Province of Ontario
Water Conservation and Efficiency Program Annual Review 2017

The following information is submitted by the Province of Ontario to the Great Lakes Regional Body pursuant to the provisions in the Agreement Article 304 of the *Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement* (Agreement).

1. Lead agencies and contact persons:

Ling Mark, Director
Land and Water Policy Branch
Ontario Ministry of the Environment and Climate Change

Jason Travers, 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 and public comments received.

Ontario's goals are identical to the goals prescribed in the Agreement. Ontario's objectives are consistent with the regional objectives adopted for the Basin and have been tailored for Ontario to reflect the direction in the *Water Opportunities and Water Conservation Act*, 2010, and to address stakeholder 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 nine ministries. See Appendix A for a detailed description of Ontario's fifty-three contributing water management and conservation statutes, programs and policies.

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 (see table below and Appendix for details). 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
o Guide programs toward long-term sustainable water use.	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. The most relevant programs are: 1. *Ontario Water Resources Act* and the *Water Taking and Transfer Regulation* 2. *Clean Water Act*, 2006 and associated Water Budget Studies 3. *Conservation Authorities Act*, 1990 4. *Lakes and Rivers Improvement Act, 1990* 5. *Endangered Species Act,* 2007 6. Great Lakes Wetland Conservation Action Plan 7. *Greenbelt Act*, 2005 and Greenbelt Plan 8. *Niagara Escarpment Planning and Development Act* and Plan 9. Ontario's Biodiversity Strategy 10. Biodiversity: It's In Our Nature – Ontario Government Plan to Conserve Biodiversity 2012-2020 11. Ontario's Great Lakes Strategy 12. Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2014 13. *Great Lakes Protection Act, 2015* 14. Joint Strategic Plan for the Management of Great Lakes Fisheries 15. *Lake Simcoe Protection Act, 2008 and Lake Simcoe Protection Plan, 2009* and associated Subwatershed Plans and Water Budgets 16. A Wetland Conservation Strategy for Ontario 2017-2030
o Adopt and implement supply and demand management to promote efficient use and conservation of water resources.	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

REGIONAL OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
	management systems and establishing water efficiency standards in Ontario's Building Code. The most relevant programs are: 17. *Water Opportunities and Water Conservation Act*, 2010 18. Financial Plans Regulation under the *Safe Drinking Water Act*, 2002 19. *Building Code Act*, 1992 and the Building Code 20. *Green Energy Act*, 2009 21. *Oak Ridges Moraine Conservation Act*, 2001 and Plan 22. *Places to Grow Act*, 2005 and Growth Plans 23. *Planning Act, 1990* and Provincial Policy Statement, 2014 24. Municipal Stormwater Management Systems 25. Ontario's Water Sector Strategy
o Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.	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, The most relevant programs are: 26. Ontario Low Water Response 27. Ontario Surface Water Monitoring 28. Provincial Groundwater Monitoring Network 29. Water Use Reporting 30. Mapping and Geomatics Services Section 31. Ontario's Provincial Fish Strategy: Fish For The Future 32. The Ontario Geological Survey's Groundwater Mapping Program 33. Stream Water Quality Monitoring and the Multi-Watershed Nutrients Study
o Develop science, technology and research.	The following programs encourage science, technology and research to implement the best in water, wastewater and stormwater technology: 34. Ontario Clean Water Agency 35. Water Technology Acceleration Project (WaterTAP) 36. Southern Ontario Water Consortium 37. Green Focus on Innovation and Technology 38. Investment Accelerator Fund 39. Ministry of Agriculture Food and Rural Affairs / University of Guelph Partnership Research Program

REGIONAL OBJECTIVES	LEGISLATIVE OR PROGRAM CITATION
	40. New Directions Research Program 41. Anishinabek/Ontario Fisheries Resource Centre 42. Climate Ready: Ontario's Adaptation Strategy and Action Plan 43. Ontario's Climate Change Adaptation Approach 44. Ontario's Cleantech Strategy
o Develop education programs and information sharing for all water users.	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: 45. Walkerton Clean Water Centre 46. Water Efficiency Labelling 47. Best Management Practices 48. Canada-Ontario Environmental Farm Plan Program and Growing Forward 2 Cost-share Funding Assistance Program 49. Species at Risk Stewardship Program 50. Invading Species Awareness Program 51. Land Stewardship and Habitat Restoration Program 52. Eastern Habitat Joint Venture 53. Ontario Parks Water Conservation Initiatives

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.

Province of Ontario
Water Conservation and Efficiency Program Annual Review 2017

Appendix A
Description of Ontario's Contributing Water Management and Conservation Statutes, Programs and Policies (as of November 1, 2017)

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 INCLUDING TAKING ECOSYSTEM NEEDS FOR WATER INTO ACCOUNT

To achieve this objective, Ontario has a range of adaptive programs and conservation and efficiency strategies that take into account the importance of water to related ecosystems, working with local stakeholders, and improving water demand forecasts, and water budgets.

