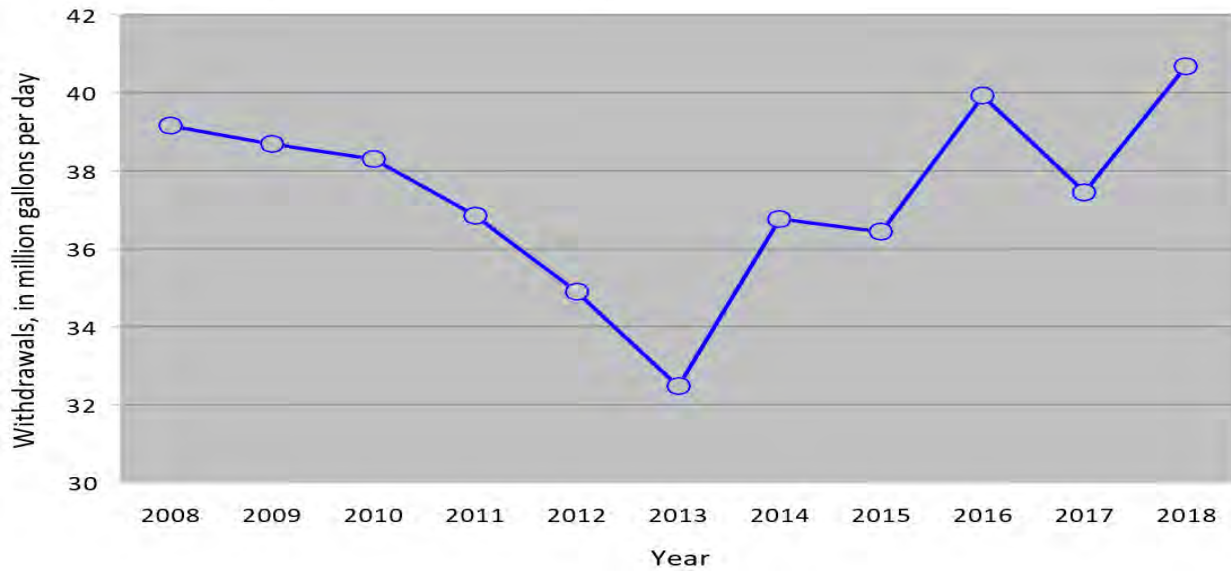
OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
<p>Guide programs toward long term sustainable water use</p>	<ul style="list-style-type: none"> <li>➤ Under the Water Rights Act, 32 P.S. §§ 636-637, public water supply agencies must obtain water allocation permits from DEP to acquire rights to surface water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

Great Lakes-St. Lawrence River Water Resources Regional Body

RESOLUTION NO. 2020-10

ADOPTING DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
Government of Québec

I. BACKGROUND AND PURPOSE

A. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

B. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State’s or Province’s Water management and conservation and efficiency programs.

C. Following the Regional Body’s review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province’s programs: (1) meet or exceed the provisions of the Agreement; or (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

D. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s and Province’s goals and objectives.

II. SUBMISSIONS BY GOVERNMENT OF QUÉBEC

The Regional Body has received the Government of Québec’s report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the Government of Québec and the terms of the Agreement, the Regional Body finds that:

- A. Based on the report submitted by the Government of Québec, the Water Management Program presented by the Government of Québec meets or exceeds the current requirements of the Agreement.
- B. Based on the report submitted by the Government of Québec, the Water Conservation and Efficiency Program presented by the Government of Québec meets or exceeds the current requirements the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body*

Draft—For Discussion Purposes Only
November 6, 2020

ATTACHMENT A

Water Management Program Review
Government of Québec
Draft Response Dated December 8, 2019

Province of Québec

Five-Year Review of Québec's Water Management Program and Water Conservation and Efficiency Program

The following information is submitted by the Province of Québec to the Great Lakes Regional Body Secretariat pursuant to the requirements of Article 300 of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement).

General Information

1. Lead agency and contact

Marie-Claude Théberge
Directrice générale des politiques de l'eau / Director General of Water Policy
Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC)
and Representative designated by the Premier of Québec to the Great Lakes–St. Lawrence River Water Resources Regional Body (Regional Body)

2. Provincial water management program implementing laws, regulations and policies

The laws and regulations listed below are available at the following address:

English: <https://www.quebec.ca/en/government/ministere/environnement/statutes-and-regulations/>

French: <https://www.quebec.ca/gouv/ministere/environnement/lois-et-reglements/>

a. Compact Section 3.4/Agreement Article 300

- Article 31.101 *Environment Quality Act* (CQLR c. Q-2)
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

b. Compact Section 4.1/Agreement Article 301

- *Regulation respecting the Declaration of Water Withdrawals* (CQLR c. Q-2, r. 14) [*Règlement sur la déclaration des prélèvements d'eau* (RLRQ c. Q-2, r. 14)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014>

c. Compact Sections 4.2(2), 4.2(4) and 4.2(5)/Agreement Article 304

- See section h. below.

d. Compact Section 4.3/Agreement Article 200

- Article 200 1.:
 - Article 31.90 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.90 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

Article 200 2.:

- Article 31.92-31.94 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.92-31.94 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>
- *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* (CQLR c. Q-2, r. 5.1)
[*Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent* (RLRQ c. Q-2, r. 5.1)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%205.1>

Article 200 3.:

- Article 31.95 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.95 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

e. Compact Section 4.8, 4.9 and 4.13/Agreement Articles 200, 201 and 208

Article 201.:

- Article 31.92-31.94 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.92-31.94 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>
- *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* (CQLR c. Q-2, r. 5.1)
[*Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent* (RLRQ c. Q-2, r. 5.1)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%205.1>

Article 208:

- Article 31.75 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.75 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

f. Compact Section 4.10/Agreement Article 206

- Article 31.95 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.95 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>
- *The Water Withdrawal and Protection Regulation* (CQLR c. Q-2, r. 35.2)
enables the application of article 31.95 and specifies application thresholds.
[*Règlement sur le prélèvement des eaux et leur protection* (RLRQ c. Q-2, r. 35.2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2035.2>

g. Compact Section 4.11/Agreement Article 207

207.1. a):

- *Regulation respecting the Declaration of Water Withdrawals* (CQLR c. Q-2, r. 14)
[*Règlement sur la déclaration des prélèvements d'eau* (RLRQ c. Q-2, r. 14)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014>

207.1. b):

- Withdrawals authorized between September 1, 2011 and the coming into force of article 31.95 of the *Environment Quality Act* in 2014 will be considered as existing withdrawals and will be listed as so.

207.2.:

- Article 31.96 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.96 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

207.5.:

- Article 3 of the *Water Withdrawal and Protection Regulation* (CQLR c. Q-2, r. 35.2) elaborates on this concept.
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2035.2>

207.9.:

- Article 31.90 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.90 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

h. Agreement Article 304

- Article 31.101 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.101 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

⋮

Water Management Program

1. Summary description of Québec's Water management program scope and thresholds

The *Act to Affirm the Collective Nature of Water Resources and to Promote Better Governance of Water and Associated Environments* (CQLR c. 6.2) (also called 'Water Act') amended the *Environment Quality Act* (EQA) to include the provisions of the Agreement. Furthermore, the *Water Withdrawal and Protection Regulation*, adopted in 2014, completed the Water Act's enforcement by implementing a new system for authorising water withdrawals that was introduced into the EQA. Chapter VI of the *Water Withdrawal and Protection Regulation* reinforces the protection of water destined for public consumption.

Diversions

For the application of Article 201 of the Agreement (Exceptions to the Prohibition of Diversions), the EQA articles 31.90 to 31.94 are in force concerning the diversion of water outside the Basin. The *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* was adopted in 2011, enabling the application of articles in the EQA with which those wishing to obtain an authorization to divert water out of the Basin must comply, in accordance with the Agreement's Exception Standard.

New or increased withdrawals

Additionally, the Water Act and the *Water Withdrawal and Protection Regulation* added a new system to the EQA for permitting all water withdrawals of 75,000 litres or more per day throughout Québec. For the application of Article 203 of the Agreement (Decision-Making Standard for Management of Withdrawals and Consumptive Uses), particular provisions apply to withdrawals located in the area covered by the Agreement. These provisions are detailed in Article 31.95 of the EQA, which specifically concerns withdrawals located in the area covered by the Agreement and applies the Decision-Making Standard for Management of Withdrawals and Consumptive Uses. In Article 31.95, the application threshold for the standard is 379,000 litres or more per day.

Reporting

In 2011 Québec adopted the *Regulation amending the Regulation respecting the Declaration of Water Withdrawals*. The amended regulation allows Québec to collect information on withdrawals and consumption in the St. Lawrence River Basin, and on volumes of water diverted out of the Basin. It enables Québec to meet its commitments under Article 301 of the Agreement, while supporting the application of EQA provisions on water diversions and the permitting process for water withdrawals, notably by setting the threshold for determining new or increased withdrawals in the St. Lawrence River Basin. The regulation also seeks to incite more responsible water use by employing accountability methods to make the largest water users in Québec more aware of the intrinsic value of this resource. It also aims to make each person responsible for the preservation of water, both quality and sufficient quantity, to meet the needs of current and future generations

2. Description of how Québec manages Water Withdrawals by sector, water source, quantity and location

- a. **Sector (public water supply, self-supply commercial and institutional, self-supply irrigation, self-supply livestock, self-supply industrial, self supply thermoelectric power production (once-through cooling), self-supply thermoelectric power production (recirculated cooling), off-stream hydroelectric power production, in-stream hydroelectric power production (voluntary), and other self-supply;**

Authorization of water withdrawals

Article 31.75 of the *Environment Quality Act (EQA)* specifies that, in general, withdrawals of 75,000 litres or more per day must be approved by authorization under article 22 (2) of the EQA. According to article 31.81 of the same law, the authorization is renewable every 10 years.

Reporting of water withdrawals

Since 2011, under the *Regulation respecting the Declaration of Water Withdrawals*, all those who withdraw water in the St. Lawrence River Basin (area covered by the Agreement) with equipment or facilities that have a rated capacity to withdraw 379,000 litres or more per day whether for direct use or diversion outside of the basin must report annually to the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* the volumes of water withdrawn, consumed within the area covered by the Agreement, or diverted outside.

Article 18.2 of the Regulation excludes the following types of water withdrawal that are entirely outside of the St. Lawrence River Basin:

- withdrawals used for the production of hydroelectric power by means of run-of-river works or facilities directly connected to the watercourse;
- withdrawals by works used for the impounding of water, other than a dam, such as a pond or a basin having no hydraulic interconnection with groundwater, except if the pond or basin is supplied by a surface water drainage system.

Article 18.7 of the Regulation states that agricultural and fish-farming businesses must produce their first annual declaration in 2016 (for withdrawals carried out in 2015).

- b. **Water source (groundwater, surface water (Great Lakes-St. Lawrence River), surface water other than Great Lakes-St. Lawrence River);**

The permitting process specific to water withdrawals applies to both surface water and groundwater throughout all of Québec.

When reporting volumes of water withdrawn, withdrawers must provide information on, amongst other things, the source of their withdrawals (groundwater, surface water) and whether the withdrawal is within the area covered by the Agreement or not.

- c. **Quantity (regulatory thresholds, volumes, rates, and reporting requirements);**

Authorization of water withdrawals

Article 31.75 of the EQA provides the volume thresholds with which the permitting process for water withdrawals across Québec is applied. Withdrawals of 75,000 litres or

more per day are subject to an authorization. The same article also states that certain withdrawals are subject to an authorization even if their volume is less than 75,000 litres per day.

Article 31.95 of the EQA sets the volume threshold to be applied for new or increased withdrawals located within the area covered by the Agreement at an average quantity or consumptive use of 379,000 litres or more per day.

As for diversions, article 31.92 specifies the volume threshold is an average of 379,000 litres or more per day for diversions that will supply a municipality located partly within the St. Lawrence River Basin and partly outside of the Basin.

Article 3 of the *Water Withdrawal and Protection Regulation* specifies the method for applying these calculations.

Article 7 of the same regulation stipulates that an applicant for a water withdrawal authorization under article 31.75 of the EQA must provide specific information describing the planned withdrawal, including the volumes to be withdrawn, consumed and discharged and their timing.

Reporting of water withdrawals

According to the *Regulation respecting the Declaration of Water Withdrawals* all those who withdraw 75,000 litres or more, save for some exceptions, must report the volumes withdrawn on an annual basis.

Furthermore, all those with equipment or facilities that have a rated capacity to withdraw 379,000 litres or more per day and are within the area covered by the Agreement must report annually the volumes of water withdrawn, consumed, or diverted outside of the Basin.

The annual report must be submitted to the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* by March 31 at the latest of the of the year following the calendar year covered by the reporting (article 9 of the aforementioned regulation).

d. Location (Statewide/Province-wide or Great Lakes-St. Lawrence River Basin); and

Authorization and reporting of water withdrawals

Withdrawers must provide information on the geolocation of all withdrawal sites.

e. Any specific exemptions as allowed in the Agreement and the Compact.

Article 31.75 (2) of the EQA specifies that a temporary, non-recurring withdrawal for emergency-response, humanitarian or civil protection purposes is exempt from the permitting process.

Also, article 6 of the *Water Withdrawal and Protection Regulation* lists other types of water withdrawals that are exempt from the permitting process.

3. Description of how the provisions of the Standard of Review and Decision are applied

a. Decision Making Standard for Withdrawals, Consumptive Uses

Article 31.95 of the EQA sets out conditions for permits that correspond with the Decision-Making Standard for Management of Withdrawals and Consumptive Uses. Thus:

1° all water withdrawn is to be returned to the Basin, with preference to the direct St. Lawrence River tributary stream watershed from which it was derived, if applicable, less an allowance for consumptive use;

2° the quantity of water withdrawn or consumed would result in no significant individual or cumulative adverse impacts on the quantity or quality of the waters of the Basin or on water-dependent natural resources in the Basin;

3° the withdrawal or consumptive use is subject to water conservation measures determined by regulation of the Government, or by the Minister under other provisions of this Act; and

4° the quantity of water withdrawn or consumed is reasonable having regard, among other things, to

- a) the water's intended use;*
- b) the measures implemented for the conservation and efficient use of water, including water from existing water supplies;*
- c) the balance between economic, social and environmental development;*
- d) the foreseeable impacts on the environment and on other uses, and the measures for avoidance or mitigation of such impacts; and*
- e) the supply potential of the water source and other interconnected water sources.*

b. Exception Standard for Diversions

Adopted in 2009 and amended in 2017, the *Act to Affirm the Collective Nature of Water Resources and to Promote Better Governance of Water and Associated Environments* (CQLR c. 6.2) (also called 'Water Act') introduces into Québec legislation (through the *Environment Quality Act*) the provisions of the Agreement to regulate water diversions outside the St. Lawrence River Basin. The exception criteria are consistent with those set forth in the Agreement. More precisely (article 31.90 of the EQA):

No water withdrawn from the St. Lawrence River Basin may be transferred out of the Basin, except as set out below and in section 31.91.

This prohibition does not apply to water withdrawals, from the outset made for purposes of transfer out of the Basin that were authorized before 1 September 2011 or, if not authorized, were lawfully commenced before that date. Unless it is increased under the conditions defined by sections 31.91 to 31.93, the quantity of water derived from such a withdrawal must not, however, exceed the quantity authorized at that date or, if there is no

Province of Québec

authorization or the authorization does not determine a maximum quantity, the capacity of the withdrawal system at that date.

Nor does this prohibition apply to water withdrawn

1° to be marketed for human consumption, if packaged within the Basin in containers of 20 litres or less;

2° to be used within the Basin in the manufacture, preservation or processing of products;

3° to supply vehicles, including vessels and aircraft, whether for the needs of persons or animals being transported or for ballast or other needs related to the operation of the vehicles; or

4° for humanitarian, civil protection or emergency-response purposes provided the withdrawal is temporary and non-recurrent.

EQA Article 31.91 of the EQA adds:

In addition to the conditions prescribed by sections 31.92 and 31.93 and those the Government or the Minister may prescribe under other provisions of this Act, a transfer out of the St. Lawrence River Basin resulting from a new withdrawal from the Basin, or an increased transfer out of the Basin resulting from such a withdrawal or a withdrawal existing on 1 September 2011, may be authorized under the following conditions:

1° all water transferred out of the Basin is intended to supply a waterworks system serving all or part of the population of a local municipality whose territory is either

a) partly within the Basin; or

b) both wholly outside the Basin and wholly within a regional county municipality whose territory is partly within the Basin; and

2° all water transferred out of the Basin is to be returned to the Basin, with preference to the direct St. Lawrence River tributary stream watershed from which it was withdrawn, if applicable, less an allowance for consumptive use. No water from outside the Basin may be added to complete the quantity of water returned to the Basin unless

a) it is part of a water supply or waste water treatment system that combines water from inside and outside the Basin;

b) it is treated to meet applicable water quality or discharge standards and to prevent the introduction of invasive species into the Basin; and

c) it maximizes the portion of water from within the Basin and minimizes the portion from outside the Basin.

For the purposes of this section, “new withdrawal” means any water withdrawal authorized after 1 September 2011.

The Minister shall publish in the Gazette officielle du Québec a list of the local municipalities and regional county municipalities whose territory is partly within the Basin for the purposes of subparagraphs a and b of subparagraph 1 of the first paragraph.

Article 31.92 of the EQA states:

If it involves an average of 379,000 litres or more per day, or a lesser quantity determined by regulation of the Government, that is intended to supply a waterworks system serving a municipality described in subparagraph a of subparagraph 1 of the first paragraph of

section 31.91, a transfer out of the St. Lawrence River Basin resulting from a new or increased water withdrawal described in that section may be authorized only if it meets the following conditions:

- 1° the transfer cannot be reasonably avoided or diminished through the conservation and efficient use of existing water supplies;*
- 2° the quantity of water to be transferred is reasonable having regard to the water's intended use;*
- 3° the transfer would result in no significant individual or cumulative adverse impacts on the quantity or quality of the waters and water-dependent natural resources of the Basin; and*
- 4° the transfer is subject to water conservation measures determined by regulation of the Government, or by the Minister under other provisions of this Act.*

If a transfer out of the Basin under the first paragraph would result in a consumptive use of an average of 19 million litres or more per day, it is also subject to review by the Great Lakes-St. Lawrence River Water Resources Regional Body established by the Agreement.

Article 31.93 of the EQA states:

A transfer out of the St. Lawrence River Basin resulting from a new or increased water withdrawal described in section 31.91 that is intended to supply a waterworks system serving a municipality described in subparagraph b of subparagraph 1 of the first paragraph of that section may be authorized only if it meets the conditions set out below and the conditions prescribed in subparagraphs 1 to 4 of the first paragraph of section 31.92:

- 1° there is no water supply alternative within the watershed in which the local municipality concerned is situated that is reasonably accessible and able to satisfy its drinking water needs;*
- 2° the quantity of water transferred will not endanger the integrity of the Basin ecosystem; and*
- 3° the transfer was reviewed by the Great Lakes-St. Lawrence River Water Resources Regional Body.*

Article 31.94 of the EQA adds:

If, under section 31.92 or 31.93, an application for authorization is subject to review by the Great Lakes-St. Lawrence River Water Resources Regional Body, the Minister must, after so informing the applicant,

- 1° notify the Regional Body and each of the parties to the Agreement;*
- 2° send the Regional Body the application record containing all the documents or information provided by the applicant as well as the Minister's opinion on the compliance of the application with the conditions prescribed by sections 31.91 to 31.93 and those set out in the Agreement; and*
- 3° at the request of the Regional Body or one of the parties to the Agreement, provide any additional document or information the Regional Board or the party may consider necessary for review of the application for authorization.*

The Minister must also inform the public that the application for authorization is subject to review by the Regional Body.

After reviewing the application for authorization as set out in the Agreement and its own rules of procedure, the Regional Body shall issue a declaration on the compliance of the application with the conditions set out in the Agreement. The declaration is sent to the Minister and made available to the public in the manner the Regional Body determines.

In making a decision with respect to the application for authorization, the Minister or the Government, as the case may be, shall take into account the Regional Body's declaration.

The *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* was adopted in 2011 and specifies the provisions with which withdrawers must comply to obtain an authorization to divert water outside of the St. Lawrence River Basin. Articles 3, 4 and 5 of this regulation specify the information and studies that must accompany an application.

Article 7 of the *Water Withdrawal and Protection Regulation* specifies the information and studies that must accompany an application for a water withdrawal permit. Furthermore, article 24 (3rd paragraph) of the EQA states that the Minister may require the applicant to provide additional studies or expert evaluation that the Minister considers necessary to make a decision.

4. Overview of Provincial reporting and database of Withdrawals, Consumptive Uses and Diversions

The *Regulation respecting the Declaration of Water Withdrawals* was adopted in 2009 and amended in 2011 to incorporate provisions in the Agreement. The purpose of the Regulation is to allow Québec to collect information on the volumes of water withdrawn and consumed in the St. Lawrence River Basin and on the volumes of water diverted out of the Basin. This information is used to help calculate the cumulative impacts of water withdrawals on surface water flows.

Article 9 of the Regulation lists the basic information to be provided by all those who withdraw an average daily volume of 75,000 litres or more of water per day, based on the monthly average, and report this annually.

Article 18.7 of the Regulation indicates that all those with equipment or facilities that have a rated capacity to withdraw 379,000 litres or more per day must provide supplementary information regarding water consumption and diversions out of the St. Lawrence River Basin. This information enables Québec to meet its commitments under Article 301 of the Agreement.

Québec employs the same definition of 'consumptive use' as the Agreement. The same definition is also used in the EQA (article 31.89): '*that portion of water withdrawn or impounded from the St. Lawrence River Basin that is lost or otherwise not returned to the Basin due to evaporation, incorporation into a product, or other processes.*'

Subparagraphs (1) and (2) of article 18.7 of the *Regulation respecting the Declaration of Water Withdrawals* specify the information that must be provided by all withdrawers regarding water diversions. It includes the volumes of water diverted out of the Basin (in litres) indicating for each withdrawal site the georeferenced data where the diverted water is used, and the volumes of water discharged or returned to the St. Lawrence River Basin (in

litres) with the georeferenced data of the facilities where the water is discharged or returned as the case may be.

In accordance with Article 207 of the Agreement, article 18.4 of the Regulation specifies the information that water users for the area of Québec covered by the Agreement had to provide by March 31, 2012 to establish a baseline for Québec. This baseline serves in setting the application thresholds for the water withdrawal permitting process.

All sectors concerned by the Agreement and Resolution No.13 of the Regional Body are covered by Title II of the Regulation, with the exception of run-of-river hydroelectric production. The latter is optional in Resolution No.13 of the Regional Body regarding the collection and transmission of data on water use.

All water withdrawals covered by the Regulation and carried out between January 1 and December 31 of any given year must be included in the annual declaration and submitted by March 31 of the year following the calendar year covered by the reporting.

Québec gave additional time to the agricultural and fish-farming sectors before they had to begin reporting withdrawals. Paragraph 5 of article 18.7 of the Regulation, that also refers to article 9, states that agricultural and fish-farming businesses located in the area covered by the Agreement must produce their first annual declaration by March 31, 2016 (for withdrawals in 2015).

Paragraph 2 of article 9 of the Regulation states that annual reports must be transmitted electronically. However, those without access to an Internet service may use a paper form.

Article 5 of the Regulation states that withdrawals must be calculated by direct measurement, using measuring equipment, in accordance with article 6 of the Regulation (article 6 refers to Chapter IV of the same regulation). However, a withdrawer who does not have measuring equipment may estimate the volumes of water withdrawn based on indirect or spot measurements. Such estimates of the volumes of water withdrawn must be performed in accordance with article 7, and must be certified by a professional (Regulation article 7, par. 3). Article 8 of the Regulation stipulates that a withdrawer who establishes a new, or alters an existing, facility must fit the site with measuring equipment as detailed in Chapter IV.

As for determining volumes of water consumed, in all sectors this may be done by either direct measurement or estimation. Direct measurement with measuring equipment must comply with the provisions applying to the calculation of volumes of water withdrawn (article 6 of the Regulation). Withdrawers in all sectors may estimate the volumes of water consumed. However, the estimate must be calculated by a professional (articles 18.7 par. 4 and 18.4 par. 3). This contrasts with estimated withdrawals, which need only to be certified by a professional. If the water is withdrawn to supply a public water system, the person making the declaration may indicate a consumptive use equal to 15% of the withdrawals, as stated in article 18.4 par. 3.

In article 2 par. 8 of the Regulation, the term “professional” is defined as a professional in line with the meaning of article 1 of the Professional Code of Québec whose professional order governs the exercise of a professional activity referred to in the Regulation.

Information on the methods of calculation and estimation approved by Québec is provided in the *Guide de soutien technique pour la clientèle* (a technical support guide available in French).

<http://www.environnement.gouv.qc.ca/eau/prelevements/Guide-soutien-clientele.pdf>

The regulatory provisions on determining the volumes of water withdrawn and consumed also apply to water diverted out of the St. Lawrence River Basin and water returned to the Basin.

The reporting information is collected in the province's water withdrawal management database (*Gestion des prélèvements d'eau - GPE*).

5. Québec's Provincial withdrawal application documents

Authorization of water withdrawals

Information and application forms for projects involving water withdrawals are provided online (in French), including a form specifically for water withdrawals located within the area covered by the Agreement (called 'Module B'):

<http://www.environnement.gouv.qc.ca/eau/prelevements/formulaires/demande-autorisation.htm>

Declaration of water withdrawals

Regulation respecting the Declaration of Water Withdrawals:

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014>

The electronic form is available online (in French) via the *Ministère de l'Environnement et de la Lutte contre les changements climatiques*'s website:

<http://www.environnement.gouv.qc.ca/eau/prelevements/enligne.htm>

The electronic form corresponds to the paper form.

A step-by-step guide (in French) explains the electronic form and how to enter the information online: <http://www.environnement.gouv.qc.ca/eau/prelevements/demarche-pasapas.pdf>

A support guide (in French) (*Guide de soutien technique pour la clientèle*) advises the withdrawer on how to measure water volumes:

<http://www.environnement.gouv.qc.ca/eau/prelevements/Guide-soutien-clientele.pdf>

A guide on how to follow the *Regulation respecting the Declaration of Water Withdrawals* specifically for the agricultural sector is available (in French):

<http://www.environnement.gouv.qc.ca/eau/prelevements/guide-applicationRDPE-entreprises-agricoles.pdf>

6. Summary description of the 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, and a description of Provincial initiatives or mechanisms to support an

improved understanding of individual or cumulative impacts of Withdrawals, Consumptive Uses and Diversions on the Basin ecosystem

Article 31.102 of the EQA reflects Article 209 of the Agreement. It states in part that:

The Minister must conduct an assessment of the cumulative impacts of water withdrawals and consumptive uses in the St. Lawrence River Basin on the Basin ecosystem, particularly on the waters and water-dependent natural resources of the Basin, in accordance with the requirements of the Agreement.

The assessment must evaluate the application of the prevention principle and the precautionary principle as well as the effects of past and reasonably foreseeable future withdrawals and consumptive uses, the effects of climate change and any other factor that may significantly damage the Basin's aquatic ecosystems.

The assessment prescribed by this section must be done every five years. It must also be done each time the incremental losses to the Great Lakes-St. Lawrence River Basin reach an average of 190 million litres per day in excess of the quantity at the time of the last assessment, or each time one or more of the parties to the Agreement so request.

In order to carry this out, in line with the Agreement's scientific goals, Québec is working with several provincial and Canadian partners to improve knowledge and develop tools that will help to assess the cumulative impacts of water withdrawals and water consumption at a variety of geographical scales.

- Québec is working with Ouranos, the province's consortium on regional climatology and adaptation to climate change, on water research projects, for example, research projects regarding hydrology, climate change and the Great Lakes:
https://www.researchgate.net/publication/276835847_Present_and_future_Laurentian_Great_Lakes_hydroclimatic_conditions_as_simulated_by_regional_climate_models_with_an_emphasis_on_Lake_Michigan-Huron
- Québec participates in activities led by the Water Management Committee of the Canadian Council of Ministers of the Environment, for example a study on environmental flow needs:
(https://www.ccme.ca/files/Resources/water/water_conservation/Environmental%20Flow%20Needs%20Approaches%20Successes%20and%20Challenges%20-%20Summary%20Report.pdf) and one on cumulative impacts (report yet to be published).
- Under the Government of Québec's 2013-2020 Climate Change Action Plan, a total of CAD1.8 million is being invested in a measure that specifically targets the assessment of cumulative impacts of water withdrawals and climate change. For information (in French): <http://www.environnement.gouv.qc.ca/cgfv/documents/fiches-suivi/environnement/30-3-3-cc-evaluation-prelevements-eau.pdf>
- The same action plan has also funded a project led by the *Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec* that looks at water conservation and management strategies for the agricultural sector. This project will be completed in 2020.

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- Québec is testing methods and tools that will assess the individual and cumulative repercussions of water withdrawals on flows and aquatic ecosystems. These will be used to analyse water withdrawal projects submitted to the permitting process.
- Québec is continuing with the funding of its groundwater knowledge acquisition program in order to complete the portrait of the groundwater resources with the aim of protecting them and ensuring their sustainability. For more information on this program (in French):
<http://www.environnement.gouv.qc.ca/eau/souterraines/programmes/acquisition-connaissance.htm>

7. Additional information

No additional information is presented.

Water Conservation and Efficiency Program

1. Status of Québec's Water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives

In 2011 the Government of Québec adopted the goals and objectives set out in the Québec Water Conservation and Efficiency Program. In formulating the Program's guiding principles, Québec drew upon the goals expressed in the first paragraph of article 304 of the Agreement. It then adapted the five regional objectives adopted on December 4, 2007 by the Regional Body to reflect provincial perspectives.

The goals and objectives of the Québec Water Conservation and Efficiency Program are presented in section 3.2 of the following document (in French), with more detail in Appendix B: <http://www.environnement.gouv.qc.ca/programmes/conservation-utilisation-efficace-eau/programme.pdf>.

In respect of article 304 (3) of the Agreement, Québec is currently participating in updating the objectives that were affirmed by the Regional Body in 2014 (Resolution #23). Following this update, Québec will revise its Water Conservation and Efficiency Program and take into account any changes to the objectives. The Program will also consider changes in technology and scientific advances.

2. Water Conservation and Efficiency Program Overview

a. Citations to Provincial Water Conservation and Efficiency Program implementing laws, regulations and policies

Article 304 of the Agreement concerning the implementation of a water conservation and efficiency program came legally into force in Québec with the inclusion of article 31.101 in the *Environment Quality Act* (EQA).
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

Article 22, paragraph 2 of the EQA says that: any withdrawal of water, including related work and works' [requiring a water withdrawal], must first obtain an authorization from the Minister. The *Water Withdrawal and Protection Regulation* details what information and documentation must accompany an application. Whether for a water withdrawal or diversion, all applications located in the area covered by the Agreement must include existing or planned water conservation and efficiency measures to reduce the water quantity required.

The first paragraph of article 31.76 of the EQA indicates that:

Any power of authorization under this Act with regard to a water withdrawal must be exercised so as to ensure the protection of water resources, particularly by fostering sustainable, equitable and efficient management of the resources in light of the precautionary principle and the effects of climate change.

This could include, for example, water conservation and efficiency measures.

Similarly, article 25 (and subsequently article 26) of the EQA enables:

On issuing an authorization, the Minister may prescribe any condition, restriction or prohibition the Minister deems advisable for protecting the quality of the environment and preventing adverse effects on the life, health, safety, welfare or comfort of human beings or on ecosystems, living species or property, (...).

Furthermore, article 31.80 (6) adds:

On deciding to issue, amend or renew a water withdrawal authorization, the Government or the Minister, as applicable, may prescribe, in addition to the conditions, restrictions and prohibitions prescribed under section 25, any condition, restriction or prohibition concerning

(6) measures to ensure the conservation and efficient use of the water withdrawn and to reduce the quantity of water consumed, lost or not returned to the environment after use, taking into account, among other things, the best economically feasible practices or economically available technologies and the particularities of the equipment, facilities and processes involved;

Article 31.92 of the EQA states:

If it involves an average of 379,000 litres or more per day, or a lesser quantity determined by regulation of the Government, that is intended to supply a waterworks system serving a municipality described in subparagraph a of subparagraph 1 of the first paragraph of section 31.91, a transfer out of the St. Lawrence River Basin resulting from a new or increased water withdrawal described in that section may be authorized only if it meets the following conditions:

(1) the transfer cannot be reasonably avoided or diminished through the conservation and efficient use of existing water supplies;

(2) the quantity of water to be transferred is reasonable having regard to the water's intended use;

(3) the transfer would result in no significant individual or cumulative adverse impacts on the quantity or quality of the waters and water-dependent natural resources of the Basin; and

(4) the transfer is subject to water conservation measures determined by regulation of the Government, or by the Minister under other provisions of this Act.

If a transfer out of the Basin under the first paragraph would result in a consumptive use of an average of 19 million litres or more per day, it is also subject to review by the Great Lakes-St. Lawrence River Water Resources Regional Body established by the Agreement.

Article 4 of the Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin enables the provisions of article 31.92 of the EQA. It states in part:

If the proposed water transfer involves an average quantity of water of 379,000 litres or more per day that is intended to supply a waterworks system serving a municipality (...) the application must (...) be accompanied by the following documents and information:

(1) a description of the measures for the preservation and efficient use of the water that the applicant undertakes to carry out, including timetables;

(2) a description of the follow-up indicators that will be used to monitor those measures for preservation and efficient use;

(3) a narrative description explaining why the water transfer is necessary. The description must also include an analysis of the efficiency of the current uses of water, including the application of preservation measures that are judicious in terms of environment protection and economically feasible with regard to existing water supplies so as to reduce as much as possible the volume of water to be transferred;

(4) a narrative description explaining why the quantities of water whose transfer is proposed are reasonable in relation to the proposed use. To that end, the application must also include a water use plan. The plan must include:

(...) (c) an evaluation of the savings resulting from an efficient use of water (...).

The Regulation may be consulted at the following address:

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%205.1>

Article 31.95 of the EQA states in part:

If it involves an average quantity or consumptive use of 379,000 litres or more per day (...) a new withdrawal from the Basin, an increase in a new withdrawal or an increase in a withdrawal existing (...) may be authorized only if it meets the conditions set out below (...):

(3) the withdrawal or consumptive use is subject to water conservation measures determined by regulation of the Government (...),

(4) the quantity of water withdrawn or consumed is reasonable having regard, among other things, to (...)

(b) the measures implemented for the conservation and efficient use of water, including water from existing water supplies (...).

Thus, the permitting process is a means of promoting the implementation of water conservation and efficiency measures. To that end, model measures specific to each sector of activity are currently being developed.

b. Summary description of the Province's Water Conservation and Efficiency Program including what elements are voluntary and mandatory

The Québec Water Conservation and Efficiency Program is described in the following document. See attachment C for a list of the Program's measures:

<http://www.environnement.gouv.qc.ca/programmes/conservation-utilisation-efficace-eau/programme-en.pdf>

Most of the measures are implemented on a voluntary basis by the *Ministère de l'Environnement et de la Lutte contre les changements climatiques*, the *Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec*, the *Ministère des Affaires municipales et de l'Habitation*, the *Ministère de l'Économie et de l'Innovation* and the *Ministère de l'Énergie et des Ressources naturelles*, for application throughout the territory of Québec. Laws and regulations are mandatory.

3. Description of how the Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures

The following table details the goals and objectives as set out in Resolution #6 (http://www.glsregionalbody.org/Docs/Resolutions/GLSLRWRRB_Resolution_6-Conservation-Efficiency.pdf) and how they are grouped in Québec's Water Conservation and Efficient Use Program.

OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
<p>➤ Guide programs toward long-term sustainable water use.</p>	<p>The first goal, <i>Foster long-term sustainable water use that takes ecosystem health and water needs into account</i>, directly concerns those government actions that can help make water withdrawals in Québec sustainable. The actions are grouped under three objectives: legal issues, reduced water use in various activity sectors, and ecosystem protection.</p>
<p>➤ Adopt and implement supply and demand management to promote efficient use and conservation of water resources.</p>	<p>The second goal, <i>Adopt and implement a supply and demand management approach that takes into account the expected impacts of climate change</i>, concerns the new clearance system for water withdrawals that now incorporates sound management principles. The goal has two objectives: determine how much water is withdrawn, consumed, and disposed of and learn more about how climate change affects supply and demand.</p>
<p>➤ Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.</p>	<p>The third goal, <i>Implement monitoring measures for the Water Conservation and Efficiency Program</i>, specifically identifies MELCC as Program coordinator and monitor. This goal has two objectives: develop a Program assessment process and make Program assessment a source of ongoing knowledge acquisition.</p>
<p>➤ Develop science, technology and research.</p>	<p>The fourth goal, <i>Promote scientific research, technological development, and knowledge acquisition</i>, concerns the development of knowledge on water conservation and efficiency. The three objectives under this goal are to strengthen research efforts, encourage partnerships, and foster the development of new technology.</p>
<p>➤ Develop education programs and information sharing for all water users.</p>	<p>The fifth goal, <i>Educate, inform, equip, and motivate water stakeholders and users</i>, groups together concrete means to guide, support, and empower water stakeholders and users in their approach to water conservation and efficiency. This goal involves four objectives: raising awareness of the value of water, sharing information, developing concrete tools, and recognizing efforts.</p>

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

Since the adoption and publication of Québec's Water Conservation and Efficiency Program in 2013, an annual review of each measure has been conducted by the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* (MELCC). As Program coordinator, the MELCC generates these annual reports in compliance with Article 304 of the Agreement, using a table format to report on the progress of each measure in relation to the initial objective and reporting target. The reports are available to the public (in French and English) at:

<http://www.glsregionalbody.org/Resolutions.aspx#ProgramReports>

The five-year program review being carried out in accordance with Article 300 of the Agreement coincides with Québec's five-year review of its own Water Conservation and Efficiency Program. All contributors from the MELCC and other provincial ministries involved have evaluated if their measure has been attained in relation to the overall target. Consequently, of the 54 measures the review shows that 42 have been attained and 9 have been partially attained. Table 1 below shows the results of a five-year evaluation of the program. NB: Some measures are present in more than one orientation. For more details, see the tables detailing each measure in Appendix 1.

Given that Québec's Water conservation and efficiency program has come to the end of its initial five years, it will be reviewed and renewed in line with the regional objectives that will be adopted by the Regional Body in December 2019.

**Table 1
Summary of attainment of measures for each orientation**

Goal 1: Foster long-term sustainable water use that takes ecosystems health and varied water uses into account			
Objective 1: Review existing laws and enact new legislation as needed			
Assessment Measures under Orientation # 1			
Measure	Attained	Partially attained	Not attained
13	9	4	0
Goal 2: Adopt and implement a supply and demand management approach that			
Objective 4: Accurately measure the amount of water withdrawn, consumed, and			
Assessment Measures under Orientation # 2			
Measure	Attained	Partially attained	Not attained
9	7	2	0
Goal 3: Set up monitoring measures for the Water Conservation and Efficiency Program			
Objective 6: Develop and implement a process to evaluate whether the objectives are being met			
Assessment Measures under Orientation # 3			
Measure	Attained	Partially attained	Not attained
8	5	0	3
Goal 4: Promote scientific research, technological development and knowledge			
Objective 8: Strengthen research efforts on water conservation and efficiency			
Assessment Measures under Orientation # 4			
Measure	Attained	Partially attained	Not attained
12	9	3	0
Goal 5: Develop education programs, information sharing networks, resources, and tools to mobilize all water stakeholder and users			
Objective 11: Make water stakeholders and users more aware of the value of water			
Assessment Measures under Orientation # 5			
Measure	Attained	Partially attained	Not attained
12	12	0	0

Appendix 1. Description of how the State or Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures

Goal 1: Foster long-term sustainable water use that takes ecosystems health and varied water uses into account

Objective 1: Review existing laws and enact new legislation as required

No.	Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
Target 1.1: Include the provisions of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement in Québec legislation						
1	Entry into force of the Act to Affirm the Collective Nature of Water Resources and to Promote Better Governance of Water and Associated Environments (Water Act)	MELCC	Adopted on June 11, 2009; fully enforced on August 14, 2014 and modified and adopted in 2017	The Act includes the provisions of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement in the Environment Quality Act (sections 31.88 to 31.104) and introduces section 31.101 which details the water conservation and efficiency program. The adoption of the Act respecting Compensation Measures for the Carrying out of Projects Affecting Wetlands or Bodies of Water led to changes in the Water Act, notably recognising the ecological functions of wetlands and water bodies, detailing the role of watershed groups and regional round tables and entrusting the production and the implementation of regional plans for wetlands and water bodies to regional municipal counties and municipalities for their respective regions.	Include the requirements of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement in Québec legislation with the implementation of all the provisions of the Water Act. (Adopted in 2009, only the subdivision concerning the "management of water resources" remained to be implemented.)	Five-year objective attained since 2014. All requirements of the Agreement are included in Québec legislation following the coming into force of all provisions of the Act to Affirm the Collective Nature of Water Resources and to Promote Better Governance of Water and Associated Environments. The Water Act articles linked to the Agreement have then been included in the Environment Quality Act, Division V, articles 31.74 to 31.108. Article 31.101 indicate that the minister can implement water conservation and efficiency programs that are based on the objectives agreed on by the Great-Lakes - St. Lawrence River Water Resources Regional Body. The adoption and enforcement in 2014 of the Water Withdrawal and Protection Regulation enabled the full implementation of the sub-section concerning "Water Resource Management". Québec has proceeded with the implementation of three regulations: Regulation respecting the Framework for Authorization of Certain Projects to Transfer Water out of the St. Lawrence River Basin, Regulation respecting the Declaration of Water Withdrawals and Water Withdrawal and Protection Regulation. The Act can be consulted (in English) at http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/C-6.2
Target 1.2: Enact the regulations required to control water withdrawals						
2	Entry into force of the Regulation respecting the Declaration of Water Withdrawals (RDWW)	MELCC	Adopted on August 12, 2009, implemented on September 10, 2009. Amended on June 22, 2011 and implemented on September 1, 2011	<i>Also meets objective 4.</i> The entry into force of this regulation provides a framework for water withdrawals by enabling us to know the volumes of water withdrawn and consumed in Québec. The regulation concerns withdrawals of 75,000 litres or more per day, with exceptions. This information will provide knowledge about water uses that will serve in determining the potential impact of new or increased withdrawals and the need for water conservation and efficiency.	Implementation of all provisions of the Regulation respecting the Declaration of Water Withdrawals to give a framework to water withdrawals. (The regulation entered fully into force in 2011.)	Five-year objective attained in 2011. The Regulation respecting the Declaration of Water Withdrawals was adopted in 2009 and amended in 2011. Furthermore, tools have been developed to enable the declaration of water withdrawals. Since 2015, the agriculture and fish production sectors are obligated to declare their water withdrawals. All provisions of the Regulation respecting the declaration of water withdrawals have been implemented. The Regulation can be consulted (in English) at http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014
3	Entry into force of the Regulation respecting the Framework for Authorization of Certain Projects to Transfer Water out of the St. Lawrence River Basin	MELCC	Adopted on June 22, 2011 and implemented on September 1, 2011	The entry into force of this regulation provides a framework for certain cases that are exempt from the prohibition against water transfers in order to supply municipal water systems. Section 3 of the regulation indicates that an application for authorization must be filed with the MELCC for any new or increased transfer of water out of the St. Lawrence River Basin. For a transfer to be authorized, the withdrawer must implement water conservation and efficiency measures.	Implementation of all provisions of the Regulation respecting the Framework for Authorization of Certain Projects to Transfer Water out of the St. Lawrence River Basin. (The regulation entered fully into force in 2011.)	Five-year objective attained in 2011. Articles 31.105 to 31.108 of the Environmental Quality Act detail how certain water transfers can be exempt from the ban on water transfers outside of Québec. With the application of article 31.108 of the Environmental Quality Act, the ministry responsible submitted a second report on the prohibition of water transfers outside of Québec in 2017. All provisions of the Regulation respecting the Framework for Authorization of Certain Projects to Transfer Water out of the St. Lawrence River Basin have been implemented. The Regulation can be consulted (in English) at http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%205.1 , the report can be consulted (in French) at http://www.environnement.gouv.qc.ca/eau/protection/rapport-transferts-eau-hors-qc.pdf
4	Entry into force of the Water Withdrawal and Protection Regulation (WWPR)	MELCC	Adopted on July 17, 2014 and implemented on August 14, 2014	<i>Also meets objective 12.</i> The entry into force of this regulation provides a framework for water withdrawals. It sets terms and conditions for the authorization of water withdrawals, and administrative and penal provisions to ensure that it is respected. To be authorized, withdrawals of 379,000 litres or more per day that are subject to section 31.95 of the Environment Quality Act must respect certain conditions, notably the putting in place of water conservation and efficiency measures. Authorization of withdrawals of 75,000 to 379,000 litres per day could be conditional on the implementation of water conservation and efficiency measures consistent with the vulnerability of the environment.	Entry into force of the Water Withdrawal and Protection Regulation (WWPR). (The WWPR came into force on August 14, 2014, except for sections 11 to 30, which enter into force on March 2, 2015, and sections 68 and 75, which enter into force on April 1, 2015.)	Five-year objective attained in 2015. All of Division V "Water Resource Protection and Management" of the Environmental Quality Act that offers a framework for water withdrawals in Québec. Furthermore, tools have been developed to enable the implementation of the WWPR. All provisions of the Water Withdrawal and Protection Regulation have been implemented. The Regulation can be consulted (in English) at http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2035.2

Objective 2: Promote reduced water use in all sectors

No.	Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
Target 2.1: Set up policy frameworks to promote reduced water use in institutional and municipal sectors						
6	Québec Strategy for Drinking Water Conservation (SEEP)	MAMH	Adopted April 1, 2012. Applied in all municipalities in Québec.	This strategy requires municipalities to establish an action plan to reduce the consumption of drinking water; to put in place, if necessary, a leak detection and repair program; to adopt a municipal by-law on the use of drinking water; and to produce an annual report on water management. This MAMH measure will lead to reduced water use in all sectors of activity that obtain water from municipal systems.	Support Québec municipalities that have drinking water distribution systems with their water economy efforts.	<p>The five-year objective has been attained each year.</p> <p>According to the 2016 status report, 612 municipalities have submitted their drinking water use form. This represents 77% of municipalities that have a drinking water distribution system and 95% of the population served by a drinking water distribution system in Québec. The quantity of water distributed per capita per day went from 777 litres in 2001 to 551 litres in 2016, which is a reduction of 29% overall, or about 2% per year.</p> <p>All municipalities that have a drinking water distribution system participate in the strategy. This implies:</p> <ul style="list-style-type: none"> - completing water reports to evaluate performance indicators - implementing an action plan on economising water - implementing a research program and repairing leakages if the indicators for water loss are not met - adopting and applying a municipal regulation for drinking water use - measuring and recording data and verifying measuring equipment <p>The strategy can be consulted (in French) at https://www.MAMH.gouv.qc.ca/infrastructures/strategie/a-propos-de-la-strategie/</p>
7	Amendment of the Québec Construction Code (Plumbing and Building chapters) prohibiting the sale or installation of water-wasteful equipment (part of the drinking water economy strategy [SEEP])	MAMH/ Régie du bâtiment du Québec (RBQ)	Ongoing	For the clientele concerned, the construction code will prohibit the installation of toilets that use more than 6 litres/flush, urinals that use more than 1.9 litre/flush, and automatic flush urinals, along with cooling and air conditioning systems that use non-recirculating drinking water. This measure will reduce the use of drinking water in the residential and institutional sectors.	Through amendments to the construction code, prohibit the installation of toilets that use more than 6 litres/flush, urinals that use more than 1.9 litre/flush, and automatic flush urinals, along with cooling and air conditioning systems that use non-recirculating drinking water.	<p>Five-year objective was attained in 2015.</p> <p>The Construction Code was amended in 2014 and 2015 to prohibit the installation of water consuming equipment (toilets that use more than 6 litres/flush, urinals that use more than 1.9 litre/flush, and automatic flush urinals, along with cooling and air conditioning systems that use non-recirculating drinking water).</p> <p>The Construction Code can be consulted (in English) at http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/B-1.1.%20r.%202</p> <p>A new objective for the next revision of the Construction Code will be to prohibit the installation of household toilets that use more than 4.8 litres/flush, shower heads that use more than 7.6l/min and sink faucets that use more than 5.7 litres/minute.</p>
44	Québec Water Strategy 2018-2030	MELCC	Launched in 2018	The Québec Water Strategy 2018-2030 (in development) should include an objective for sustainable water quantity management. The Strategy will take the form of five-year action plans including measures to promote a reduction in water use in all sectors of activity.	With the adoption of a Québec Water Strategy and five-year action plans, put in place an action framework to promote a reduction in water use in all sectors of activity.	<p>Five-year objective partially attained.</p> <p>The Québec Water Strategy was launched in June 2018. The reduction and efficient use of water is part of Priority 5 (Promote sustainable water use) for which one of the objectives is to encourage the development and adoption of sustainable water use and conservation practices with the target to reduce water consumption in Québec by 20% by 2025. The action plan was announced in conjunction with the strategy in 2018. The action plan prompting a reduction of water use across all sectors of activity has not been developed, however there are three measures related to water conservation and efficiency: 5.1.2 Adopt the next phase of the Québec Strategy for Drinking Water Conservation for 2018 to 2025 (residential water use); 5.1.3 Support the use of innovative technologies and techniques to improve businesses' environmental performance (agricultural sector); 5.1.4 Raise public awareness about the protection and sustainable use of water (Water month - public awareness over 2 years by Réseau environnement and the ROBVO).</p> <p>The Strategy and the first Action Plan can be consulted (in English) at http://www.environnement.gouv.qc.ca/eau/strategie-quebecoise/index-en.asp</p>
8	Continue the implementation of drinking water economy policies in government buildings and those of the health, social services and education systems	MAMH/ SIQ/MSSS/ MELS/ MELCC/ MESRST	Ongoing	This measure enables the adoption of action plans and the implementation of targeted corrective measures in government buildings to reduce drinking water use in the institutional sector.	Adoption of action plans and implementation of targeted corrective measures in government buildings to reduce the use of drinking water in the institutional sector.	<p>Five-year objective was partially attained in 2016.</p> <p>An action plan was adopted by the health and social services network and by cégeps and universities in 2014 and by school boards in 2016.</p> <p>The results of the implementation of drinking water economy policies in the health and social services network, school boards, colleges and universities as well as for the <i>Société québécoise des infrastructures</i> are available on the Québec Strategy for Drinking Water Conservation website.</p>

No.	Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
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Target 2.2: Put in place economic incentives that encourage water users to reduce the volume of their water withdrawals

9	Entry into force of the Regulation respecting the Charges Payable for the Use of Water	MELCC	Adopted on December 1, 2010 and implemented on January 1, 2011	<p><i>Also meets objective 2.</i> By obligating those who withdraw 75,000 litres or more per day to pay a charge based on their use, the regulation will educate them about the economic value of water and encourage its wise use.</p> <p><i>Also meets objective 11.</i> This regulation obliges all water withdrawers of 75,000 litres or more per day to pay a charge (articles 1 to 15) based on the volume of water withdrawn. It is an economic incentive that promotes a reduction in water use in all sectors of activity.</p>	<p>Put in place economic incentives to encourage water users to reduce the volume of their water withdrawals.</p> <p>The objective for the next 5 years is to monitor annual variations in the volumes of water withdrawn by withdrawers who have paid water use charges.</p>	<p>Five-year objective attained in 2011. The Regulation respecting the Charges Payable for the Use of Water came into force in 2011. The agricultural, municipal, commercial and institutional sectors are not subjected to the regulation. A report on the implementation of the regulation between 2011 and 2015 was published in 2017. The water withdrawal data from the past five years does not confirm if the introduction of water charges has led to a decrease in water withdrawals or consumption. Nevertheless, the figures below show a variation in water withdrawals sometimes leading to a decrease, sometimes an increase. However, overall water withdrawal volumes have decreased by 0.5% on average since 2013.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Volume/M³</th> <th>Charge \$/M³</th> <th>No. activities</th> </tr> </thead> <tbody> <tr> <td>2018</td> <td>840,121,749.70</td> <td>2,995,471.06</td> <td>616</td> </tr> <tr> <td>2017</td> <td>844,059,287.54</td> <td>3,061,580.14</td> <td>676</td> </tr> <tr> <td>2016</td> <td>837,100,041.29</td> <td>3,056,936.85</td> <td>681</td> </tr> <tr> <td>2015</td> <td>826,822,779.99</td> <td>3,085,476.35</td> <td>678</td> </tr> <tr> <td>2014</td> <td>860,086,191.23</td> <td>3,063,123.44</td> <td>678</td> </tr> <tr> <td>2013</td> <td>876,892,964.11</td> <td>3,132,852.86</td> <td>682</td> </tr> </tbody> </table> <p>Data from April 2019.</p> <p>The report on the implementation of the Regulation respecting the Charges Payable for the Use of Water is available (in French) at the following address: http://www.environnement.gouv.qc.ca/eau/redevance/rapport2017-RREUE.pdf</p> <p>The Regulation respecting the Charges Payable for the Use of Water is available (in English) at the following address : http://legisquebec.gouv.qc.ca/en/pdf/cr/Q-2,%20R.%2042.1.pdf</p>	Year	Volume/M ³	Charge \$/M ³	No. activities	2018	840,121,749.70	2,995,471.06	616	2017	844,059,287.54	3,061,580.14	676	2016	837,100,041.29	3,056,936.85	681	2015	826,822,779.99	3,085,476.35	678	2014	860,086,191.23	3,063,123.44	678	2013	876,892,964.11	3,132,852.86	682
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Target 2.3: Determine effective water conservation and efficiency measures applicable to every sector within the withdrawal authorization system

10	Development of water conservation and efficiency measures applicable to each sector of activity within the framework for the authorization of new or increased water withdrawals	MELCC	Ongoing	<p>This measure is part of the new authorization regime for water withdrawals planned in the draft Water Withdrawal and Protection Regulation. For new or increased withdrawals, water withdrawers of 75 000 litres or more per day must demonstrate the acceptability of their application and, among other things, may propose water conservation and efficiency measures to reduce their withdrawals. Also, withdrawers of 379 000 litres or more per day who are subject to sec. 31.95 of the Environment Quality Act must implement water conservation and efficiency measures in order to apply for authorization. Production of a reference list of suggested water conservation and efficiency measures adapted to each sector will facilitate the adoption of such measures by those concerned.</p>	<p>Existence of a reference document on water conservation and efficiency measures appropriate for each sector of activity, containing current knowledge and available to promoters and analysts.</p>	<p>Five-year objective partially attained.</p> <p>The document presenting measures for each sector has been approved by technical experts from each sector and will subsequently be made available to regional analysts and promoters. The compilation of measures adopted in the permitting process is in progress.</p>
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Objective 3: Promote efforts to maintain adequate water quantity and quality to ensure ecosystem integrity

Target 3.1: Develop and apply methods to take into account the cumulative impacts of withdrawals on the carrying capacity of ecosystems and the vulnerability of drinking water withdrawals

No.	Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
11	Evaluation of cumulative impacts when analyzing applications for water withdrawal, consumption and transfer.	MELCC	Ongoing	<p><i>Also meets objective 5.</i></p> <p>The method developed for analyzing the cumulative impacts of water withdrawals makes it possible to ensure that sufficient quantities of water are available to maintain the integrity of ecosystems. Under the new authorization regime in the draft Water Withdrawal and Protection Regulation, withdrawers must implement water conservation and efficiency measures that are consistent with the potential impact of their withdrawals on the integrity of ecosystems.</p>	Establish a process/methodology to account for the cumulative impacts of withdrawals within the MELCC's permitting process.	<p>Five-year objective partially attained, as the method is now under validation.</p> <p>Tools to enable the calculation of cumulative impacts from water withdrawals are also being validated.</p>

Target 3.2: Adapt water quantity management to take into account the carrying capacity of ecosystems

12	Adaptation of the management of public dams	MELCC	Ongoing	The management plans of facilities managed by the Centre d'expertise hydrique du Québec (CEHQ) contain operating parameters that take into account high- and low-flows. Where necessary, management plans are adapted to respect the carrying capacity of ecosystems.	Provide ongoing ecosystem management of government-owned dams, to optimize the carrying capacity of ecosystems during high- and low-flows.	Five-year objective attained annually.
13	Ottawa River Regulation Planning Board (ORRPB)	MELCC	Underway	<p>The Board consists of representatives from Canada, Ontario and Québec and provides integrated management of the main reservoirs of the Ottawa River watershed. It attempts to prevent flooding along the Ottawa River and its tributaries as well as in the Montréal region, taking into account the interests of different users.</p> <p>The reservoirs provide supplementary water in low-flow periods, helping to maintain the integrity of ecosystems. The Board sets common objectives to optimize integrated management in low-flow periods.</p>	<p>In high-flow periods, continuous ecosystem management of dams in accordance with the ORRPB Agreement to optimize the carrying capacity of ecosystems.</p> <p>In low-flow periods, continuous ecosystem management of dams in accordance with the ORRPB Agreement to optimize the carrying capacity of ecosystems.</p>	Five-year objective attained annually.

Appendix 1. Description of how the State or Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures

Goal 2: Adopt and implement a supply and demand management approach that takes into account the expected impact of climate change

Objective 4: Accurately measure the amount of water withdrawn, consumed, and disposed of in Quebec

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
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Target 4.1: Establish a water withdrawal management system

14	Launch of the Québec water withdrawal management database (GPE)	MELCC	March 2010	The system provides a way to collect, in a database, all of the information on water withdrawals obtained under the Regulation respecting the declaration of water withdrawals and the Regulation respecting the charges payable for the use of water. This data gives a portrait of the quantities of water withdrawn in Québec (volumes of 75,000 litres or more per day), presented in a structured way thanks to the GPE system.	By March 2009, to have developed and put online a water withdrawal management system for the purposes of the Regulation respecting the declaration of water withdrawals.	Five-year objective attained. The water withdrawal management system was made available online and is 100% operational. It collects data on Québec's water withdrawals.
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Target 4.2: Develop and strengthen knowledge on withdrawn water quantities for all activity sectors

15	MAPAQ-MELCC administrative agreement on the declaration of water withdrawals for agricultural and fish-farming purposes	MAPAQ/ MELCC	December 7, 2011; terminates on Sept. 30, 2016 with tacit renewal	This agreement facilitates the declaration of water withdrawals by agricultural and fish-farming producers. It provides for the set up of a project to monitor water withdrawals by typical fish-farming businesses. This information will serve in establishing standards to facilitate the annual declaration of withdrawals by such businesses under the Regulation respecting the declaration of water withdrawals (adopted June 22, 2011). This measure contributes to improving knowledge about the volumes of water withdrawn and consumed in agriculture and fish-farming.	By March, 31 annually MAPAQ sends to MELCC data for all of Québec concerning water withdrawals by the agricultural and fish farming sectors. The data must be presented monthly, by administrative region, by watershed, by SCIAN code and detail if it is ground or surface water. A guide about the application of the Regulation respecting the declaration of water withdrawals will be made available on line for the agricultural and fish farming sector by 1 January 2015.	Five-year objective attained. Every year MAPAQ sends data on agricultural and fish-farming water withdrawals for all of Québec. The administrative agreement has not been renewed as, since 2016, water withdrawals have been declared by agricultural and fish-farming producers within the territory of the Great Lakes - St. Lawrence River Basin Sustainable Water Resources Agreement when their withdrawal capacity reaches or exceeds 379,000 litres per day. A guide, explaining the regulation for the agricultural and fish-farming sectors was developed in 2014 and published in 2015. It can be consulted (in French only) at this address: http://www.environnement.gouv.qc.ca/eau/prelevements/guide-applicationRDPE-entreprises-agricoles.pdf
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Object	Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
2	Entry into force of the Regulation respecting the Declaration of Water Withdrawals (RDWW)	MELCC	Adopted on August 12, 2009, implemented on September 10, 2009 and amended on June 22, 2011	<p><i>Also meets objective 1.</i></p> <p>Section 9 of the Regulation obliges those who withdraw 75,000 litres or more per day, across Québec, to declare their water withdrawals. For those within the territory of the Great Lakes St-Lawrence River Basin Sustainable Water Resources Agreement, and who withdraw 379,000 litres or more per day, article 18.7 makes it mandatory to declare the volumes withdrawn, consumed and transferred out of the St. Lawrence River Basin. This measure will increase knowledge about the quantities of water withdrawn in each sector of activity across Québec.</p>	<p>By March 31 annually, receive, for all of Québec, a declaration of annual water withdrawal by those withdrawing 75,000 litres or more per day.</p> <p>By March 31 annually, receive, for the territory covered by the Great Lakes Agreement, a declaration of annual water withdrawal by those with the capacity to withdraw 379,000 litres or more per day.</p> <p>Annually ensure the quality of data.</p>	<p>Five-year objective attained.</p> <p>All the sections of the Regulation respecting the Declaration of Water Withdrawals are in operation.</p> <p>Data is received annually for withdrawals on more than 75,000 litres/day and more than 379,000 litres/day.</p> <p>The MELCC carries out quality assurance/quality control for Québec's water use data every year.</p> <p>The regulation can be consulted (in English) at the following address: http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014</p>

Objective 5: Take into account the impact of climate change on water supply and demand

Target 5.1: Develop and strengthen knowledge on groundwater supply

16	Knowledge acquisition program on groundwater (PACES)	MELCC	First official announcements of funding in spring 2009 and renewed in 2017	The knowledge acquisition program was designed to obtain knowledge about the volume and recharging of groundwater aquifers. The measure increases knowledge about groundwater supply.	Over the next 5 years, pursue the knowledge acquisition program on groundwater (PACES) for southern Québec	<p>Five-year objective attained.</p> <p>The initial groundwater knowledge acquisition program ended in 2015. In March 2018 the MELCC funded a second program (2018-2022) that will extend the coverage of the groundwater knowledge acquisition projects. Therefore, by March 31, 2022 nearly all of Québec's populated areas will be covered.</p>
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Target 5.2: Develop and strengthen knowledge on the effects of climate change on surface water supply

17	Production of the Hydroclimatic Atlas of Southern Québec : 2050 projections	MELCC	March 2013	The atlas illustrates the impacts of climate change on the water regime of tributaries of the St. Lawrence River projected to 2050. It also suggests how the surface water supply will evolve in response to climate change, which can be used to determine the need for water conservation and efficiency measures in vulnerable watersheds.	By 2020, produce a series of hydroclimatic atlases (3) with iterative improvements on the content and underlying methodology.	<p>Five-year objective attained.</p> <p>100% of actions for the 2018 web Atlas have been completed. 100% of actions for the first version of a summary document (entitled Accompanying Document) have been completed. As well as covering projections for 2050, the 2018 Atlas includes projections for 2030 and 2080.</p> <p>20% of actions to update the Atlas in 2020 have been completed. NB: Prior to the 2018 version the Atlas was produced in 2013 and 2015.</p> <p>It can be consulted (in English) at the following address: https://www.cehq.gouv.qc.ca/atlas-hydroclimatique/CrucesPrintanieres/Q1max2P-en.htm</p>
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Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective	
18	Implementation of the St. Lawrence Action Plan (SLAP) 2011-2026	MELCC/ECCC	November 29, 2011	<p><i>Also meets objectives 9 and 12.</i></p> <p>Project 7.2.1, an issue under perennial water use entitled "A study of the impacts of climate change on water inflows" will development knowledge about the effects of climate change on the water supply.</p> <p>The work of the Climate Change Coordination Committee (project 7.2.3) will provide an overall portrait of the issues surrounding the impact of climate change on the St. Lawrence, and of needs for knowledge development about impacts and adaptation needs. Climate change adaptation could include putting in place water conservation and efficiency measures.</p> <p>The Numerical Environmental Prediction Program of the SLAP 2011-2026 provides a better understanding of the ecosystem of the St. Lawrence, notably with regard to water levels and flows. It serves in assessing the impact of climate change on water resources and determining the need for water conservation and efficiency measures in vulnerable watersheds.</p>	<p>In the next 5 years, implement the activities in SLAP that concern more specifically the impacts of climate change on water supply and demand:</p> <ul style="list-style-type: none"> - By 2016, complete project 7.2.1 "Study the impacts of climate change on water inflows". - By 2016, complete project 7.2.3 "Set up a Climate Change Coordination Committee". <p>For the next 5 years, continue the work of the Numerical Environmental Prediction Working Group.</p> <p>In the program of activities for 2016-2021, develop projects on the impact of climate change on water supply and demand.</p>	<p>Five-year objective partially attained.</p> <p>Project 7.2.1 is underway with the numerical environmental prediction working group (GTPNE). The results are not yet available. The working group continues with its projects.</p> <p>Project 7.2.3: the CCCC was created and held a series of webcasts about climate change. No new project has been developed for the 2016-21 period.</p>

Target 5.3: Set up a climate change policy framework that takes into account water resources

19	Implementation of the 2013–2020 Government Strategy for Climate Change Adaptation	MELCC	April 2013	<p>The Government Strategy for Climate Change Adaptation is aimed at strengthening society's resilience to the impacts of climate change. It accords great importance to water resources. The sixteenth objective of the Strategy is to prioritize the conservation and protection of water resources, with a view toward conserving biodiversity and the benefits offered by ecosystems in a changing climate. Climate change adaptation and the protection of water resources can include the adoption of water conservation and efficiency measures.</p>	<p>Implementation of the climate change adaptation strategy that includes an objective regarding water conservation.</p>	<p>Five-year objective attained.</p> <p>The Climate Change Adaptation Strategy was launched in 2012, for 2013-2020, and includes an objective on water conservation.</p> <p>The Strategy can be consulted (in English) at the following address: http://www.environnement.gouv.qc.ca/changements/plan_action/stat-egie-adaptation2013-2020-en.pdf</p>
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Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective	
20	Support for research projects by the Ouranos consortium on climate change and water conservation and efficiency, as part of the implementation of the 2013-2020 action plan (PACC 2013-2020) on climate change.	MELCC	April 2013	Priority 6 of PACC 2013-2020 is to support research in climate change adaptation. This includes funding research by the Ouranos consortium to improve knowledge about water resources. This in turn will increase knowledge about the relationship between climate change and water conservation and efficiency, and will aid in developing adaptation solutions.	Increase knowledge about the impact of climate change on water conservation and efficiency , and on adaptation solutions, as part of PACC 2013-2020.	Five-year objective attained. 13 of Ouranos' research projects are linked to conservation and efficient use of water and climate change. A description of projects and final reports can be consulted (in English) at the following address: https://www.ouranos.ca/en/program/water-management/

Target 5.4: Develop and apply a method to take into account cumulative impacts (including climate change impacts) on water resources

11	Evaluation of cumulative impacts when analyzing applications for withdrawals, consumption and transfers of water	MELCC	Ongoing	<p><i>Also meets objective 3.</i></p> <p>The impact of climate change on the water regime (hydrologic indicators) is taken into account in the evaluation of cumulative impacts on sensitive components of the basin (ecosystems and uses). This measure takes into account the impact of climate change on the vulnerability of watersheds, and will aid in planning water conservation and efficiency measures to reduce that vulnerability.</p>	Establish a process/methodology that takes into account the cumulative impacts of withdrawals, to form part of the MELCC's authorization process.	Five-year objective partially attained. The methodology that will take into account the cumulative impacts of water withdrawals is still being validated.
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Appendix 1. Description of how the State or Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures

Goal 3: Set up monitoring measures for the Water Conservation and Efficiency Program

Objective 6: Develop and implement a process to evaluate whether the objectives are being met

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective	
Target 6.1: Determine and apply the annual assessment process and the five-year review of the Program						
E1	Determine five-year targets for each objective of the program	MELCC	Program tabled in Sept. 2013	To enable the evaluation of the progress of each objective of the program, it is necessary to determine the different aspects of each objective which is determined within five-year targets. The first targets were established on the basis of measures contained in the inventory when the first version of the program was tabled.	Define five-year targets for each objective to facilitate monitoring and the five-year evaluation of the program.	Five-year objective attained since 2014. Québec defined the five-year targets for its Water Conservation and Efficiency Program based on regional targets. Furthermore, all targets are regrouped in five orientations and evaluated on an annual basis so as to measure the degree to which the five-year objectives have been attained.
E2	Determine indicators for each measure of the program	MELCC	Program tabled in Sept. 2013	In working with those responsible in different ministries for each measure, it is necessary to determine annual measurable targets as indicators.	During the first year of the program, define five-year objectives and annual indicators to monitor for each measure, with the help of those responsible for the measure.	Five-year objective attained since 2014. In collaboration with those responsible for the program measures, annual indicators have been set for each one.

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective	
E3	Carry out annual monitoring of each measure of the program	MELCC	Ongoing	Annually, the MELCC must monitor measure indicators as defined, in collaboration with the ministries concerned. This annual evaluation must be made public.	Annually, monitor the indicators in collaboration with those responsible for each measure in the ministries concerned. Prepare the annual report of the program and send it to the Regional Body. The latter will publish the report.	Five-year objective attained. The indicators have been completed each year.
E4	Carry out a five-year evaluation of targets	MELCC	Ongoing	Every five years, the MELCC must carry out an assessment of the conservation program. This implies evaluating the achievement of objectives relative to progress within the five-year targets.	Carry out an evaluation of the five-year objectives and targets in 2018. Write 5-year review and send to Regional Body, who publish it on their website.	Five-year objective attained. This measure has been evaluated in 2019, given that the program ended on 31 December, 2018. The objectives and five-year targets for each measure have been evaluated. Québec participates in meetings organised by the Regional Body regarding the 5-year review.
E5	Identify new measures being developed and integrate them into the program	MELCC	Ongoing	During annual monitoring, new measures being developed in each ministry concerned will be identified in order to add them to the program.	In 2018, following the five-year evaluation (E4) and after having determined any new measures (E6), add new five-year targets to the program.	Five-year objective not attained. The new Water Conservation and Efficiency Program must take into account the objectives as they are defined by the Regional Body. However, the revision of the regional objectives has not yet been completed. Québec is a member of the working group charged with revising the regional objectives.

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
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Target 6.2: Use acquired knowledge to adapt the Water Conservation and Efficiency Program

E6	Determine if there are any new measures that are being developed	MELCC	Underway	Enable the continual update of the program.	Check, on an annual basis, if any new measures are being developed by the ministries implicated in the program.	Five-year objective attained. Each year a check was automatically made to see if any new measures should be added.
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Objective 7: Make monitoring a source of new knowledge and know-how for Agreement signatories and all other water stakeholders and users

Target 7.1: Disseminate the results of the annual assessment and the five-year review of the Water Conservation and Efficiency Program

E7	Publish results from the annual monitoring of measures on the water knowledge portal	MELCC	Annually	Annually, the MELCC must monitor the progress of measures and make its report public. This will be done using the water knowledge portal.	Once the water knowledge portal is online and accessible (measure 38), publish results from the annual monitoring of measures.	Five-year objective not attained. The Water Knowledge portal is online since August 2018. However, it has been decided to use the Regional Body's website to publish the annual monitoring results.
E8	Submit the five-year evaluation report to the Regional Council and publish it on the water knowledge portal	MELCC	Every five years as of 2013 (2018)	Every five years, the MELCC must evaluate the achievement of program objectives. The report must be submitted to the Regional Council and made public via publication on the water knowledge portal.	In 2018, send the five-year evaluation report to the Regional Council and publish it on the water knowledge portal.	Five-year objective not attained. The five-year evaluation report for Québec's conservation measures is currently being written. This report will be integrated in the Declaration of Finding that will be published at a later date on the water knowledge portal and the Regional Body's website.

