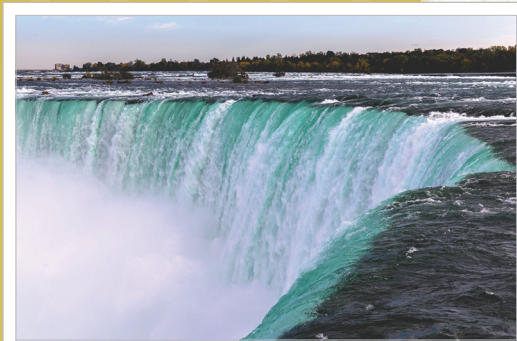
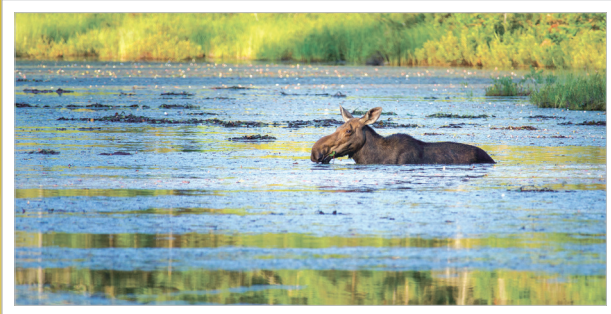




Office of the Auditor General of Ontario

Annual Report *2019*

Reports on the
Environment



Volume 2



Office of the Auditor General of Ontario

To the Honourable Speaker
of the Legislative Assembly

In my capacity as the Auditor General, I am pleased to submit to you Volume 2 of the *2019 Annual Report* of the Office of the Auditor General of Ontario to lay before the Assembly in accordance with the provisions of section 12 of the *Auditor General Act*.

A handwritten signature in black ink, reading "Bonnie Lysyk".

Bonnie Lysyk, MBA, FCPA, FCA
Auditor General

Fall 2019
Toronto, Ontario

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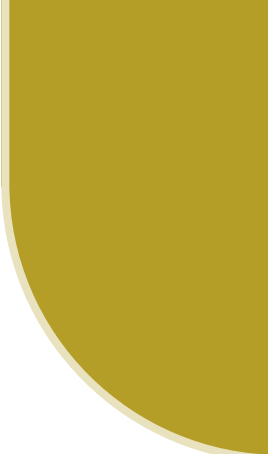


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Bonnie Lysyk
Auditor General of Ontario

Reflections

On April 1, 2019, we welcomed our new team members from the former Office of the Environmental Commissioner and together celebrated our expanded role of reporting on the government's responsibilities under the *Environmental Bill of Rights, 1993*, and the opportunity to build on my Office's experience conducting value-for-money audits on provincial programs intended to protect the environment.

Then, in August 2019, after an external competition, I hired Jerry DeMarco as my fifth Assistant Auditor General and appointed him to manage our environmental audit portfolio as Commissioner of the Environment. For the upcoming year, an Audit Director and an Audit Supervisor from another audit portfolio will work in the environmental portfolio to further support the transition.

Since April 1, 2019, in addition to working on the three reports in *Volume 2—Reports on the Environment* of this year's *2019 Annual Report*, our new team members have been receiving training on our audit methodology and working-paper software and gaining field experience working with other audit teams in the Office on other value-for-money audits in *Volume 1* of our *2019 Annual Report*.

During the past year, there has been some public discussion suggesting Ontarians have lost their environmental watchdog. I want to assure Ontarians that this is not the case. We will perform the environmental audit work using the same high

standards and proven practices that apply to all of our work. As well, the powers and access rights of my Office (which are more extensive than those of the former Office of the Environmental Commissioner) are now available to the Commissioner of the Environment portfolio.

These powers include extensive access to information, including powers under the *Public Inquiries Act, 2009*. They also include the authority to audit environmental issues by visiting ministries, government agencies and organizations, and broader-public-sector organizations throughout Ontario. Our reports, once tabled in the Legislature, will automatically be referred to the Standing Committee on Public Accounts. The Committee may then choose to hold public hearings on the issues, programs or services audited in the reports.

These powers also bring with them responsibilities: they include the duty of confidentiality; the requirement to follow Office protocols and methodology, including professional auditing standards; the duty to maintain objectivity in all work performed; and the need to avoid situations that could result in a perceived or real conflict of interest. In addition, we as an Office audit the implementation and delivery of government policy and do not question government policy itself. Policy commentary is left to Members of the Legislature and external stakeholders.