1. Ontario Water Resources Act and the Water Taking and Transfer Regulation

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, in order 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 and Climate Change. Water taken for domestic uses, watering of livestock or poultry, or firefighting 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 (http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_040387_e.htm)
and an accompanying Permit to Take Water Manual
(https://ia902301.us.archive.org/25/items/permittotakewate00snsn8696/permittotakewate00snsn8696.pdf) outline 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.

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).

The Ontario Water Resources Act was amended in 2010 to add a regulation-making authority to establish water efficiency standards or requirements for prescribed appliances and products.

On December 16, 2016, Ontario implemented 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. While the moratorium is in place, Ontario plans to undertake further research to ensure long-term water protection, including considering the impacts of climate change and future demand on water sources. Ontario will also engage Indigenous partners, communities and industry on any potential changes to water quantity management practices.

Effective April 21, 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.

2. 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 all Ontarians and to implement the recommendations of the Walkerton Inquiry.

The Clean Water Act requires that source protection committees, composed of multiple stakeholders from the local watershed and supported by source protection authorities (generally conservation authorities), assess potential risks to the quality and quantity of municipal drinking water sources through science based assessment reports, and develop a source protection plan to address these risks. As of December 2015, all 22 source protection plans were approved by the Minister of the Environment and Climate Change.

A component of the science-based assessment reports is water budgets. This work involves evaluating how much water exists both at the surface and below ground, how it moves, and 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.

The Ministry of the Environment and Climate Change has considered how the impacts of climate change can be integrated into the source protection planning process. In collaboration with the Ministry of the Environment and Climate Change, the Ministry of Natural Resources and Forestry has developed a Guide for the Assessment of Hydrologic Effects of Climate Change in Ontario. The guide provides a methodology for conducting assessments of the effects of climate change on water resources in Ontario to both inform management and adapt decision making. In addition to the guide, the Ministry of Natural Resources and Forestry has developed an interactive web-based tool that allows users to select and download future climate change data sets (temperature and precipitation) for use within hydrologic models as outlined in the guide http://www.waterbudget.ca/climatechangeguide. The need to integrate these data sets into source protection plans will be considered as these plans are updated.

The 22 source protection plans in effect across Ontario protect the sources of over 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. Currently, the implementation of the source protection plans is underway. Municipalities, ministries and others are implementing actions on the ground to protect the quality and quantity of sources of municipal drinking water.

The Ministry of the Environment and Climate Change has provided comprehensive support to municipalities and conservation authorities with source protection education and outreach policies, including those focused on water conservation. This includes a resource catalogue, a "Campaign in a Box" toolkit best practices webinars, a community of practice, individual advice, and social media promotion through the hashtag #SourceWaterON. The catalogue and toolkit can be found in Conservation Ontario's website library at: http://conservation-ontario.on.ca/library?view=category&id=66&limitstart=0

Furthermore, the Ministry of the Environment and Climate Change launched a Source Water Protection Map on Ontario.ca, an innovative and interactive tool that provides the first province-wide view of the more than 970 wellhead protection areas and 150 intake protection zones within the source protection areas — the places where drinking water comes from. The public can access over 20 layers of information related to water quality and quantity and do customized searches. The map can be accessed at: https://www.ontario.ca/page/source-protection.

Under the Clean Water Act, source protection planning must also consider 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

3. Conservation Authorities Act, 1990

The Conservation Authorities Act is administered by the Ministry of Natural Resources and Forestry. The Act 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 Ministry. As public sector organizations, conservation authorities implement programs that serve both the Ministry's and the municipal interests. There are 36 conservation authorities in Ontario today.

The current shared program with the Ministry of Natural Resources and Forestry for conservation authorities is 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.

Additionally, each conservation authority has a provincially-approved 'Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses' made 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) as set out in the Act and regulations 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 a wetland.

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.

Additional local resource management programs are determined by the conservation authority boards of directors which are comprised of municipal appointees. These additional programs reflect local needs and the capacity of the conservation authority and may include activities such as stewardship, watershed studies, education and recreation. Conservation authorities may also comment on municipal planning documents according to their own board approved policies as a public body.

By contract or agreement, authorities may provide additional technical advice or other services to municipalities, such as assessment of environmental impacts, hydrogeology services, stormwater management advice, natural heritage advice, septic system reviews, tree planting and other activities.

Conservation authorities may also have responsibilities under other provincial legislation, programs or through agreements with other government agencies. For example, conservation authorities undertake the duties of source protection authorities under the Clean Water Act, 2006, and participate in the Ontario Low Water Response Program.

www.ontario.ca/lowwater

https://www.ontario.ca/environment-and-energy/conservation-authorities

4. Lakes and Rivers Improvement Act

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;
- 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 number of 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/90l03

https://www.ontario.ca/page/dam-management

5. 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. Conserving water helps to maintain habitat conditions for many species at risk and will aid in their recovery. For example, the recovery of both Lake Sturgeon and American Eel would be enhanced by promoting passage around water control and waterpower structures, both of which may be used to alter river flows, and can affect water levels in downstream lakes and wetlands.