Appendix 1. Description of how the State or Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures

Goal 4: Promote scientific research, technological development and knowledge acquisition

Objective 8: Strengthen research efforts on water conservation and efficiency measures

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
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Target 8.1: Develop and strengthen knowledge on water conservation and efficiency in the municipal, mining and agricultural sectors

21	Participation in events and committees that bring together experts in the field to improve knowledge in MAMH about concepts related to water economy (part of the Quebec Strategy for Drinking Water Conservation)	MAMH	Ongoing	MAMH participates in training offered by the American Water Works Association (AWWA) and is on the Canadian committee for water conservation. This measure will develop and consolidate knowledge on water conservation and efficiency in the municipal sector.	Participation in events and committees that bring together experts in the field to improve knowledge in MAMH on concepts surrounding water conservation.	<p>Five-year objective attained.</p> <p>MAMH participated in four annual conference calls of the Canadian committees on water conservation.</p> <p>MAMH participated in six annual conference calls of the AWWA performance indicator task force.</p> <p>MAMH participated in three annual conference calls of AWWA's water audit committee.</p>
22	Organize and prepare training sessions in water economy to support municipalities (part of the Quebec Strategy for Drinking Water Conservation)	MAMH	Ongoing	<p>The Quebec Strategy for Drinking Water Conservation will be presented at about twenty different congress and conferences each year.</p> <p>This measure ensures that information about water conservation and efficient use is strengthened and shared with the municipal sector.</p>	Consolidate and share information about water conservation and efficient use with the municipal sector through the organisation of training sessions about water conservation.	<p>Five-year objective attained.</p> <p>MAMH organised and held annual training session on water conservation.</p> <p>The 18 regional training sessions and 2 webcasts organised by MAMH reached 700 municipal participants. A two-day annual training session on the Quebec Strategy for Drinking Water Conservation, prepared in collaboration with Réseau Environnement, reached 250 participants. A webcast on the review of the strategy and the new form are now available for free on the Quebec Municipal website.</p> <p>For the 2019-2025 Strategy, a regional tour with 34 training sessions will be organised in April-May 2019.</p>

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
23 Annual production of municipal reports on water use to evaluate the quantities of water distributed and water losses in distribution systems (part of the Quebec Strategy for Drinking Water Conservation)	MAMH	June 8, 2012 / ongoing	Under the drinking water strategy, municipalities must produce an annual report on their water use. A central database collects the data sent in by municipalities (about 200 data items per municipality). This measure consolidates knowledge about the quantities of water distributed and water system losses in the municipal sector.	Consolidate knowledge on the quantities of water distributed and on water system losses for the municipal sector, through updates of the annual reports on drinking water.	Five-year objective attained. Information on the quantities of water distributed and the leaks from the municipal networks has been collected on an annual basis with the annual report on drinking water management. The reports can be consulted (in French) at the following address: https://www.mamh.gouv.qc.ca/infrastructures/strategie/cartographie-et-rapports-annuels/
24 Partnership research program on sustainable development of the mining sector	MERN	Decree approved on March 27, 2013/ 2012-2013 to 2016-2017	In this program, a number of research priorities have to do with water: water infiltration control, acid mine drainage, management of mine tailings in water, passive water treatment, reduction of water consumption. This measure will develop knowledge on water use in the mining sector (industrial).	Acquire knowledge on conservation and efficient use of water through the funding of research projects within the Partnership research program on sustainable development of the mining sector run by Fonds de Recherche du Québec - Nature et technologie. From 2013 to 2015, there will be 3 calls for proposals, totalling 15 million dollars investment.	Five-year objective attained. The program enabled the funding of 3 research projects on the conservation and efficient use of water by the mining sector. Two final reports have been submitted and the final one is expected in 2019. Non-technical summaries authorised for publication by the researchers will be published by MERN in 2019.
25 Research and technology transfer projects concerning the conservation and optimal use of water in agriculture, under the action framework to develop water management and conservation strategies in the 2013-2020 action plan on climate change	MAPAQ	Ongoing	This measure promotes research and technology transfer projects on the conservation and optimal use of water in agriculture. Project results contribute to knowledge about water use in the agricultural sector, and will aid in finding effective ways to reduce water use in this sector.	Completion of 5 research projects on water conservation and efficiency by 2018.	Objective partially attained. A first research project (Radeau 1) was funded to document water use conflicts for 5 agricultural regions in Quebec. This project ended in March 2019 and the final report will be available in June 2019. A second research project (Radeau 2) was funded to continue work for the remaining 6 agricultural regions in Quebec. This project will end in March 2020.

Object	Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
26	Project to characterize water use in irrigation.	MAPAQ	Completed	This project's objectives are to quantify irrigation doses and the water storage capacity of soils, to test methods of estimating water withdrawals, and to produce a seasonal report on water inputs, with a view toward estimating the extent to which irrigation inputs are insufficient or excessive. The results of these projects will increase knowledge on the topic, and could aid in efforts to optimize the use of irrigation in agriculture.	Completion of the characterization project on water use in irrigation by 2016.	<p>Five-year objective attained in 2016.</p> <p>The characterization project on water use in irrigation was completed in 2016. The MAPAQ report is available (in French) on Agri réseau (https://www.agrireseau.net/pdt/documents/92075/caracterisation-de-l_usage-de-l_eau-en-irrigation-rapport-final-mars-2016).</p> <p>Results were presented at a horticultural event in 2015. This project led to the creation of measure 4304 in the Prime Vert program 2018-2023 (optimal management of water use for irrigation), that was implemented as of April 2018.</p>

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
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Objective 9: Foster research partnerships, multidisciplinary studies and collaborative activities

Target 9.1: Develop and set up a collaboration work space for water researchers

27	Collaborative space on the water knowledge portal	MELCC	Completed	<p>The collaborative space is intended as a place for exchanging knowledge and know-how by a range of actors and users (governments, municipalities, businesses, associations, watershed committees, etc.) along with university researchers. This measure will encourage research partnerships and collaborative activities.</p>	<p>In the next 5 years, creation of a pilot project with researchers in the field of water.</p>	<p>Five-year objective attained.</p> <p>Since the creation on line of the Water Knowledge Portal in August 2018, more than 70 collaborative spaces have been created by different organisations from the municipal sector to researchers.</p>
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Target 9.2: Include the notions of partnership, multidisciplinary and collaboration in the definition of government's water research projects

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
18 Implementation of the St. Lawrence Action Plan 2011-2026 (SLAP)	MELCC/ECCC	29 November, 2011 / ongoing	<p><i>Also meets objectives 5 and 12.</i></p> <p>Projects included under SLAP must be designed and conducted in collaboration with at least one department of the provincial and federal governments. One objective of the Climate Change Coordination Committee is to determine research projects in collaboration with local stakeholders. The implementation of integrated management of the St. Lawrence by holding an annual forum, and the creation of regional collaboration tables (RCTs) will encourage participation by communities.</p>	<p>Program of joint activities for 2011-2016, along with program activities for monitoring the status of the St. Lawrence and for numerical environmental prediction are completed.</p> <p>Integrated management of the St. Lawrence achieved by holding an annual forum and by creating 6 RCTs. As of 2016, develop and implement the 2016-2021 plan.</p>	<p>Five-year objective attained.</p> <p>The SLAP products can be consulted (in English) at the following address: http://planstlaurent.qc.ca/en/home.html</p> <p>A report about the projects and activities is produced yearly.</p> <p>6/6 RCT have been designated.</p> <p>3/5 forums have been held.</p>

Objective 10: Encourage the development of innovative water technologies

Target 10.1: Introduce the water conservation and efficiency component into strategies and programs aimed at supporting technology development

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
28 Committee on new technologies for domestic wastewater treatment	MELCC/ MAMH	Committee created in 1999; Protocol published in 2008 / ongoing	<p>The committee works to safeguard public health and protect the environment by validating the performance claims for water treatment technologies, and provides quality control on projects authorized by the MELCC or funded by MAMH. It also publishes and makes available technical information about these technologies.</p> <p>This measure provides quality control on new water technologies.</p>	Publication of information on new technologies in domestic wastewater treatment and drinking water treatment, with relation to water conservation and efficiency.	<p>Five-year objective attained.</p> <p>Information about new technologies in wastewater and drinking water treatment have been published on the ministerial website on an annual basis.</p> <p>In December 2018, 32 wastewater information sheets and 36 drinking water information sheets were available on the ministerial website at the following addresses (in French): http://www.environnement.gouv.qc.ca/eau/eaux-usees/usees/fiches/fiches.htm and http://www.environnement.gouv.qc.ca/eau/potable/guide/fiches.htm</p> <p>The tripartite committee made up of MELCC, MAMH and the <i>Bureau de normalisation du Québec</i> (BNQ) agreed collectively to cease activities in February 2019.</p>
29 Supporting research and innovation	MEI	Partially ongoing	<p>One objective of the component to support technological innovation in business, which is part of the innovation support program created under the Strategy, is to support the development and marketing of processes and technologies for limiting and repairing water-related damage.</p> <p>In the national policy on research and innovation, two innovation assistance programs can support projects and centres concerned with water conservation and efficiency. They are: the innovation support program (PAI) (start-up support for new technological businesses), component 1; and the support program for technology enhancement and transfer (PSVT), component 1, envelope for college centres for technology transfer (CCTT). One of the existing centres is dedicated to this area: the Centre des technologies de l'eau (CTE).</p> <p>This measure supports the development of new water technologies.</p>	Support the development of new technologies related to water conservation and efficiency.	<p>Five-year objective partially attained.</p> <p>The innovation support program (PAI in French) was abolished in 2014 and did not yield any results.</p> <p>The <i>Centre des technologies de l'eau</i> enabled the creation of 1 business and resulted in 2 patents. Data on the median revenue growth rate are not available.</p>

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective	
30	Projects of the agrifood innovation support program (PSIA) / Innov'Action agroalimentaire program (starting 2013)	MAPAQ	Ongoing	Some projects funded under the PSIA concern the optimization of water use in agriculture. This measure supports the development of new water technologies in agriculture.	Support the development of processes and technologies in agriculture by funding 15 projects on optimizing water use or improving water quality.	<p>Five-year objective partially attained.</p> <p>14/15 projects were funded and carried out between 2014 and March 2019.</p> <p>Information about these completed projects funded by Innov'Action is available on the MAPAQ website at the following address (in French): http://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Recherche_Innovation/proj_innovation.xls</p> <p>Reports are available on request from MAPAQ.</p>
31	Canada-Québec Water Supply Expansion Program (CQWSEP)	MAPAQ	Program completed in 2009	The CQWSEP encouraged individual and group projects to optimize irrigation in agriculture. This measure supported the development of new water technologies in agriculture.	Complete the Canada-Québec Water Supply Expansion Program (CQWSEP).	<p>Five-year objective attained in 2009.</p> <p>The program was completed in 2009.</p>

Appendix 1. Description of how the State or Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures

Goal 5: Develop education programs, information sharing networks, resources, and tools to mobilize all water stakeholder and users

Objective 11: Make water stakeholders and users more aware of the value of water

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective	
Target 11.1: Develop and implement awareness tools intended for youth and the general public						
32	The "Coin de Rafale"	MELCC	Ongoing	This section of the MELCC's website specifically addresses a young audience. This measure contributes to raising the awareness of young people about water conservation and efficiency.	Raise the awareness of young people using "Did you know" information capsules and Rafale adventures on the theme of water conservation and efficiency.	Five-year objective attained. Publication of 3 information capsules about water conservation and efficiency. They can be consulted at the following address (in French): http://www.environnement.gouv.qc.ca/jeunesse/sections-personnages/eau-melodie.htm
33	MELCC website	MELCC	Web page on line as of 1 September, 2013, yearly update every 1 September.	Several of MELCC's website pages are dedicated to making the population more aware about the importance of water resources. One page describes the water conservation and efficiency program, educating the population about the value of water. Another page presents the monitoring of rivers and lakes in southern Quebec so as to inform and equip the public about the state of water.	Add information to the page on the website about the program.	Five-year objective attained. The MELCC web page about the program was made available online in 2014 and can be consulted (in English) at the following address: http://www.environnement.gouv.qc.ca/programmes/conservation-utilisation-efficace-eau/index-en.htm
34	Educational program for 5th-year students in collaboration with the Centre d'interprétation de l'eau (water interpretation centre) and the Ministère de l'Éducation, des Loisirs et des Sports (under the Drinking water economy strategy)	MAMH /MEES	Program launched 29 September, 2014 /ongoing	This measure raises young people's awareness about water conservation and efficiency.	Set up an educational program to raise young people's awareness about water conservation and efficiency.	Five-year objective attained since 2014. The educational program has handed out 3,800 kits to Elementary teachers of grades 5 and 6.
35	Continue the partnership with Réseau Environnement for the drinking water economy program (PEEP), which raises citizen awareness in collaboration with municipalities (part of the Drinking water economy strategy)	MAMH	Ongoing	Some 85 municipalities participated in PEEP in 2011. The Facebook page "Je consomme EAUrement" has nearly 500 friends (from 350 to 1200 visits per week). In early 2012, a radio advertisement was broadcast across Québec. This measure raises public awareness about water conservation and efficiency.	Raise public awareness about water conservation and efficiency through the Facebook page "Je consomme EAUrement" and encourage municipalities to participate in PEEP.	Five-year objective attained. On average 95 municipalities have participated in PEEP which has now been replaced by the Municipalité Écon'eau program. The Facebook page for PEEP has a good following with approximately 1,400 Likes.

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
36 Adoption of WaterSense certification, which labels equipment that uses 20% less water (part of the Drinking water economy strategy)	MAMH / MELCC / MEI	June 7, 2012 / completed	MAMH and MELCC announced an agreement to promote the voluntary certification and labelling program WaterSense in Québec. The MFE promotes the program in the business community. This measure raises public awareness about water conservation and efficiency.	Agreement to promote the voluntary certification and labelling program WaterSense in Québec. This measure raises public awareness about water conservation and efficiency. Disseminate information to businesses about WaterSense certification.	Five-year objective attained in 2014. An agreement was concluded in 2014 to promote the voluntary certification and labelling program WaterSense in Québec. Two information guides for businesses were published about WaterSense certification in 2014.

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
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Objective 12: Make information on water resources, water quality, aquatic ecosystems and the various uses of water more accessible to all stakeholders

Target 12.1: Develop platforms to make information on water resources public, and promote knowledge-sharing

37	Create a special section about the Drinking water economy strategy (SEEP) on the MAMH website	MAMH	Completed	A special section on SEEP was added to the MAMH website, providing all the documentation needed for municipalities. New documents are added on a regular basis. This measure means that information is accessible to all on a public platform, to promote water conservation and efficiency in municipalities.	Create a special section about SEEP on the MAMH website.	Five-year objective attained in 2014. A special section about SEEP was added to the MAMH website in 2014. The Strategy is now in the Infrastructures section of MAMH.
38	Creation of the water knowledge portal	MELCC	Underway	The portal will foster collaboration, a culture of knowledge sharing about water, the integration of that knowledge, and its dissemination. Social media resources like Facebook and Twitter will also be used as a way of offering scientific and technical information in a manner attractive to the general public.	Creation and launch of the collaborative portal.	Five-year objective attained each year. The Québec Water Knowledge Portal is online since August 13, 2018 and now has 1,000 members from research institutions to municipal/government professionals and environmental groups as well as First Nations all of whom work on water related projects.
39	Publication of the report on the status of water resources and aquatic ecosystems (<i>Rapport sur l'état des ressources en eau et des écosystèmes aquatiques</i>)	MELCC	First report online in 2014, work ongoing for second report	The five-year report is a way of providing information to all groups and individuals concerned about water and aquatic ecosystems to enrich their knowledge and give them a better understanding of the issues surrounding both topics.	Online publication of the 2014 report and summary. Preparation of the second report for publication in 2019.	Five-year objective partially attained. The report was made available on line in 2014 at the following address (in French): http://www.environnement.gouv.qc.ca/rapportsurleau/index.htm . The second report is due for publication in 2020.
4	Entry into force of the Water Withdrawal and Protection Regulation	MELCC	Regulation in force in its entirety	<i>Also meets objective 1.</i> The WWPR requires that part of the analysis report on the vulnerability of water withdrawals for human consumption be published on the website of the entity responsible for the withdrawal. Elements that must be made public include the location of the withdrawal site, the location of protected areas (at immediate, intermediate and remote distances), and the vulnerability of those areas as determined in accordance with provisions of the WWPR. This measure contributes to making information accessible on the vulnerability of water sources.	Make the publication of information on the vulnerability of water sources mandatory, through the entry into force of sections 68 and 75 of the WWPR.	Five-year objective attained in 2015. Information pertaining to newly authorised (WWPR) withdrawal sites is of public interest and can be released. The regulation can be consulted (in English) at the following address: http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2035.2

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective	
18	Implementation of the St. Lawrence Action Plan 2011-2026 (SLAP)	MELCC/ECCC	November 29, 2011	<p><i>Also meets objectives 5 and 10.</i></p> <p>The results of work conducted under the Numerical Environmental Prediction Program are published on the SLAP website. Some of these results inform the general public and decision-makers on the evolution of the water regime of the St. Lawrence.</p>	Put information about the St. Lawrence Action Plan on line and renew the information regularly.	<p>Five-year objective attained.</p> <p>The St. Lawrence Action Plan website is online and regularly updated. It can be consulted (in English) at the following address: http://planstlaurent.qc.ca/en/home.html</p>

Object Measure in effect or being developed	Ministry responsible	Date of entry into force/Status	Justification	Five-year objective of measure	Evaluation of achievement of five-year objective
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Objective 13: Ensure that water stakeholders and users have access to water conservation and efficiency tools

Target 13.1: Develop tools to help municipal and agricultural water stakeholders set up water conservation and efficiency practices

41	Production of guides and translation of manuals of the American Water Works Association (AWWA) (part of the Drinking water economy strategy)	MAMH	Ongoing	To equip municipalities, documents have been produced (model municipal by-law on water use, simple form for measuring results, guide on drinking water and municipalities, AWWA manuals translated into French, economic assessment of the Strategy, etc.). Other documents are in preparation (sample specification for leak detection, economic impact study on the use of water counters and fees, etc.). For all government departments, consumption studies are underway in 50 institutional buildings and a guide is in production.	Production of guides and translation of AWWA manuals.	Five-year objective attained. MAMH has regularly produced guidelines and translated manuals from the American Water Works Association (AWWA).
42	Information sheet for entrepreneurs on best practices in water management, to be made available on the website of the Ministère de l'Économie, de l'Innovation et des Exportations and on the Québec Portal.	MEI	Completed	Many small and medium-sized enterprises need awareness and explanation on good water management practices and the positive impact of these good practices.	Provide information for small and medium enterprises (SMEs) on best practices in water management by producing an information sheet and publishing it online.	Five-year objective attained. Draft and publish an information sheet for SMEs about water management best practices. It is available on the ministry website at the following address (in French): https://www.economie.gouv.qc.ca/index.php?id=22143 , and on the official website of the Québec government (Portail Québec).

Objective 14: Recognize exemplary water conservation and efficiency actions by water stakeholders and users in the various sectors

Target 14.1: Develop a means to recognize exemplary actions in the municipal sector

43	Create, with the partners concerned, a recognition program for successful municipalities	MAMH	2013 / ongoing	Efforts made by successful municipalities could be recognized at the various municipal association conferences. This measure would highlight the exemplary actions of the municipal sector and encourage the pursuit of efforts in water conservation and efficiency.	Showcase successful municipalities.	Five-year objective attained. Different strategies (for example, news articles and videos) are used to showcase successful municipalities, often in collaboration with the magazine Source.
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Province de Québec
Examen quinquennal du Programme de gestion de l'eau
et du Programme de conservation et d'utilisation efficace
de l'eau du Québec

La Province de Québec fournit ce qui suit au Conseil régional des ressources en eau des Grands Lacs et du fleuve Saint-Laurent (le « Conseil régional ») en vertu de l'article 300 de l'Entente sur les ressources en eaux durables du bassin des Grands Lacs et du fleuve Saint-Laurent (l'« Entente »).

Renseignements généraux

1. Personne-ressource prioritaire et entité de référence

Marie-Claude Théberge

Directrice générale des politiques de l'eau

Ministère de l'Environnement et de la Lutte contre les changements climatiques et représentante désignée du premier ministre auprès du Conseil régional des ressources en eau des Grands Lacs et du fleuve Saint-Laurent.

2. Lois, règlements et politiques veillant à l'application du Programme de gestion de l'eau du Québec

Les lois et règlements ci-après mentionnés se trouvent aux adresses suivantes :

Français : <https://www.quebec.ca/gouv/ministere/environnement/lois-et-reglements/>

Anglais :

<https://www.quebec.ca/en/government/ministere/environnement/statutes-and-regulations/>

a. Article 3.4 du Pacte/Article 300 de l'Entente

- Art. 31.101 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

b. Article 4.1 du Pacte/Article 301 de l'Entente

- Règlement sur la déclaration des prélèvements d'eau (RLRQ, c. Q-2, r. 14)
<http://legisquebec.gouv.qc.ca/fr/pdf/cr/Q-2,%20R.%2014.pdf>

c. Articles 4.2 (2) et 4.2 (4) du Pacte/Article 304 de l'Entente

- Consulter le sous-paragraphe *h* ci-dessous.

d. Article 4.3 du Pacte/Article 200 de l'Entente

Article 200 1 :

- Art. 31.90 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

Article 200 2 :

- Art. 31.92-31.94 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>
- Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent (RLRQ, c. Q-2, r. 5.1)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2,%20r.%205.1>

Article 200 3 :

- Art. 31.95 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

e. Articles 4.8, 4.9 et 4.13 du Pacte/Articles 200, 201 et 208 de l'Entente

Article 201 :

- Art. 31.92-31.94 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>
- Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent (RLRQ, c. Q-2, r. 5.1)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2,%20r.%205.1>

Article 208 :

- Art. 31.75 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)]
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

f. Article 4.10 du Pacte/Article 206 de l'Entente

- Art. 31.95 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>
- Règlement sur le prélèvement des eaux et leur protection (RLRQ, c. Q-2, r. 35.2), règlement qui autorise et encadre l'application et les seuils de l'article 31.95 de la Loi sur la qualité de l'environnement.
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2,%20r.%2035.2>

g. Article 4.11 du Pacte/Article 207 de l'Entente

207.1 a) :

Province de Québec
Examen quinquennal du Programme de gestion de l'eau
et du Programme de conservation et d'utilisation efficace de l'eau du Québec

- Règlement sur la déclaration des prélèvements d'eau (RLRQ, c. Q-2, r. 14)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2,%20r.%2014>

207.1 b) :

Les prélèvements autorisés entre le 1^{er} septembre 2011 et l'entrée en vigueur de l'article 31.95 de la Loi sur la qualité de l'environnement en 2014 sont considérés comme déjà effectués au 1^{er} septembre 2011 et seront ajoutés à la liste correspondante.

207.2 :

- Art. 31.96 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

207.5 :

- L'article 3 du Règlement sur le prélèvement des eaux et leur protection (RLRQ, c. Q-2, r. 35.2) donne des précisions.
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

207.9 :

- Art. 31.90 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

h. Article 304 de l'Entente

- Art. 31.101 de la Loi sur la qualité de l'environnement (RLRQ, c. Q-2)
<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>

Programme de gestion de l'eau

1. Résumé de la portée et des seuils stipulés au Programme de gestion de l'eau du Québec

La Loi affirmant le caractère collectif des ressources en eau et favorisant une meilleure gouvernance de l'eau et des milieux associés (RLRQ, chapitre C-6.2) (aussi nommé la « Loi sur l'eau ») a modifié la Loi sur la qualité de l'environnement (LQE) de façon à y intégrer les dispositions de l'Entente. De plus, le Règlement sur le prélèvement des eaux et leur protection, adopté en 2014, permet de compléter l'entrée en vigueur de la Loi sur l'eau en mettant en œuvre le nouveau régime d'autorisation des prélèvements d'eau que cette loi introduit dans la Loi sur la qualité de l'environnement. Le chapitre VI du Règlement sur le prélèvement des eaux et leur protection renforce la protection des sources destinées à l'alimentation en eau potable.

Dérivations (transferts)

Aux fins de l'article 201 de l'Entente, intitulé « Exceptions à l'interdiction des dérivations », les articles 31.90 à 31.94 de la LQE s'appliquent à l'égard du transfert d'eau hors bassin. Adopté en 2011, le Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent rend possible l'application des articles de la LQE à respecter pour obtenir l'autorisation de transférer de l'eau hors du bassin conformément aux normes d'exception à l'Entente.

Nouveaux prélèvements et augmentation des quantités prélevées

Par ailleurs, la Loi sur l'eau et le Règlement sur le prélèvement des eaux et leur protection bonifient la LQE d'un nouveau régime d'autorisation applicable à tout prélèvement minimal de 75 000 litres par jour en sol québécois. L'article 203 de l'Entente, intitulé « Norme de décision pour la gestion des prélèvements et consommations d'eau », impose des dispositions particulières à tout prélèvement sur le territoire d'application. Ces dispositions sont celles de l'article 31.95 de la LQE, qui concerne les prélèvements sur ledit territoire, qu'il assujettit à ladite Norme de décision. Cette norme précise un seuil d'application moyen de 379 000 litres ou plus par jour à l'article 31.95.

Déclaration

En 2011, le Québec a adopté le Règlement modifiant le Règlement sur la déclaration des prélèvements d'eau, qui lui donne le droit de recueillir de l'information sur les prélèvements et la consommation dans le bassin du fleuve Saint-Laurent et les volumes d'eau qui en sont transférés. En plus de donner à la province les moyens de respecter l'article 301 de l'Entente, ce règlement modifié renforce les dispositions de la LQE relatives aux transferts d'eau et le cadre d'autorisation de prélèvement, notamment par l'application d'un seuil à tout nouveau prélèvement et à toute augmentation de la quantité prélevée. Il vise de plus à

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induire des comportements plus responsables au regard de l'utilisation de l'eau en amenant les plus importants préleveurs d'eau au Québec, par une reddition de compte des prélèvements effectués, à prendre davantage conscience de la valeur intrinsèque de cette ressource et de la responsabilité de chacun de la préserver en qualité et en quantité suffisante pour répondre aux besoins des générations actuelles et à venir.

2. Description de la méthode de gestion des prélèvements d'eau par secteur, source, quantité et emplacement en vigueur au Québec

a. Secteur : approvisionnement public en eau, auto-approvisionnement commercial et institutionnel, auto-approvisionnement à des fins d'irrigation, auto-approvisionnement à des fins d'élevage, auto-approvisionnement industriel, auto-approvisionnement pour la production d'énergie thermoélectrique (eau de refroidissement recyclée ou non recyclée), production d'hydroélectricité hors cours d'eau ou en cours d'eau (volontaire) et autres auto-approvisionnements

Autorisation de prélèvement d'eau

L'article 31.75 de la LQE exige généralement l'autorisation du ministre en vertu de l'article 22 (2) pour tout prélèvement égal ou supérieur à 75 000 litres par jour. Selon l'article 31.81, cette autorisation est valide pendant 10 ans.

Déclaration de prélèvements

Depuis 2011, le Règlement sur la déclaration des prélèvements d'eau (RDPE) exige de tout préleveur qui prélève de l'eau dans le bassin du fleuve Saint-Laurent (territoire de l'Entente) à partir d'un site de prélèvement dont les ouvrages ou les installations ont une capacité nominale de prélèvement égale ou supérieure à 379 000 litres par jour, que cette eau soit destinée à la consommation sur place ou au transfert hors bassin, qu'il déclare annuellement au ministre de l'Environnement et de la Lutte contre les changements climatiques les volumes prélevés et consommés sur une base mensuelle dans ce bassin et les volumes transférés hors bassin, le cas échéant.

L'article 18.2 du RDPE exclut les prélèvements d'eau suivant, dans la mesure où ils ont lieu en totalité à l'extérieur du bassin du fleuve Saint-Laurent :

- les prélèvements destinés à produire de l'énergie hydroélectrique à l'aide d'ouvrage ou d'installation à même le cours d'eau;
- les prélèvements faits au moyen d'un ouvrage destiné à retenir l'eau, autre qu'un barrage, tel qu'un étang ou un bassin n'ayant aucun lien hydraulique avec les eaux souterraines, sauf s'il est alimenté au moyen d'un système de drainage des eaux de surface.

Selon l'article 18.7 de ce règlement, cette exigence s'applique à compter du 1^{er} janvier 2016 pour les prélèvements d'eau effectués à des fins agricoles ou piscicoles au cours de l'année 2015.

b. Source d'eau : eau souterraine, eau de surface des Grands Lacs et du fleuve Saint-Laurent, ou eau de surface d'une autre provenance

Le régime d'autorisation ministérielle de la LQE s'applique aux prélèvements d'eau souterraine et de surface partout au Québec.

Quiconque déclare un volume d'eau prélevé doit également indiquer, entre autres, sa provenance (eau souterraine ou eau de surface) et si le site de prélèvement se situe sur le territoire de l'Entente ou non.

c. Quantité : seuils réglementaires, volumes, taux et exigences de déclaration

Autorisation de prélèvement d'eau

L'article 31.75 de la LQE précise les seuils d'application du régime d'autorisation de prélèvement d'eau dans toute la province. L'autorisation ministérielle est obligatoire pour tout prélèvement égal ou supérieur à 75 000 litres par jour, mais aussi pour certains prélèvements dont le débit maximum est inférieur à 75 000 litres par jour.

L'article 31.95 de la LQE fixe le seuil d'application à une quantité ou une consommation moyenne de 379 000 litres ou plus par jour pour tout nouveau prélèvement et toute augmentation de la quantité prélevée sur le territoire de l'Entente.

Quant à un transfert d'eau hors bassin, l'article 31.92 indique le seuil d'application à une quantité moyenne d'eau de 379 000 litres ou plus par jour pour les transferts destinés à une municipalité chevauchant la limite du bassin du fleuve Saint-Laurent.

L'article 3 du Règlement sur le prélèvement des eaux et leur protection précise la méthode de calcul à appliquer.

L'article 7 du même règlement prescrit des renseignements nécessaires pour toute demande d'autorisation ministérielle de prélèvement en vertu de l'article 31.75 de la LQE. Ainsi, une telle demande doit comprendre une description des conditions prévues, notamment les périodes de prélèvement ainsi que les volumes de prélèvement, de consommation et de rejet.

Déclaration de prélèvements

Selon le Règlement sur la déclaration des prélèvements d'eau, tout prélèvement de 75 000 litres ou plus, sauf exception, doit faire l'objet d'une déclaration annuelle du volume prélevé.

De plus, tout site de prélèvement qui se situe sur le territoire de l'Entente dont les ouvrages ou les installations ont une capacité nominale de prélèvement égale ou supérieure à 379 000 litres par jour doit faire l'objet d'une déclaration annuelle du volume prélevé, consommé sur le territoire de l'Entente ou transféré hors bassin, selon le cas.

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La déclaration annuelle doit être transmise au ministère de l'Environnement et de la Lutte contre les changements climatiques au plus tard le 31 mars de l'année qui suit l'année civile qui fait l'objet de la déclaration (article 9 dudit règlement).

d. Emplacement : à l'échelle de l'État ou de la province ou dans le bassin des Grands Lacs et du fleuve Saint-Laurent

Déclaration et autorisation de prélèvement d'eau

Il est obligatoire de préciser, notamment, les données géoréférencées de tout site de prélèvement visé.

e. Autres exemptions particulières permises par l'Entente et le Pacte

L'article 31.75 (deuxième alinéa) de la LQE précise qu'aucune autorisation n'est exigée pour un prélèvement temporaire et non récurrent qui est effectué dans une situation d'urgence ou à des fins humanitaires ou de sécurité civile.

Par ailleurs, l'article 6 du Règlement sur le prélèvement des eaux et leur protection énumère d'autres types de prélèvements soustraits de l'obligation d'autorisation ministérielle prévue à l'article 31.75 de la LQE.

3. Description du mode d'application des dispositions de la norme d'examen et de décision

a. Norme de décision pour la gestion des prélèvements et consommations d'eau

L'article 31.95 de la LQE énonce les critères d'autorisation propres à la Norme de décision pour la gestion des prélèvements et consommations d'eau. Les voici :

1° les eaux prélevées sont retournées en totalité au bassin, préférablement dans le bassin de l'affluent direct du fleuve d'où elles proviennent le cas échéant, moins la quantité d'eau allouée à des fins de consommation;

2° la quantité d'eau prélevée ou consommée ne cause aucun impact négatif significatif, individuel ou cumulatif, sur la quantité ou la qualité des eaux du bassin et des ressources naturelles qui en dépendent;

3° le prélèvement ou la consommation d'eau est soumis à des mesures de conservation de l'eau déterminées par règlement du gouvernement, ou par le ministre en vertu d'autres dispositions de la présente Loi;

4° la quantité d'eau prélevée ou consommée est raisonnable compte tenu, notamment :

a) de l'usage auquel est destinée l'eau;

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- b) *des mesures prises pour utiliser efficacement et conserver l'eau, dont celle provenant des approvisionnements existants;*
- c) *de l'équilibre entre le développement économique, social et environnemental;*
- d) *des impacts prévisibles sur l'environnement et sur les autres usages, ainsi que des moyens prévus pour éviter ou atténuer ces impacts;*
- e) *du potentiel d'approvisionnement de la source d'eau et des autres sources qui sont interconnectées.*

b. Norme d'exception pour les dérivations

Adoptée en 2009 et modifiée en 2017, la Loi affirmant le caractère collectif des ressources en eau et favorisant une meilleure gouvernance de l'eau et des milieux associés (RLRQ, chapitre C-6.2) (aussi nommé la « Loi sur l'eau »), par l'intermédiaire de la LQE, introduisait dans la législation québécoise les dispositions de l'Entente qui régissent les transferts d'eau hors du bassin du fleuve Saint-Laurent ainsi que les critères d'exception correspondants. En voici l'essentiel tiré de l'article 31.90 de la LQE :

Le transfert hors du bassin du fleuve Saint-Laurent des eaux qui y sont prélevées est interdit, sous réserve des exceptions qui suivent et de l'article 31.91.

Cette interdiction n'est pas applicable aux prélèvements d'eau, effectués dès l'origine à des fins de transfert hors bassin, qui ont été autorisés avant le 1^{er} septembre 2011 ou qui, sans avoir été autorisés, ont légalement débuté avant cette date. À moins qu'elle ne soit augmentée dans les conditions définies par les articles 31.91 à 31.93, la quantité d'eau issue d'un tel prélèvement et transférée hors bassin ne peut toutefois excéder la quantité autorisée à cette date ou, en l'absence d'autorisation ou si l'autorisation ne fixe pas de plafond, la capacité du système de prélèvement à cette même date.

Cette interdiction n'est pas non plus applicable aux eaux prélevées :

1^o pour être commercialisées comme eau de consommation humaine, pourvu que l'emballage de ces eaux soit effectué dans le bassin et dans des contenants de 20 litres ou moins;

2^o pour entrer dans la fabrication, la conservation ou le traitement, dans le bassin, de produits;

3^o pour approvisionner des véhicules, tels les navires ou avions, que ce soit pour les besoins des personnes ou des animaux transportés, ou pour le ballastage ou d'autres besoins liés au fonctionnement de ces véhicules;

4^o pour des fins humanitaires ou de sécurité civile, ou dans des situations d'urgence, à condition que le prélèvement soit temporaire et non récurrent.