Volume 2—Reports on the Environment of this *2019 Annual Report* is the first consolidated report

issued by our Office as per sections 51(1) and 51(3) of the *Environmental Bill of Rights, 1993*. Section 51(1) states: “The Auditor General shall report annually to the Speaker of the Assembly with regard to the operation of this Act, and the Speaker shall lay the report before the Assembly as soon as reasonably possible.” As per section 51(3), “The annual report may, in the Auditor General’s discretion, be included in the Auditor General’s annual report prepared under section 12 of the *Auditor General Act*.”

Volume 2 includes the following three chapters:

Chapter 1 provides an overview of Ontario’s environmental trends and key challenges regarding our air; water; land resources and waste; nature and wildlife; and climate change. Ontario, like other jurisdictions in Canada and around the world, is facing a number of environmental challenges. Throughout most of history, the earth’s natural systems have worked to achieve balance in the environment. These systems, also known as “eco-system services,” have allowed the human population to grow and expand. However, population growth and economic development have put much pressure on the natural systems that have sustained humanity, including Ontario’s population.

This first chapter also outlines the provincial legislation that addresses the environment, as well as the environmental responsibilities shared by different levels of government—federal, provincial and municipal. The overview also explains that some environmental issues, such as climate change, can be impacted by and can impact many different natural systems. The report makes one key recommendation—that the province develop key indicators and targets and provide regular state-of-the-environment reporting on its Made-in-Ontario Environment Plan.

Chapter 2 reports on the province’s plan to address climate change and analyzes the information that the Ministry of the Environment, Conservation and Parks (Ministry) is using to develop a response to climate change, while supporting a prosperous economy. According to the most recent data (see **Figure 10** in **Chapter 2**), Ontario’s 2017

emissions were 159 megatonnes (Mt). Canada produces 1.5% of global emissions. Ontario produces 22.2% of the Canadian total, and 0.3% of total global emissions. The average emissions per person per year in Ontario of 11 tonnes are the second-lowest in Canada after Quebec. However, this is higher than in many developed countries, and almost twice the world average of six tonnes.

The Ministry’s Made-in-Ontario Environment Plan (Plan) details Ontario’s current greenhouse-gas emissions (using a 2018 estimate of 160.9 Mt), where they come from, and the initiatives that the Ministry has identified that could further reduce those emissions. Our Office’s analysis found that the emissions reductions in the Plan are not yet supported by sound evidence, and we make recommendations that focus on provincial actions needed to address this as the province works toward reducing emissions to 143.3 Mt by 2030.

Chapter 3 details the compliance of prescribed Ontario ministries with their responsibilities under the *Environmental Bill of Rights, 1993* (EBR). The EBR requires these ministries to have an up-to-date Statement of Environmental Values that reflects the government’s priorities and each ministry’s related responsibilities. These ministries are also required to notify and consult with the public on environmentally significant government initiatives and respond to Ontarians when they request environmental reviews, a right guaranteed under the EBR.

We noted that a number of ministries still need to update their Statement of Values to align with the Made-in-Ontario Environment Plan released in November 2018, and that the Ministry of the Environment, Conservation and Parks, which has primary responsibility for protecting the environment in Ontario, needs to do more to lead by example in complying with the requirements of the EBR. In contrast, the Treasury Board Secretariat, the Ministry of Economic Development, Job Creation and Trade, and the Ministry of Indigenous Affairs fully met their responsibilities under the EBR. With the exception of needing to update its Statement of Environmental Values, the Ministry

of Transportation met all of its responsibilities. The Ministry of Agriculture, Food and Rural Affairs, the Ministry of Government and Consumer Services, and the Ministry of Infrastructure met almost all of their responsibilities.

These three chapters represent the first of many more reports to follow in the coming years as we perform audits on provincial environment-related programs that are intended to protect the environment, and as we continue to report annually to the Legislature on prescribed ministries' compliance with the EBR.

Sincerely,

A handwritten signature in black ink, reading "Bonnie Lysyk". The signature is fluid and cursive, with the first name "Bonnie" and last name "Lysyk" clearly distinguishable.

Bonnie Lysyk, MBA, FCPA, FCA
Auditor General of Ontario

An Overview of Environmental Issues in Ontario

1.0 The Auditor General's Expanded Environmental Role

On April 1, 2019, the government of Ontario made the Office of the Auditor General of Ontario (Office) responsible for reporting on environmental issues under the *Environmental Bill of Rights, 1993* (EBR). The Auditor General established two teams of environmental auditors and subsequently appointed an Assistant Auditor General, an employee of the Office, as Commissioner of the Environment to manage the Office's expanded environmental responsibilities and audit portfolios.

The EBR gives Ontarians the ability to comment on environmental issues, and hold prescribed ministries accountable for environmental decision-making. The EBR ensures that the public can obtain information and participate in decisions that affect the environment. These rights exist to protect, conserve and restore the natural environment for the

benefit of all Ontarians – present and future generations (see **Figure 1**).