Under the Act, a recovery strategy is to be developed for each species listed as either Endangered or Threatened on the Species at Risk in Ontario list. A recovery strategy provides the Ontario government with the best available scientific information and advice regarding how to protect and recover the species. The government then outlines the actions it plans to take in response to this advice in a government response statement. Recovery strategies and government response statements are available to the public through Ontario's Environmental Registry and 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

6. 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 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

7. Greenbelt Act, 2005 and Greenbelt Plan

The Greenbelt Act, 2005 provides the legislative framework for the development and implementation of the Greenbelt Plan. 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 5 year official plan review.

The Greenbelt Plan 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 area contains numerous watersheds, subwatersheds and groundwater and surface water resources, and a number of 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 arears, highly vulnerable areas) and features (e.g. wetlands, permanent/ intermittent streams).

The province is currently considering potential options for expanding the Greenbelt in the outer ring of the Greater Golden Horseshoe area, with a focus on protecting water features and systems while managing urban growth.

https://www.ontario.ca/laws/statute/05g01

http://www.mah.gov.on.ca/Page13783.aspx

8. 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 and its implementation through a system of development control that is administered by the Niagara Escarpment Commission, a regulatory agency of the Government of Ontario. The purpose of the Act and the Niagara Escarpment Plan 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 Niagara Escarpment Plan Area, and includes policies that guide planning and development in order to help protect water resources. The Niagara Escarpment Plan 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

9. Ontario's Biodiversity Strategy

Ontario's Biodiversity Strategy, 2011, is the guiding framework for coordinating the conservation of Ontario's biodiversity. Implementation and reporting on progress of the strategy is guided by the Ontario Biodiversity Council with membership from government, conservation stakeholders, Indigenous organizations and industry. In May 2015, the Council released the State of Ontario's Biodiversity 2015 report assessing progress against Ontario's 15 biodiversity targets and 45 indicators.

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/

http://sobr.ca/report

10. 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 conservation under Ontario's Biodiversity Strategy, 2011. The plan is an important statement of partnership and commitment across 16 ministries to work together to conserve Ontario's biodiversity.

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.

http://ontariobiodiversitycouncil.ca/resource/biion/

11. Ontario's Great Lakes Strategy

Released in December 2012, Ontario's Great Lakes Strategy provides a roadmap for how Ontario will focus action to protect the Great Lakes. Ontario's Great Lakes Strategy includes a summary of Great Lakes environmental conditions, a summary of Ontario's actions taken to date, and identification of priority areas for future action. Priorities for future action are described around the following six Great Lakes goals:

- 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
- Ensuring environmentally sustainable economic opportunities and innovation

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.

The province is currently implementing actions in Ontario's Great Lakes Strategy focused on community engagement, water protection, coastal and beach improvements, biodiversity protection, science, climate change adaptation, and innovative economic opportunities. Fulfilling the Strategy's triennial reporting commitment, the First Progress Report on Ontario's Great Lakes Strategy was issued in March 2016. This progress report outlined key accomplishments and new scientific findings established during the first three years of Ontario's Great Lakes Strategy. It represented the actions across 14 different Great Lakes ministries and numerous partners, including First Nation and Métis communities, municipalities, conservation authorities, environmental organizations, the science community, and the industrial, agricultural, recreational and tourism sectors.

The Great Lakes Protection Act (GLPA) requires Ontario to undertake a review of the Ontario Great Lakes Strategy before December 2018. In addition, the Second Progress Report on Ontario's Great Lakes Strategy is due in winter 2018-19.

www.ontario.ca/document/ontarios-great-lakes-strategy

https://www.ontario.ca/page/ontarios-great-lakes-strategy-2016-progress-report

12. 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 protect the Great Lakes. The first COA was signed in 1971. In December 2014, an 8th Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health was signed. The 2014 COA supports implementation of Ontario's Great Lakes Strategy and the 2012 Canada-U.S. Great Lakes Water Quality Agreement (GLWQA). It committed Ontario to developing nutrient targets and in October of 2016, Ontario announced a target of a 40 percent phosphorus load reduction by 2025 (from 2008 levels) for the Ontario portion of the western and central basins of Lake Erie, as well as an aspirational interim goal of a 20 percent reduction by 2020. COA also committed Ontario and Canada to developing a Domestic Action Plan for Lake Erie by 2018, to address algal blooms. Ontario and Canada launched public consultations on the draft action plan in March 2017.

The Harmful Pollutants Annex of COA commits Ontario and Canada to the designation of Chemicals of Concern (COC) for priority action in the Great Lakes Basin. In February 2017, Ontario and Canada designated the first set of COCs. The list of COCs under COA is strongly linked to the designation of Chemicals of Mutual Concern (CMC) under the GLWQA between the Canada and the United States. The first set of CMCs under the GLWQA were designated in May 2016 and are the same as the COCs designated under COA.