L'article 31.91 de la LQE ajoute :

En outre des conditions prescrites par les articles 31.92 et 31.93 et de celles que peut prescrire le gouvernement ou le ministre en vertu d'autres dispositions de la présente loi,

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le transfert hors du bassin du fleuve Saint-Laurent des eaux provenant d'un nouveau prélèvement dans ce bassin, ou l'augmentation de la quantité d'eau transférée hors de ce bassin en provenance d'un tel prélèvement ou d'un prélèvement existant le 1^{er} septembre 2011, peut être autorisé dans les conditions suivantes :

1^o les eaux transférées hors bassin sont destinées en totalité à l'approvisionnement d'un système d'aqueduc desservant en tout ou en partie la population d'une municipalité locale dont le territoire est situé :

a) soit en partie dans le bassin du fleuve Saint-Laurent et en partie à l'extérieur de celui-ci;

b) soit à la fois entièrement à l'extérieur du bassin du fleuve Saint-Laurent et entièrement dans une municipalité régionale de comté dont le territoire se trouve en partie à l'intérieur de ce bassin et en partie à l'extérieur de ce même bassin;

2^o les eaux transférées hors bassin sont en totalité retournées au bassin, préférablement dans le bassin de l'affluent direct du fleuve d'où elles ont été prélevées le cas échéant, moins la quantité d'eau allouée pour des fins de consommation et moins la quantité d'eau prélevée à l'extérieur du bassin qui peut être ajoutée aux eaux retournées au bassin lorsque celles-ci :

a) font partie d'un système d'approvisionnement ou de traitement d'eaux usées où sont mélangées des eaux en provenance à la fois de l'intérieur et de l'extérieur du bassin;

b) font l'objet d'un traitement pour être conformes aux normes de rejet ou de qualité applicables et pour prévenir l'introduction dans le bassin d'espèces envahissantes;

c) se composent d'un maximum d'eau prélevée à l'intérieur du bassin et d'un minimum d'eau prélevée à l'extérieur.

Aux fins du présent article, « nouveau prélèvement » s'entend de tout prélèvement autorisé après le 1^{er} septembre 2011.

Le ministre publie à la Gazette officielle du Québec la liste des municipalités locales et des municipalités régionales de comté dont le territoire est situé en partie dans le bassin du fleuve Saint-Laurent et en partie à l'extérieur de ce bassin et qui sont respectivement visées aux sous-paragraphes a et b du paragraphe 1^o du premier alinéa.

L'article 31.92 de la LQE dit :

S'il implique une quantité moyenne d'eau de 379 000 litres ou plus par jour, ou une quantité moindre déterminée par règlement du gouvernement, qui est destinée à alimenter un système d'aqueduc desservant une municipalité visée au sous-paragraphe a du paragraphe 1^o du premier alinéa de l'article 31.91, le transfert hors bassin des eaux provenant d'un nouveau prélèvement ou de l'augmentation d'un prélèvement visés à cet article ne peut être autorisé que si les conditions suivantes sont respectées :

1^o le transfert ne peut raisonnablement être évité ou diminué par une utilisation efficace de l'eau ni par la conservation de l'eau provenant d'approvisionnements existants;

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2° la quantité d'eau transférée est raisonnable compte tenu de l'usage auquel est destinée cette eau;

3° le transfert ne cause aucun impact négatif significatif, individuel ou cumulatif, sur la qualité ou la quantité des eaux du bassin et des ressources naturelles qui en dépendent;

4° le transfert est soumis à des mesures de conservation de l'eau déterminées par règlement du gouvernement, ou par le ministre en vertu d'autres dispositions de la présente loi.

S'il implique une consommation moyenne d'eau de 19 millions de litres ou plus par jour, le transfert d'eau hors bassin visé au premier alinéa est également subordonné à l'examen du Conseil régional des ressources en eaux des Grands Lacs et du fleuve Saint-Laurent créé en vertu de l'Entente.

L'article 31.93 de la LQE dit :

Le transfert hors bassin des eaux qui proviennent d'un nouveau prélèvement ou de l'augmentation d'un prélèvement visés à l'article 31.91 et qui sont destinées à alimenter un système d'aqueduc desservant une municipalité visée au sous-paragraphe b du paragraphe 1° du premier alinéa de cet article, ne peut être autorisé que si les conditions suivantes sont respectées, en outre de celles prescrites par les paragraphes 1° à 4° du premier alinéa de l'article 31.92 :

1° il n'existe, à l'intérieur du bassin où est située la municipalité locale concernée, aucune source d'approvisionnement qui est raisonnablement accessible et en mesure de satisfaire les besoins en eau potable;

2° la quantité d'eau transférée ne met aucunement en danger l'intégrité de l'écosystème du bassin;

3° le transfert a fait l'objet d'un examen par le Conseil régional des ressources en eaux des Grands Lacs et du fleuve Saint-Laurent.

L'article 31.94 de la LQE ajoute :

Lorsqu'une demande d'autorisation est, aux termes des articles 31.92 ou 31.93, subordonnée à l'examen du Conseil régional des ressources en eaux des Grands Lacs et du fleuve Saint-Laurent, le ministre doit, après en avoir informé le demandeur :

1° donner avis de la demande au Conseil régional ainsi qu'à chacune des parties à l'Entente;

2° transmettre au Conseil régional le dossier de la demande d'autorisation comprenant tous les documents ou renseignements fournis par le demandeur ainsi que son avis sur la conformité de la demande aux conditions prescrites par les articles 31.91 à 31.93 et par l'Entente;

3° sur demande du Conseil régional ou de l'une des parties à l'Entente, lui fournir tout document ou renseignement supplémentaire qu'il estime nécessaire à l'examen de la demande d'autorisation.

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Le ministre doit également informer le public que la demande d'autorisation est soumise à l'examen du Conseil régional.

Après en avoir fait l'examen dans les conditions prévues par l'Entente et par les règles de procédure qu'il établit, le Conseil régional fait une déclaration sur la conformité de la demande d'autorisation aux conditions prescrites par l'Entente. Cette déclaration est transmise au ministre et rendue accessible au public selon les modalités fixées par le Conseil régional.

Le ministre ou le gouvernement, selon le cas, tient compte de la déclaration du Conseil régional lorsqu'il prend sa décision relativement à cette demande.

Adopté en 2011, le Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent énonce les dispositions à respecter pour obtenir l'autorisation de transférer de l'eau hors du bassin. Ses articles 3, 4 et 5 précisent quels renseignements et études joindre à toute demande d'autorisation ministérielle à cet égard.

L'article 7 du Règlement sur le prélèvement des eaux et leur protection énumère quant à lui les renseignements et études à joindre à toute demande d'autorisation ministérielle de prélèvement. En outre, le troisième alinéa de l'article 24 de la LQE stipule que le ministre peut exiger d'un demandeur tout autre renseignement, document ou étude supplémentaire qu'il estime nécessaire pour connaître les impacts du projet sur la qualité de l'environnement avant de prendre sa décision.

4. Résumé des exigences provinciales en matière de prélèvement, de consommation et de dérivation, et bases de données

Adopté en 2009, puis modifié en 2011 pour inclure certaines dispositions de l'Entente, le Règlement sur la déclaration des prélèvements d'eau donne aux autorités québécoises le droit de recueillir des renseignements sur les volumes d'eau prélevés et consommés dans le bassin du Saint-Laurent et ceux qui seront transférés à l'extérieur du bassin. Cette information sert également à calculer les impacts cumulatifs des prélèvements d'eau aux débits des eaux de surface.

L'article 9 de ce règlement indique quels renseignements le préleveur est tenu de déclarer à toute déclaration annuelle pour les prélèvements d'eau totalisant un volume moyen quotidien de 75 000 litres ou plus par jour, calculé sur la base de la quantité mensuelle d'eau prélevée divisée par le nombre de jours de prélèvement dans le mois visé.

L'article 18.7 précise que tout préleveur qui prélève de l'eau dans le bassin du fleuve Saint-Laurent à partir d'un site de prélèvement dont les ouvrages ou les installations ont une capacité nominale de prélèvement égale ou supérieure à 379 000 litres par jour doit aussi fournir des renseignements supplémentaires relativement à la consommation d'eau ou au

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transfert d'eau hors du bassin du fleuve Saint-Laurent. Ces renseignements en main, le Québec est en mesure de respecter son engagement à l'égard de l'article 301 de l'Entente.

Les autorités provinciales entendent par « consommation d'eau », conformément à la définition de l'Entente, qui est la même que celle de l'article 31.89 de la LQE, la « [...] quantité d'eau prélevée ou retenue du bassin et qui est perdue ou non retournée au bassin en raison de son évaporation, de son intégration à un produit ou pour toute autre raison. »

Les premier et deuxième alinéas de l'article 18.7 du Règlement sur la déclaration des prélèvements d'eau précisent quels renseignements fournir lors d'une déclaration relative à un prélèvement d'eau en vue d'un transfert d'eau. Ces renseignements doivent inclure les volumes d'eau transférés hors bassin du fleuve Saint-Laurent (en litres), accompagnés des données géoréférencées des lieux d'utilisation de l'eau ainsi transférée, de même que les volumes d'eau rejetés ou retournés au bassin du fleuve Saint-Laurent (en litres), accompagnés des données géoréférencées des lieux de rejet de ces eaux ou, le cas échéant, de retour de ces eaux.

Conformément à l'article 207 de l'Entente, l'article 18.4 du Règlement précise quels renseignements fournir au plus tard le 31 mars 2012 afin que le Québec puisse déterminer les volumes d'eau de référence des prélèvements. Cette référence doit servir à fixer le seuil d'application aux fins du régime d'autorisation de prélèvement d'eau.

Le titre II du Règlement sur la déclaration des prélèvements d'eau s'applique à tout prélèvement destiné aux secteurs concernés par l'Entente et la Résolution n° 13 du Conseil régional, à l'exception des installations hydroélectriques à même le cours d'eau, pour lesquelles la collecte et la transmission de données sont facultatives selon la Résolution n° 13.

Tout prélèvement assujéti au Règlement effectué du 1^{er} janvier au 31 décembre d'une année donnée doit faire l'objet d'une déclaration au plus tard le 31 mars de l'année qui suit l'année civile qui fait l'objet de la déclaration.

Le Québec a accordé aux entreprises agricoles et piscicoles un délai supplémentaire pour la première déclaration annuelle de leurs prélèvements. En effet, selon le paragraphe 5° de l'article 18.7 du Règlement, qui renvoie à l'article 9, ces entreprises peuvent produire leur première déclaration annuelle au plus tard le 31 mars 2016 pour les prélèvements effectués en 2015 sur le territoire de l'Entente.

Selon le paragraphe 2° de l'article 9 susmentionné, la transmission des déclarations annuelles doit se faire électroniquement. Néanmoins, lorsqu'un préleveur n'a pas d'accès à Internet, les données peuvent être transmises en format papier.

L'article 5 du Règlement indique que les volumes d'eau prélevés se calculent par mesure directe rapportée par un équipement de mesure, sous réserve de l'article 6, qui renvoie au chapitre IV. Advenant qu'un préleveur ne possède pas d'équipement de mesure, il peut estimer les volumes prélevés par mesures indirectes ou ponctuelles, mais il doit ensuite

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obtenir l'attestation d'un professionnel, conformément au paragraphe 3° de l'article 7. L'article 8 du Règlement stipule qu'un préleveur qui aménage ou modifie un lieu de prélèvement doit le munir d'un équipement de mesure qui respecte les dispositions du chapitre IV.

Dans tous les secteurs, le calcul des volumes d'eau consommés peut se faire par mesure directe ou estimation. Dans le premier cas, l'équipement de mesure doit répondre aux exigences relatives au calcul des volumes d'eau prélevés (article 6 du Règlement). Dans le second cas, un professionnel doit réaliser l'estimation et non seulement l'attester (paragraphe 4° de l'article 18.7 et paragraphe 3° de l'article 18.4). Si l'eau prélevée est destinée à un système d'aqueduc, le déclarant peut indiquer une consommation égale à 15 % de ses prélèvements sans avoir à justifier ce pourcentage, selon le paragraphe 3° de l'article 18.4.

Le paragraphe 8° de l'article 2 du Règlement indique que « professionnel » s'entend au sens de l'article 1 du Code des professions du Québec, qui institue l'Office des professions du Québec et le mandate de régir tout exercice professionnel, comme les activités mentionnées dans le Règlement.

Le *Guide de soutien technique pour la clientèle* explique les méthodes de calcul et d'estimation approuvée par le gouvernement du Québec.

<http://www.environnement.gouv.qc.ca/eau/prelevements/Guide-soutien-clientele.pdf>

Les dispositions réglementant la détermination des volumes d'eau prélevés et consommés s'appliquent également aux transferts d'eau hors du bassin du fleuve Saint-Laurent ou vers celui-ci.

Tous les renseignements ainsi fournis sont saisis dans la base de données provinciale *Gestion des prélèvements d'eau* (GPE).

5. Demande d'autorisation de prélèvement au Québec

Autorisation de prélèvement d'eau

Les informations et les formulaires de demande d'autorisation ministérielle d'un prélèvement d'eau, y compris un formulaire spécifique aux prélèvements effectués sur le territoire de l'Entente, sont disponibles (Module B) à l'adresse suivante :

<http://www.environnement.gouv.qc.ca/eau/prelevements/formulaires/demande-autorisation.htm>

Déclaration de prélèvements d'eau

Règlement sur la déclaration des prélèvements d'eau :

<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2.%20r.%2014>

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L'accès au service en ligne pour le formulaire se trouve sur le site Internet du ministère de l'Environnement et de la Lutte contre les changements climatiques :

<http://www.environnement.gouv.qc.ca/eau/prelevements/enligne.htm>

Le formulaire électronique est identique au formulaire papier.

Le guide « pas à pas » explique chaque étape du formulaire, notamment la façon de saisir de l'information dans le système en ligne :

<http://www.environnement.gouv.qc.ca/eau/prelevements/demarche-pasapas.pdf>

Le *Guide de soutien technique pour la clientèle* aide le préleveur dans la mise en place d'un système d'évaluation des volumes d'eau :

<http://www.environnement.gouv.qc.ca/eau/prelevements/Guide-soutien-clientele.pdf>

Le *Guide de soutien aux entreprises agricoles pour l'application du Règlement sur la déclaration des prélèvements d'eau* vise les préleveurs agricoles :

<http://www.environnement.gouv.qc.ca/eau/prelevements/guide-applicationRDPE-entreprises-agricoles.pdf>

6. Description sommaire des mesures provinciales favorisant la compréhension scientifique des eaux du bassin et des eaux souterraines du bassin ainsi que de leur rôle dans la gestion des ressources hydriques du bassin, et description des mécanismes et mesures provinciales soutenant une meilleure compréhension des répercussions individuelles et cumulatives des prélèvements d'eau, de la consommation d'eau et des dérivations sur l'écosystème du bassin

L'article 31.102 de la LQE, qui correspond à l'article 209 de l'Entente, stipule notamment que :

Le ministre est tenu de réaliser, en conformité avec les exigences de l'Entente, une évaluation des impacts cumulatifs des prélèvements ou consommations d'eau dans le bassin du fleuve Saint-Laurent sur l'écosystème de ce bassin, en particulier sur les eaux et les ressources naturelles qui en dépendent. [...]

Cette évaluation doit prendre en compte les principes de prévention et de précaution, de même que les effets des prélèvements ou consommations passés et de ceux qui seront vraisemblablement effectués dans le futur, ainsi que les effets du changement climatique et de toute autre situation susceptible de porter atteinte de façon significative aux écosystèmes aquatiques du bassin.

L'évaluation que prescrit le présent article doit être faite tous les cinq ans. Elle doit également être faite chaque fois que survient dans le bassin des Grands Lacs et du fleuve Saint-Laurent une perte moyenne de 190 millions de litres d'eau par jour, par rapport aux quantités consommées lors de l'évaluation précédente, ou encore lorsque l'une ou plusieurs des parties à l'Entente en font la demande.

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Aux fins de réalisation de ces travaux et conformément aux visées scientifiques de l'Entente, le Québec travaille avec plusieurs partenaires québécois et canadiens à améliorer les connaissances et à développer des outils pour pouvoir évaluer les impacts cumulatifs des prélèvements d'eau et de la consommation d'eau à plusieurs échelles territoriales.

- Le Québec collabore avec Ouranos, le consortium québécois sur la climatologie régionale et l'adaptation aux changements climatiques, aux projets de recherche en eau, notamment des projets de recherche sur l'hydrologie, les changements climatiques et les Grands Lacs :
https://www.researchgate.net/publication/276835847_Present_and_future_Laurentian_Great_Lakes_hydroclimatic_conditions_as_simulated_by_regional_climate_models_with_an_emphasis_on_Lake_Michigan-Huron
- Le Québec participe aux travaux menés par le Conseil canadien des ministres de l'environnement, notamment une étude sur les débits environnementaux (https://www.ccme.ca/files/Resourcess/water/water_conservation/Environmental%20Flow%20Needs%20Approaches%20Successes%20and%20Challenges%20-%20Summary%20Report.pdf) et les impacts cumulatifs des prélèvements d'eau (rapport à venir).
- Le Québec finance à l'ordre de 1,8 million de dollars canadiens une mesure ciblant la prise en compte des changements climatiques lors de l'évaluation des impacts cumulatifs des prélèvements d'eau dans le Plan d'action sur les changements climatiques 2013-2020 (PACC) :
(<http://www.environnement.gouv.qc.ca/cqfv/documents/fiches-suivi/environnement/30-3-3-cc-evaluation-prelevements-eau.pdf>)
- Le PACC a aussi financé un projet mené par le ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec visant l'élaboration de stratégies de conservation et de gestion de l'eau en milieu agricole. Le projet se termine en 2020.
- Le Québec met au point une méthode et des outils pour évaluer les répercussions individuelles et cumulatives des prélèvements d'eau, qui serviront à l'analyse des demandes d'autorisation ministérielle en matière de prélèvement d'eau.
- Le Québec poursuit son Programme d'acquisition de connaissances sur les eaux souterraines du Québec pour compléter le portrait des eaux souterraines des régions en vue de les protéger et de renforcer leur durabilité. De plus amples renseignements sur le programme se trouvent à l'adresse suivante :
<http://www.environnement.gouv.qc.ca/eau/souterraines/programmes/acquisition-connaissance.htm>

7. Renseignements supplémentaires

Sans objet.

Programme de conservation et d'utilisation efficace de l'eau

1. État des orientations et objectifs de conservation et d'utilisation efficace de l'eau de la province comparativement à ceux du bassin

En 2011, le gouvernement du Québec a adopté les orientations et objectifs décrits au Programme de conservation et d'utilisation efficace de l'eau du Québec. Pour rédiger les principes directeurs de celui-ci, il s'est inspiré du premier paragraphe de l'article 304 de l'Entente, puis a adapté au contexte québécois les cinq objectifs régionaux que le Conseil régional a adoptés en décembre 2007.

La section 3.2 du Programme de conservation et d'utilisation efficace de l'eau du Québec présente ces orientations et objectifs, et l'annexe B en donne le détail : <http://www.environnement.gouv.qc.ca/programmes/conservation-utilisation-efficace-eau/programme.pdf>

Pour lui permettre de respecter l'article 304 (3) de l'Entente, le Québec participe actuellement aux travaux de mise à jour des objectifs qui ont été réaffirmés en 2014 par le Conseil régional (Résolution n° 23). À la suite de cette mise à jour, le Québec révisera son programme en tenant compte notamment des modifications aux objectifs, s'il y a lieu. Le programme prendra en compte l'évolution des nouvelles technologies et des connaissances scientifiques.

2. Résumé du Programme de conservation et d'utilisation efficace de l'eau

a. Mentions du Programme de conservation et d'utilisation efficace de l'eau du Québec mettant en œuvre des lois, règlements et politiques

L'article 304 de l'Entente, qui porte sur la mise en œuvre du Programme de conservation et d'utilisation efficace de l'eau, a force de loi au Québec grâce à l'article 31.101 de la LQE (<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/Q-2>).

Le paragraphe 2° du premier alinéa de l'article 22 de la LQE stipule que « tout prélèvement d'eau, incluant les travaux et ouvrages que nécessite un tel prélèvement [...] » est subordonné à une autorisation du ministre. Le Règlement sur le prélèvement des eaux et leur protection précise les renseignements et les documents qui doivent accompagner une demande d'autorisation ministérielle. L'évaluation de toute demande d'autorisation de prélèvement ou de transfert d'eau sur le territoire de l'Entente doit se fonder notamment sur les mesures de conservation et d'utilisation efficace en place ou prévues afin de réduire la quantité prélevée.

Le premier alinéa de l'article 31.76 de la LQE indique que :

Tout pouvoir d'autorisation visé par la présente loi relatif à un prélèvement d'eau doit être exercé de manière à assurer la protection des ressources en eau, notamment en favorisant une gestion durable, équitable et efficace de ces ressources ainsi qu'en prenant en compte le principe de précaution et les effets des changements climatiques.

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Il pourrait s'agir, par exemple, de mesures de conservation et d'utilisation efficace.

De la même façon, l'article 25 (et ensuite l'article 26) de la LQE dit :

Lorsqu'il délivre une autorisation, le ministre peut prescrire toute condition, restriction ou interdiction qu'il estime indiquée pour protéger la qualité de l'environnement et pour éviter de porter atteinte à la vie, à la santé, à la sécurité, au bien-être ou au confort de l'être humain, aux écosystèmes, aux espèces vivantes ou aux biens [...].

En outre, le paragraphe 6° du premier alinéa de l'article 31.80 souligne que le gouvernement ou le ministre, selon le cas, peut prescrire toute condition, restriction ou interdiction portant sur :

6° les moyens propres à assurer la conservation de l'eau prélevée et son utilisation efficace ainsi qu'une réduction de la quantité d'eau consommée, perdue ou non retournée au milieu après usage, en tenant compte notamment des meilleures pratiques ou technologies économiquement accessibles ainsi que des particularités des équipements, installations ou procédés concernés.

L'article 31.92 de la LQE stipule notamment que :

S'il implique une quantité moyenne d'eau de 379 000 litres ou plus par jour, ou une quantité moindre déterminée par règlement du gouvernement, qui est destinée à alimenter un système d'aqueduc desservant une municipalité visée au sous-paragraphe a du paragraphe 1° du premier alinéa de l'article 31.91, le transfert hors bassin des eaux provenant d'un nouveau prélèvement ou de l'augmentation d'un prélèvement visés à cet article ne peut être autorisé que si les conditions suivantes sont respectées :

1° le transfert ne peut raisonnablement être évité ou diminué par une utilisation efficace de l'eau ni par la conservation de l'eau provenant d'approvisionnements existants;

2° la quantité d'eau transférée est raisonnable compte tenu de l'usage auquel est destinée cette eau;

3° le transfert ne cause aucun impact négatif significatif, individuel ou cumulatif, sur la qualité ou la quantité des eaux du bassin et des ressources naturelles qui en dépendent;

4° le transfert est soumis à des mesures de conservation de l'eau déterminées par règlement du gouvernement, ou par le ministre en vertu d'autres dispositions de la présente loi.

S'il implique une consommation moyenne d'eau de 19 millions de litres ou plus par jour, le transfert d'eau hors bassin visé au premier alinéa est également subordonné à l'examen du Conseil régional des ressources en eaux des Grands Lacs et du fleuve Saint-Laurent créé en vertu de l'Entente.

L'article 4 du Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent, qui autorise les dispositions de l'article 31.92 de la LQE, stipule notamment :

Si le transfert d'eau projeté implique une quantité moyenne d'eau de 379 000 litres ou plus par jour qui est destiné à alimenter un système d'aqueduc desservant une

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municipalité [...], cette demande doit, en outre des renseignements et documents mentionnés à l'article 3, être accompagnée des documents et renseignements suivants :

1° une description des mesures de conservation et d'utilisation efficace de l'eau que le demandeur d'autorisation s'engage à réaliser, incluant les échéanciers applicables;

2° une description des indicateurs de suivi qui seront utilisés pour permettre le contrôle de ces mesures de conservation et d'utilisation;

3° une description narrative expliquant en quoi le transfert de l'eau est nécessaire. La description doit aussi comprendre une analyse de l'efficacité des utilisations actuelles de l'eau, y compris l'application de mesures de conservation judicieuses au plan environnemental et économiquement réalisables concernant les approvisionnements existants pour diminuer au maximum le volume d'eau à transférer;

4° une description narrative expliquant en quoi les quantités d'eau dont le transfert est projeté sont raisonnables en ce qui a trait à l'utilisation proposée. Pour ce faire, la demande doit également comporter un plan d'utilisation de l'eau. Le plan doit comprendre :

[...] c) une évaluation des économies liées à l'utilisation efficace de l'eau; [...]

Ce règlement peut être consulté à l'adresse suivante :

<http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2.%20r.%205.1>

L'article 31.95 de la LQE stipule notamment que :

S'il implique une quantité ou consommation moyenne d'eau de 379 000 litres ou plus par jour [...], un nouveau prélèvement dans le bassin du fleuve Saint-Laurent, ou toute augmentation de ce prélèvement ou d'un prélèvement existant [...] ne peut être autorisé que si les conditions suivantes sont respectées [...]:

[...] 3° le prélèvement ou la consommation d'eau est soumis à des mesures de conservation de l'eau déterminées par règlement du gouvernement [...];

4° la quantité d'eau prélevée ou consommée est raisonnable compte tenu notamment :

[...] b) des mesures prises pour utiliser efficacement et conserver l'eau, dont celle provenant des approvisionnements existants [...].

Ainsi, le processus d'autorisation est un moyen de favoriser la mise en œuvre de mesures de conservation et d'utilisation efficace. À cette fin, des exemples de mesures types propres à chaque secteur d'activité sont en cours d'élaboration.

b. Description sommaire du Programme de conservation et d'utilisation efficace de l'eau du Québec, avec indication des éléments volontaires et obligatoires

Le document suivant décrit le Programme de conservation et d'utilisation efficace de l'eau du Québec, et son annexe C en énumère les mesures :

<http://www.environnement.gouv.qc.ca/programmes/conservation-utilisation-efficace-eau/programme.pdf>

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La majorité des mesures sont sous la responsabilité volontaire du ministère de l'Environnement et de la Lutte contre les changements climatiques, du ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, du ministère des Affaires municipales et de l'Habitation, du ministère de l'Économie et de l'Innovation et du ministère de l'Énergie et des Ressources naturelles et sont mises en œuvre partout au Québec. Quant aux mesures qui concernent les lois et les règlements, leur mise en œuvre est obligatoire.

3. Description de la stratégie provinciale de promotion de mesures de conservation de l'eau judicieuses au plan environnemental et économiquement réalisables

Le tableau suivant donne des précisions sur chaque objectif adopté dans le cadre de l'Entente (Résolution 6, accessible en anglais à l'adresse http://www.glsregionalbody.org/Docs/Resolutions/GLSLRWRRB_Resolution_6-Conservation-Efficiency.pdf) et décrit les orientations par objectif qui figurent au Programme de conservation et d'utilisation efficace de l'eau du Québec.

OBJECTIFS	RÉFÉRENCE À LA LOI OU À UN PROGRAMME
Guider les programmes vers une utilisation durable de l'eau.	La première orientation, <i>Agir pour pérenniser les approvisionnements en eau en considérant les écosystèmes et les usages de l'eau</i> , relève directement des mesures gouvernementales visant la durabilité des prélèvements d'eau au Québec. Ces mesures portent sur trois objectifs : vaincre les obstacles juridiques, réduire l'utilisation d'eau dans certains secteurs et protéger les écosystèmes.
Adopter et mettre en œuvre la gestion de l'approvisionnement et de la demande afin de promouvoir la conservation et l'utilisation efficace des ressources hydriques.	La deuxième orientation, <i>Adopter et mettre en œuvre une gestion de la disponibilité de l'eau et des prélèvements d'eau qui tient compte de l'impact anticipé des changements climatiques</i> , concerne le nouveau régime d'autorisation fondé sur des principes de saine gestion. L'orientation poursuit deux objectifs : déterminer le volume d'eau prélevé, consommé et rejeté, et approfondir les connaissances sur les répercussions des changements climatiques sur l'offre et la demande.
Améliorer le suivi et normaliser la communication des données entre les programmes des États et des provinces.	La troisième orientation, <i>Mettre en place un suivi du Programme de conservation et d'utilisation efficace de l'eau</i> , confie au ministère de l'Environnement et de la Lutte contre les changements climatiques la coordination et le suivi du programme. L'orientation poursuit deux objectifs : mettre au point un mode d'évaluation du programme et faire de celui-ci une source intarissable de connaissances.

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Faire progresser la science, la technologie et la recherche.	La quatrième orientation, <i>Encourager la recherche scientifique, le développement technologique et l'acquisition de connaissances</i> , tient de l'approfondissement des connaissances sur la conservation de l'eau et son utilisation efficace. Les trois objectifs sont de renforcer les travaux de recherche, d'encourager les partenariats et de favoriser les progrès technologiques.
Élaborer des programmes d'éducation et des mécanismes d'échange de renseignements pour tous les consommateurs d'eau.	La cinquième orientation, <i>Sensibiliser, informer, outiller et mobiliser les acteurs et utilisateurs de l'eau</i> , rassemble des moyens efficaces pour guider, soutenir et autonomiser ces personnes en matière de conservation et d'utilisation efficace. Cette orientation compte quatre objectifs : conscientiser les gens à l'importance de l'eau, les informer, mettre au point de bons outils et reconnaître les efforts accomplis.

4. Description du calendrier et de la progression de la mise en œuvre du Programme de conservation et d'utilisation efficace de l'eau du Québec

Depuis l'adoption et la publication du Programme de conservation et d'utilisation efficace de l'eau du Québec en 2013, un suivi annuel des mesures est effectué par le ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC). En tant que coordonnateur du programme, le MELCC produit en format tableau un rapport annuel en vertu de l'article 304 de l'Entente afin de suivre le progrès de chaque mesure par rapport à l'objectif initial et la cible. Ces rapports sont disponibles en français et en anglais à l'adresse suivante : <http://www.glsregionalbody.org/Resolutions.aspx#ProgramReports>

L'examen quinquennal du programme en cours, en vertu de l'article 300 de l'Entente, coïncide avec le bilan quinquennal du Programme de conservation et d'utilisation efficace de l'eau du Québec. Ainsi, tous les collaborateurs du MELCC et des autres ministères provinciaux ont évalué l'atteinte de chaque mesure dont ils sont responsables. Subséquemment, des 54 mesures évaluées, 42 ont été atteintes et 9 ont été partiellement atteintes. Le tableau 1 ci-dessous illustre les résultats du bilan quinquennal du programme. Il est à noter que certaines mesures se retrouvent dans plus d'une orientation. Pour plus de détail, veuillez consulter le tableau à l'annexe 1 du présent document.

Étant donné que le Programme de conservation et d'utilisation efficace de l'eau du Québec arrive à la fin d'une première période quinquennale, il sera analysé et renouvelé en concordance avec les objectifs régionaux. Ces derniers seront adoptés par le Conseil régional en décembre 2019.