The abilities of the Office under the *Auditor General Act*, including access to government information and records needed to complete audits, now extend to the Office's oversight of the EBR.

The Office will continue to carry out value-for-money audits, also known as performance audits, of the government's environmental programs. Since the Auditor General began conducting value-for-money audits in 1978, the Office has completed 35 environmental audits. Recent topics have included source water protection (2014), management of contaminated sites (2015), climate change (2016), environmental approvals (2016), environmental assessments (2016) and the Niagara Peninsula Conservation Authority (2018).

The Office will integrate information obtained from its work on assessing compliance with the EBR into its environmental audit selection process. Audits could focus on environmental protection, sustainability, pollution prevention, biodiversity

Figure 1: The Preamble of Ontario's Environmental Bill of Rights

Source: *Environmental Bill of Rights, 1993*

The people of Ontario recognize the inherent value of the natural environment.

The people of Ontario have a right to a healthful environment.

The people of Ontario have as a common goal the protection, conservation and restoration of the natural environment for the benefit of present and future generations.

While the government has the primary responsibility for achieving this goal, the people should have means to ensure that it is achieved in an effective, timely, open and fair manner.

*For more about the Environmental Bill of Rights, see **Chapter 2**.

conservation, natural resource management and protecting ecologically sensitive areas and processes. Environmental audits typically examine the effectiveness of government programs measured against objectives set out in provincial legislation and policy, as well as best practices in the field of environmental management. Once tabled in the Legislature, our reports are referred to the Standing Committee on Public Accounts.

This Chapter describes the key features and challenges of Ontario's environment, and the provincial legislation and policies intended to protect it. **Chapter 2** of this volume sets out this Office's first EBR compliance review for the 2018/19 fiscal year. The Office can also report on energy conservation, greenhouse gas emission reduction activities (see **Chapter 3**) or any other environmental matter.

2.0 Ontario's Environment

With about 11% of Canada's total area, Ontario is the second largest province. Ontario is an ecologically diverse region, stretching from the tundra on the shores of Hudson Bay to the predominantly deciduous forests bordering the southern Great Lakes. Ontario's wide range of landforms and climates has created habitat for thousands of species of plants, fish, amphibians, reptiles, insects, birds and mammals. Ontario is home to Canada's largest human population and has an economy based on services, industry and agriculture.

The map in **Figure 2** illustrates some of Ontario's natural features.

Ontario can be divided into four ecozones based on ecology, climate and topography, as presented in **Figure 3**.

2.1 Environmental Challenges

Increases in human population and resource consumption have, like in other parts of the world, put pressure on the natural environment in Ontario. People are eating more food, and using more energy and resources than at any other time in history. This makes it hard for natural systems to regenerate and results in environmental change (see **Figure 4**).

Key drivers that can negatively impact the environment include:

- land development for agriculture, urban expansion, and infrastructure expansion;
- unsustainable use or overexploitation of animals, plants and natural materials (resource extraction, forestry, hunting, fishing, etc.);
- pollution in the air, water and soil, including greenhouse gases, plastics, waste, industrial pollutants, oil spills;
- invasive plant and animal species that cause harm in new environments; and
- climate change, caused primarily by burning of fossil fuels, which increases the adverse environmental impacts of other key drivers.

Many of the benefits that natural ecosystems provide to people cannot be replaced by technology. Changes in nature are often irreparable, and can undermine nature's ability to provide the ecosystem services that people depend on for their health and a good quality of life.

2.2 Nature's Benefits

Many people feel a strong connection to nature, and it has intrinsic value. Nature is also essential for humans to exist and have good quality of life. Our natural systems supply Ontarians with essential "ecosystem services" providing water, energy, resources and medicines. Through ecological processes and cycles, nature distributes water, produces the oxygen we breathe, regulates climate, provides pollination, controls pests, produces