During the term of 2014 COA, the governments continue to work towards completing actions toward delisting five Areas of Concern and make significant progress in the remaining Areas of Concern. Additional COA goals include taking targeted action in priority nearshore areas, development of a baseline survey, increasing investment in nutrients and climate change science, undertaking more focused invasive species work, providing a more strategic approach to influencing future water infrastructure investments and improved understanding and implementation of adaptive management approaches to lake level regulation.

COA also contains a number of new provisions that strengthen governance and accountability measures, as well as new annexes on Aquatic Invasive Species, Habitat and Species, Engaging First Nations, Engaging Métis, Engaging Communities and adapting to climate change impacts. The COA expires in December 2019 and will be renegotiated for a future term.

www.ontario.ca/page/canada-ontario-great-lakes-agreement

13. Great Lakes Protection Act, 2015

In October 2015, the Ontario legislature passed the Great Lakes Protection Act, 2015 (the Act received royal assent on November 3, 2015) which will strengthen the province's ability to restore and protect the Great Lakes and St. Lawrence River, as well as the waterways that flow into them.

The Act enables the province to address the significant environmental challenges facing the Great Lakes and St. Lawrence River Basin, including climate change, harmful pollutants and algal blooms.

The Act allows Ontario to set environmental targets and enables communities to address local problems. It requires the establishment of monitoring programs where needed, as well as regular public reporting. The legislation commits the Minister of the Environment and Climate Change to set a target related to algal blooms by November 2017. In October 2016, the government signalled that Ontario is adopting, under this legislation, a target of 40% phosphorus load reduction by 2025 (from 2008 levels) for the Ontario portion of western and central Lake Erie, as well as an aspirational interim goal of a 20% reduction by 2020, to help reduce algal blooms. A Canada-Ontario Lake Erie Action Plan is currently being developed by the parties and will be finalized by February 2018.

The Great Lakes Protection Act enshrines Ontario's Great Lakes Strategy, the province's action plan on the Great Lakes, as a living document to be reviewed every six years and reported in the legislature every three years.

The Act also established the Great Lakes Guardians' Council, a forum involving Great Lakes ministers and other Great Lakes leaders and experts, including First Nations and Métis and municipal representatives, the farming community, conservation authorities, industry, environmental groups, the recreation and tourism sectors, and academia, to help improve collaboration and coordination and build consensus on priority actions and opportunities for partnerships and funding. Council meeting notes can be found at:

https://www.ontario.ca/page/great-lakes-guardians-council#section-2

https://www.ontario.ca/page/protecting-great-lakes

https://www.ontario.ca/laws/statute/15g24

14. 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 makes a clear connection between fish habitat, water quality and water uses. The plan highlights impacts on fish during spawning and the potential for large-scale diversions to impact fish. Thus, the plan clearly identifies a need to ensure the conflicting goals of users take into account impacts on fish, an important aquatic resource.

www.glfc.org

15. 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.

On June 2, 2009 the government released the Lake Simcoe Protection Plan to address environmental protection of the watershed. Drawing on expert advice from scientists, the plan sets a new standard for environmental protection in the province and provides a road map to help restore and protect the health of Lake Simcoe.

Among other things, the Plan promotes greater efforts to conserve and use water more efficiently in order to maintain future demands for water within sustainable limits. To monitor progress in achieving the water quantity-related objectives of the Plan, the indicators of environmental health relating to water quantity include effective water conservation and efficiency plans (e.g. as measured through reductions in peak water demand; reduced water use per capita; progress in achieving municipal targets).

The Plan contains the following policies to promote greater efforts to conserve and use water more efficiently throughout the Lake Simcoe watershed:

- Within five years of the date the Plan comes into effect, municipalities of Barrie, Orillia, New Tecumseth, Bradford West Gwillimbury, Innisfil, Oro-Medonte and Ramara will prepare and begin implementation of a water conservation and efficiency plan that includes targets for water conservation and/or efficiency with associated timeframes, water conservation measures, incentives and means to promote conservation, cost/benefit analyses, required measures, an implementation plan, and monitoring and reporting;
- The Ministry of Agriculture, Food and Rural Affairs, in cooperation with key stakeholders, will assist and encourage water conservation and efficiency efforts in the agricultural community through stewardship programs aimed at promoting the adoption of best management practices;
- The Ministry of the Environment and Climate Change will work with other water use sectors in the Lake Simcoe watershed to encourage the development and implementation of water conservation and efficient use practices for their sector; and

- An application to establish or expand a major recreational use shall be accompanied by a recreational water use plan that demonstrates the reduction in water use or use of water conservation technologies.
- As part of the Lake Simcoe Protection Plan, the Building Code Act and Building Code were amended to establish a program of mandatory maintenance inspections of on-site sewage systems in parts of the Lake Simcoe watershed. This program took effect in January of 2011 and was expanded in January 2016 to include additional areas of the Lake Simcoe watershed.