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Tableau 1

Orientation # 1: Agir pour pérenniser les approvisionnements en eau en considérant les écosystèmes			
Objectif # 1: Examiner la législation existante et élaborer, au besoin, une nouvelle législation			
Évaluation des mesures de l'orientation # 1			
Mesures	Atteinte	Partiellement atteinte	Non-atteinte
13	9	4	0

Orientation # 2: Adopter et mettre en œuvre une gestion des prélèvements d'eau qui tient compte de l'impact anticipé des changements climatiques.			
Objectif # 4: Connaître les quantités d'eau prélevées, consommées et rejetées			
Évaluation des mesures de l'orientation # 2			
Mesures	Atteinte	Partiellement atteinte	Non-atteinte
9	7	2	0

Orientation # 3: Mettre en place un suivi du Programme de conservation et d'utilisation efficace de l'eau			
Objectif # 6: Élaborer le processus d'évaluation de l'atteinte des objectifs et réaliser l'évaluation			
Évaluation des mesures de l'orientation # 3			
Mesures	Atteinte	Partiellement atteinte	Non-atteinte
8	5	0	3

Orientation 4 : Encourager la recherche scientifique, le développement technologique et l'acquisition de connaissances			
Objectif 8 : Renforcer les efforts d'acquisition de connaissances sur la conservation et l'utilisation efficace de l'eau			
Évaluation des mesures de l'orientation # 4			
Mesures	Atteinte	Partiellement atteinte	Non-atteinte
12	9	3	0

Orientation 5 : Sensibiliser, informer, outiller et mobiliser les acteurs et les utilisateurs de l'eau			
Objectif 11 : Conscientiser les acteurs et les utilisateurs de l'eau à la valeur de l'eau			
Évaluation des mesures de l'orientation # 5			
Mesures	Atteinte	Partiellement atteinte	Non-atteinte
12	12	0	0

Annexe 1. Programme de conservation et d'utilisation efficace de l'eau du Québec - Suivi des mesures (2013-2018)

Orientation 1 : Agir pour pérenniser les approvisionnements en eau en considérant les écosystèmes et les usages de l'eau

Objectif 1 : Examiner la législation existante et élaborer, au besoin, une nouvelle législation

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
Cible 1.1 : Inclure dans la législation québécoise les dispositions de l'Entente sur les ressources en eaux durables du bassin des Grands Lacs et du fleuve Saint-Laurent							
1	Mise en vigueur de la Loi affirmant le caractère collectif des ressources en eau et favorisant une meilleure gouvernance de l'eau et des milieux associés (Loi sur l'eau)	MELCC	Marie-Claude Théberge	Adoptée le 11 juin 2009; mise en vigueur complète le 14 août 2014 et modifiée puis adoptée en 2017	La Loi permet d'inclure les dispositions de l'Entente sur les ressources en eaux durables du bassin des Grands Lacs et du fleuve Saint-Laurent dans la Loi sur la qualité de l'environnement (article 31.88 à 31.104) et d'introduire l'article 31.101 qui présente les considérations liées au programme de conservation et d'utilisation efficace de l'eau. L'adoption de la Loi concernant la conservation des milieux humides et hydriques est venue modifier la Loi affirmant le caractère collectif des ressources en eau et visant à renforcer leur protection, notamment pour reconnaître les fonctions écologiques exercées par les milieux humides et hydriques, préciser le rôle des organismes de bassin versant et des tables de concertation régionales et confier aux municipalités régionales de comté et aux municipalités locales la responsabilité d'élaborer et de mettre en œuvre un plan régional des milieux humides et hydriques à l'échelle de leurs territoires respectifs.	Inclure dans la législation québécoise les exigences de l'Entente sur les ressources en eaux durables du bassin des Grands Lacs et du fleuve Saint-Laurent en mettant en œuvre toutes les dispositions de la Loi sur l'eau. (Adoptée en 2009, seule la sous-section relative à la « gestion des ressources en eau » restait à être mise en vigueur.)	<p>Objectif quinquennal atteint depuis 2014.</p> <p>Toutes les exigences de l'Entente sont incluses dans la législation québécoise par la mise en vigueur de toutes les dispositions de la Loi affirmant le caractère collectif des ressources en eau et favorisant une meilleure gouvernance de l'eau et des milieux associés (Loi sur l'eau).</p> <p>Les articles de la Loi sur l'eau concernant l'Entente ont ensuite été introduits dans la Loi sur la qualité de l'environnement. Les exigences de l'Entente sont précisées dans la section V de la Loi, de l'article 31.74 à l'article 31.108. L'article 31.101 indique que le ministre peut mettre en œuvre des programmes sur l'utilisation efficace et la conservation de l'eau qui prennent appui sur les objectifs fixés par le Conseil régional des ressources en eaux des Grands Lacs et du fleuve Saint-Laurent. L'adoption et l'entrée en vigueur en 2014 du Règlement sur les prélèvements d'eau et leur protection ont permis la mise en place complète de la sous-section relative à la « gestion des ressources en eau ».</p> <p>Le Québec a mis en vigueur trois règlements, soit le Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent, le Règlement modifiant le règlement sur la déclaration des prélèvements d'eau et le Règlement sur le prélèvement des eaux et leur protection.</p> <p>La Loi sur l'eau peut être consultée à l'adresse suivante : http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/C-6</p>

Cible 1.2 : Mettre en vigueur les règlements nécessaires pour encadrer les prélèvements d'eau

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
2	Mise en vigueur du Règlement sur la déclaration des prélèvements d'eau (RDPE)	MELCC	Issa Ouédraogo	Adopté le 12 août 2009, mis en vigueur le 10 septembre 2009. Modifié le 22 juin 2011 et mis en vigueur le 1 ^{er} septembre 2011	<i>Réponds également à l'objectif 4. La mise en vigueur de ce règlement permet d'encadrer les prélèvements d'eau en nous permettant de connaître les volumes d'eau prélevés et consommés au Québec. Le règlement vise les prélèvements égaux ou supérieurs à 75 000 litres par jour, sauf exception. Cette information est à la base des connaissances sur les usages de l'eau nécessaires pour déterminer l'impact potentiel de prélèvements nouveaux ou augmentés et la nécessité de conserver et d'utiliser efficacement l'eau.</i>	Mise en œuvre de toutes les dispositions du Règlement sur la déclaration des prélèvements d'eau afin d'encadrer les prélèvements d'eau. (Le règlement est pleinement entré en vigueur en 2011.)	Objectif quinquennal atteint depuis 2011. Le Règlement sur les déclarations des prélèvements d'eau a été adopté en 2009 et modifié en 2011. De plus, des outils ont été développés pour faciliter les déclarations de prélèvements d'eau. Depuis 2015, les secteurs agricoles et piscicoles doivent déclarer leurs prélèvements d'eau. Toutes les dispositions du Règlement sur la déclaration des prélèvements d'eau ont été mises en œuvre. Le Règlement peut être consulté à l'adresse suivante : http://legisquebec.gouv.qc.ca/fr/pdf/cr/Q-2,%20R.%2014.pdf
3	Mise en vigueur du Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent	MELCC	Issa Ouédraogo	Adopté le 22 juin 2011 et mis en vigueur le 1 ^{er} septembre 2011	La mise en vigueur de ce règlement permet d'encadrer certains cas bénéficiant d'une exception à l'interdiction de transférer l'eau qui sont liés aux besoins en eau potable des municipalités. L'article 3 du règlement indique qu'une demande d'autorisation doit être déposée au MELCC pour tout transfert d'eau ou augmentation de transfert d'eau à l'extérieur du bassin du fleuve Saint-Laurent. Pour qu'un transfert soit autorisé, le préleveur doit mettre en œuvre des mesures de conservation et d'utilisation efficace de l'eau.	Mise en œuvre de toutes les dispositions du Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent afin d'encadrer les prélèvements d'eau. (Le règlement est pleinement entré en vigueur en 2011.)	Objectif quinquennal atteint en 2011. Les articles 31.105 à 31.108 de la Loi sur la qualité de l'environnement viennent préciser le cadre dans lequel certains transferts d'eau peuvent bénéficier d'une exception à l'interdiction des transferts d'eau hors Québec. En application de l'article 31.108 de la Loi sur la qualité de l'environnement, le ministre de l'Environnement a déposé le deuxième Rapport sur l'interdiction des transferts d'eau hors Québec en 2017. Toutes les dispositions du Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent ont été mises en œuvre. Le Règlement peut être consulté à l'adresse suivante : http://legisquebec.gouv.qc.ca/fr/pdf/cr/Q-2,%20R.%2015.1.pdf Le Rapport peut être consulté à l'adresse suivante : http://www.environnement.gouv.qc.ca/eau/protection/rapport-transferts-eau-hors-qc.pdf

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
4	Mise en vigueur du Règlement sur les prélèvements des eaux et leur protection (RPEP)	MELCC	Michel Ouellet/ Judith Kirby	Adopté le 17 juillet 2014 et mis en vigueur le 14 août 2014, sauf exception, mise en vigueur complète en 2015.	<p><i>Réponds également à l'objectif 12 La mise en vigueur de ce règlement permet d'encadrer les prélèvements d'eau. Il prévoit les modalités relatives à l'autorisation des prélèvements d'eau et des dispositions administratives et pénales pour assurer son respect. Pour être autorisés, les prélèvements supérieurs ou égaux à 379 000 litres par jour assujettis à l'article 31.95 de la Loi sur la qualité de l'environnement devront respecter certaines conditions, notamment la mise en place de mesures de conservation et d'utilisation efficace de l'eau. Pour être autorisés, les prélèvements compris entre 75 000 et 379 000 litres par jour pourront être conditionnels à la mise en place de mesures de conservation et d'utilisation efficace de l'eau selon la vulnérabilité du milieu.</i></p>	<p>Mise en vigueur du Règlement sur le prélèvement des eaux et leur protection (RPEP). (L'entrée en vigueur du RPEP est le 14 août 2014 à l'exception des articles 11 à 30 qui entrent en vigueur le 2 mars 2015 et des articles 68 et 75 qui entrent en vigueur le 1er avril 2015.)</p>	<p>Objectif quinquennal atteint depuis 2015.</p> <p>Toute la section V « Protection et gestion des ressources en eau » de la Loi sur la qualité de l'environnement vient encadrer les prélèvements d'eau au Québec. Par ailleurs, des outils ont été développés pour faciliter l'application du Règlement sur le prélèvement des eaux et leur protection. Toutes les dispositions du Règlement ont été mises en œuvre.</p> <p>Le Règlement peut être consulté à l'adresse suivante : http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2,%20r.%2035.2</p>

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
Objectif 2 : Favoriser une réduction de l'utilisation de l'eau dans tous les secteurs d'activité							
N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
Cible 2.1 : Mettre en œuvre des cadres d'action pour favoriser la diminution de l'utilisation de l'eau dans les secteurs institutionnel et municipal							
6	Stratégie québécoise d'économie d'eau potable (SEEP)	MAMH	Mathieu Laneuville	Adoptée le 1 ^{er} avril 2012 / en application dans toutes les municipalités du Québec	Cette stratégie demande aux municipalités de se doter d'un plan d'action pour diminuer la consommation d'eau potable, de mettre en place, au besoin, un programme de recherche et de réparation de fuite, d'adopter un règlement municipal sur l'utilisation de l'eau potable et de produire un rapport annuel sur la gestion de l'eau. Cette mesure du MAMH favorise une réduction de l'utilisation de l'eau dans tous les secteurs d'activité qui prélèvent de l'eau à partir d'un réseau municipal.	Accompagner les municipalités québécoises ayant un réseau de distribution d'eau potable dans leur démarche d'économie d'eau	<p>Objectif quinquennal atteint.</p> <p>Selon le Bilan 2016, 612 municipalités ont fourni leur formulaire de l'usage de l'eau potable, soit 77 % des municipalités ayant un réseau de distribution d'eau potable et 95 % de la population desservie par un réseau de distribution d'eau potable au Québec. La quantité d'eau distribuée par personne par jour est passée de 777 litres en 2001 à 551 litres en 2016, ce qui correspond à une réduction de 29 %, soit environ 2 % par année.</p> <p>Toutes les municipalités dotées d'un réseau de distribution d'eau potable conforme participent à la Stratégie québécoise d'économie d'eau potable, ce qui implique 1) la réalisation d'un bilan d'eau pour évaluer les indicateurs de performance, 2) la mise en place d'un plan d'action en économie d'eau, 3) la mise en place d'un programme de recherche et de réparation de fuites si les indicateurs de pertes d'eau n'atteignent pas les objectifs, 4) l'adoption et l'application d'une réglementation municipale sur l'utilisation de l'eau potable, 5) la mesure, l'enregistrement de données et la vérification des instruments de mesure de l'eau distribuée qui se font.</p> <p>La stratégie peut être consultée sur la page suivante : https://www.MAMH.gouv.qc.ca/infrastructures/strategie/a-propos-de-la-strategie/</p>

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7	Modification du Code de construction (chapitre <i>Plomberie et Bâtiment</i>) interdisant la vente ou l'installation d'équipements surconsommant l'eau (dans le cadre de la Stratégie d'économie d'eau potable)	MAMH/ Régie du bâtiment du Québec (RBQ)	Yves Duchesne et Nathalie Lessard/ Mathieu Laneuville	En cours	Le code de construction vise notamment à interdire, pour la clientèle visée, l'installation des modèles de toilettes de plus de 6 litres/chasse, d'urinoirs de plus de 1,9 litre/chasse et d'urinoirs à chasse automatique ainsi que des systèmes de climatisation ou de refroidissement à l'eau potable sans boucle de recirculation; elle permet donc de réduire l'utilisation de l'eau potable dans le secteur résidentiel et institutionnel.	Par la modification du code de construction, interdire, pour la clientèle visée, l'installation des modèles de toilettes de plus de 6 litres/chasse, d'urinoirs de plus de 1,9 litre/chasse et d'urinoirs à chasse automatique ainsi que des systèmes de climatisation ou de refroidissement à l'eau potable sans boucle de recirculation	<p>Objectif quinquennal atteint en 2015.</p> <p>Le Code de construction a été révisé en 2014 et en 2015 pour interdire l'installation d'équipements surconsommant l'eau (modèles de toilettes de plus de 6 L/chasse, urinoirs de plus de 1,9 L/chasse, urinoirs à réservoir de chasse automatique, systèmes de refroidissement et de climatisation à l'eau potable).</p> <p>Le Code de construction peut être consulté à l'adresse suivante : http://legisquebec.gouv.qc.ca/fr/showdoc/cr/B-1.1,%20r.%202</p> <p>Un nouvel objectif serait d'interdire l'installation des modèles de toilettes de plus de 4,8 L/chasse dans les habitations, des pommeaux de douche de plus de 7,6 L/min et des robinets de lavabo de plus de 5,7 L/min lors de la prochaine révision du Code de construction.</p>

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44	Stratégie québécoise de l'eau 2018-2030	MELCC	Patrick Émond	Lancée en 2018	La Stratégie québécoise de l'eau 2018-2030 en développement devrait inclure un objectif visant la gestion durable des quantités d'eau. La Stratégie va se traduire par des plans d'action quinquennaux qui incluront des mesures visant à favoriser une réduction de l'utilisation de l'eau dans tous les secteurs d'activité.	Mettre en place un cadre d'action, par l'adoption d'une Stratégie québécoise de l'eau et de plans d'action quinquennaux, favorisant la réduction de l'utilisation de l'eau dans tous les secteurs d'activité.	<p>Objectif quinquennal partiellement atteint.</p> <p>La Stratégie québécoise de l'eau (SQE) a été lancée en juin 2018. La réduction et l'utilisation efficace de l'eau font partie de l'orientation 5 (Promouvoir l'utilisation durable de l'eau) dont un des objectifs est d'encourager le développement et l'adoption de pratiques visant l'économie de l'eau ainsi que l'utilisation durable de l'eau à laquelle est associée une cible de réduction de la consommation 20 % d'ici 2025.</p> <p>Le plan d'action a été annoncé en même temps que la SQE en 2018. Le plan d'action favorisant la réduction de l'utilisation de l'eau pour tous les secteurs d'activité n'a pas été élaboré. Néanmoins, trois mesures sont en lien avec la conservation et l'utilisation efficace de l'eau, soit 5.1.2, Adopter la poursuite de la SEEP de 2018 à 2025 (consommation d'eau du secteur résidentiel), 5.1.3, Appuyer le recours à des technologies et des techniques novatrices permettant de meilleures performances environnementales des entreprises (principalement le secteur agricole), et 5.1.4, Sensibiliser la population à la protection et à l'utilisation durable de l'eau (mois de l'eau, sensibilisation sur deux ans par le Réseau environnement et le Regroupement des organismes de bassins versants du Québec).</p> <p>La Stratégie et le premier plan d'action peuvent être consultés à l'adresse suivante : http://www.environnement.gouv.qc.ca/eau/strategie-quebecoise/</p>
8	Poursuivre la mise en œuvre des politiques d'économie d'eau potable dans les immeubles gouvernementaux et ceux des réseaux de la santé et des services sociaux et de l'éducation	MAMH/SIQ/MSSS/MEES/ MELCC/MESI	Mathieu Laneuville/ Isabelle Verret/ Chantal Saucier/ Guylaine Coutu/ Carole Faucher	En continu	Cette mesure permet l'adoption de plans d'action et l'implantation des correctifs ciblés dans les immeubles gouvernementaux afin de diminuer l'utilisation d'eau potable dans le secteur institutionnel.	Adoption des plans d'action et implantation des correctifs ciblés dans les immeubles gouvernementaux afin de diminuer l'utilisation d'eau potable dans le secteur institutionnel.	<p>Objectif quinquennal partiellement atteint en 2016.</p> <p>Un plan d'action a été adopté dans les réseaux de la santé et des services sociaux, des cégeps et des universités en 2014 et dans les commissions scolaires en 2016.</p> <p>Les résultats de l'application de la politique d'économie d'eau dans les réseaux de la santé et des services sociaux, des commissions scolaires, des collèges et des universités ainsi qu'à la Société québécoise des infrastructures sont disponibles à partir du site Web de la Stratégie québécoise d'économie d'eau potable.</p>
Cible 2.2 : Mettre en place des incitatifs économiques qui encouragent les utilisateurs de l'eau à diminuer le volume de leurs prélèvements d'eau							

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9	Mise en vigueur du Règlement sur la redevance exigible pour l'utilisation de l'eau	MELCC	Issa Ouédraogo	Adopté le 1 ^{er} décembre 2010 et mis en vigueur le 1 ^{er} janvier 2011	<p><i>Réponds également aux objectifs 2 En obligeant les préleveurs d'eau de 75 000 litres et plus par jour à payer une redevance au prorata de leur prélèvement d'eau, ce règlement aura comme effet de les sensibiliser à la valeur de l'eau et de favoriser une utilisation efficace de l'eau.</i></p> <p><i>Réponds également à l'objectif 11. Ce règlement oblige tous les préleveurs d'eau de 75 000 litres par jour et plus à payer une redevance (articles 1 à 15) en fonction du volume d'eau prélevé. Il s'agit d'un incitatif économique qui favorise la diminution de l'utilisation de l'eau dans tous les secteurs d'activité.</i></p>	<p>Mettre en place des incitatifs économiques qui encouragent les utilisateurs de l'eau à diminuer le volume de leurs prélèvements d'eau.</p> <p>L'objectif pour les 5 prochaines années est de suivre les variations annuelles des volumes d'eau prélevés par les préleveurs ayant payé des redevances sur l'utilisation de l'eau.</p>	<p>Objectif quinquennal atteint en 2011.</p> <p>Le Règlement sur la redevance exigible sur l'utilisation de l'eau est entré en vigueur en 2011. Les secteurs agricole, municipal, commercial et institutionnel ne sont pas assujettis au Règlement.</p> <p>Un rapport de mise en œuvre du Règlement entre 2011 et 2015 a été publié en 2017.</p> <p>Les données de prélèvement d'eau des cinq dernières années ne permettent pas de conclure que l'introduction de la redevance sur l'utilisation de l'eau a entraîné une diminution des volumes d'eau prélevés ou consommés. Néanmoins, on peut observer qu'il y a une variation des volumes d'eau prélevés tantôt à la baisse et quelques fois à la hausse. Ainsi, on remarque une diminution des volumes d'eau prélevés entre 2013 et 2018 de 0,5 % en moyenne depuis 2013.</p> <table border="1"> <thead> <tr> <th>Année</th> <th>Volume/M</th> <th>Redevance \$/M</th> <th>Nombre d'activités</th> </tr> </thead> <tbody> <tr> <td>2018</td> <td>840 121 749,70</td> <td>2 995 471,06 \$</td> <td>616</td> </tr> <tr> <td>2017</td> <td>844 059 287,54</td> <td>3 061 580,14 \$</td> <td>676</td> </tr> <tr> <td>2016</td> <td>837 100 041,29</td> <td>3 056 936,85 \$</td> <td>681</td> </tr> <tr> <td>2015</td> <td>826 822 779,99</td> <td>3 085 476,35 \$</td> <td>678</td> </tr> <tr> <td>2014</td> <td>860 086 191,23</td> <td>3 063 123,44 \$</td> <td>678</td> </tr> <tr> <td>2013</td> <td>876 892 964,11</td> <td>3 132 852,86 \$</td> <td>682</td> </tr> </tbody> </table> <p>Données extraites en avril 2019</p> <p>Le rapport de mise en œuvre du Règlement sur la redevance exigible pour l'utilisation de l'eau est disponible à l'adresse suivante : http://www.environnement.gouv.qc.ca/eau/redevance/rapport2017-RREUE.pdf</p> <p>Le Règlement sur la redevance exigible pour l'utilisation de l'eau est disponible à l'adresse suivante : http://legisquebec.gouv.qc.ca/fr/ShowDoc/cr/Q-2,%20r.%2042.1</p>	Année	Volume/M	Redevance \$/M	Nombre d'activités	2018	840 121 749,70	2 995 471,06 \$	616	2017	844 059 287,54	3 061 580,14 \$	676	2016	837 100 041,29	3 056 936,85 \$	681	2015	826 822 779,99	3 085 476,35 \$	678	2014	860 086 191,23	3 063 123,44 \$	678	2013	876 892 964,11	3 132 852,86 \$	682
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Cible 2.3 : Mettre à la disposition des préleveurs d'eau des exemples de mesures de conservation et d'utilisation efficace de l'eau pour favoriser leur adoption							
10	Établissement de mesures de conservation et d'utilisation efficace de l'eau applicables à chaque secteur d'activité dans le cadre de l'autorisation des prélèvements d'eau nouveaux ou augmentés	MELCC	Issa Ouédraogo	En cours	<p>Cette mesure s'inscrit dans le cadre du nouveau régime d'autorisation des prélèvements d'eau prévu au projet de Règlement sur les prélèvements des eaux et leur protection. En ce qui concerne l'autorisation des prélèvements d'eau nouveaux ou augmentés, les préleveurs d'eau de 75 000 litres et plus par jour devront démontrer l'acceptabilité de leur demande et pourront, entre autres, proposer d'appliquer des mesures de conservation et d'utilisation efficace de l'eau pour diminuer leurs prélèvements. Par ailleurs, les préleveurs de 379 000 litres et plus par jour assujettis à l'art 31.95 de la Loi sur la qualité de l'Environnement devront mettre en oeuvre des mesures de conservation et d'utilisation efficace de l'eau pour demander une autorisation. La production d'une liste de référence proposant des mesures de conservation et d'utilisation efficace de l'eau adaptées à chaque secteur d'activité facilite l'adoption de ces mesures par les préleveurs dans chaque secteur d'activité.</p>	<p>Avoir un document de référence sur les mesures de conservation et d'utilisation efficace de l'eau propres à chaque secteur d'activité qui soit à jour avec les connaissances et disponible auprès des promoteurs et des analystes.</p>	<p>Objectif quinquennal partiellement atteint.</p> <p>Le document présentant les mesures sectorielles a été validé par des experts de chacun des domaines couverts et sera mis ultérieurement à la disposition des analystes et des promoteurs. La compilation des mesures adoptées dans le cadre d'autorisations de prélèvements suit son cours.</p>
Objectif 3 : Promouvoir le maintien d'une quantité d'eau et d'une qualité de l'eau suffisantes pour assurer l'intégrité des écosystèmes							
Cible 3.1 : Élaborer et mettre en application des méthodes pour tenir compte des impacts cumulatifs des prélèvements d'eau sur la capacité de support des écosystèmes et la vulnérabilité des prélèvements d'eau potable							

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
11	Évaluation des impacts cumulatifs lors de l'analyse des demandes de prélèvements, de consommation et de transferts d'eau	MELCC	Judith Kirby	En cours	<p><i>Réponds également à l'objectif 5 La méthode mise au point pour analyser les impacts cumulatifs des prélèvements d'eau permet de s'assurer que des quantités suffisantes d'eau sont disponibles pour maintenir l'intégrité des écosystèmes. Les préleveurs doivent mettre en œuvre des mesures de conservation et d'utilisation efficace de l'eau plus ou moins exigeantes en fonction de leur impact potentiel sur l'intégrité des écosystèmes afin d'obtenir l'autorisation de faire leur prélèvement d'eau dans le cadre du nouveau régime d'autorisation des prélèvements d'eau prévu dans le Règlement sur les prélèvements des eaux et leur protection.</i></p>	Établir un processus/méthodologie permettant la prise en compte des impacts cumulatifs des prélèvements lors de l'autorisation par le MELCC.	<p>Objectif quinquennal atteint partiellement.</p> <p>La méthode est toujours en validation.</p> <p>Les outils permettant la prise en compte des impacts cumulatifs des prélèvements d'eau sont encore en cours de validation.</p>

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
Cible 3.2 : Adapter la gestion de la quantité d'eau afin de tenir compte de la capacité de support des écosystèmes							
12	Adaptation de la gestion des barrages publics	MELCC	Julie Lafleur/Patricia Clavet	En continu	Les plans de gestion des ouvrages gérés par le Centre d'expertise hydrique du Québec (CEHQ) énoncent les paramètres d'exploitation des ouvrages qui tiennent compte des périodes de crues et de faible hydraulicité. Au besoin, les plans de gestion sont adaptés pour optimiser la gestion dans la perspective, notamment, de respecter la capacité de support des écosystèmes.	Assurer une gestion écosystémique en continu des barrages du Gouvernement du Québec afin d'optimiser la capacité de support des écosystèmes en période de crue et d'étiage.	Objectif quinquennal atteint annuellement.

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13	Commission de planification et de régulation de la rivière des Outaouais (CPRRO)	MELCC	Patricia Clavet	En cours	<p>La Commission est formée de représentants du Canada, de l'Ontario et du Québec et elle assure une gestion intégrée des principaux réservoirs du bassin versant de la rivière des Outaouais. Cette gestion vise une protection contre les inondations le long de la rivière des Outaouais et de ses affluents et dans la région de Montréal en tenant compte des intérêts des différents utilisateurs. Les réservoirs permettent aussi un apport en eau supplémentaire en période d'été afin, notamment, de maintenir l'intégrité des écosystèmes. La Commission prévoit fixer des objectifs communs pour optimiser la gestion intégrée lors des périodes d'été.</p>	<p>En période de crue, gestion écosystémique en continu des barrages suivant l'Entente de la Commission de planification de la régularisation de la rivière des Outaouais (CPRRO) afin d'optimiser la capacité de support des écosystèmes.</p> <p>En période d'été, gestion écosystémique en continu des barrages suivant l'Entente de la Commission de planification de la régularisation de la rivière des Outaouais (CPRRO) afin d'optimiser la capacité de support des écosystèmes.</p>	Objectif quinquennal atteint annuellement.

Orientation # 2: Adapter et mettre en œuvre une gestion des prélèvements d'eau qui tient compte de l'impact anticipé des changements climatiques.

Objectif 4 : Connaître les quantités d'eau prélevées, consommées et rejetées

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
Cible 4.1 : Se doter d'un système de gestion des prélèvements d'eau							
14	Mise en fonction du Système informatique sur la gestion des prélèvements en eau (GPE)	MELCC	Jonathan Couillard St-Pierre	Mars 2010	Ce système informatique permet de recueillir dans une base de données toute l'information sur les prélèvements d'eau au Québec obtenue dans le cadre du Règlement sur la déclaration des prélèvements d'eau et du Règlement sur les redevances exigibles pour l'utilisation de l'eau. Ces données sont à la base des connaissances sur les quantités d'eau prélevées au Québec pour des volumes égaux ou supérieurs à 75 000 litres par jour et le système GPE permet de les regrouper de façon structurée.	Au plus tard en mars 2009, avoir développé et mis en ligne un système de gestion des prélèvements d'eau pour répondre au Règlement sur la déclaration des prélèvements d'eau.	Objectif atteint en 2014. Le système informatique de gestion des prélèvements d'eau a été développé et mis en ligne. Le système est entièrement fonctionnel et permet de récolter les données sur le prélèvement d'eau au Québec.
Cible 4.2 : Développer et consolider les connaissances sur les quantités d'eau prélevées pour tous les secteurs d'activité							

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15	Entente administrative MAPAQ-MELCC sur la déclaration des prélèvements d'eau destinés à des fins agricoles et piscicoles	MAPAQ/ MELCC	Issa Ouédraogo	7 décembre 2011 Échéance : 30 sept. 2016, avec reconduction tacite	Cette entente vise à faciliter la déclaration des prélèvements d'eau des producteurs agricoles et piscicoles. L'entente prévoit notamment la mise en place d'un projet de suivi d'entreprises types pour la détermination de standards de prélèvement d'eau en pisciculture afin d'établir des standards facilitant la déclaration annuelle des entreprises piscicoles touchées par le Règlement sur la déclaration des prélèvements d'eau adopté le 22 juin 2011. Cette mesure contribue à améliorer les connaissances sur les volumes d'eau prélevés et consommés en agriculture et en aquaculture.	<p>Annuellement, au plus tard le 31 mars, le MAPAQ transmet au MELCC des données sur les prélèvements d'eau agricoles et piscicoles sur l'ensemble du territoire du Québec. Les données doivent être ventilées mensuellement, par région administrative, par bassin versant, par code SCIAN et par provenance (souterrain/surface).</p> <p>Développer et mettre en ligne un guide d'application destiné à la clientèle agricole et piscicole pour l'application du Règlement sur la déclaration des prélèvements d'eau. Le document doit être en ligne au 1er janvier 2015.</p>	<p>Objectif quinquennal atteint.</p> <p>Le MAPAQ transmet annuellement les données sur les prélèvements d'eau agricoles et piscicoles sur l'ensemble du Québec. L'entente administrative n'est pas reconduite puisque depuis 2016 les déclarations de prélèvements d'eau agricoles et piscicoles situés sur le territoire de l'Entente sur les ressources en eaux durables du bassin des Grands Lacs et du fleuve Saint-Laurent sont obligatoires pour les secteurs agricole et piscicole lorsque leur capacité de prélèvement est supérieure ou égale à 379 000 litres par jour.</p> <p>Le guide d'application du Règlement sur la déclaration des prélèvements d'eau pour les clientèles agricoles et piscicoles a été élaboré en 2014 et publié en 2015. Il peut être consulté sur la page suivante : http://www.environnement.gouv.qc.ca/eau/prelevements/guide-applicationRDPE-entreprises-agricoles.pdf</p>

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2	Mise en vigueur du Règlement sur la déclaration des prélèvements d'eau (RDPE)	MELCC	Judith Kirby	Adopté le 12 août 2009, mis en vigueur le 10 septembre 2009 et modifié le 22 juin 2011	<p><i>Répond également à l'objectif 1</i></p> <p>L'article 9 du Règlement oblige les préleveurs de 75 000 litres ou plus par jour sur tout le territoire du Québec à déclarer les prélèvements d'eau. L'article 18.7 oblige les préleveurs ayant la capacité de prélever 379 000 litres ou plus par jour à déclarer, sur le territoire de l'Entente Grands Lacs–Saint-Laurent, les volumes prélevés, consommés et transférés hors du bassin du fleuve Saint-Laurent. Cette mesure contribue à développer les connaissances sur les quantités d'eau prélevées dans chaque secteur d'activité pour l'ensemble du Québec.</p>	<p>Annuellement, au plus tard le 31 mars, recevoir les déclarations annuelles des préleveurs qui prélèvent plus de 75 000 litres par jour, et ce, pour l'ensemble du territoire. Annuellement, au plus tard le 31 mars, sur le territoire de l'Entente GLSL, recevoir les déclarations annuelles des préleveurs ayant une capacité de prélèvement supérieure à 379 000 litres par jour. Annuellement, mettre en œuvre un protocole d'assurance qualité pour s'assurer de la qualité des données transmises.</p>	<p>Objectif quinquennal atteint.</p> <p>Toutes les dispositions du Règlement sur la déclaration des prélèvements d'eau ont été mises en œuvre.</p> <p>Les données sont obtenues annuellement pour les prélèvements de plus de 75 000 litres par jour et plus de 379 000 litres par jour.</p> <p>Le Bureau d'expertise et de contrôle assure annuellement le suivi qualitatif des données de prélèvement d'eau au Québec.</p> <p>Le Règlement peut être consulté à l'adresse suivante : http://www.MELCC.gouv.qc.ca/eau/prelevements/declaration.htm</p>

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Objectif 5 : Considérer les modifications qu'apporteront les changements climatiques dans la dynamique de l'offre et de la demande

Cible 5.1 : Développer et consolider les connaissances sur l'offre en eau souterraine

16	Programme d'acquisition de connaissances sur les eaux souterraines (PACES)	MELCC	Édith Bourque / Diane Myrand	Premières annonces officielles de financement au printemps 2009 et programme renouvelé en 2017	Ce programme d'acquisition de connaissances permet de connaître le volume et la recharge des nappes phréatiques. Cette mesure permet de développer les connaissances sur l'offre en eau souterraine.	Durant les 5 prochaines années, poursuivre le programme d'acquisition de connaissances sur les eaux souterraines (PACES) du Québec méridional	<p>Objectif quinquennal atteint.</p> <p>Le premier programme d'acquisition de connaissances sur les eaux souterraines a pris fin en 2015. En mars 2018, le Ministère a octroyé du financement pour le deuxième programme (2018-2022) afin de poursuivre la couverture territoriale des projets d'acquisition de connaissances sur les eaux souterraines. Ainsi, d'ici le 31 mars 2022, la presque totalité des zones habitées du territoire québécois sera couverte.</p>
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Cible 5.2 : Développer et consolider les connaissances sur les effets des changements climatiques sur l'offre en eau de surface							
17	Production de l'Atlas hydroclimatique du Québec méridional à l'horizon 2050	MELCC	Jean-François Cyr	Mars 2013	Cet atlas illustre les impacts des changements climatiques (CC) sur le régime hydrique des tributaires du fleuve Saint-Laurent à l'horizon 2050. Cela permet ainsi de savoir comment évoluera l'offre en eau de surface en fonction des changements climatiques et de déterminer le besoin d'appliquer des mesures de conservation et d'utilisation efficace de l'eau dans les bassins versants (BV) vulnérables.	D'ici 2020, avoir produit une série d'Atlas Hydroclimatiques (3) en améliorant itérativement le contenu et la méthodologie sous-jacente.	<p>Objectif quinquennal atteint.</p> <p>Toutes les activités menant à l'Atlas Web 2018 ont été réalisées. Toutes les activités menant à une première version du document synthèse (intitulé « document d'accompagnement ») ont été réalisées. En plus de l'horizon de projection 2050, l'Atlas 2018 couvre les horizons 2030 et 2080.</p> <p>Près de 20 % des activités menant à la mise à jour 2020 ont été réalisées.</p> <p>Note : avant la version 2018 de l'Atlas, une version 2013 et une version 2015 ont aussi été produites.</p> <p>L'Atlas peut être consulté à l'adresse suivante : https://www.cehq.gouv.qc.ca/atlas-hydroclimatique/Hydraulcite/Qmoy.htm</p>

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18	Mise en œuvre du Plan d'action Saint-Laurent (PASL) 2011-2026	MELCC/ECCC	Brigitte Laberge/Maryse St-Pierre	29 novembre 2011	<p>Répond également aux objectifs 9 et 12 Le projet 7.2.1 de l'enjeu Pérennité des usages intitulé « Étudier les impacts des changements climatiques sur les apports en eau » permet de développer les connaissances sur les effets des changements climatiques sur l'offre en eau. Les travaux du Comité de concertation sur les changements climatiques (projet 7,2,3) permettront de dresser un portrait d'ensemble des enjeux relatifs aux impacts des changements climatiques sur le Saint-Laurent et des besoins en développement de connaissances sur les impacts et les besoins d'adaptation. L'adaptation aux changements climatiques peut passer par la mise en place de mesures de conservation et d'utilisation efficace de l'eau. Le Programme de prévision numérique environnementale du PASL 2011 2026 permet d'avoir une meilleure compréhension de l'écosystème du Saint-Laurent, notamment en ce qui concerne les niveaux et les débits d'eau. Il permet d'évaluer l'impact des changements climatiques sur les ressources hydriques et de déterminer le besoin d'appliquer des mesures de conservation et d'utilisation efficace de l'eau dans les bassins versants vulnérables.</p>	<p>Dans les 5 prochaines années, mettre en œuvre des activités dans le PASL qui concernent plus spécifiquement les impacts des changements climatiques sur l'offre et la demande en eau :</p> <ul style="list-style-type: none"> - À l'horizon 2016, réaliser le projet 7.2.1 étudier les impacts des changements climatiques sur les apports en eau. - À l'horizon 2016, réaliser le projet 7.2.3 mettre en place un Comité de concertation sur les changements climatiques. <p>Pour les 5 prochaines années, poursuivre les travaux du Groupe de travail prévision numérique environnementale. Dans la prochaine programmation d'activités 2016-2021, développer des projets en lien avec l'impact des changements climatiques sur l'offre et la demande en eau.</p>	<p>Objectif quinquennal partiellement atteint.</p> <p>Le projet 7.2.1 est en cours, sous le GTPNE. Les résultats issus du projet ne sont pas encore disponibles. Le GTPNE poursuit ses activités.</p> <p>Projet 7.2.3 : le Comité de coopération sur les changements climatiques (CCCC) a été créé et tient des séries de webinaires sur les changements climatiques. Aucun nouveau projet n'a été planifié pour la période 2016-2021.</p>

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Cible 5.3 : Mettre en place un cadre d'action relatif aux impacts des changements climatiques qui prend en compte les ressources en eau

19	Mise en œuvre de la Stratégie gouvernementale d'adaptation aux changements climatiques 2013-2020	MELCC	Virginie Moffet/Julie Veillette	Avril 2013	La Stratégie gouvernementale d'adaptation aux changements climatiques vise à renforcer la résilience de la société relativement aux impacts des changements climatiques. Elle accorde une grande importance aux ressources hydriques. Le seizième objectif de la Stratégie vise à « prioriser la conservation et la protection des ressources hydriques en vue de conserver la biodiversité et les bénéfices offerts par les écosystèmes dans un contexte de changements climatiques ». L'adaptation aux changements climatiques et la protection des ressources hydriques peuvent passer par l'adoption de mesures de conservation et d'utilisation efficace de l'eau.	Mise en œuvre de la stratégie d'adaptation aux changements climatiques en incluant un objectif sur la conservation de l'eau	<p>Objectif quinquennal atteint.</p> <p>La Stratégie d'adaptation aux changements climatiques a été lancée en 2012, mais pour la période 2013-2020. Elle inclut un objectif sur la conservation de l'eau.</p> <p>La Stratégie peut être consultée à l'adresse suivante : http://www.environnement.gouv.qc.ca/changements/plan_action/strategie-adaptation2013-2020.pdf</p>
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20	Soutien à des projets de recherche du consortium Ouranos en lien avec la conservation et l'utilisation efficace de l'eau et les changements climatiques, dans le cadre de la mise en œuvre du plan d'action 2013-2020 (PACC 2013-2020) sur les changements climatiques.	MELCC	Virginie Moffet/Julie Veillette	Avril 2013	La priorité 6 du PACC 2013- 2020 est de soutenir la recherche en adaptation aux changements climatiques. Elle vise notamment à financer la réalisation de travaux de recherche du consortium Ouranos permettant d'améliorer la connaissance sur les ressources en eau. Cet aspect de cette priorité permet d'accroître, entre autres, les connaissances sur les effets des changements climatiques sur les ressources en eau et sur la conservation et d'utilisation efficace de l'eau dans un contexte de changements climatiques ainsi que de développer des solutions d'adaptation.	Accroître les connaissances sur l'impact des changements climatiques sur les ressources en eau, sur la conservation et l'utilisation efficace de l'eau et sur les solutions d'adaptation, dans le cadre du PACC 2013-2020.	<p>Objectif quinquennal atteint.</p> <p>Treize projets de recherche Ouranos ont été financés en lien avec la conservation et l'utilisation efficace de l'eau et les changements climatiques.</p> <p>Les fiches de projets et les rapports finaux peuvent être consultés à l'adresse suivante : https://www.ouranos.ca/programmes/</p>
Cible 5.4 : Élaborer et mettre en application une méthode pour tenir compte des impacts cumulatifs, dont ceux des changements climatiques, sur les ressources en eau							

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Personne-ressource	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
11	Évaluation des impacts cumulatifs lors de l'analyse des demandes de prélèvements, de consommations et de transferts d'eau	MELCC	Judith Kirby	En cours	<p>Répond également à l'objectif 3 <i>L'impact des changements climatiques sur la modification du régime hydrique (indicateurs hydrologiques) est pris en compte dans l'évaluation des impacts cumulatifs sur les composantes sensibles (écosystèmes et usages) du bassin. Cette mesure permet de tenir compte de l'impact des changements climatiques sur la vulnérabilité des bassins versants et de prévoir des mesures de conservation et d'utilisation efficace de l'eau pour en diminuer la vulnérabilité.</i></p>	Établir un processus/méthodologie permettant la prise en compte des impacts cumulatifs des prélèvements lors de l'autorisation par le MELCC.	<p>Objectif quinquennal partiellement atteint.</p> <p>La méthodologie permettant la prise en compte des impacts cumulatifs des prélèvements d'eau est encore en validation.</p>

Annexe 1. Programme de conservation et d'utilisation efficace de l'eau du Québec - Suivi des mesures (2013-2018)

Orientation 3 : Mettre en place un suivi du Programme de conservation et d'utilisation efficace de l'eau

Objectif 6 : Élaborer le processus d'évaluation de l'atteinte des objectifs et réaliser l'évaluation

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
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Cible 6.1 : Déterminer et appliquer le processus de suivi annuel et le bilan quinquennal du Programme

E1	Déterminer des cibles quinquennales pour chaque objectif du Programme	MELCC	Dépôt du programme en septembre 2013.	Afin de faciliter l'évaluation de l'avancement du Programme sur le plan de l'atteinte de chaque objectif, des cibles quinquennales ont été fixées. Les premières cibles sont établies en fonction des mesures contenues dans l'inventaire lors du dépôt de la première version du Programme en 2013.	Définir, durant la première année de mise en œuvre du programme, des cibles quinquennales pour chaque objectif afin de faciliter le suivi et l'évaluation quinquennale du programme.	Objectif quinquennal atteint depuis 2014. Le Québec a défini les cibles quinquennales de son Programme de conservation en tenant compte des cibles régionales. De plus, toutes les cibles sont regroupées dans cinq orientations et évaluées annuellement, ce qui permet de vérifier l'atteinte ou pas des objectifs quinquennaux.
E2	Déterminer les indicateurs pour chaque mesure du Programme	MELCC	Dépôt du programme en septembre 2013.	En collaboration avec les responsables des mesures dans chaque ministère concerné, il faut déterminer des cibles annuelles mesurables au moyen d'indicateurs.	Définir, durant la première année de mise en œuvre du programme, en concertation avec les chargés de mesure, des objectifs quinquennaux ainsi que des indicateurs de suivi annuels pour chaque mesure.	Objectif quinquennal atteint depuis 2014. Des indicateurs annuels pour chaque mesure du programme ont été déterminés en collaboration avec les responsables des mesures.