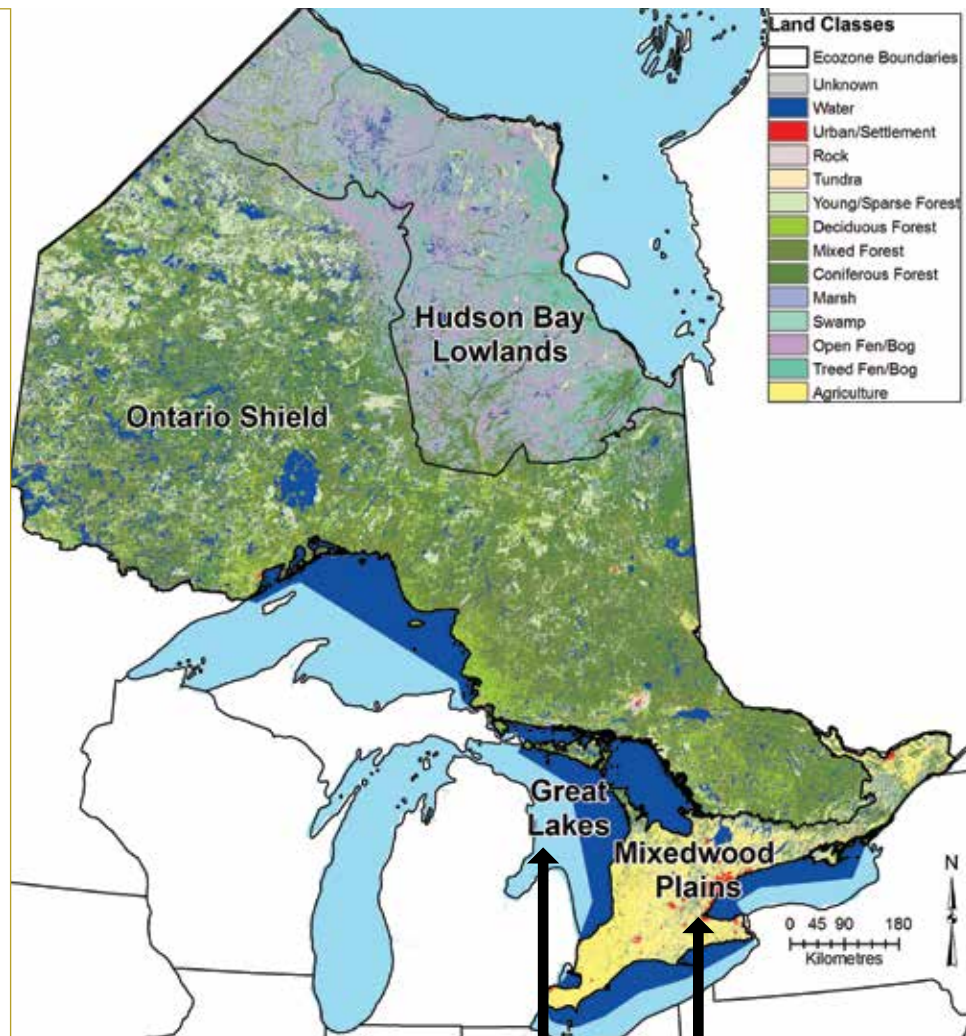
Figure 2: Map of Ontario with Environmental Features

Prepared by the Office of the Auditor General of Ontario with data from State of Ontario's Biodiversity (2010) and the Ontario Biodiversity Council

Ontario is a vast province that covers more than 1,000,000 km² of the Earth's surface. Despite its large human population, much of the landscape remains dominated by natural systems.

From north to south, Ontario's four ecozones are: Hudson Bay Lowlands, Ontario Shield, Great Lakes and Mixedwood Plains. Its physical features vary greatly from the tundra in the north to the boreal forests in the Shield to the temperate deciduous forest in the south.

- More than 30,000 species are known to reside in Ontario.
- Crown lands and waters make up 87% of the province.
- 10.7% of Ontario is protected within parks.
- Ontario has just over 50% of Canada's best agricultural land. Nearly all of it lies south of the Ontario Shield.
- Almost two-thirds of Ontario is covered by forests.
- Ontario is home to over 250,000 lakes—including four of the five Great Lakes—as well as countless rivers, streams and creeks. Ontario has almost 20% of the fresh surface water on the planet.



The Great Lakes Basin, shared with the US, is home for over 40 million people, including around 98% of Ontarians and 40% of Canadians.

The Niagara Escarpment has been recognized as a UNESCO World Biosphere Reserve, with 725 km of cliffs, hills and waterfalls.

resources and decomposes waste. Overall, it sustains the quality of air, water, and soils. Forests and wetlands, for example, filter pollutants from our air, absorb and filter stormwater, prevent erosion and mitigate drought.