Orillia and Innisfil released Water Conservation and Efficiency Plans (WCEPs) in 2014. The Plans include reference to the Ontario Water Works Association (OWWA), the LSPP and the local Subwatershed Plans, and are currently being implemented. Bradford West Gwillimbury also maintains a WCEP that is intended to help the Town utilize and expand upon existing conservation efforts, as well as meeting the requirements set out in the LSPP. The City of Barrie is building on existing programs, water conservation programs initiated in the mid and late 1990s and currently has some measures, such as an appliance rebate program and lawn watering restrictions, but no specific conservation targets have been established. New Tecumseth, Oro-Medonte, and Ramara are all providing water conservation programs. Oro-Medonte has implemented a lower water use rate as an incentive to encourage water conservation, beginning in January 1st, 2018.

The province is supporting Tourism Barrie to work with its members on greening practices including water conservation. Guides have been developed for 12 subsectors. Tourism Barrie is now working with recreation based businesses to develop management plans with objectives and targets. The province also supported Ryerson University to develop a green festival guide and work with festival organizers, vendors and participants to reduce festival environmental impacts. This includes education and program development to support water conservation at large festivals. The efforts to pilot the Guide at the Mariposa Folk Festival won a tourism industry award of excellence for sustainable tourism from the Tourism Industry Association of Ontario. Since 2016, Festivals Ontario has adopted the Festival Guide and will be developing programing for the rest of Ontario.

In the development sector, the LSRCA and MOECC are working to change the way water is managed in urban areas of the watershed by encouraging the implementation of Low Impact Development (LID) practices. The program objective is to better manage urban stormwater using sustainable methods that mimic the natural hydrologic cycle, moving water into the ground much in the same way it did before houses or parking lots were built there. Efforts include promoting "greener" construction practices and ‘rainscaping’ in new undeveloped lands as part of the subdivision plan, and to existing development through retrofitting. LID can improve water quantity control, reduce flood risks, and increase resilience to climate change by improving groundwater recharge conditions.

The plan also requires the Ministries of Environment and Climate Change and Natural Resources and Forestry to develop in-stream flow targets for water quantity stressed subwatersheds, in collaboration with the local conservation authority. Targets have been established for the Maskinonge River and Lover's Creek, considering the potential impacts of climate change. These will be used to inform future strategies related to water taking.

In support of these initiatives, the province and the Lake Simcoe Region Conservation Authority (LSRCA) finalized the development of Tier Two Water Budget information for all subwatersheds in the Lake Simcoe watershed, to create a complete surface water and groundwater model representation for the entire Basin. The water budgets may be 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.

Ecologically Significant Groundwater Recharge Areas are the areas of the landscape responsible for providing water to ecologically significant features, such as cold-water streams and significant wetlands. The province is working with the LSRCA to map these areas in the watershed. Areas of high volume recharge have been mapped for entire watershed, and mapping of ecologically significant recharge areas is near completion. The LSRCA, in collaboration with Ministries of Environment and Climate Change and Natural Resources and Forestry, and watershed municipalities, developed guidance to assist municipalities in protecting and restoring these important areas.

http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_08l23_e.htm

https://www.ontario.ca/page/protecting-lake-simcoe

Supported by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Farm and Food Care Ontario, undertook a number of water use assessments in the Lake Simcoe area to help growers better understand how and where they use water. Informational videos, fact sheets, case studies and good news stories were all created to promote the understanding of water stewardship and inspire farmers and processors to embark upon an assessment of their own. Throughout the assessment process, vegetable washers and greenhouse growers are often able to reduce their water use and build smaller treatment systems, saving the producer money. Results are available here:

http://www.farmfoodcareon.org/farming-and-the-environment/water/water-smart-farming-project/

16. 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 better communicate the value of wetlands and foster their stewardship, improve mapping required for water balances and source water protection, improve understanding of the relationship between wetlands and ground and surface waters, support research into how wetlands are responding to climate change as well as their role in adaptation strategies and climate resiliency, and finally the development of policy to improve wetland conservation. Together, these actions and many more will be important for meeting the target of a net gain in wetland area and function where wetland loss has been the greatest. The Province will report on progress every 5 years beginning in 2020.

http://apps.mnr.gov.on.ca/public/files/er/a-wetland-conservation-strategy-for-ontario-2017-2030.pdf

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.

17. Water Opportunities and Water Conservation Act, 2010

On November 29, 2010 Ontario's Legislature passed the Water Opportunities and Water Conservation Act, 2010. The Act 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 created the Water Technology Acceleration Project (WaterTAP), a non-crown corporation to encourage collaboration and coordination between industry, governments and academia. WaterTAP is assisting in facilitating the creation and growth of globally competitive companies and high-value jobs in the water and wastewater sector.