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
E3	Faire le suivi annuel des mesures du Programme	MELCC	pour septembre de chaque année	Annuellement, le MELCC devra faire un suivi des indicateurs des mesures telles qu'ils auront été définis en collaboration avec les ministères concernés. Un bilan annuel du Programme doit être rédigé, transmis au Conseil régional et rendu public par celui-ci.	Annuellement, procéder au suivi des indicateurs mesures en collaboration avec les chargés de chaque mesure dans les ministères concernés. Rédiger le bilan annuel du programme et le transmettre au Conseil régional. Le bilan sera rendu public par celui-ci.	Objectif atteint. Les indicateurs ont été réalisés annuellement, permettant l'atteinte de l'objectif quinquennal.
E4	Faire l'évaluation quinquennale des cibles	MELCC	pour septembre 2018	Tous les cinq ans, le MELCC devra faire une évaluation du Programme de conservation. Il s'agira d'évaluer l'atteinte des objectifs quinquennaux pour chaque mesure et des cibles quinquennales pour chaque objectif. Il devra rédiger un bilan quinquennal du Programme, le transmettre au Conseil régional et le rendre public via ce dernier.	En 2018, procéder à l'évaluation de l'atteinte des objectifs quinquennaux pour chaque mesure et des cibles quinquennales pour chaque objectif. Rédiger un bilan quinquennal et le transmettre au Conseil régional. Le bilan sera rendu public par celui-ci.	Objectif atteint. L'évaluation de cet objectif quinquennal ne pouvait être faite qu'en 2019, car le programme prenait fin le 31 décembre 2018. L'atteinte des objectifs et des cibles quinquennales de chaque mesure a été évaluée. Le Québec participe aux rencontres organisées par le Conseil régional pour le bilan quinquennal du Programme. Le bilan quinquennal sera rendu public par le Conseil régional en 2020.

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
E5	Fixer de nouvelles cibles quinquennales	MELCC	pour septembre 2018	Lors du suivi annuel, les nouvelles mesures en cours d'élaboration dans chaque ministère concerné seront recensées afin de les ajouter au Programme. À partir de ces nouvelles mesures, pour septembre 2018, de nouveaux objectifs et de nouvelles cibles quinquennales seront établis. Ce travail permettra de mettre à jour le Programme en continu et de contribuer à l'atteinte des orientations du Programme.	En 2018, fixer de nouveaux objectifs et de nouvelles cibles quinquennales à partir des nouvelles mesures de conservation recensées.	Objectif quinquennal non atteint. Le nouveau programme de conservation doit prendre en compte les objectifs définis par le Conseil régional. Or, celui-ci n'a pas encore adopté les modifications apportées aux objectifs régionaux. Le Québec participe activement aux travaux du comité chargé de définir de nouveaux objectifs régionaux.
Cible 6.2 : Utiliser les connaissances acquises pour adapter le Programme de conservation et d'utilisation efficace de l'eau						
E6	Recenser les nouvelles mesures en cours d'élaboration	MELCC	Annuellement	Permet la mise à jour en continu du programme et l'atteinte des orientations.	Annuellement, recenser les nouvelles mesures en cours d'élaboration dans les différents ministères impliqués dans le Programme de conservation.	Objectif quinquennal atteint. Chaque année, le recensement des nouvelles mesures ou en cours d'élaboration est fait automatiquement.

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
Objectif 7 : Faire du suivi une source de connaissances et de savoir-faire pour les signataires de l'Entente et tous les acteurs et les utilisateurs de l'eau						
Cible 7.1 : Diffuser les résultats du suivi annuel et du bilan quinquennal du Programme de conservation et d'utilisation efficace de l'eau						
E7	Diffuser les résultats du suivi annuel des mesures sur le Portail des connaissances sur l'eau	MELCC	Annuellement	Annuellement, le MELCC doit effectuer un suivi de l'avancement des mesures, régiger un bilan annuel du Programme et rendre public ce rapport. Cette diffusion se fera sur le Portail des connaissances sur l'eau	Lorsque le Portail des connaissances sur l'eau sera en ligne et accessible (mesure 38), y diffuser les résultats du suivi annuel des mesures.	Objectif quinquennal non atteint. Le Portail des connaissances sur l'eau est en ligne depuis août 2018. Cependant, la plateforme favorisée pour diffuser les informations est celle du site Web du Conseil régional.
E8	Présenter le rapport de l'évaluation quinquennale aux membres du Conseil régional et le diffuser sur le Portail des connaissances sur l'eau	MELCC	Tous les 5 ans à partir de 2013 (2018)	Tous les cinq ans, le MELCC doit effectuer une évaluation de l'atteinte des objectifs du Programme à l'aide des cibles quinquennales. Il doit régiger un bilan quinquennal du Programme et le rendre public. Cette diffusion se fera sur le Portail des connaissances sur l'eau	En 2018, diffuser le rapport d'évaluation quinquennale sur le Portail des connaissances sur l'eau.	Objectif quinquennal non atteint. Le rapport d'évaluation quinquennale des mesures de conservation du Québec à l'étape de rédaction. Ce rapport sera inclus dans la « déclaration of finding » du Conseil régional qui sera publié ultérieurement sur le Portail des connaissances sur l'eau et sur le site Web du Conseil régional.

Annexe 1. Programme de conservation et d'utilisation efficace de l'eau du Québec - Suivi des mesures (2013-2018)

Orientation 4 : Encourager la recherche scientifique, le développement technologique et l'acquisition de connaissances

Objectif 8 : Renforcer les efforts d'acquisition de connaissances sur la conservation et l'utilisation efficace de l'eau

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
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Cible 8.1 : Développer et consolider les connaissances sur la conservation et l'utilisation efficace de l'eau dans les secteurs municipal, minier et agricole

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
21	Participation aux événements et aux comités qui rassemblent les experts du domaine pour améliorer les connaissances du MAMH sur les concepts liés à l'économie d'eau (dans le cadre de la Stratégie d'économie d'eau potable)	MAMH	En continu	Le MAMH participe aux formations de l'American Water Works Association (AWWA) et au comité canadien sur l'économie d'eau. Cette mesure permet de développer et de consolider les connaissances sur la conservation et l'utilisation efficace de l'eau dans le secteur municipal.	Participation aux événements et aux comités qui rassemblent les experts du domaine pour améliorer les connaissances du MAMH sur les concepts liés à l'économie d'eau dans le domaine municipal.	<p>Objectif quinquennal atteint.</p> <p>Participation aux quatre conférences téléphoniques annuelles du Comité canadien sur l'économie d'eau.</p> <p>Participation aux six conférences téléphoniques annuelles du Performance Indicator Task Force de l'AWWA.</p> <p>Participation aux trois conférences téléphoniques annuelles du Comité de l'audit de l'eau de l'AWWA.</p>

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
22	Organiser et préparer des séances de formation sur l'économie d'eau pour accompagner les municipalités (dans le cadre de la Stratégie d'économie d'eau potable)	MAMH	En continu	La Stratégie sera présentée lors d'une vingtaine de congrès et de conférences par année. Cette mesure permet de consolider et partager les connaissances sur la conservation et l'utilisation efficace de l'eau auprès des acteurs du secteur municipal.	Consolider et partager les connaissances sur la conservation et l'utilisation efficace de l'eau auprès des acteurs du secteur municipal en organisant des séances de formation sur l'économie d'eau.	<p>Objectif quinquennal atteint.</p> <p>Le MAMH a organisé et tenu des séances de formation sur l'économie de l'eau annuellement. Les 18 séances de formation en région et les deux conférences Web organisées par le MAMH ont rejoint plus de 700 représentants du milieu municipal pour les soutenir dans leur démarche.</p> <p>Une formation annuelle de deux jours sur la Stratégie d'économie d'eau potable (SEEP), préparée en collaboration avec RÉSEAU Environnement, a rejoint plus de 250 intervenants. Une conférence Web sur le suivi de la SEEP et sur le nouveau formulaire est maintenant accessible gratuitement sur le site de Québec municipal.</p> <p>Pour la Stratégie 2019-2025, une tournée régionale de formation comprenant 34 séances est prévue pour avril et mai 2019.</p>

N°	Mesure en application ou en cours d'élaboration	Ministère responsable	Date de mise en vigueur/Statut	Justification	Objectif quinquennal de la mesure	Évaluation de l'atteinte de l'objectif quinquennal
23	Production annuelle de bilans municipaux sur l'utilisation de l'eau pour évaluer les quantités d'eau distribuées et les pertes d'eau dans les réseaux de distribution (dans le cadre de la Stratégie d'économie d'eau potable)	MAMH	8 juin 2012 / en continu	Dans le cadre de la SEEP, les municipalités doivent produire un bilan annuel de leur utilisation de l'eau. Une base de données centrale regroupe les données transmises par les municipalités (environ 200 données par municipalité). Cette mesure permet de consolider les connaissances sur les quantités d'eau distribuée et sur les pertes en réseau pour le secteur municipal.	Consolider les connaissances sur les quantités d'eau distribuées et sur les pertes en réseau pour le secteur municipal par la mise à jour du rapport annuel de gestion de l'eau potable.	Objectif quinquennal atteint. Les connaissances sur les quantités d'eau distribuées et sur les fuites en réseau pour le secteur municipal ont été consolidées annuellement par la mise à jour du rapport annuel de gestion de l'eau potable. Ils sont disponibles au lien suivant : https://www.MAMH.gouv.qc.ca/infrastructures/strategie/cartographie-et-rapports-annuels/
24	Programme de recherche en partenariat sur le développement durable du secteur minier	MERN	Décret approuvé le 27 mars 2013/ 2012-2013 à 2016-2017	Dans le cadre de ce programme, plusieurs des priorités de recherche traitent de l'eau : contrôle des infiltrations d'eau, drainage minier acide, gestion des rejets miniers dans l'eau, traitement passif de l'eau, réduction de la consommation de l'eau. Cette mesure permet de développer les connaissances sur l'utilisation de l'eau dans le secteur minier (industriel).	Acquérir des connaissances sur la conservation et l'utilisation efficace de l'eau en finançant des projets de recherche dans le cadre du Programme de recherche en partenariat sur le développement durable du secteur minier mis de l'avant par le Fonds de Recherche du Québec - Nature et Technologie. De 2013-2015, 3 appels de propositions seront lancés pour un total de 15 millions de dollars.	Objectif quinquennal atteint. Le Programme a permis de financer trois projets de recherche portant sur la conservation et l'utilisation efficace de l'eau dans le secteur minier. Deux rapports finaux ont été déposés et le dernier est attendu en 2019. Des résumés vulgarisés dont la publication est autorisée par les chercheurs seront publiés par le MERN en 2019.

Province of Québec

Five-Year Review of Québec's Water Management Program and Water Conservation and Efficiency Program

The following information is submitted by the Province of Québec to the Great Lakes Regional Body Secretariat pursuant to the requirements of Article 300 of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement).

General Information

1. Lead agency and contact

Marie-Claude Théberge
Directrice générale des politiques de l'eau / Director General of Water Policy
Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC)
and Representative designated by the Premier of Québec to the Great Lakes–St. Lawrence River Water Resources Regional Body (Regional Body)

2. Provincial water management program implementing laws, regulations and policies

The laws and regulations listed below are available at the following address:

English: <https://www.quebec.ca/en/government/ministere/environnement/statutes-and-regulations/>

French: <https://www.quebec.ca/gouv/ministere/environnement/lois-et-reglements/>

a. Compact Section 3.4/Agreement Article 300

- Article 31.101 *Environment Quality Act* (CQLR c. Q-2)
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

b. Compact Section 4.1/Agreement Article 301

- *Regulation respecting the Declaration of Water Withdrawals* (CQLR c. Q-2, r. 14) [*Règlement sur la déclaration des prélèvements d'eau* (RLRQ c. Q-2, r. 14)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014>

c. Compact Sections 4.2(2), 4.2(4) and 4.2(5)/Agreement Article 304

- See section h. below.

d. Compact Section 4.3/Agreement Article 200

- Article 200 1.:
 - Article 31.90 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.90 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

Article 200 2.:

- Article 31.92-31.94 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.92-31.94 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>
- *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* (CQLR c. Q-2, r. 5.1)
[*Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent* (RLRQ c. Q-2, r. 5.1)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%205.1>

Article 200 3.:

- Article 31.95 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.95 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

e. Compact Section 4.8, 4.9 and 4.13/Agreement Articles 200, 201 and 208

Article 201.:

- Article 31.92-31.94 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.92-31.94 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>
- *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* (CQLR c. Q-2, r. 5.1)
[*Règlement concernant le cadre d'autorisation de certains projets de transfert d'eau hors du bassin du fleuve Saint-Laurent* (RLRQ c. Q-2, r. 5.1)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%205.1>

Article 208:

- Article 31.75 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.75 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

f. Compact Section 4.10/Agreement Article 206

- Article 31.95 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.95 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>
- *The Water Withdrawal and Protection Regulation* (CQLR c. Q-2, r. 35.2)
enables the application of article 31.95 and specifies application thresholds.
[*Règlement sur le prélèvement des eaux et leur protection* (RLRQ c. Q-2, r. 35.2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2035.2>

g. Compact Section 4.11/Agreement Article 207

207.1. a):

- *Regulation respecting the Declaration of Water Withdrawals* (CQLR c. Q-2, r. 14)
[*Règlement sur la déclaration des prélèvements d'eau* (RLRQ c. Q-2, r. 14)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014>

207.1. b):

- Withdrawals authorized between September 1, 2011 and the coming into force of article 31.95 of the *Environment Quality Act* in 2014 will be considered as existing withdrawals and will be listed as so.

207.2.:

- Article 31.96 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.96 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

207.5.:

- Article 3 of the *Water Withdrawal and Protection Regulation* (CQLR c. Q-2, r. 35.2) elaborates on this concept.
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2035.2>

207.9.:

- Article 31.90 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.90 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

h. Agreement Article 304

- Article 31.101 *Environment Quality Act* (CQLR c. Q-2)
[Art. 31.101 *Loi sur la qualité de l'Environnement* (RLRQ c. Q-2)]
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

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Water Management Program

1. Summary description of Québec's Water management program scope and thresholds

The *Act to Affirm the Collective Nature of Water Resources and to Promote Better Governance of Water and Associated Environments* (CQLR c. 6.2) (also called 'Water Act') amended the *Environment Quality Act* (EQA) to include the provisions of the Agreement. Furthermore, the *Water Withdrawal and Protection Regulation*, adopted in 2014, completed the Water Act's enforcement by implementing a new system for authorising water withdrawals that was introduced into the EQA. Chapter VI of the *Water Withdrawal and Protection Regulation* reinforces the protection of water destined for public consumption.

Diversions

For the application of Article 201 of the Agreement (Exceptions to the Prohibition of Diversions), the EQA articles 31.90 to 31.94 are in force concerning the diversion of water outside the Basin. The *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* was adopted in 2011, enabling the application of articles in the EQA with which those wishing to obtain an authorization to divert water out of the Basin must comply, in accordance with the Agreement's Exception Standard.

New or increased withdrawals

Additionally, the Water Act and the *Water Withdrawal and Protection Regulation* added a new system to the EQA for permitting all water withdrawals of 75,000 litres or more per day throughout Québec. For the application of Article 203 of the Agreement (Decision-Making Standard for Management of Withdrawals and Consumptive Uses), particular provisions apply to withdrawals located in the area covered by the Agreement. These provisions are detailed in Article 31.95 of the EQA, which specifically concerns withdrawals located in the area covered by the Agreement and applies the Decision-Making Standard for Management of Withdrawals and Consumptive Uses. In Article 31.95, the application threshold for the standard is 379,000 litres or more per day.

Reporting

In 2011 Québec adopted the *Regulation amending the Regulation respecting the Declaration of Water Withdrawals*. The amended regulation allows Québec to collect information on withdrawals and consumption in the St. Lawrence River Basin, and on volumes of water diverted out of the Basin. It enables Québec to meet its commitments under Article 301 of the Agreement, while supporting the application of EQA provisions on water diversions and the permitting process for water withdrawals, notably by setting the threshold for determining new or increased withdrawals in the St. Lawrence River Basin. The regulation also seeks to incite more responsible water use by employing accountability methods to make the largest water users in Québec more aware of the intrinsic value of this resource. It also aims to make each person responsible for the preservation of water, both quality and sufficient quantity, to meet the needs of current and future generations

2. Description of how Québec manages Water Withdrawals by sector, water source, quantity and location

- a. **Sector (public water supply, self-supply commercial and institutional, self-supply irrigation, self-supply livestock, self-supply industrial, self supply thermoelectric power production (once-through cooling), self-supply thermoelectric power production (recirculated cooling), off-stream hydroelectric power production, in-stream hydroelectric power production (voluntary), and other self-supply;**

Authorization of water withdrawals

Article 31.75 of the *Environment Quality Act (EQA)* specifies that, in general, withdrawals of 75,000 litres or more per day must be approved by authorization under article 22 (2) of the EQA. According to article 31.81 of the same law, the authorization is renewable every 10 years.

Reporting of water withdrawals

Since 2011, under the *Regulation respecting the Declaration of Water Withdrawals*, all those who withdraw water in the St. Lawrence River Basin (area covered by the Agreement) with equipment or facilities that have a rated capacity to withdraw 379,000 litres or more per day whether for direct use or diversion outside of the basin must report annually to the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* the volumes of water withdrawn, consumed within the area covered by the Agreement, or diverted outside.

Article 18.2 of the Regulation excludes the following types of water withdrawal that are entirely outside of the St. Lawrence River Basin:

- withdrawals used for the production of hydroelectric power by means of run-of-river works or facilities directly connected to the watercourse;
- withdrawals by works used for the impounding of water, other than a dam, such as a pond or a basin having no hydraulic interconnection with groundwater, except if the pond or basin is supplied by a surface water drainage system.

Article 18.7 of the Regulation states that agricultural and fish-farming businesses must produce their first annual declaration in 2016 (for withdrawals carried out in 2015).

- b. **Water source (groundwater, surface water (Great Lakes-St. Lawrence River), surface water other than Great Lakes-St. Lawrence River);**

The permitting process specific to water withdrawals applies to both surface water and groundwater throughout all of Québec.

When reporting volumes of water withdrawn, withdrawers must provide information on, amongst other things, the source of their withdrawals (groundwater, surface water) and whether the withdrawal is within the area covered by the Agreement or not.

- c. **Quantity (regulatory thresholds, volumes, rates, and reporting requirements);**

Authorization of water withdrawals

Article 31.75 of the EQA provides the volume thresholds with which the permitting process for water withdrawals across Québec is applied. Withdrawals of 75,000 litres or

more per day are subject to an authorization. The same article also states that certain withdrawals are subject to an authorization even if their volume is less than 75,000 litres per day.

Article 31.95 of the EQA sets the volume threshold to be applied for new or increased withdrawals located within the area covered by the Agreement at an average quantity or consumptive use of 379,000 litres or more per day.

As for diversions, article 31.92 specifies the volume threshold is an average of 379,000 litres or more per day for diversions that will supply a municipality located partly within the St. Lawrence River Basin and partly outside of the Basin.

Article 3 of the *Water Withdrawal and Protection Regulation* specifies the method for applying these calculations.

Article 7 of the same regulation stipulates that an applicant for a water withdrawal authorization under article 31.75 of the EQA must provide specific information describing the planned withdrawal, including the volumes to be withdrawn, consumed and discharged and their timing.

Reporting of water withdrawals

According to the *Regulation respecting the Declaration of Water Withdrawals* all those who withdraw 75,000 litres or more, save for some exceptions, must report the volumes withdrawn on an annual basis.

Furthermore, all those with equipment or facilities that have a rated capacity to withdraw 379,000 litres or more per day and are within the area covered by the Agreement must report annually the volumes of water withdrawn, consumed, or diverted outside of the Basin.

The annual report must be submitted to the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* by March 31 at the latest of the of the year following the calendar year covered by the reporting (article 9 of the aforementioned regulation).

d. Location (Statewide/Province-wide or Great Lakes-St. Lawrence River Basin); and

Authorization and reporting of water withdrawals

Withdrawers must provide information on the geolocation of all withdrawal sites.

e. Any specific exemptions as allowed in the Agreement and the Compact.

Article 31.75 (2) of the EQA specifies that a temporary, non-recurring withdrawal for emergency-response, humanitarian or civil protection purposes is exempt from the permitting process.

Also, article 6 of the *Water Withdrawal and Protection Regulation* lists other types of water withdrawals that are exempt from the permitting process.

3. Description of how the provisions of the Standard of Review and Decision are applied

a. Decision Making Standard for Withdrawals, Consumptive Uses

Article 31.95 of the EQA sets out conditions for permits that correspond with the Decision-Making Standard for Management of Withdrawals and Consumptive Uses. Thus:

1° all water withdrawn is to be returned to the Basin, with preference to the direct St. Lawrence River tributary stream watershed from which it was derived, if applicable, less an allowance for consumptive use;

2° the quantity of water withdrawn or consumed would result in no significant individual or cumulative adverse impacts on the quantity or quality of the waters of the Basin or on water-dependent natural resources in the Basin;

3° the withdrawal or consumptive use is subject to water conservation measures determined by regulation of the Government, or by the Minister under other provisions of this Act; and

4° the quantity of water withdrawn or consumed is reasonable having regard, among other things, to

- a) the water's intended use;*
- b) the measures implemented for the conservation and efficient use of water, including water from existing water supplies;*
- c) the balance between economic, social and environmental development;*
- d) the foreseeable impacts on the environment and on other uses, and the measures for avoidance or mitigation of such impacts; and*
- e) the supply potential of the water source and other interconnected water sources.*

b. Exception Standard for Diversions

Adopted in 2009 and amended in 2017, the *Act to Affirm the Collective Nature of Water Resources and to Promote Better Governance of Water and Associated Environments* (CQLR c. 6.2) (also called 'Water Act') introduces into Québec legislation (through the *Environment Quality Act*) the provisions of the Agreement to regulate water diversions outside the St. Lawrence River Basin. The exception criteria are consistent with those set forth in the Agreement. More precisely (article 31.90 of the EQA):

No water withdrawn from the St. Lawrence River Basin may be transferred out of the Basin, except as set out below and in section 31.91.

This prohibition does not apply to water withdrawals, from the outset made for purposes of transfer out of the Basin that were authorized before 1 September 2011 or, if not authorized, were lawfully commenced before that date. Unless it is increased under the conditions defined by sections 31.91 to 31.93, the quantity of water derived from such a withdrawal must not, however, exceed the quantity authorized at that date or, if there is no

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authorization or the authorization does not determine a maximum quantity, the capacity of the withdrawal system at that date.

Nor does this prohibition apply to water withdrawn

1° to be marketed for human consumption, if packaged within the Basin in containers of 20 litres or less;

2° to be used within the Basin in the manufacture, preservation or processing of products;

3° to supply vehicles, including vessels and aircraft, whether for the needs of persons or animals being transported or for ballast or other needs related to the operation of the vehicles; or

4° for humanitarian, civil protection or emergency-response purposes provided the withdrawal is temporary and non-recurrent.

EQA Article 31.91 of the EQA adds:

In addition to the conditions prescribed by sections 31.92 and 31.93 and those the Government or the Minister may prescribe under other provisions of this Act, a transfer out of the St. Lawrence River Basin resulting from a new withdrawal from the Basin, or an increased transfer out of the Basin resulting from such a withdrawal or a withdrawal existing on 1 September 2011, may be authorized under the following conditions:

1° all water transferred out of the Basin is intended to supply a waterworks system serving all or part of the population of a local municipality whose territory is either

a) partly within the Basin; or

b) both wholly outside the Basin and wholly within a regional county municipality whose territory is partly within the Basin; and

2° all water transferred out of the Basin is to be returned to the Basin, with preference to the direct St. Lawrence River tributary stream watershed from which it was withdrawn, if applicable, less an allowance for consumptive use. No water from outside the Basin may be added to complete the quantity of water returned to the Basin unless

a) it is part of a water supply or waste water treatment system that combines water from inside and outside the Basin;

b) it is treated to meet applicable water quality or discharge standards and to prevent the introduction of invasive species into the Basin; and

c) it maximizes the portion of water from within the Basin and minimizes the portion from outside the Basin.

For the purposes of this section, “new withdrawal” means any water withdrawal authorized after 1 September 2011.

The Minister shall publish in the Gazette officielle du Québec a list of the local municipalities and regional county municipalities whose territory is partly within the Basin for the purposes of subparagraphs a and b of subparagraph 1 of the first paragraph.

Article 31.92 of the EQA states:

If it involves an average of 379,000 litres or more per day, or a lesser quantity determined by regulation of the Government, that is intended to supply a waterworks system serving a municipality described in subparagraph a of subparagraph 1 of the first paragraph of

section 31.91, a transfer out of the St. Lawrence River Basin resulting from a new or increased water withdrawal described in that section may be authorized only if it meets the following conditions:

- 1° the transfer cannot be reasonably avoided or diminished through the conservation and efficient use of existing water supplies;*
- 2° the quantity of water to be transferred is reasonable having regard to the water's intended use;*
- 3° the transfer would result in no significant individual or cumulative adverse impacts on the quantity or quality of the waters and water-dependent natural resources of the Basin; and*
- 4° the transfer is subject to water conservation measures determined by regulation of the Government, or by the Minister under other provisions of this Act.*

If a transfer out of the Basin under the first paragraph would result in a consumptive use of an average of 19 million litres or more per day, it is also subject to review by the Great Lakes-St. Lawrence River Water Resources Regional Body established by the Agreement.

Article 31.93 of the EQA states:

A transfer out of the St. Lawrence River Basin resulting from a new or increased water withdrawal described in section 31.91 that is intended to supply a waterworks system serving a municipality described in subparagraph b of subparagraph 1 of the first paragraph of that section may be authorized only if it meets the conditions set out below and the conditions prescribed in subparagraphs 1 to 4 of the first paragraph of section 31.92:

- 1° there is no water supply alternative within the watershed in which the local municipality concerned is situated that is reasonably accessible and able to satisfy its drinking water needs;*
- 2° the quantity of water transferred will not endanger the integrity of the Basin ecosystem; and*
- 3° the transfer was reviewed by the Great Lakes-St. Lawrence River Water Resources Regional Body.*

Article 31.94 of the EQA adds:

If, under section 31.92 or 31.93, an application for authorization is subject to review by the Great Lakes-St. Lawrence River Water Resources Regional Body, the Minister must, after so informing the applicant,

- 1° notify the Regional Body and each of the parties to the Agreement;*
- 2° send the Regional Body the application record containing all the documents or information provided by the applicant as well as the Minister's opinion on the compliance of the application with the conditions prescribed by sections 31.91 to 31.93 and those set out in the Agreement; and*
- 3° at the request of the Regional Body or one of the parties to the Agreement, provide any additional document or information the Regional Board or the party may consider necessary for review of the application for authorization.*

The Minister must also inform the public that the application for authorization is subject to review by the Regional Body.

After reviewing the application for authorization as set out in the Agreement and its own rules of procedure, the Regional Body shall issue a declaration on the compliance of the application with the conditions set out in the Agreement. The declaration is sent to the Minister and made available to the public in the manner the Regional Body determines.

In making a decision with respect to the application for authorization, the Minister or the Government, as the case may be, shall take into account the Regional Body's declaration.

The *Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin* was adopted in 2011 and specifies the provisions with which withdrawers must comply to obtain an authorization to divert water outside of the St. Lawrence River Basin. Articles 3, 4 and 5 of this regulation specify the information and studies that must accompany an application.

Article 7 of the *Water Withdrawal and Protection Regulation* specifies the information and studies that must accompany an application for a water withdrawal permit. Furthermore, article 24 (3rd paragraph) of the EQA states that the Minister may require the applicant to provide additional studies or expert evaluation that the Minister considers necessary to make a decision.

4. Overview of Provincial reporting and database of Withdrawals, Consumptive Uses and Diversions

The *Regulation respecting the Declaration of Water Withdrawals* was adopted in 2009 and amended in 2011 to incorporate provisions in the Agreement. The purpose of the Regulation is to allow Québec to collect information on the volumes of water withdrawn and consumed in the St. Lawrence River Basin and on the volumes of water diverted out of the Basin. This information is used to help calculate the cumulative impacts of water withdrawals on surface water flows.

Article 9 of the Regulation lists the basic information to be provided by all those who withdraw an average daily volume of 75,000 litres or more of water per day, based on the monthly average, and report this annually.

Article 18.7 of the Regulation indicates that all those with equipment or facilities that have a rated capacity to withdraw 379,000 litres or more per day must provide supplementary information regarding water consumption and diversions out of the St. Lawrence River Basin. This information enables Québec to meet its commitments under Article 301 of the Agreement.

Québec employs the same definition of 'consumptive use' as the Agreement. The same definition is also used in the EQA (article 31.89): '*that portion of water withdrawn or impounded from the St. Lawrence River Basin that is lost or otherwise not returned to the Basin due to evaporation, incorporation into a product, or other processes.*'

Subparagraphs (1) and (2) of article 18.7 of the *Regulation respecting the Declaration of Water Withdrawals* specify the information that must be provided by all withdrawers regarding water diversions. It includes the volumes of water diverted out of the Basin (in litres) indicating for each withdrawal site the georeferenced data where the diverted water is used, and the volumes of water discharged or returned to the St. Lawrence River Basin (in

litres) with the georeferenced data of the facilities where the water is discharged or returned as the case may be.

In accordance with Article 207 of the Agreement, article 18.4 of the Regulation specifies the information that water users for the area of Québec covered by the Agreement had to provide by March 31, 2012 to establish a baseline for Québec. This baseline serves in setting the application thresholds for the water withdrawal permitting process.

All sectors concerned by the Agreement and Resolution No.13 of the Regional Body are covered by Title II of the Regulation, with the exception of run-of-river hydroelectric production. The latter is optional in Resolution No.13 of the Regional Body regarding the collection and transmission of data on water use.

All water withdrawals covered by the Regulation and carried out between January 1 and December 31 of any given year must be included in the annual declaration and submitted by March 31 of the year following the calendar year covered by the reporting.

Québec gave additional time to the agricultural and fish-farming sectors before they had to begin reporting withdrawals. Paragraph 5 of article 18.7 of the Regulation, that also refers to article 9, states that agricultural and fish-farming businesses located in the area covered by the Agreement must produce their first annual declaration by March 31, 2016 (for withdrawals in 2015).

Paragraph 2 of article 9 of the Regulation states that annual reports must be transmitted electronically. However, those without access to an Internet service may use a paper form.

Article 5 of the Regulation states that withdrawals must be calculated by direct measurement, using measuring equipment, in accordance with article 6 of the Regulation (article 6 refers to Chapter IV of the same regulation). However, a withdrawer who does not have measuring equipment may estimate the volumes of water withdrawn based on indirect or spot measurements. Such estimates of the volumes of water withdrawn must be performed in accordance with article 7, and must be certified by a professional (Regulation article 7, par. 3). Article 8 of the Regulation stipulates that a withdrawer who establishes a new, or alters an existing, facility must fit the site with measuring equipment as detailed in Chapter IV.

As for determining volumes of water consumed, in all sectors this may be done by either direct measurement or estimation. Direct measurement with measuring equipment must comply with the provisions applying to the calculation of volumes of water withdrawn (article 6 of the Regulation). Withdrawers in all sectors may estimate the volumes of water consumed. However, the estimate must be calculated by a professional (articles 18.7 par. 4 and 18.4 par. 3). This contrasts with estimated withdrawals, which need only to be certified by a professional. If the water is withdrawn to supply a public water system, the person making the declaration may indicate a consumptive use equal to 15% of the withdrawals, as stated in article 18.4 par. 3.

In article 2 par. 8 of the Regulation, the term “professional” is defined as a professional in line with the meaning of article 1 of the Professional Code of Québec whose professional order governs the exercise of a professional activity referred to in the Regulation.

Information on the methods of calculation and estimation approved by Québec is provided in the *Guide de soutien technique pour la clientèle* (a technical support guide available in French).

<http://www.environnement.gouv.qc.ca/eau/prelevements/Guide-soutien-clientele.pdf>

The regulatory provisions on determining the volumes of water withdrawn and consumed also apply to water diverted out of the St. Lawrence River Basin and water returned to the Basin.

The reporting information is collected in the province's water withdrawal management database (*Gestion des prélèvements d'eau - GPE*).

5. Québec's Provincial withdrawal application documents

Authorization of water withdrawals

Information and application forms for projects involving water withdrawals are provided online (in French), including a form specifically for water withdrawals located within the area covered by the Agreement (called 'Module B'):

<http://www.environnement.gouv.qc.ca/eau/prelevements/formulaires/demande-autorisation.htm>

Declaration of water withdrawals

Regulation respecting the Declaration of Water Withdrawals:

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%2014>

The electronic form is available online (in French) via the *Ministère de l'Environnement et de la Lutte contre les changements climatiques*'s website:

<http://www.environnement.gouv.qc.ca/eau/prelevements/enligne.htm>

The electronic form corresponds to the paper form.