These processes have value because they contribute to human welfare, but they are unpriced,

and therefore are typically missing from economic accounting. Ecosystems also provide value to and sustain other species. Examples of ecosystem services are presented in **Figure 5**. Several studies have made attempts to quantify the value of Ontario's ecosystem services and estimate that healthy ecosystems provide tens of billions of

Figure 3: Ontario's Ecozones

Prepared by the Office of the Auditor General of Ontario with data from State of Ontario's Biodiversity (2010)

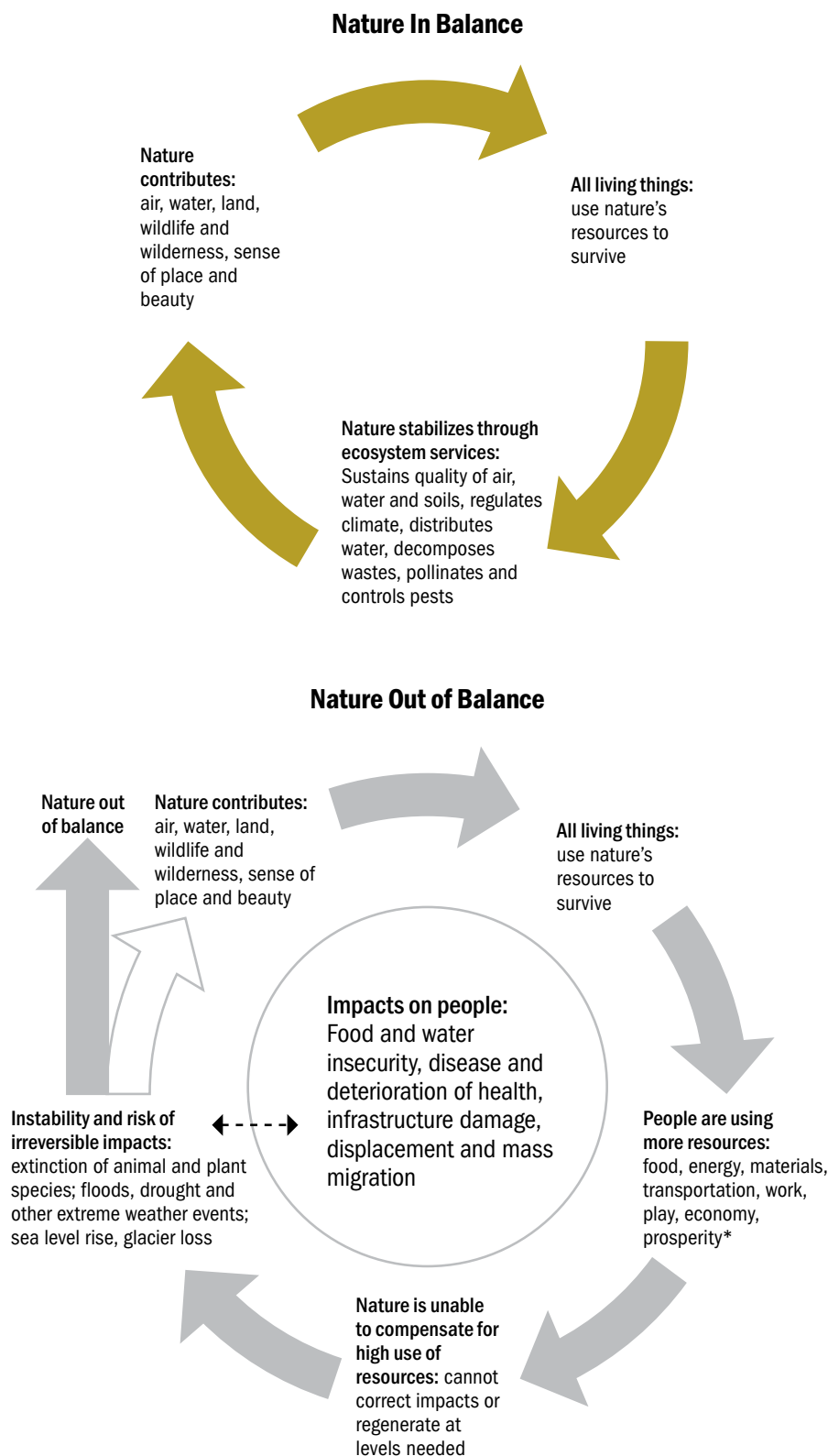
Ecozone	% of Ontario Area	% of Ontario Population	Landforms	Examples of Species	Human Land Use
Hudson Bay Lowlands	23	0.03	Mostly wetlands, which are habitat and carbon sinks; also supports boreal and subarctic forests, tundra, tidal marshes and numerous rivers and lakes	Snow Goose, Polar Bear, Lake Sturgeon, Gray Wolf, Caribou (Boreal Population) and Wolverine	Many First Nations communities; much of the land is undeveloped
Ontario Shield	61	8	68% forests (coniferous in north, mixed and deciduous in south); 23% lakes, ponds and wetlands	White and Black Spruce, Jack and Eastern White Pine, Moose, American Black Bear, Beaver, Common Loon and Lake Trout	Many First Nations communities; small towns and cities
Mixedwood Plains	8	92	Formerly extensive forests, wetlands, prairies	Sugar Maple, White Trillium, Monarch Butterfly and White-tailed Deer	Dominated by settlement; high concentration of industry, agriculture (25% of Canada's agricultural production), and urban areas
Great Lakes	8	n/a	Four of the five Great Lakes partially in Ontario, and connecting waterways, contain nearly 20% of the world's surface fresh water; cold deep-water habitats, shallower nearshore habitats, islands and coastal wetlands	Lake Whitefish, Yellow Perch and Walleye	Supplies more than 70% of Ontario's drinking water; used for transportation, fishing, recreation, agriculture and industries