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

http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&Intranet=&BillID=2362

18. Financial Plans Regulation under the Safe Drinking Water Act, 2002

As part of the province's commitment to implement all of Justice O'Connor's Walkerton recommendations, the province put in place a new 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 and Climate Change 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

19. 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

20. Green Energy Act, 2009

On May 14, 2009 the Ontario legislature passed the Green Energy Act to remove barriers to and promote opportunities for renewable energy projects, promote a green economy and promote and expand energy conservation. Amendments in 2010 expanded the guiding principles for the Government of Ontario to consider when constructing, acquiring, operating and managing government facilities. The guiding principles now include:

- Reporting on water use associated with government facilities;
- Ensuring water efficiency is considered in planning and designing government facilities; and
- Using technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources.

Amendments to the Green Energy Act in 2016 presented new opportunities to conserve water and energy by enabling the implementation of two new conservation initiatives.

First, the Green Energy Act prohibits the sale of products in Ontario that do not meet prescribed energy and water efficiency standards. On December 2, 2016, Ontario filed Ontario Regulation 419/16, which amended Ontario Regulation 404/12, Energy and Water Efficiency – Appliances and Products to include, among other things, new water efficiency standards for products using both energy and water such as clothes washers and dishwashers. The Amendment came into effect on January 1, 2017. Setting water efficiency standards for these products reduces water and energy use and further lower greenhouse gas emissions.

The second energy and water conservation initiative is the Large Building Energy and Water Reporting and Benchmarking program, which requires commercial, multi-unit residential and some industrial buildings that are 50,000 square feet or larger to annually report their energy and water consumption and GHG emissions to the Ministry of Energy. The information will be benchmarked against other similar buildings and 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. On February 6, 2017, Ontario Regulation 20/17, Reporting of Energy Consumption and Water Use, was filed, which sets out the details of the reporting requirements.

https://www.ontario.ca/laws/statute/09g12

21. Oak Ridges Moraine Conservation Act, 2001 and Oak Ridges Moraine Conservation Plan

The Oak Ridges Moraine Conservation Act, 2001 provides the legislative framework for the development and implementation of the Oak Ridges Moraine Conservation Plan. The Act requires all decisions under the Planning Act and Condominium Act to conform to the Oak Ridges Moraine Conservation Plan 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 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 requires that every upper-tier municipality and single-tier municipality within the designated Oak Ridges Moraine plan area begin to prepare 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 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

22. 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

The Growth Plan for the Greater Golden Horseshoe, 2017 represents the province's long-term vision for managing the rapid growth that is forecast for this region to 2041. Recent amendments made to the Plan through the Coordinated Provincial Plans review resulted in a stronger policy framework for the region which includes requirements for watershed planning to inform growth and infrastructure planning, the identification of a water resources systems, consistent with the direction in the Greenbelt Plan, 2017, policies for more integrated infrastructure planning, including requirements for water, wastewater and stormwater master planning that is informed by watershed plans and that ensure evaluation of water availability and assimilative capacity needed to service current and projected growth.

The Growth Plan includes specific direction on water conservation and efficiency policies. These policies require that the construction of new, or expansion of existing, municipal or private communal water and wastewater systems should only be considered when:

- opportunities for optimization and efficiency within the existing system have been prioritized and supported by strategies for water conservation and water demand management;
- plans for expansion or for new services are to serve growth in a manner that supports achievement of the intensification and density targets;
- a comprehensive water or wastewater master plan or equivalent has been prepared; and,
- plans have been considered in the context of applicable Great Lakes Basin Agreements.

Municipalities are also required to develop and implement official plan policies and other strategies which support the policies related to the protection of water quality and quantity, including conservation objectives.

https://www.placestogrow.ca/index.php?option=com_content&task=view&id=9&Itemid=14

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

23. 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 applications or when creating their planning documents.

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 Ontario Municipal Board. 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. 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.

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.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90p13_e.htm

24. Municipal Stormwater Management Systems

The Ministry of the Environment and Climate Change 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.

https://www.ontario.ca/document/stormwater-management-planning-and-design-manual-0

In 2010, the ministry completed a review of the need for a new policy, act or regulation to deal with municipal stormwater management systems in Ontario municipalities in light of climate change. The review identified a need for a stormwater management policy framework, with emphasis on improving stormwater management at the source through reuse and low impact development practices. Further, increased collaboration for source control practices is needed between all partners including residents, businesses, conservation authorities and all levels of governments.

The ministry is in the process of drafting a low impact development guidance manual that will assist proponents in implementing their efforts. The draft manual is expected to be available for public comment in 2017.

https://www.ontario.ca/page/policy-review-municipal-stormwater-management-light-climate-change

25. 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
- 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.