A step-by-step guide (in French) explains the electronic form and how to enter the information online: <http://www.environnement.gouv.qc.ca/eau/prelevements/demarche-pasapas.pdf>

A support guide (in French) (*Guide de soutien technique pour la clientèle*) advises the withdrawer on how to measure water volumes:

<http://www.environnement.gouv.qc.ca/eau/prelevements/Guide-soutien-clientele.pdf>

A guide on how to follow the *Regulation respecting the Declaration of Water Withdrawals* specifically for the agricultural sector is available (in French):

<http://www.environnement.gouv.qc.ca/eau/prelevements/guide-applicationRDPE-entreprises-agricoles.pdf>

6. Summary description of the 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, and a description of Provincial initiatives or mechanisms to support an

improved understanding of individual or cumulative impacts of Withdrawals, Consumptive Uses and Diversions on the Basin ecosystem

Article 31.102 of the EQA reflects Article 209 of the Agreement. It states in part that:

The Minister must conduct an assessment of the cumulative impacts of water withdrawals and consumptive uses in the St. Lawrence River Basin on the Basin ecosystem, particularly on the waters and water-dependent natural resources of the Basin, in accordance with the requirements of the Agreement.

The assessment must evaluate the application of the prevention principle and the precautionary principle as well as the effects of past and reasonably foreseeable future withdrawals and consumptive uses, the effects of climate change and any other factor that may significantly damage the Basin's aquatic ecosystems.

The assessment prescribed by this section must be done every five years. It must also be done each time the incremental losses to the Great Lakes-St. Lawrence River Basin reach an average of 190 million litres per day in excess of the quantity at the time of the last assessment, or each time one or more of the parties to the Agreement so request.

In order to carry this out, in line with the Agreement's scientific goals, Québec is working with several provincial and Canadian partners to improve knowledge and develop tools that will help to assess the cumulative impacts of water withdrawals and water consumption at a variety of geographical scales.

- Québec is working with Ouranos, the province's consortium on regional climatology and adaptation to climate change, on water research projects, for example, research projects regarding hydrology, climate change and the Great Lakes:
https://www.researchgate.net/publication/276835847_Present_and_future_Laurentian_Great_Lakes_hydroclimatic_conditions_as_simulated_by_regional_climate_models_with_an_emphasis_on_Lake_Michigan-Huron
- Québec participates in activities led by the Water Management Committee of the Canadian Council of Ministers of the Environment, for example a study on environmental flow needs:
(https://www.ccme.ca/files/Resourcess/water/water_conservation/Environmental%20Flow%20Needs%20Approaches%20Successes%20and%20Challenges%20-%20Summary%20Report.pdf) and one on cumulative impacts (report yet to be published).
- Under the Government of Québec's 2013-2020 Climate Change Action Plan, a total of CAD1.8 million is being invested in a measure that specifically targets the assessment of cumulative impacts of water withdrawals and climate change. For information (in French): <http://www.environnement.gouv.qc.ca/cgfv/documents/fiches-suivi/environnement/30-3-3-cc-evaluation-prelevements-eau.pdf>
- The same action plan has also funded a project led by the *Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec* that looks at water conservation and management strategies for the agricultural sector. This project will be completed in 2020.

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- Québec is testing methods and tools that will assess the individual and cumulative repercussions of water withdrawals on flows and aquatic ecosystems. These will be used to analyse water withdrawal projects submitted to the permitting process.
- Québec is continuing with the funding of its groundwater knowledge acquisition program in order to complete the portrait of the groundwater resources with the aim of protecting them and ensuring their sustainability. For more information on this program (in French):
<http://www.environnement.gouv.qc.ca/eau/souterraines/programmes/acquisition-connaissance.htm>

7. Additional information

No additional information is presented.

Water Conservation and Efficiency Program

1. Status of Québec's Water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives

In 2011 the Government of Québec adopted the goals and objectives set out in the Québec Water Conservation and Efficiency Program. In formulating the Program's guiding principles, Québec drew upon the goals expressed in the first paragraph of article 304 of the Agreement. It then adapted the five regional objectives adopted on December 4, 2007 by the Regional Body to reflect provincial perspectives.

The goals and objectives of the Québec Water Conservation and Efficiency Program are presented in section 3.2 of the following document (in French), with more detail in Appendix B: <http://www.environnement.gouv.qc.ca/programmes/conservation-utilisation-efficace-eau/programme.pdf>.

In respect of article 304 (3) of the Agreement, Québec is currently participating in updating the objectives that were affirmed by the Regional Body in 2014 (Resolution #23). Following this update, Québec will revise its Water Conservation and Efficiency Program and take into account any changes to the objectives. The Program will also consider changes in technology and scientific advances.

2. Water Conservation and Efficiency Program Overview

a. Citations to Provincial Water Conservation and Efficiency Program implementing laws, regulations and policies

Article 304 of the Agreement concerning the implementation of a water conservation and efficiency program came legally into force in Québec with the inclusion of article 31.101 in the *Environment Quality Act* (EQA).
<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/Q-2>

Article 22, paragraph 2 of the EQA says that: any withdrawal of water, including related work and works' [requiring a water withdrawal], must first obtain an authorization from the Minister. The *Water Withdrawal and Protection Regulation* details what information and documentation must accompany an application. Whether for a water withdrawal or diversion, all applications located in the area covered by the Agreement must include existing or planned water conservation and efficiency measures to reduce the water quantity required.

The first paragraph of article 31.76 of the EQA indicates that:

Any power of authorization under this Act with regard to a water withdrawal must be exercised so as to ensure the protection of water resources, particularly by fostering sustainable, equitable and efficient management of the resources in light of the precautionary principle and the effects of climate change.

This could include, for example, water conservation and efficiency measures.

Similarly, article 25 (and subsequently article 26) of the EQA enables:

On issuing an authorization, the Minister may prescribe any condition, restriction or prohibition the Minister deems advisable for protecting the quality of the environment and preventing adverse effects on the life, health, safety, welfare or comfort of human beings or on ecosystems, living species or property, (...).

Furthermore, article 31.80 (6) adds:

On deciding to issue, amend or renew a water withdrawal authorization, the Government or the Minister, as applicable, may prescribe, in addition to the conditions, restrictions and prohibitions prescribed under section 25, any condition, restriction or prohibition concerning

(6) measures to ensure the conservation and efficient use of the water withdrawn and to reduce the quantity of water consumed, lost or not returned to the environment after use, taking into account, among other things, the best economically feasible practices or economically available technologies and the particularities of the equipment, facilities and processes involved;

Article 31.92 of the EQA states:

If it involves an average of 379,000 litres or more per day, or a lesser quantity determined by regulation of the Government, that is intended to supply a waterworks system serving a municipality described in subparagraph a of subparagraph 1 of the first paragraph of section 31.91, a transfer out of the St. Lawrence River Basin resulting from a new or increased water withdrawal described in that section may be authorized only if it meets the following conditions:

(1) the transfer cannot be reasonably avoided or diminished through the conservation and efficient use of existing water supplies;

(2) the quantity of water to be transferred is reasonable having regard to the water's intended use;

(3) the transfer would result in no significant individual or cumulative adverse impacts on the quantity or quality of the waters and water-dependent natural resources of the Basin; and

(4) the transfer is subject to water conservation measures determined by regulation of the Government, or by the Minister under other provisions of this Act.

If a transfer out of the Basin under the first paragraph would result in a consumptive use of an average of 19 million litres or more per day, it is also subject to review by the Great Lakes-St. Lawrence River Water Resources Regional Body established by the Agreement.

Article 4 of the Regulation respecting the framework for authorization of certain projects to transfer water out of the St. Lawrence River Basin enables the provisions of article 31.92 of the EQA. It states in part:

If the proposed water transfer involves an average quantity of water of 379,000 litres or more per day that is intended to supply a waterworks system serving a municipality (...) the application must (...) be accompanied by the following documents and information:

(1) a description of the measures for the preservation and efficient use of the water that the applicant undertakes to carry out, including timetables;

(2) a description of the follow-up indicators that will be used to monitor those measures for preservation and efficient use;

(3) a narrative description explaining why the water transfer is necessary. The description must also include an analysis of the efficiency of the current uses of water, including the application of preservation measures that are judicious in terms of environment protection and economically feasible with regard to existing water supplies so as to reduce as much as possible the volume of water to be transferred;

(4) a narrative description explaining why the quantities of water whose transfer is proposed are reasonable in relation to the proposed use. To that end, the application must also include a water use plan. The plan must include:

(...) (c) an evaluation of the savings resulting from an efficient use of water (...).

The Regulation may be consulted at the following address:

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%205.1>

Article 31.95 of the EQA states in part:

If it involves an average quantity or consumptive use of 379,000 litres or more per day (...) a new withdrawal from the Basin, an increase in a new withdrawal or an increase in a withdrawal existing (...) may be authorized only if it meets the conditions set out below (...):

(3) the withdrawal or consumptive use is subject to water conservation measures determined by regulation of the Government (...),

(4) the quantity of water withdrawn or consumed is reasonable having regard, among other things, to (...)

(b) the measures implemented for the conservation and efficient use of water, including water from existing water supplies (...).

Thus, the permitting process is a means of promoting the implementation of water conservation and efficiency measures. To that end, model measures specific to each sector of activity are currently being developed.

b. Summary description of the Province's Water Conservation and Efficiency Program including what elements are voluntary and mandatory

The Québec Water Conservation and Efficiency Program is described in the following document. See attachment C for a list of the Program's measures:

<http://www.environnement.gouv.qc.ca/programmes/conservation-utilisation-efficace-eau/programme-en.pdf>

Most of the measures are implemented on a voluntary basis by the *Ministère de l'Environnement et de la Lutte contre les changements climatiques*, the *Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec*, the *Ministère des Affaires municipales et de l'Habitation*, the *Ministère de l'Économie et de l'Innovation* and the *Ministère de l'Énergie et des Ressources naturelles*, for application throughout the territory of Québec. Laws and regulations are mandatory.

3. Description of how the Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures

The following table details the goals and objectives as set out in Resolution #6 (http://www.glsregionalbody.org/Docs/Resolutions/GLSLRWRRB_Resolution_6-Conservation-Efficiency.pdf) and how they are grouped in Québec's Water Conservation and Efficient Use Program.

OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
<p>➤ Guide programs toward long-term sustainable water use.</p>	<p>The first goal, <i>Foster long-term sustainable water use that takes ecosystem health and water needs into account</i>, directly concerns those government actions that can help make water withdrawals in Québec sustainable. The actions are grouped under three objectives: legal issues, reduced water use in various activity sectors, and ecosystem protection.</p>
<p>➤ Adopt and implement supply and demand management to promote efficient use and conservation of water resources.</p>	<p>The second goal, <i>Adopt and implement a supply and demand management approach that takes into account the expected impacts of climate change</i>, concerns the new clearance system for water withdrawals that now incorporates sound management principles. The goal has two objectives: determine how much water is withdrawn, consumed, and disposed of and learn more about how climate change affects supply and demand.</p>
<p>➤ Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.</p>	<p>The third goal, <i>Implement monitoring measures for the Water Conservation and Efficiency Program</i>, specifically identifies MELCC as Program coordinator and monitor. This goal has two objectives: develop a Program assessment process and make Program assessment a source of ongoing knowledge acquisition.</p>
<p>➤ Develop science, technology and research.</p>	<p>The fourth goal, <i>Promote scientific research, technological development, and knowledge acquisition</i>, concerns the development of knowledge on water conservation and efficiency. The three objectives under this goal are to strengthen research efforts, encourage partnerships, and foster the development of new technology.</p>
<p>➤ Develop education programs and information sharing for all water users.</p>	<p>The fifth goal, <i>Educate, inform, equip, and motivate water stakeholders and users</i>, groups together concrete means to guide, support, and empower water stakeholders and users in their approach to water conservation and efficiency. This goal involves four objectives: raising awareness of the value of water, sharing information, developing concrete tools, and recognizing efforts.</p>

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

Since the adoption and publication of Québec's Water Conservation and Efficiency Program in 2013, an annual review of each measure has been conducted by the *Ministère de l'Environnement et de la Lutte contre les changements climatiques* (MELCC). As Program coordinator, the MELCC generates these annual reports in compliance with Article 304 of the Agreement, using a table format to report on the progress of each measure in relation to the initial objective and reporting target. The reports are available to the public (in French and English) at:

<http://www.glsregionalbody.org/Resolutions.aspx#ProgramReports>

The five-year program review being carried out in accordance with Article 300 of the Agreement coincides with Québec's five-year review of its own Water Conservation and Efficiency Program. All contributors from the MELCC and other provincial ministries involved have evaluated if their measure has been attained in relation to the overall target. Consequently, of the 54 measures the review shows that 42 have been attained and 9 have been partially attained. Table 1 below shows the results of a five-year evaluation of the program. NB: Some measures are present in more than one orientation. For more details, see the tables detailing each measure in Appendix 1.

Given that Québec's Water conservation and efficiency program has come to the end of its initial five years, it will be reviewed and renewed in line with the regional objectives that will be adopted by the Regional Body in December 2019.

Table 1
Summary of attainment of measures for each orientation

Goal 1: Foster long-term sustainable water use that takes ecosystems health and varied water uses into account			
Objective 1: Review existing laws and enact new legislation as needed			
Assessment Measures under Orientation # 1			
Measure	Attained	Partially attained	Not attained
13	9	4	0
Goal 2: Adopt and implement a supply and demand management approach that			
Objective 4: Accurately measure the amount of water withdrawn, consumed, and			
Assessment Measures under Orientation # 2			
Measure	Attained	Partially attained	Not attained
9	7	2	0
Goal 3: Set up monitoring measures for the Water Conservation and Efficiency Program			
Objective 6: Develop and implement a process to evaluate whether the objectives are being met			
Assessment Measures under Orientation # 3			
Measure	Attained	Partially attained	Not attained
8	5	0	3
Goal 4: Promote scientific research, technological development and knowledge			
Objective 8: Strengthen research efforts on water conservation and efficiency			
Assessment Measures under Orientation # 4			
Measure	Attained	Partially attained	Not attained
12	9	3	0
Goal 5: Develop education programs, information sharing networks, resources, and tools to mobilize all water stakeholder and users			
Objective 11: Make water stakeholders and users more aware of the value of water			
Assessment Measures under Orientation # 5			
Measure	Attained	Partially attained	Not attained
12	12	0	0

**Great Lakes-St. Lawrence River Water Resources Regional Body
Great Lakes-St. Lawrence River Basin Water Resources Council**

RESOLUTION NO. 2020-8

ADOPTING JOINT DECLARATION OF FINDING

For the Water Management Program Review and
Water Conservation and Efficiency Program Review
State of Wisconsin

I. BACKGROUND AND PURPOSE

The Compact

A. The Great Lakes-St. Lawrence River Basin Water Resources Compact (“Compact”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin and the Commonwealth of Pennsylvania, and was effective on December 8, 2008.

B. Section 3.4 of the Compact requires each Party State to submit a report to the Great Lakes-St. Lawrence River Basin Water Resources Council (“Compact Council”) and the Great Lakes-St. Lawrence River Water Resources Regional Body (“Regional Body”) on actions taken by that State to meet the provisions of the Agreement and Compact regarding that Party State’s Water management and conservation and efficiency programs.

C. Following the Compact Council’s review of such reports in cooperation with the Provinces pursuant to Section 3.4 of the Compact, the Council shall determine whether that State’s programs: (1) meet or exceed the provisions of the Compact; or (2) do not meet the provisions of the Compact and, if not, recommend options to assist the jurisdiction in meeting the provisions of the Compact.

D. Section 4.2 of the Compact requires the Compact Council in cooperation with the Provinces to adopt Basin-wide conservation and efficiency objectives, which were adopted by the Compact Council on December 8, 2008. Section 4.2.2 of the Compact requires each Party State to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a Water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State’s goals and objectives.

The Agreement

E. The Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (“Agreement”) is by, between and among the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin, the Commonwealth of Pennsylvania, the Province of Ontario, and the Government of Québec, and certain provisions of the Agreement began to more fully come into force on March 8, 2015.

F. Article 300 of the Agreement requires each Party State and Province to submit a report to the Regional Body on actions taken by the State or Province to meet the provisions of the Agreement regarding that State's or Province's Water management and conservation and efficiency programs.

G. Following the Regional Body's review of such reports pursuant to Article 300 of the Agreement, the Regional Body shall determine if that State or Province's programs: (1) meet or exceed the provisions of the Agreement; (2) do not meet the provisions of the Agreement; or (3) would meet the provisions of the Agreement if certain modifications were made and what options may exist to assist the jurisdiction in meeting the provisions of the Agreement.

H. Article 304, Paragraph 1 of the Agreement requires the Regional Body to identify Basin-wide Water conservation and efficiency objectives to assist the Parties in developing their Water conservation and efficiency programs by December 13, 2007, which were adopted by the Regional Body on December 13, 2007. Article 304, Paragraph 2 of the Agreement requires each Party State and Province to develop its own water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives, and develop and implement a water conservation and efficiency program, either voluntary or mandatory, within its jurisdiction based on the Party State's or Province's goals and objectives.

II. SUBMISSIONS BY STATE OF WISCONSIN

A. To the Compact Council. The Compact Council has received the State of Wisconsin's report on its Water management and conservation and efficiency programs under the Compact, which is attached to this Resolution as Attachment A.

B. To the Regional Body. The Regional Body has received the State of Wisconsin's report on its Water management and conservation and efficiency programs under the Agreement, which is attached to this Resolution as Attachment A.

III. DECLARATION OF FINDING

Upon review of the submissions of the State of Wisconsin, the terms of the Compact and the Agreement, the Compact Council and Regional Body find as follows:

- A. Based on the report submitted by the State of Wisconsin, the Water Management Program presented by the State of Wisconsin meets or exceeds the current requirements of the Compact and the Agreement.
- B. Based on the report submitted by the State of Wisconsin, the Water Conservation and Efficiency Program presented by the State of Wisconsin meets or exceeds the current requirements of the Compact and the Agreement.

*Adopted and approved on December 8, 2020 by
the Great Lakes-St. Lawrence River Water Resources Regional Body and
the Great Lakes—St. Lawrence River Basin Water Resources Council*

Draft—For Discussion Purposes Only
October 26, 2020

ATTACHMENT A

Water Management Program Review
State of Wisconsin
December 11, 2019

WISCONSIN DEPARTMENT OF NATURAL RESOURCES WATER MANAGEMENT AND CONSERVATION AND EFFICIENCY PROGRAM REVIEW

December 11, 2019

General Information

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

Lead agency: State of Wisconsin Department of Natural Resources (WDNR)

Contacts:	Adam Freihoefer WDNR DG/5 PO Box 7921 Madison, WI 53707-7921 Adam.Freihoefer@wisconsin.gov (608) 267-7638	Shaili Pfeiffer WDNR DG/5 PO Box 7921 Madison, WI 53707-7921 Shaili.Pfeiffer@wisconsin.gov (608) 267-7630
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2. Identify all laws, statutes, rules, regulations, executive orders, administrative orders or other similarly enforceable documents (collectively, “Laws”) that establish or implement programs meeting the requirements of the following provisions of the Compact or Agreement. In particular, ensure that all such citations address the following sections and articles of the Compact and Agreement. Include a brief lay person description for each section of the program and weblink for more information (registration, reporting, diversion, decision making standard for water use permits, water conservation program, science and research, etc.)

The Wisconsin Legislature ratified the *Great Lakes–St. Lawrence River Basin Water Resources Compact* (Compact) in 2007 Wisconsin Act 227. Section 281.346 of the Wisconsin Statutes details Wisconsin’s program for managing and regulating new or increased water withdrawals, diversions and consumptive uses consistent with the provisions of the Compact. There have been some changes to Wisconsin’s laws related to Compact implementation since 2007 Act 227. All relevant changes are noted below. Additional detail is provided in the table below.

COMPACT	AGREEMENT	IMPLEMENTING LAWS AND ADMINISTRATIVE CODES*
Compact Section 3.4	Agreement Article 300	§281.343(3)(d); §281.346(11)
Compact Section 4.1	Agreement Article 301	§281.343(4); §281.346(3); §281.346(11); NR 856
Compact Sections 4.2(2), 4.2(4), and 4.2(5)	Agreement Article 304	§281.343(4b)(b),(d) & (e); §281.346(8); § 281.346 (8) and (11) (d); NR 852

Compact Section 4.3	Agreement Article 200	§281.343(4d); §281.346; NR 850; NR 852; NR 856; NR 860
Compact Sections 4.8, 4.9, and 4.13	Agreement Articles 200, 201 and 208	§281.343(4m); §281.343(4n); §281.343(4v); §281.346(4), (5m), (6) and (7); NR 852; NR 856
Compact Section 4.10	Agreement Article 206	§281.343(4p); §281.346 (4m), (4s), (5), (5e), (5m); NR 860
Compact Section 4.11	Agreement Article 207	§281.343(4r); §281.346(6); NR 860

* NR references refer to chapters or sections of the Wisconsin Administrative Code; § references refer to sections of the Wisconsin Statutes.

Registration: Water withdrawers must register a water withdrawal if the water supply system (e.g. high capacity well or surface water intake pipe) has the capacity to withdraw at least 100,000 gallons per day (70 gallons per minute) (including from the Great Lakes basin) in any 30-day period. The two exemptions to this requirement are: withdrawals to supply vehicles for the needs of the persons or animals being transported or for ballast or other needs related to the operation of the vehicles and temporary withdrawals for fire-fighting, humanitarian or emergency response purposes. Ch. NR 856, Wis. Adm. Code; <https://dnr.wi.gov/topic/WaterUse/registration.html>

Reporting: Registered withdrawers are required to measure or estimate the volume of water they withdraw every month and report that information annually to the WDNR. Even if water is not withdrawn during the previous year, a withdrawal report is still required. Reporting is required for: all high capacity well properties (statewide); permitted (Chapter 30, Wis. Stats.) surface water withdrawals (statewide); properties with a Water Use Permit (Great Lakes basin); and any properties that withdrew an average of 100,000 gallons per day or more in any 30-day period. Ch. NR 856, Wis. Adm. Code; <https://dnr.wi.gov/topic/WaterUse/report.html>

Water Use Permits: Since December 8, 2011, WDNR requires water use permits in the [Great Lakes Basin](#) (Lake Superior or Lake Michigan) for properties that plan to withdraw water at an average of 100,000 gallons per day or more in any 30-day period. There are two types of water use permits:

- **Water Use General Permit** - Required for withdrawals that average 100,000 gallons per day or more in any 30-day period but do not equal at least 1,000,000 gallons per day for 30 consecutive days.
- **Water Use Individual Permit** - Required for withdrawals that equal at least 1,000,000 gallons per day for 30 consecutive days.

Applicants must receive a water use permit prior to withdrawing water. There are no Water Use Permit application fees. Ch. NR 860, Wis. Adm. Code; <https://dnr.wi.gov/topic/WaterUse/permits.html>

Water Conservation and Efficiency: Wisconsin implements a water conservation and efficiency program in line with the Wisconsin and Great Lakes basin-wide water conservation and efficiency goals and objectives. The water conservation and efficiency program is implemented by the WDNR, in cooperation with the Public Service Commission of Wisconsin, and the Wisconsin Department of Safety and Professional Services. Wisconsin provides [annual reports](#) on its water conservation and efficiency program to the Compact Council and Regional Body. Ch. NR 852, Wis. Adm. Code; <https://dnr.wi.gov/topic/WaterUse/conservation.html>

Diversions: The Great Lakes Compact and Agreement ban diversions of Great Lakes water with limited exceptions. These exceptions allow a "straddling community" or "community in a straddling county" to apply to divert water (i.e., to move water out of the Great Lakes basin). "Straddling community" refers to communities that straddle the Great Lakes basin boundary. These are communities that lie partly within the Great Lakes basin and partly outside of the Great Lakes basin. Examples of straddling communities in Wisconsin are the City of New Berlin and Village of Mount Pleasant. "Community in a straddling county" refers to communities that are wholly outside of the Great Lakes basin but located in a county that straddles the Great Lakes basin boundary. An example of this type of community is the City of Waukesha, Wisconsin. Wis. Stat. § 281.346 (4); <https://dnr.wi.gov/topic/WaterUse/compact.html>

Other: Wisconsin summarizes water use reporting data annually and [reports](#) are available on the WDNR's website. Additionally, Wisconsin annually provides aggregate water use data to the Great Lakes Commission to include in the Great Lakes Commission's Great Lakes [water use report](#). Wisconsin also provides an on-line search tool of [water withdrawal sources](#).

3. Identify any changes from the 2014 report, highlighting in particular major changes from 2014 throughout the response. If there are no changes, please indicate accordingly.

The statutes and administrative rules governing the implementation of the Great Lakes Compact in Wisconsin were approved prior to 2014. Three changes were made to the statutes since the 2014 report, the first two in 2017. The Wisconsin legislature created a provision to specify that if a fish farm withdraws water and places it in a registered aquacultural pond, any subsequent use of that water from that pond does not need to be registered again, as long as the withdrawal is not a diversion (2017 Act 21). The legislature also amended Wisconsin's Compact implementing legislation after the Council's Decision to approve Waukesha's request to divert Lake Michigan water. This [amendment](#) provided that if the Great Lakes council approves a diversion area for a public water supply system proposing to make a diversion from the Great Lakes basin, that diversion area shall be the water supply service area for purposes of Wisconsin law and the diversion area does not need to be consistent with the approved areawide water quality management plan under Wis. Stat. § 283.83.

The Compact implementing legislation, Wis. Stat. § 281.346, was modified in 2018 to specify that a water supply service area plan is not required for a proposed diversion in an electronics and manufacturing technology zone. There have been no modifications or additions to Wisconsin's Compact implementing administrative rules since the 2014 report. The implementation of WDNR's Water Use Program continues to be refined. In particular, WDNR has continually improved its Water Use Database for tracking water use and has improved access

to water use information and monitoring water levels through a public [water quantity data viewer](#) and online access to Wisconsin's [inventory of water withdrawal sources](#).

Water Management Program Report

- 1. Summary description of the State's or Province's Water management program scope and thresholds, including the current status of program implementation and a description of which New or Increased Withdrawals, Consumptive Uses and Diversions are subject to the program. The summary should include information on registration (if applicable), management and regulation, and reporting elements of the program.**

Water Use Program Management: The Water Use Program at WDNR was created to implement the Compact and *Great Lakes–St. Lawrence River Basin Sustainable Water Resources Agreement* (Agreement) and to focus on sustainable and efficient water use. Wisconsin's Compact implementing legislation (2007 Wisconsin Act 227) and related regulatory and case law provide the foundation for the Water Use Program. While most of the program applies statewide, there are specific requirements for water users in the Great Lakes Basin. Information related to the Water Use Program is available on the WDNR website: <http://dnr.wi.gov/topic/wateruse/>.

The Water Use Program is focused on achieving Wisconsin's goal to:

“Sustainably manage the quantity and quality of water in the state to ensure that water is available to be used to protect and improve our health, economy and environment now and into the future.”

Water Use Program components include:

- Documenting and monitoring water use through registration and reporting;
- Implementing the Compact through water use permitting and regulating diversions of Great Lakes Basin waters;
- Helping communities plan water supply needs;
- Reviewing the construction and impact of high capacity wells;
- Building a statewide water conservation and efficiency program; and
- Developing and maintaining a statewide water resources inventory, including a better understanding of water loss and consumptive use in Wisconsin.
- Providing information to the public on water withdrawal sources in Wisconsin, applications for new high capacity wells, and opportunities for public participation on significant Compact related proposals.

Statewide water use registration and reporting

Wis. Stat. § 281.346(3) and Chapter NR 856, Wis. Adm. Code, establish requirements for property owners including registration of water withdrawals and reporting of water withdrawal data annually to the WDNR to support management of the state's water resources.

Registration

Any person who proposes to begin a new or increased withdrawal from waters of the state using a water supply system¹ with the capacity to withdraw 100,000 gallons per day (~ 70 gallons per minute) or more in any 30-day period, must register the withdrawal with the DNR. Examples of water supply systems that may fall under this category include:

- All high capacity well properties;²
- Permitted (Wis. Stat. Chapter 30) surface water withdrawals;
- Any other properties statewide on which there is a water supply system with the capacity to withdraw an average of 100,000 gpd or more in any 30-day period from surface water or groundwater.

Prior to the effective date of the Compact, December 8, 2008, any approved and permitted water supply systems with a capacity to withdraw at least 100,000 gpd through several programs were automatically registered with the WDNR. Following implementation of the Compact, all new or increased withdrawals that meet the withdrawal threshold must register with the WDNR prior to withdrawing groundwater or surface water. This is typically done in conjunction with other approval or permitting procedures. As of 2018, WDNR has approximately 14,500 registered withdrawal sources statewide, of which, approximately 13,400 are wells and 1,100 are surface water sources. The public may search for water withdrawal locations through WDNR's [water quantity data viewer](#).

Reporting

In addition to registering water withdrawals, persons who make withdrawals from the waters of the state that average 100,000 gpd or more in any 30-day period must annually report to the WDNR the monthly volumes of the withdrawal.³

Owners with registered withdrawals must measure or estimate their monthly withdrawal volumes and report the previous calendar years' monthly water use by March 1 of each year. Methods for measuring water for reporting purposes are outlined in s. NR 856.31, Wis. Adm. Code. Owners report on-line or through mailed copies. Reporting response rate is consistently above 95% since 2012. These reports are stored in a database and analyzed for errors and inconsistencies.

¹ "Water supply system," when not preceded by "public," means one of the following: 1. Except as provided in subd. 2., the equipment handling water from the point of intake of the water to the first point at which the water is used. 2. For a system for providing a public water supply, the equipment from the point of intake of the water to the first point at which the water is distributed. Wis. Stat. § 281.346(1)(wp)

² Section NR 812.07(52), Wis. Adm. Code, defines "high capacity property as "one property on which a high capacity well system exists or is to be constructed." Further, s. NR 812.07(53) defines "high capacity well system" as "one or more wells, drillholes or mine shafts used or to be used to withdraw water for any purpose on one property, if the total pumping or flowing capacity of all wells, drillholes or mine shafts on one property is 70 or more gallons per minute based on the pump curve at the lowest system pressure setting, or based on the flow rate.

³ Pursuant to Wis. Stat. s. 281.346 and Ch. NR 820, Wis. Adm. Code, high capacity well owners must annually report withdrawals to the WDNR, regardless of withdrawal volume. Further, under Ch. NR 860, Wis. Adm. Code, water use permittees must also annually report withdrawals, regardless of volume.

Wisconsin summarizes water use reporting data annually and [reports](#) are available on the WDNR's website. Water use information is available to the public by source or aggregated through the WDNR's online water withdrawal data portal and geospatially through the water quantity data viewer. Individual reports are provided upon request to governmental partners, researchers, businesses and private individuals.

The Regional Body and Compact Council Water Use Reporting Protocols require that States and Provinces report aggregate water use to the Great Lakes Commission annually to include in the Great Lakes Water Use report. Wisconsin provides this information annually by the specified August 15 deadline.

Water Use Permitting

Sections 281.346(4m), (4s), and (5), and Chapter NR 860, Wis. Adm. Code, establish the process, requirements and criteria for implementing water use permitting. A water use permit is required before persons may withdraw water in quantities that average 100,000 gpd or more in any 30-day period from groundwater or surface water in the Great Lakes basin.

Water use permits for pre-existing withdrawals

In Wisconsin, water use permitting requirements began on December 8, 2011. WDNR issued automatic coverage under Water Use General Permit No. 1 to 687 persons in the Great Lakes Basin with the capacity to withdraw an average of 100,000 gpd or more, but less than 1 MGD, in any 30-day period. WDNR issued automatic Water Use Individual Permits to 600 persons with a water supply system or systems on one property or a public water supply system having approval to withdraw at least 1,000,000 gallons of water per day for any 30 consecutive days.

The automatic permits included a baseline, set at the maximum hydraulic capacity of the most restrictive component of the water supply system or a withdrawal limit contained in a permit or approval as of December 8, 2008. Wis. Stat. § 281.346(4e). (For baselines *see* Wis. Stat. § 281.346(2)(e)). The automatic permits issued in December 2011 also included an authorized withdrawal amount, which was based on the maximum hydraulic capacity of the most restrictive component of the water supply system or a withdrawal limit contained in an approval or other permit. If a person proposes to modify their authorized withdrawal amount before December 8, 2021 so that it equals 1 MGD or more over the baseline for any 30 consecutive days, the withdrawal must meet the State Decision-Making Standard (Wis. Stat. § 281.346(5)(f)). If a person proposes to modify the withdrawal before December 8, 2021, so that it equals 10 MGD or more over the baseline for any 30 consecutive days, the withdrawal must meet the Compact Decision-Making Standard (Wis. Stat. § 281.346(5)(f)).

Water use permits for new or increased withdrawals in the Great Lakes Basin

After December 8, 2011, persons proposing new withdrawals averaging 100,000 gpd or more in any 30-day period or proposing to increase an existing withdrawal so that it will equal 100,000 gpd or more in any 30-day period (but will not equal at least 1 MGD for any 30 consecutive days) must apply for and receive coverage under the Water Use General Permit No. 2. Persons proposing Great Lakes basin withdrawals that will equal at least 1 MGD for any 30 consecutive days must apply for an Individual Water Use Permit and the state decision-

making standard and conservation and efficiency measures apply.

If a person proposes to increase a withdrawal above the withdrawal amount authorized in an existing permit, the person must apply for an amended permit and implement water conservation and water use efficiency measures related to the new or increased source. Beginning December 8, 2011, coverage under the Water Use General Permit No. 2 is accompanied by a notice of coverage (NOC) letter that includes: an authorized withdrawal amount, requirements for reporting water use, and a copy of the required water conservation and efficiency measures. Since December 8, 2011, WDNR has issued or amended coverage or permits to 282 persons in the Great Lakes Basin (coverage under Water Use General Permit No. 2 to 281 persons and 1 individual permit).

Public notice and comment are required for each individual water use permit application. Any interested party may also request a public hearing on an individual water use permit. If a new general permit is proposed by WDNR, public notice and comment on the proposed general permit is also required.

Persons receiving coverage under Water Use General Permit⁴ must satisfy the following requirements:

- Meet water conservation requirements in Wis. Adm. Code NR 852
- Ensure the water withdrawal is consistent with an approved water supply service area plan, if the plan is required
- Receive all necessary permits or approvals for the withdrawal under Wis. Stat. §§ 30.12, 30.18, 281.34 and 281.41, or § 281.17, 2001 Stats.

An individual permit may only be issued if the applicant will:

- Meet water conservation requirements in Wis. Adm. Code NR 852
- Ensure the water withdrawal is consistent with an approved water supply service area plan, if the plan is required
- Receive all necessary permits or approvals for the withdrawal under Wis. Stat. §§ 30.12, 30.18, 281.34 and 281.41, or §. 281.17, 2001 Stats.
- Meet the state decision making standard or compact decision making standard, if applicable
- Comply with prior notice to the Regional Body and Regional Review requirements, if applicable.

Wisconsin's water use permits reference several other water management regulations. The majority of proposed water withdrawals are reviewed based on these additional regulations.

⁴ These are the permit requirement for General Permit 2 – which is applicable for proposed new or increased water withdrawals. General Permit 1 applied to withdrawer that existed at the time of the Compact ratification and General permit 3 applies to temporary construction dewatering.