dollars annually in economic benefits to humans. Value that nature provides in other ways, in social and cultural services for example, is even harder to quantify and is generally excluded from these studies. When functioning ecosystems are damaged through pollution, climate change or habitat loss, our economy's productivity and our quality of life can be negatively impacted, now and in the future. Ontario has a range of laws, policies and programs that recognize the benefits of healthy ecosystems

to human populations, as do other levels of government and jurisdictions around the world. Environmental issues are interconnected locally and globally, as natural systems extend beyond provincial and national boundaries. Ontario's legislation and related regulations, policies and programs are meant to protect against environmental degradation, and support better health and quality of life for future generations.

Figure 4: How Human Consumption is Driving Environmental Change

Prepared by the Office of the Auditor General of Ontario with data from the United Nations Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services



* Globally, people have severely altered 75% of land and 66% of oceans; 85% of wetlands, which filter and clean water, have been lost.

Figure 5: Examples of Ecosystems Services

Prepared by the Office of the Auditor General of Ontario with data from Ontario.ca

Ecosystem Service Type	Examples
Provisioning	• Food • Water supply • Raw materials • Wood products • Medicinal resources • Energy
Regulating	• Climate regulation • Air filtration • Water filtration • Flood control • Erosion control • Waste treatment
Supporting	• Soil formation • Water cycling • Nutrient cycling • Habitat • Biodiversity
Social/Cultural	• Wilderness • Cultural heritage and identity • Spiritual • Recreation • Aesthetics • Mental health

3.0 Provincial Responsibility for Protecting the Environment

Provincial responsibility for protecting Ontario's environment falls primarily to the **Ministry of the Environment, Conservation and Parks**. It is responsible for “protecting clean air, land, water, species at risk and their habitat, tackling climate change and managing Ontario's parks and conservation reserves for present and future generations of Ontarians.”

Several other ministries also have programs or activities intended to protect Ontario's environment, for example:

- The **Ministry of Natural Resources and Forestry** is responsible for “the management and preservation of Ontario's natural resources, including forests, fisheries, wildlife, mineral aggregates, petroleum resources and Crown lands,” and also “for promoting economic opportunities in the resource sector and supporting outdoor recreation opportunities.”
- The **Ministry of Energy, Northern Development and Mines** sets goals for the province's energy plans, including conservation and fuel standards, and runs programs to promote energy conservation and energy efficiency.
- The **Ministry of Agriculture, Food and Rural Affairs** is responsible for growing Ontario's agri-food sector and supporting rural communities. It runs Environmental Stewardship Programming, which is tasked with addressing priorities related to water quality and soil health.
- The **Ministry of Municipal Affairs and Housing** sets provincial planning requirements, including land use planning and growth plans that include rules for farmland and natural heritage.
- The **Ministry of Indigenous Affairs** is responsible for delivering programs that benefit and support Indigenous communities as well as overseeing land claims and other land-related issues.
- The **Ministry of Health** funds Public Health Ontario and municipal public health authorities, which are responsible for protecting the health of Ontarians, preventing illness and restoring health. This includes how air, water, food and our physical environment can affect our health.
- The **Ministry of Transportation** develops policies and plans to support a more sustainable, safe, and efficient transportation network in the province.
- The **Ministry of Economic Development, Job Creation and Trade** is responsible for funding research and innovation.

- The **Ministry of Education** is responsible for environmental education.
- The **Treasury Board Secretariat** and the **Ministry of Government and Consumer Services** are responsible for procurement and ensuring that environmental considerations are taken into account in procurement decisions, as specified in the procurement directives.

The *Environmental Bill of Rights, 1993* requires a Statement of Environmental Values from all prescribed ministries (see **Chapter 2**) describing how each ministry views its environmental responsibilities and how it “will integrate environmental values with social, economic and scientific considerations when making a decision.” As recommended in **Chapter 2**, these statements need to be updated. The government’s November 2018 draft Made-in-Ontario Environment Plan contains a commitment to update ministries’ statements to reflect Ontario’s environment plan, including to improve government’s ability to consider climate change when making decisions and “make climate change a cross-government priority.”