26. Ontario Low Water Response

The Ontario Low Water Response program provides a framework to enable local response in the event of a drought/low water. The Ministry of Natural Resources and Forestry maintains the provincial climate and streamflow monitoring network, analyzes 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. Increasing water conservation is required 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

27. Ontario Surface Water Monitoring

The Ministry of Natural Resources and Forestry collects, monitors and analyzes stream flow and climate data through a provincial network of over 650 stations. Data collection standards are managed in accordance with multiple bi-lateral agreements. This information is used to provide early warning for food and low water/drought to identify locations throughout the province where a potential risk of flood or drought/low water may exist. The mandate for this work is founded in Lieutenant Governor Order-in-Council and the Emergency Management and Civil Protection Act for the purposes of public safety. Additionally, the information supports on-going decision-making regarding 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

28. 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 450 monitoring wells. The program reports on water quality and levels in peat formation in Far North mining development through the network of 132 monitoring wells. Rain gauges established at 50 of the monitoring sites provide information on 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

29. 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. 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 Ontario Ministry of Natural Resources and Forestry in collaboration with the Ontario Ministry of Environment and Climate Change. Investments continue to be made to enhance the regional data processing and assessment.

http://www.glc.org/work/water-use

http://www.glc.org/wateruse/database/

30. 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/environment-and-energy/topographic-maps

https://www.ontario.ca/page/watershed-flow-assessment-tool

31. 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 $2.5 billion annually to Ontario's economy. The Provincial Fish Strategy outlines goals, objectives and tactics to improve the conservation and management of fisheries and the ecosystems on which fish communities depend; and to promote, facilitate and encourage fishing.

Ontario's Fisheries Management Zones have been established to protect and maintain Ontario's high quality fishing opportunities. To enhance public involvement and decision-making in managing and ensuring the sustainability of its recreational fisheries resources, Ontario created complementary Fisheries Management Zone Advisory Councils for each zone. Each of Ontario's four Great Lakes is assigned a council, with a council assigned specifically to the Fisheries Management Zone that encompasses Georgian Bay as well.

In support of fisheries management, the Ministry of Natural Resources and Forestry implemented a broad-scale monitoring program for inland lakes. The broad-scale monitoring program is a long-term effort to monitor the health of Ontario's lakes and their fisheries. The goals of the program are 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: fish are netted to determine abundance, sex, length and weight, and to test for contaminants; temperature/oxygen and water quality is analyzed; invasive species are documented; and fishing effort is estimated.

Intensive monitoring occurs on each of the Great Lakes to provide information on the fish communities and fisheries they support. These monitoring programs inform the development of lake-specific Fish Community Objectives and are used to establish allowable harvest levels for fisheries within the lakes.

https://www.ontario.ca/page/fishing

32. The Ontario Geological Survey's Groundwater Mapping Initiative

The Ontario Geological Survey's groundwater mapping initiative contributes to water management initiatives, including the development of GIS-based geological maps / databases, regional (3-D) aquifer mapping in bedrock and surficial sediments, watershed characterization, thematic studies, regional groundwater geochemistry studies, method/protocol and product development.

http://www.mndm.gov.on.ca/en/mines-and-minerals/geoscience/groundwater

33. Stream Water Quality Monitoring and the Multi-Watershed Nutrients Study

The Provincial Water Quality Monitoring Network measures and reports on stream water quality across Ontario with focussed studies related pesticides, climate change, drinking water source

protection, road salts and Far North mining development. 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

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.

34. 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

35. Water Technology Acceleration Project (WaterTAP)

The Water Technology Acceleration Project (WaterTAP) was created through Ontario's Water Opportunities Act, 2010. Operating since 2012 with arm's length funding from the Ontario government, WaterTAP acts as Ontario's water sector champion by:

- Connecting: Bringing the right players together and encouraging collaboration
- Accelerating: Supporting innovative technology companies with business growth opportunities
- Celebrating: Promoting Ontario's water sector brand and sharing its success

WaterTAP plays the "connector" role in a larger ecosystem that supports Ontario's innovative water technology sector. This ecosystem includes industry associations, NGOs, government, academic institutions, accelerators and incubators, testing beds, investors, end-users (e.g., municipalities, communities, industry) and other members of the water technology supply chain. WaterTAP maps these links to better identify opportunities for company growth and leverage existing programs and knowledge. These funding, customer, and partnership opportunities continue to grow as WaterTAP expands its global network.

WaterTAP works closely with Ontario's water technology companies to enable them to build better businesses – to develop effective business strategies that prepare them for local, national, and global market entry and investment. These companies also need plans to expand beyond the first customer and achieve market momentum and sustainable revenue.

http://www.watertapontario.com/

36. 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 is able to 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/

37. 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 adopt innovative clean technologies, products and solutions and showcase the successful solutions to potential customers in local and global markets. The Green Focus on Innovation and Technology provides an opportunity for clean technology companies to accelerate their innovative green technologies to the global marketplace.

http://www.doingbusiness.mgs.gov.on.ca/mbs/psb/psb.nsf/English/GreenFIT

38. 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 $500,000 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/

39. Ministry of Agriculture, Food and Rural Affairs/University of Guelph Partnership 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 (ES) 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. In order 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 sectors 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 initiatives;
- assess the effect of environmental policies and the natural environment on the agri-environment, agri-food sector economics and rural society; and
- identify opportunities for agriculture, food, and bio-products sectors, and rural communities to provide solutions for societal environmental challenges.