Statute	Subject	Standards
30.12	Structure and deposits in navigable waters	<ul style="list-style-type: none"> - Establishes standards for general permits and individual permits - Establishes exemptions from permit requirements
30.18	Withdrawal of water from lakes and streams	<ul style="list-style-type: none"> - Applies to withdrawals of any amount for maintaining flow or lake level, for agriculture and irrigation - Withdrawals may not injure public rights
281.34	Groundwater withdrawals	<ul style="list-style-type: none"> - Applies to withdrawal of 100,000 gallons per day or more - Applications that: fall within a groundwater protection area, impact a spring, result in 95% water loss, impact a municipal well, impact groundwater quality are conditioned to avoid significant adverse impacts or denied.
281.41	Wastewater Treatment Plant Plans	<ul style="list-style-type: none"> - Requires plan and specification approval for reviewable projects

Water Loss and Consumptive Use

‘Consumptive Use’ is defined in Wis. Stat. § 281.346(1)(e), as “a use of water that results in the loss of or failure to return some or all of the water to the basin from which the water is withdrawn due to evaporation, incorporation into products, or other processes.” WDNR uses consumptive use coefficients, as outlined in NR 142, Wis. Adm. Code, to calculate consumptive use. WDNR estimates consumptive uses on an annual basis, based on water use coefficients and reporting data. Site specific data for consumptive use may be submitted to the department by the withdrawer. WDNR also refers to tables within USGS publications SIR 2007-5197 and Fact Sheet 2008-3032 for consumptive use coefficient information.

Water loss approvals are required statewide for new or increased withdrawals that will result in a water loss averaging more than 2 MGD in any 30-day period (see Wis. Stat. § 281.35)

The DNR must determine the following in order to issue a water loss approval:

- No public water rights in navigable water will be adversely affected;
- The proposed withdrawal does not conflict with any applicable plan for future uses of the waters of the state;
- The applicant’s current water use and proposed plans incorporate reasonable conservation practices;
- The proposed withdrawal and uses will not have a significant adverse impact on the environment and ecosystem of the Great Lakes basin or the upper Mississippi River basin;

- The proposed withdrawal and uses are consistent with the protection of public health, safety and welfare and will not be detrimental to the public interest; and
- The proposed withdrawal will not have a significant detrimental effect on the quantity and quality of waters of the state.

In addition, if the proposed withdrawal will result in an interbasin diversion and water loss applies, all of the following:

- a. That each state or province to which the water will be diverted has developed and is implementing a plan to manage and conserve its own water quantity resources, and that further development of its water resources is impracticable or would have a substantial adverse economic, social or environmental impact.
- b. That granting the application will not impair the ability of the Great Lakes basin or upper Mississippi River basin to meet its own water needs.
- c. That the interbasin diversion alone, or in combination with other water losses, will not have a significant adverse impact on lake levels, water use, the environment or the ecosystem of the Great Lakes basin or upper Mississippi River basin.
- d. That the proposed withdrawal is consistent with all applicable federal, regional and interstate water resources plans.

Persons with Water Loss Approvals must annually report water loss to the WDNR. WDNR publishes a public notice upon receipt of a complete water loss application.

Diversions

A ‘diversion’ is defined in Wis. Stat. § 281.346(1)(h), as “a transfer of water from the Great Lakes basin into a watershed outside the Great Lakes basin, or from the watershed of one of the Great Lakes into that of another, by any means of transfer, including a pipeline, canal, tunnel, aqueduct, channel, modification of the direction of a water course, tanker ship, tanker truck, or rail tanker except that the ‘diversion’ does not include any of the following:

1. The transfer of a product produced in the Great Lakes basin or in the watershed of one of the Great Lakes, using waters of the Great Lakes basin, out of the Great Lakes basin, or out of that watershed.
2. The transmission of water within a line that extends outside the Great Lakes basin as it conveys water from one point to another within the Great Lakes basin if no water is used outside the Great Lakes basin.
3. The transfer of bottled water from the Great Lakes basin in containers of 5.7 gallons or less.”

The WDNR issued grandfathered diversion approvals to water supply systems that diverted water prior to December 8, 2008. For the diversion approvals that returned water to the Great Lakes basin, the authorized diversion amount identified in the approval was based on the amount of water necessary to provide water for public water supply purposes within a sewer service territory that provides for the return of wastewater to the Great Lakes basin and that is specified in the sewer service area provisions of an area-wide water quality management plan

approved by the WDNR before December 31, 2007. The approved diversion amounts for these public water systems were based on approved sewer service areas, and population and related water supply service projections for build-out conditions in those communities. *See* Wis. Stat. § 281.344(3e) and (3m). For diversion approvals that discharge wastewater to the Mississippi River basin, the diversion amount was based on the maximum hydraulic capacity of the most restrictive component of the water supply system. *See* Wis. Stat. § 281.343(4t)(b).

Relevant provisions of the Compact and Wis. Stat. § 281.346(4) govern diversions in the state. No person may begin a diversion, unless as authorized under Wis. Stat. § 281.346(4), and no person may increase the amount of a diversion over the diversion amount specified in an approval under that subsection without prior approval from the WDNR. WDNR is required to provide public notice and a public comment period of any diversion applications governed by Wis. Stat. § 281.346(4). WDNR is also required to hold a public hearing on any diversion application if requested. WDNR is required to provide access to information on diversion applications. To facilitate public access to information on diversion applications, WDNR has provided a webpage for each diversion application and posted all official correspondence between WDNR and the applicant on these webpages. WDNR has an electronic subscription for members of the public interested in Great Lakes Compact issues. Public notices related to diversion applications are also provided via email to the Great Lakes Compact issues electronic subscription list. The list currently has more than 6,000 subscribers.

WDNR has approved two straddling community diversion applications since 2008: for the City of [New Berlin](#) and the City of [Racine](#). The City of New Berlin diversion was approved in 2009 and reports annually to WDNR on the diversion. The City of Racine diversion was approved in April 2018. The approval was challenged in an administrative hearing and the administrative law judge upheld the approval. The petitioners did not seek judicial review of the administrative law judge decision, so the approval stands as issued.

In 2012 and 2013, WDNR approved intrabasin transfers for Enbridge to conduct hydrostatic testing of pipeline segments between Superior, WI and Sarnia, ON and between Superior, WI and Mokena, IL. WDNR required that all water was discharged into Lake Huron and Lake Michigan. WDNR notified the Regional Body of these intrabasin transfers through email correspondence.

WDNR forwarded the City of Waukesha's diversion application for a community in a straddling county to the Regional Body and Compact Council in 2016. WDNR reviewed the application between 2010 and 2015 before determining the application was approvable under the Great Lakes Compact. As part of the Wisconsin review of the City of Waukesha diversion application, WDNR held 6 public hearings and three public comment periods. WDNR also consulted with federally recognized tribes in Wisconsin. During the Regional Body and Compact Council review of the Waukesha diversion application between January and June 2016, Wisconsin worked with the Regional Body and Compact Council to provide information necessary for the review. This review included responding to 100 additional written questions from the Regional Body on the application. This application was approved by the Regional Body and Compact Council in 2016 with conditions. The City of [Waukesha](#) is currently working to obtain all the necessary federal and state approvals and permits to implement the diversion.

2. Describe specifically how Water Withdrawals in the State are managed by:

a. Sector

Each withdrawal source and property is assigned a [water use code](#). Water use codes that represent specific sectors are assigned based on the purpose for which the majority of the water is used. For the most part, water withdrawals in Wisconsin are not regulated by sector but are regulated based on water source, quantity and location. There are a few exceptions: 1) surface water withdrawals of any amount from a stream for the purposes of agriculture or irrigation are regulated under Wis. Stat. § 30.18; 2) water conservation and efficiency requirements differ among sectors under Ch. NR 852, Wis. Adm. Code; and 3) the public water supply sector is subject to a separate set of requirements⁵ and is also regulated by the Public Service Commission of Wisconsin (PSC).

b. Water source

i. Surface water withdrawals (Lake Michigan, Lake Superior, and other surface waters)

Surface water withdrawals are required to register if the water system has the capacity to withdraw 100,000 gallons per day. Surface water withdrawals with the capacity to withdraw 100,000 gallons per day are required to report withdrawals over 100,000 gallons per day. Surface water withdrawals are also managed under . § 30.18. WDNR regulates surface water withdrawals of any amount from streams for purposes of agriculture or irrigation (Wis. Stat. § 30.18(2)(a)2.); withdrawals of any amount from a stream to maintain or restore lake levels or stream flows (Wis. Stat. § 30.18(2)(a)1.); and withdrawals from a stream or lake resulting in a water loss of ≥ 2 MGD in any 30-day period (Wis. Stat. § 30.18(5)(b)). An individual permit is required for withdrawals falling into any of the categories above. WDNR evaluates permit applications to ensure that the proposed withdrawals do not injure public rights in navigable waters and either withdraw only surplus water or have the consent of all possibly adversely affected riparian owners (Wis. Stat. § 30.18(5)(a)).

ii. Groundwater withdrawals

Groundwater withdrawals are required to register if the water system has the capacity to withdraw 100,000 gallons per day. Groundwater withdrawal sources with the capacity to withdraw 100,000 gallons per day are required to report water withdrawals of any volume. Groundwater withdrawals are further regulated under Ch. 281, Wis. Stats., Chs. NR 812 and 820, Wis. Adm. Code, and related case law. All public and private wells, except those community water system wells that are subject to separate regulations, are subject to Ch. NR 812, Wis. Adm. Code regulations that govern their location and provide standards and requirements for well construction, pump installation, and water treatment. High capacity wells are those with a capacity of $\geq 100,000$ gpd from one or more wells on a single property. Approval criteria for high capacity wells vary based on the geographic location of the well, amount of water loss, and the amount of the withdrawal. *See* Wis. Stat. § 281.34. For example, WDNR is required to undertake an environmental review if the proposed well may impact a

⁵ Including Chs. NR 809, 810 and 811, Wis. Adm. Code.

spring with a normal flow of 1 cubic foot per second; is in a groundwater protection area (i.e., is within 1,200 feet of a trout stream or outstanding or exceptional resource water); or will have a water loss of more than 95 percent of the amount withdrawn. *See* Wis. Stat. § 281.34(4) and (5).⁶

c. Quantity

Water withdrawals are required to register if the water system has the capacity to withdraw 100,000 gallons per day. Groundwater withdrawal sources with the capacity to withdraw 100,000 gallons per day are required to report water withdrawals of any volume. Surface water withdrawals with the capacity to withdraw 100,000 gallons per day are required to report withdrawals over 100,000 gallons per day.

New or increased water withdrawals in the Great Lake Basin proposing to withdraw 100,000 gallons per day up to 1,000,000 gallons per day for 30 consecutive days are required to receive coverage under a general water use permit. New or increased water withdrawals in the Great Lakes Basin proposing to withdraw 1,000,000 gallons per day for 30 consecutive days or more are required to obtain an individual water use permit and are subject to the state decision-making standard. New or increased water withdrawals in the Great Lakes Basin proposing to withdraw 10,000,000 gallons per day for 30 consecutive days are subject to the Compact decision-making standard.

d. Location

The primary geographical distinction affecting water withdrawal management in Wisconsin is that between withdrawals and uses in the Great Lakes basin (Lake Michigan and Lake Superior basins) and withdrawals and uses outside of the basin (i.e., in the Upper Mississippi River basin). Regulations specific to the Great Lakes basin include: water use permits, mandatory conservation and efficiency plans, diversion prohibitions, and regional notification and review procedures. These additional Great Lakes requirements are discussed below.

e. Any specific exemptions as allowed in the Agreement and the Compact

The scope and thresholds for the water management program are described above. Wisconsin Compact implementing legislation does not include any specific exemptions to the water management program.

3. Description of how the provisions of the Standard of Review and Decision are applied. The description should include information on how each criterion of the Decision-Making Standard and Exception Standard is addressed.

a. State decision-making standard

Under Wis. Stat. § 281.346(5), the WDNR may not approve an application for a new withdrawal that will equal at least 1 MGD for any 30 consecutive days, or for an existing withdrawal that is not covered by a general permit that is proposed to be modified so that it will equal at least 1 MGD for any 30 consecutive days, unless the withdrawal meets the state decision-making

⁶ Ongoing litigation may impact how and in what instances WDNR is authorized or required to consider impacts of all proposed high capacity wells on waters of the state

standard.

To meet the state decision-making standard, applicants must attach documentation describing how the withdrawal will be implemented such that the following criteria, listed in Wis. Stat. § 281.346(5m), are met:

- (a) The amount of the withdrawal or increase in the withdrawal is needed to meet the projected needs of the person who will use the water.
- (b) For an increase in a withdrawal, cost-effective conservation practices have been implemented for existing uses of the water, as required under rules promulgated by the department under sub. (8)(d).
- (c) The applicant has assessed other potential water sources for cost-effectiveness and environmental effects.
- (d) Cost-effective conservation practices will be implemented to ensure efficient use of the water, for a new withdrawal, or of the increased amount of an existing withdrawal.
- (e) One of the following applies:
 - 1. No significant adverse environmental impacts to waters of the state will result from the new or increased withdrawal.
 - 2. If the withdrawal is from a surface water body, the applicant demonstrates that the withdrawal will not result in the violation of water quality standards under Wis. Stat. § 281.15 or impair fish populations.
 - 3. The department has issued a permit under s. 30.18 for the new or increased withdrawal or has issued a permit under s. 30.12 for a structure that will be used for the new or increased withdrawal.
 - 4. The department has issued an approval under § 281.34, or § 281.17, 2001 Stats., for the new or increased withdrawal.

Section NR. 860.31(3)(a)12., Wis. Adm. Code contains the following additional criteria for meeting the state decision-making standard:

- a. Documentation that the proposed withdrawal amount is needed to meet the applicant's projected needs.
- b. Documentation of compliance with the applicable provisions of Ch. NR 852 (Water Conservation & Water Use Efficiency).
- c. An alternatives analysis comparing other potential water sources for cost-effectiveness and environmental effects.
- d. A description of the baseline conditions of the source including hydrologic flow, water quality, and for surface water sources, habitat of the source. This information is not required if the department has issued a permit under Wis. Stat. § 30.18, Stats.; an

approval under Wis. Stat. § 281.34 for the new or increased withdrawal; or has issued a permit under Wis. Stat. § 30.12, for the structure that will be used for the new or increased withdrawal.

e. An assessment of the potential impacts of the withdrawal on the waters of the state. The department may require modeling to document the anticipated hydrologic impacts of the proposed withdrawal and any return flow or may require a water quality evaluation to determine if the withdrawal or return flow will meet established water quality standards, or may require both. This information is not required if the department has issued a permit under Wis. Stat. § 30.18; an approval under Wis. Stat. § 281.34, for the new or increased withdrawal; or has issued a permit under Wis. Stat. § 30.12, for the structure that will be used for the new or increased withdrawal.

An applicant must comply with all of the above state decision-making standard requirements prior to the proposed withdrawal.

Since December 8, 2011, the WDNR has reviewed and approved one application for an individual permit and the WDNR has reissued one water loss approval in the Lake Michigan basin.

b. *Compact decision-making standard*

Under Wis. Stat. § 281.346(5), WDNR may not approve an application for a new withdrawal that will equal at least 10 MGD for any 30 consecutive days, or for an existing withdrawal that is not covered by a general permit and that is proposed to be modified so that it will equal at least 10 MGD for any 30 consecutive days, unless the withdrawal meets the Compact decision-making standard.

However, if a person proposing a new or increased withdrawal to which the Compact decision-making standard would otherwise apply, demonstrates, using procedures specified in rules promulgated by WDNR (Wis. Adm. Code NR 142.06), that the water loss would average less than 5 MGD in every 90-day period, the state decision-making standard—rather than the Compact decision-making standard—applies to the withdrawal. Wis. Stat. § 281.346(5)(f).

To meet the Compact decision-making standard, an applicant must demonstrate the following, as required by Wis. Stat. § 281.346(6):

- (a) All of the water withdrawn from the Great Lakes basin will be returned to the source watershed, less an allowance for consumptive use.
- (b) The withdrawal will result in no significant adverse individual impacts or cumulative impacts to the quantity or quality of the waters of the Great Lakes basin, to water dependent natural resources, to the source watershed, or, if the withdrawal is from a stream tributary to one of the Great Lakes, to the watershed of that stream.
- (c) The withdrawal will be implemented in a way that incorporates environmentally sound and economically feasible water conservation measures.

(d) The withdrawal will be in compliance with all applicable local, state, and federal laws and interstate and international agreements, including the Boundary Waters Treaty of 1909.

(e) The proposed use of the water is reasonable, based on a consideration of all of the following:

1. Whether the proposed withdrawal is planned in a way that provides for efficient use of the water and will avoid or minimize the waste of water.
2. If the proposal would result in an increased water loss, whether efficient use is made of existing water supplies.
3. The balance of the effects of the proposed withdrawal and use, and other existing or planned withdrawals and water uses from the water source, on economic development, social development, and environmental protection.
4. The supply potential of the water source, considering quantity, quality, reliability, and safe yield of hydrologically interconnected water sources.
5. The probable degree and duration of any adverse impacts caused or expected to be caused by the proposed withdrawal and use, under foreseeable conditions, to other lawful consumptive uses or nonconsumptive uses of water or to the quantity or quality of the waters of the Great Lakes basin and water dependent natural resources, and the proposed plans and arrangements for avoidance or mitigation of those impacts.
6. Any provisions for restoration of hydrologic conditions and functions of the source watershed or, if the withdrawal is from the stream tributary to one of the Great Lakes, of the watershed of that stream.

Section NR 860.31(3)(a)13., Wis. Adm. Code contains the following additional criteria for meeting the Compact decision-making standard:

- a. An assessment of the potential impacts of the withdrawal on the waters of the state and water dependent natural resources including wetlands. The department may require modeling to document the anticipated hydrologic impacts of the proposed withdrawal and any return flow or may require a water quality evaluation to determine if the withdrawal or return flow will meet established water quality standards, or may require both.
- b. Documentation of compliance with the applicable provisions of Ch. NR 852.
- c. Documentation of compliance with all applicable local, state, and federal laws, rules, and regulations, and interstate and international agreements, including the Boundary Waters Treaty of 1909.
- d. An analysis of the efficiency of the proposed water use, and if there is an expected

increase in water loss, an analysis of the efficiency of the use of existing water supplies. The analysis shall include a comparison of the proposed water use intensity with the water use intensity of similar facilities or operations. The analysis may include information from the water conservation plan prepared in compliance with s. NR 852.07.

- e. An analysis of the impacts of the withdrawal over the next ten years on economic development, social development, and environmental protection taking into consideration other existing and planned withdrawals from the same source. The analysis shall include the impact of the withdrawal on the quantity and quality of the water supply for existing withdrawers and the quantity and quality of the water supply for future users, the economic impact of the water use including the number of individuals that will be employed and potential tax revenues, the social impact of the project on people living in the area of the withdrawal including access to jobs, and whether or not the withdrawal is capable of being maintained at a steady level without exhausting natural resources or causing significant adverse environmental impact.
- f. The supply potential of the water source including quality, quantity, and reliability taking into consideration interconnected water sources and water dependent natural resources.
- g. A description of mitigation measures that will be implemented to prevent or eliminate significant impacts.

Applicants must comply with all of the above Compact decision-making standard requirements prior to the proposed withdrawal. Since the effective date of the Compact, no permit applications have been submitted in Wisconsin that required compliance with the Compact decision-making standard.

c. Exception standard for diversions

The Exception Standard for Diversions that has been integrated into Wisconsin's Compact implementing legislation mirrors the Exception Standard in the Compact and Agreement with a few additions:

1. The proposal for a diversion must be consistent with an approved water supply service area plan under Wis. Stat. § 281.348 that covers the public water supply system, unless the proposal is to provide water to a straddling community that includes a designated electronics and information technology manufacturing zone. *See* Wis. Stat. § 281.346(4)(c)2m. and (e)1.em..
2. The place at which the water is returned to the source watershed must be as close as practicable to the place from which it is withdrawn, unless that place is not economically feasible, not environmentally sound, or not in the interest of public health. *See* Wis. Stat. § 281.346(4)(f)3m.
3. If the water will be returned to the source watershed through a stream tributary to one of the Great Lakes, the physical, chemical, and biological integrity of the

receiving water will be protected and sustained, considering the state of the receiving water before the proposal is implemented and considering both low and high flow conditions and potential adverse impacts due to changes in temperature and nutrient loadings. Wis. Stat. § 281.346(4)(f)4m.

4. Wisconsin has defined “reasonable water supply alternative” to mean “a water supply alternative that is similar in cost to, and as environmentally sustainable and protective of public health as, the proposed new or increased diversion and that does not have greater adverse environmental impacts than the proposed new or increased diversion.” Wis. Stat. § 281.346(1)(ps).

4. Overview of State reporting and database of Withdrawals, Consumptive Uses and Diversions including implementation status and database elements and capabilities, and reporting mechanisms (e.g., electronic submission, etc.). The overview should include methods of measurement (e.g., flow volume or rate meters, flow gauging, timing devices, etc.) approved by the State/Province for measuring Water volumes.

Registered water users must annually report monthly withdrawal amounts for each calendar year by March 1 of the following year. *See* Wis. Adm. Code. s. NR 856.30(2). Each report contains monthly withdrawal amounts, the primary use of the water and the method used to measure or estimate the water use, consistent with requirements for reporting to the Great Lakes Commission (GLC). *See* Wis. Adm. Code s. NR 856.30(2). Registered withdrawers have the ability to report water use through a web-based application or using paper forms which are entered into the WDNR’s Water Use database.

A totalized flow meter must be used for measuring water withdrawals. All other methods are considered to be estimates and are calculated by such methods as hourly metering, gallon estimates per person or per animal based on use, time to fill a known volume, or the use of a weir. *See* Wis. Adm. Code s. NR 856.31(1). Other methods can be used if approved by the WDNR if none of the existing methods is sufficient. Wis. Adm. Code s. NR 856.31(1)(a)5. and (b)6. WDNR provides [measurement instructions](#) to water use reporters.

Information about the primary use of the withdrawn water enables WDNR to assign water use codes. Water use codes are detailed codes specifying public water supply uses (municipal systems, community water systems, non-transient, non-community systems, transient, non-community systems and K-12 schools), industrial uses, commercial and institutional uses, power generation, irrigation, other agricultural uses, domestic supply and fire protection. Each WDNR water use fits under a more general GLC water sector for annual reporting to the GLC. A list of the water use codes can be found in the [Water Withdrawal Report Guidance](#).

The WDNR has determined water loss coefficients for each water use code based on various sources such as USGS published values, Ch. NR 142, Wis. Adm. Code, or assumed general practices.

In addition to reporting monthly withdrawal data to the WDNR, persons with approved Great Lakes basin diversions are required to report the monthly volumes diverted and the volume returned to the Great Lakes basin. Withdrawal, diversion and return flow volumes are tracked and reported to the Great Lakes Commission annually.

All water use data is housed in a dedicated geographic information system database that is updated by WDNR staff through a web-based application. Water use data is used to support WDNR decision-making and serves as the basis for annual withdrawal report summaries and sector specific studies. Water use data is available to the public through the [Water Quantity Data Viewer](#) and the [Water Withdrawal Query Tool](#). Governmental partners, university researchers, businesses and private individuals may also request data to be delivered in tabular or spatial formats.

- 5. Include a web link to the State or Province’s Withdrawal application form(s). In addition, include a section on web access to additional information on the program, link to any application forms and links to tools for improving the management of water resources or sharing information about water withdrawals.**

Throughout this document, WDNR has provided links to water use program web pages, applications, tools and program information related to water withdrawals.

- 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. A description of State or Provincial initiatives or mechanisms to support an improved understanding of individual or cumulative impacts of Withdrawals, Consumptive Uses and Diversions on the Basin ecosystem should also be provided.**

The WDNR has supported a variety of projects to improve the understanding or management of groundwater and surface water quantity in Wisconsin. WDNR has continued or developed the following projects in the past 5 years:

- Wisconsin’s Long-Term Groundwater Level Monitoring Network – The WDNR partners with the United States Geological Survey (USGS) and the Wisconsin Geological and Natural History Survey (WGNHS) to continue [monitoring water levels](#) in aquifers across Wisconsin. Currently 92 long term wells are in the network as monitoring flow at two springs in Waukesha County. Data collected from this network are used for monitoring local water resources, assessing aquifer response to drought or flooding, calibrating groundwater flow models, and measuring the effect of pumping on groundwater levels.
- Development of a [Water Quantity Data Viewer](#) and the [Water Withdrawal Query Tool](#)– In the past few years, Water Use staff developed two tools: a Water Quantity Data Viewer and Withdrawal Query Tool in order for the public to search withdrawal data, reporting data and where water quantity is monitored statewide.
- [Pilot Groundwater flow model](#) – State and federal partners completed a pilot groundwater flow model that allows for incorporation of management objectives in a groundwater stressed area of Wisconsin in 2016. This model will be used to inform management options and demonstrate the viability of expanding the use of such a model.
- Improved Wisconsin Springs Inventory – An [inventory of springs](#) with flows greater than 0.25 cfs was completed in 2019 and includes approximately 400 springs statewide.

In addition, eight reference springs are being monitored quarterly to develop a long-term record on spring flow variability and water chemistry. Springs in the inventory and newly identified sites will continue to be visited annually on a rotating basis. A summary of the springs inventory has also been published in a [final report](#).

- [Central Sands Lakes Study](#) – The Wisconsin legislature requested the WDNR, in partnership with USGS, WGNHS, and the University of Wisconsin, evaluate and model the hydrology of Pleasant Lake, Plainfield Lake and Long Lake to determine whether existing and potential groundwater withdrawals are causing or are likely to cause a significant reduction of the lakes’ water levels below their average seasonal levels. This area of Wisconsin straddles the Great Lakes Basin divide. If significant impacts exist, WDNR will develop special measures to mitigate these impacts and forward recommendations to state legislators by June 2021.

As part of the study the WDNR partnered with University of Wisconsin and the agricultural community to directly measure evapotranspiration, a critical component to consumptive use. The study will produce a calibrated groundwater flow model of the designated study area to simulate the water budget associated with the three lakes and to evaluate their interactions with groundwater withdrawals. The approach for determining significant impacts to the three lakes may be applicable throughout the Great Lakes basin for determining impacts to surface waters based on groundwater withdrawals.

- Lake Michigan Water Use – As part of an annual report on water use, WDNR analyzed water use data for Lake Michigan surface water users and published this analysis in the 2016 annual [Wisconsin Water Use Report](#).

Water Conservation and Efficiency Program Report

1. Status of the State or Province’s Water conservation and efficiency goals and objectives consistent with the Basin-wide goals and objectives. If developed, include State or Provincial goals and objectives or link to electronic version.

Wisconsin adopted water conservation and efficiency goals and objectives that are consistent with the Basin-wide goals and objectives. The goals and objectives, which were first adopted in 2008 and most recently revised in 2011, can be found on the Department website at: http://dnr.wi.gov/topic/WaterUse/documents/WDNR_Statewide_WCE_Objectives_2011.pdf. WDNR reviews these goals and objectives every five years.

2. Water Conservation and Efficiency Program Overview

- a. *Citations to State Water Conservation and Efficiency Program implementing laws, regulations, and policies.*

The Wisconsin Legislature ratified the Great Lakes—St. Lawrence River Basin Water Resources Compact (Compact) in 2007 Wisconsin Act 227. Wisconsin adopted additional water conservation and efficiency requirements that go beyond the minimum required by the Compact. These requirements are codified in s. 281.346(8), Wis. Stat., and Ch. NR 852, Wis.

Adm. Code. These requirements include programs such as water use audits, leak detection and repair programs, information and education programs, source measurement at the first tier⁷. At the second tier additional requirements are dependent on the water sector and for the third tier an analysis and implementation of all cost-effective water conservation and efficiency measures must be implemented.

b. *Summary description of Wisconsin's Water Conservation and Efficiency Program including what elements are voluntary and mandatory.*

The Water Use Section of the WDNR's Bureau of Drinking Water and Groundwater developed a statewide water conservation and efficiency program that is based on Wisconsin's adaptation of the Great Lakes Regional Conservation and Efficiency Objectives. The program requires mandatory water conservation and efficiency measures for new or increased withdrawals in the Great Lakes Basin, for any new or increased diversions from the Great Lakes Basin, and for any new or increased withdrawals—statewide—that will result in a water loss averaging more than two MGD in any 30-day period. Voluntary water conservation and efficiency measures are encouraged for all existing water users throughout the state. Water conservation measures are required through municipal water systems through the Public Service Commission of Wisconsin (PSC) water loss control program. This program includes requirements to meter all sales, maintain and verify the accuracy of meters, identify and repair leaks in the distribution system, control water usage from hydrants, maintain records of system pumpage and consumption and conduct an annual water audit.

The conservation and efficiency program is implemented through administrative rules, water use permits, and guidance developed in cooperation with the PSC and the Wisconsin Department of Safety and Professional Services. Rules implementing the program, primarily Ch. NR 852, Wis. Adm. Code, outline the necessary conservation and efficiency measures. Under Ch. NR 852, Wis. Adm. Code, conservation and efficiency measures vary depending on the withdrawal amount and calculated water loss:

- For new or increased Great Lakes basin withdrawals averaging 100,000 gpd or more in any 30-day period but less than 1 MGD for any 30 consecutive days, Tier 1 water conservation and efficiency requirements apply. *See* s. NR 852.04, Wis. Adm. Code, including Table 1.
- For new or increased Great Lakes basin withdrawals equaling 1 MGD or more for any 30 consecutive days, Tier 1 (see above) and Tier 2 water conservation and efficiency requirements apply. *See* s. NR 852.05, Wis. Adm. Code, including Table 2.
- For new or increased withdrawals (statewide) resulting in a water loss averaging more than 2 MGD in any 30-day period; or for new or increased Great Lakes diversions, in addition to Tier 1 and Tier 2 requirements, Tier 3 water conservation and efficiency requirements are required—including an analysis to determine whether additional cost-effective conservation and efficiency measures are

⁷ Ch. NR 852 includes a three-tier process for water conservation and efficiency requirements, depending on the type of withdrawal, diversion or water loss.

available (other than those in Tier 1 and Tier 2). *See* s. NR 852.06, Wis. Adm. Code.

The PSC also relies on administrative rules (Chs. PSC 184 and PSC 185, Wis. Adm. Code) for authorizing and monitoring voluntary water conservation programs for municipal water systems. For other withdrawals subject to mandatory water conservation and efficiency, requirements increase as the volume of withdrawal increases.

In addition, water supply service area plans for public water supply systems must consider water conservation alternatives when identifying options for supplying water. These plans are required by 2026 for all public water systems in Wisconsin serving populations of 10,000 or more; and are required immediately for any Great Lakes Basin public water systems serving populations of 10,000 or more that are seeking a new or increased withdrawal, and for applicants for diversions of Great Lakes water, except that a water supply service area plan is not required for a proposed diversion to a straddling community in an electronics and manufacturing technology zone.

- 3. For each of the regional objectives, identify how the State/Provincial program is consistent with the regional objective, and a description of how the State or Province promotes Environmentally Sound and Economically Feasible Water Conservation Measures. More details for each objective are available at http://www.glsregionalbody.org/Docs/Resolutions/GLSLRWRRB_Resolution_6-Conservation-Efficiency.pdf and can be provided in the table below.**

As shown in the table below, the Wisconsin program is consistent with the regional objectives in the promotion of environmentally sound and economically feasible water conservation measures.

OBJECTIVES	LEGISLATIVE OR PROGRAM DESCRIPTION
Guide programs toward long- term sustainable water use.	<ul style="list-style-type: none"> ▪ Adoption of Water Conservation and Water Use Efficiency Rules (Wis. Adm. Code Ch. NR 852), 1/1/2011 ▪ Mandatory water conservation plans and conservation and efficiency measures for new or increased Great Lakes Basin withdrawals, all diversions of Great Lakes water, and withdrawals with a water loss of ≥ 2 MGD ▪ Water Supply Service Area Planning (Wis. Stat. § 281.348), rules still in development
Adopt and implement supply and demand management to promote efficient use and conservation of water resources.	<ul style="list-style-type: none"> ▪ The Public Service Commission of Wisconsin rules include requirements for all public water utilities to meter customer water use, test meter accuracy, conduct annual water audits, and identify and repair leaks. ▪ Implemented a pilot water use audit and water use efficiency upgrade at Peninsula State Park ▪ Required water conservation plans are in place for approximately 200 water use permittees

<p>Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.</p>	<ul style="list-style-type: none">▪ Developed a new database for water use data▪ Developed an on-line registration and reporting system, with ongoing system refinement. On-line reporting is available for all registered water users and reporting forms are mailed to those who choose not to report on-line. On- line system automated quality checks continue to improve reporting quality.▪ The WDNR mails water conservation reporting forms to registered water users with mandatory water conservation requirements▪ Water use data by source and aggregated is available on the WDNR water use webpage.
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<p>Develop science, technology and research.</p>	<ul style="list-style-type: none"> ▪ Co-funded a project with the Public Service Commission titled “Water Efficiency Potential Study for Wisconsin,” which was completed in late 2011 ▪ Funded a project titled “Ecological Limits of Hydrologic Alteration” focused on understanding stress to fish populations due to reduced stream flows ▪ Funded a project to develop a hydrogeologic data viewer for Wisconsin hydrogeologic data ▪ Funded a “proof-of-concept” hydrological model to optimize stream flow, withdrawals and crop rotations in a small watershed in central Wisconsin ▪ Funded a project entitled “Impacts of potato and maize management and climate change on groundwater recharge across the Central Sands” to better understand impacts of groundwater dependent agro-ecosystems. ▪ Funded a project to compile groundwater and lake level data for Wisconsin and develop statistical models to understand linkages between groundwater, climate and water levels of seepage lakes. ▪ Conducting a study authorized by the Wisconsin legislature to evaluate and model the potential impacts of groundwater withdrawals on three specific lakes in Central Sands region of Wisconsin. ▪ Evaluated remote sensing evapotranspiration models for use in Wisconsin and evaluated differences in evapotranspiration rates relative to agricultural practices. ▪ Partially installation and operation of eddy covariance towers to directly measure evapotranspiration. ▪ Ongoing delivery of spatial water use data to governmental and university partners for use in modeling projects and scientific research. ▪ Funded a pilot groundwater flow model that allows for incorporation of management objectives in a groundwater stress area of Wisconsin. ▪ Updated inventory of 400 springs in Wisconsin with flows greater than 0.25 cfs. Recently published by the Wisconsin Geological and Natural History Survey – An inventory of Springs in Wisconsin.
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<p>Develop education programs and information sharing for all water users.</p>	<ul style="list-style-type: none"> ▪ Promotion of EPA <i>WaterSense</i> Fix-a-Leak, including webpage, promotional video, radio ads, and TV interview appearances ▪ Participation in 2014 Wisconsin DNR State Fair Park Exhibit demonstrating efficient faucet aerators, showerheads, and toilets including handouts of <i>WaterSense</i> labeled aerators, leak detection tablets, showerheads, temporary tattoos, jar openers (aerator removal and tightening tool). ▪ Initiated a program of water use benchmarks for geographic and sector specific withdrawals. ▪ Promoting irrigation conservation at Farm Technology Days. This includes promotion of irrigation scheduling tools developed by the University of Wisconsin.
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4. Description of the State or Provincial Water conservation and efficiency program implementation timeline and status.

Wisconsin completed its Water Conservation and Efficiency Goals and Objectives in 2008 and updated these Goals and Objects for statewide application in 2011. Wisconsin’s administrative rules for Water Conservation and Efficiency, Chapter NR 852, Wis. Adm. Code, became effective in January 2011. A Water Conservation and Efficiency webpage is available at the [DNR website](#) and at the [Public Service Commission of Wisconsin website](#). Wisconsin promotes “Fix a Leak Week” annually. Water conservation plan requirements are integrated into the water use permit review and issuance process.

Consultation with Wisconsin federally recognized Tribes and public comment period

Wisconsin DNR accepted comments on the draft Wisconsin Water Management and Water Conservation and Efficiency Program Review between September 3, 2019 and October 15, 2019. Wisconsin held a conference call with federally recognized Tribes in Wisconsin on October 9, 2019 to discuss the draft program review. Comments received from the conference call and written comments are incorporated into this revised draft.