Responsibilities for addressing the impacts of environmental degradation, such as repairing infrastructure, increasing health-care services, and adapting communities, are broadly distributed. Other provincial ministries, government organizations and agencies have responsibilities, as does the broader public sector through various plans, policies, processes and programs.

Canada’s federal government and municipalities also have important roles to play in environmental protection. **Figure 6** describes how different levels of government share jurisdiction for environmental issues.

The following sections provide examples of the challenges facing Ontario in four separate areas—air, water, land and wildlife—while recognizing that many environmental problems can affect more than one of these areas at the same time. The fifth section looks at climate change, which is a prime example of an interconnected environmental issue. Each section includes an overview of provincial commitments intended to reduce environmental impacts in the four areas.

Figure 6: Governments Share Responsibilities for the Environment

Prepared by the Office of the Auditor General of Ontario

The **Canadian Constitution** (Constitution Acts, 1867 and 1982) does not assign specific responsibilities for the environment to either the federal government or provincial governments. Environmental responsibility is shared. In addition, while municipalities exist under provincial legislation and have no constitutional powers, powers delegated to them by the province enable them to improve environmental stewardship at the local level. Because jurisdiction over the environment is shared, multiple levels of government are often involved in the management of a specific environmental matter.

- **Federal government:** plays a role in fisheries and waters, Indigenous lands, federal land (like national parks and military bases), national industries (like railways and airlines), as well as an approval role in projects that require federal environmental assessments.
- **First Nations’ and Indigenous Peoples’ governments:** play a role in land management.
- **Provincial governments:** make decisions about non-renewable resources, mines, forestry, electricity, provincial public lands, and local works within the province as well as setting planning and transportation policy frameworks for municipalities to follow.
- **Municipal governments:** make decisions and bylaws on local matters, such as waste management and land use planning.
- **Multi-jurisdictional responsibilities:** Federal and provincial governments both have taxation and other fiscal tools at their disposal to properly price and reduce environmental pollution. Another example is waste management, which falls under municipal, provincial and federal mandates. Municipalities are responsible for collecting and managing waste from homes for recycling, composting and disposal. Provincial authorities are responsible for the approval, licensing and monitoring of waste management operations. Finally, the federal government is responsible for transboundary movements of hazardous waste, in addition to international agreements related to chemicals and waste. Other cross-jurisdiction issues that extend across international boundaries include climate change, air pollution and the Great Lakes.

3.1 Air

Air quality has significant impacts on public health, the environment and the economy. Air pollution contributes to illnesses such as heart disease, stroke, asthma, lung disease, and lung cancer. According to Health Canada, exposure to air pollution in Ontario results in increased hospitalizations, as well as 6,700 premature deaths, every year. Cancer Care Ontario reports that exposure to fine particles in outdoor air causes between 290 and 900 new cancer cases in Ontario every year.

Air pollution can also contaminate soil and water resources, harm plants and animals, and disrupt ecological processes. Greenhouse gases emitted into the air cause climate change, which can exacerbate other environmental impacts. Examples of goals the province has set out to improve air quality are found in **Figure 7**.

Trends

Ontario's air quality improved steadily since 1988 due to decreased air emissions of a number of harmful pollutants such as nitrogen dioxide, sulphur dioxide, carbon monoxide and particulate matter. Smog days, when smog and air health advisories are issued due to high levels of ozone or

other air pollutants, also dropped from 53 days in 2005 to zero in 2017. These decreases are due in part to:

- closure of all coal-fired power plants in Ontario between 2005 and 2014. Coal power plants were sources of emissions of nitrogen oxides, sulphur dioxide, particulate matter, mercury and lead, as well as the greenhouse gas carbon dioxide;
- changes to Ontario's regulatory framework in 2005, which included tougher rules for industrial emitters, and stricter air standards for individual pollutants;
- mandatory emissions testing for older heavy-duty diesel vehicles;
- past programs aimed at lowering emissions from vehicles such as the Drive Clean passenger vehicle program from 1999 to 2019 and the Green Commercial Vehicle Program from 2008 to 2010, and from 2017 to 2018; and
- nitrogen oxides and sulphur dioxide emissions cap and trade regulations in Ontario, as well as reductions in the United States as part of the 1991 Canada-US Air Quality Agreement to reduce acid rain.