Since 2010, the OMAFRA-UofG Partnership research program has funded 35 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

40. 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 2 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/

41. Anishinabek/Ontario Fisheries Resource Centre

The Anishinabek/Ontario Fisheries Resource Centre was established 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. In the past nineteen years, the centre has completed over 385 fisheries projects with First Nations and government agencies across the province, including creel surveys, index netting projects, tagging studies, fish habitat inventories, and synthesis of existing fisheries data for the purpose of formulating resource management plans. This type of information contributes to measuring the success of water conservation and fisheries management efforts.

http://www.aofrc.org/

42. Climate Ready: Ontario's Adaptation Strategy and Action Plan 2011-2014

Ontario's adaptation strategy and action plan outlines a framework for action across government, a vision for the four year period and beyond, and includes 37 near term actions.

The plan's 37 actions to improve Ontario's resilience include:

- Ensuring source protection plans consider integrating climate change adaptation measures into policies to ensure sources of drinking water are sustainable in the future.
- Releasing an updated Provincial Policy Statement in 2014 which requires that municipalities consider the impacts of a changing climate in infrastructure, electricity generation facilities, transmission and distribution systems, and public service facilities.
- Conserving biodiversity and supporting resiliency by helping ecosystems and species adapt by updating Ontario's biodiversity strategy.

http://www.ontario.ca/environment-and-energy/climate-ready-adaptation-strategy-and-action-plan-2011-2014

43. Ontario's Climate Change Adaptation Approach

Ontario is taking a decisive step in its approach to climate change adaptation to better prepare Ontario for the impacts of climate change through:

- New Climate Change Organization - Creating a new climate change organization to provide climate change projection data and analysis, and delivering adaptation services for the public and private sectors, municipalities, Indigenous communities, and businesses.
- Provincial Vulnerability and Risk Assessment - Conducting a provincial risk assessment to determine Ontario's most urgent climate change vulnerabilities and how to best address them in key thematic areas, including (but not limited to) the

boreal forest, public assets and infrastructure; financial services; agriculture; public health and water resources.

- Governance Framework - Develop a strong governance framework to ensure all-of-government coordination to more effectively identify priorities and implement climate change adaptation actions.
- Public awareness - Provide information to the public on climate impacts and adaptation in order to raise public awareness of the need to adapt and how to adapt.

44. 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.

45. Walkerton Clean Water Centre

The Walkerton Clean Water Centre was established in 2004, as part of the province's response to the Walkerton Inquiry Report. 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/

46. Water Efficiency Labelling

The Ontario Ministry of the Environment and Climate Change 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.

47. 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 (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. In particular, 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 and Climate Change 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 2-3 minute videos. In particular, a series for irrigators and for greenhouses introduce water efficiency practices. The videos can be seen here:

http://www.omafra.gov.on.ca/english/crops/hort/videos.htm

48. Canada-Ontario Environmental Farm Plan Program and Growing Forward 2 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 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 Growing Forward 2 – Cost-share Funding Assistance program.

The Growing Forward 2 Cost-Share Funding Assistance program supports a range of best management practices project categories including irrigation water efficiency improvements.

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 Growing Forward 2 Agricultural Policy Framework Agreement. 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

In addition to the EFP and cost-share funding, the Growing Forward 2 Program supported strategic agricultural research including the two following initiatives: The Water Adaptation Management and Quality Initiative (WAMQI) and Water Resource Adaptation Management Initiative (WRAMI) supported demonstration and applied research projects that showcased innovative technologies and solutions for agricultural water conservation and water efficiency activities related to adapting to climate change. Projects that support the efficient use of nutrients and effective nutrient management related to water quality were also eligible for funding. WAMQI and WRAMI helped Ontario farmers:

- Prepare for, and better manage, the impacts of climate change through the development of resilient farm practices;
- Address issues of water supply by adopting water conservation and water use practices; and
- Improve water quality through better nutrient management practices.

The results of the initiatives can be seen here:

http://www.farmfoodcareon.org/farming-and-the-environment/water/

49. Species at Risk Stewardship Program

The Species at Risk Stewardship Program is a Ministry of Natural Resources and Forestry funding program 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 920 stewardship projects and over 135 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

50. Invading Species Awareness Program

The province-wide Invading Species Awareness Program has been a joint partnership initiative of the Ministry of Natural Resources and Forestry and the Ontario Federation Anglers and Hunters since 1992. The program focuses on education and outreach to prevent the spread and or introduction of invasive species in Ontario as well as programs designed to monitor the occurrence and distribution of invasive species**.** The Invading Species Awareness Program has involved over 300 partners. The program has worked with the ministry and other partners to develop a web based invasive species tracking system and mobile App (www.eddmaps.org/Ontario) which will serve as a key prevention tool helping Ontario to detect and track the spread of invasive species.

http://www.invadingspecies.com/

51. 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

52. 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 support for wetland conservation by Ontario EHJV partners since 1994.

http://www.ehjv.ca/

53. 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 9.5 million visits each year. Over the last few years, Ontario Parks has undertaken a number of 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.

Ontario Parks permanently protects over 25,000 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