Figure 7: Examples of Ontario's Air Protection Goals

Prepared by the Office of the Auditor General of Ontario

Existing Provincial Objectives	Provincial Legislation, Plan or Policy
"We are committed to protecting our air, ensuring we have strong environmental standards that are protective of human health and the environment, and taking action to enforce local air quality standards;" To "improve air quality in communities by creating unique solutions to their individual challenges;" "Improve understanding of different sources of air pollution and their impact;" and "Strengthen collaboration on addressing air pollution that comes from outside of Ontario's borders"	Made-in-Ontario Environment Plan, 2018
"To provide for the protection and conservation of the natural environment," which includes "the air ... of the Province of Ontario"	<i>Environmental Protection Act</i>
"The betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment," where "environment" means "air, land or water, plant and animal life, including human life ..."	<i>Environmental Assessment Act</i>

Main Challenges

Despite the positive trend in air quality, air pollution is still a major environmental issue in Ontario:

- **Air pollution from the transportation sector** affects air quality and public health in Ontario's cities. Traffic-related air pollution has been linked to numerous illnesses and diseases, including asthma, heart disease, respiratory symptoms, decreased lung function and lung cancer. Traffic-related air pollution is a major public health concern for the 28% of Ontarians who live near major roads and highways, and for commuters. Over 40% of Ontario commuters spend more than 30 minutes on roads and highways every day.
- **Air pollution “hotspots,”** which are areas located close to heavy industrial emitters, experience disproportionate health and environmental impacts from air pollution. For example, some of the worst air pollution in Canada is found in Sarnia's “Chemical Valley,” home to the Aamjiwnaang First Nation. This community has experienced higher-than-average hospital admissions for respiratory and cardiovascular illnesses from 1996 to 2000, higher-than-average cancer rates from 1986 to 1992, and a decline in the sex ratio of babies, with two girls born for every boy from 1999 to 2003. The province is working on a project to study “the links between the environment and health in the community,” expected to be completed in late 2021 or early 2022. Since 2018, industrial facilities in air pollution hotspots have started to be required to account for other nearby sources of emissions (i.e., cumulative effects) when seeking approvals to emit more contaminants to air, but the new requirements are limited to only new or expanding facilities in the hotspots, and to two types of toxic emissions.
- **Greenhouse gas emissions** are discussed in **Section 3.5** on climate change.

3.2 Water

Ontario's lakes, rivers, streams, wetlands and groundwater sustain human and ecosystem health and wellbeing. Ontarians rely on clean water to drink, to irrigate farmland, to provide habitat, and to support many industries including manufacturing, energy generation, recreation and tourism. Healthy watersheds (areas of land that catch rain and snow, and drain into a water body like a river or lake) provide drinking water, filter pollutants, improve air quality, help prevent flooding and erosion, and provide opportunities for recreation.

Water can be contaminated by industrial wastewater, urban stormwater, agricultural runoff, thermal pollution from industries, wastewater from sewage treatment facilities and power plants, and airborne pollution. Water pollution can contaminate drinking water, close beaches, poison fish and harm aquatic ecosystems.

Quantity is also important. Too much water can cause flooding, while too little can cause water shortages and droughts. Examples of Ontario goals for water protection are found in **Figure 8**.

Trends

Overall, Ontario's watersheds have seen some positive trends, but continue to show signs of stress as well, mainly in southern Ontario where there is less green space and more people, industry, and development. More paved surfaces makes it more difficult for stormwater to infiltrate the soil, and increases the likelihood of runoff and flooding.

- **Pollution from lawn care pesticides has significantly decreased** in urban streams since Ontario legislated a ban on residential use of cosmetic pesticides in 2009.
- **Efforts to clean up several highly contaminated areas have been successful.** In Lake Ontario, polychlorinated biphenyls (PCBs) and mercury have been reduced. In 2018, Ontario committed to remediating the decades-long mercury contamination in the

Figure 8: Examples of Ontario's Water Protection Goals

Prepared by the Office of the Auditor General of Ontario

Existing Provincial Objectives	Provincial Legislation, Plan or Policy
"Continue work to restore and protect our Great Lakes;" "Continue to protect and identify vulnerable waterways and inland waters;" "Ensure sustainable water use and water security for future generations;" "Help people conserve water and save money;" and "Improve municipal wastewater and stormwater management and reporting"	Made-in-Ontario Environment Plan, 2018
"To protect human health and well-being through the protection and restoration of water quality, hydrologic functions and the ecological health of the Great Lakes-St. Lawrence River Basin, including through the elimination or reduction of harmful pollutants"	<i>Great Lakes Protection Act, 2015</i>
"To protect and restore the ecological health of the Lake Simcoe watershed"	<i>Lake Simcoe Protection Act, 2008</i>
"To protect existing and future sources of drinking water"	<i>Clean Water Act, 2006</i>
"To provide for the management of materials containing nutrients in ways that will enhance protection of the natural environment and provide a sustainable future for agricultural operations and rural development," where "natural environment means the air, land and water of the Province of Ontario"	<i>Nutrient Management Act, 2002</i>
"To recognize that the people of Ontario are entitled to expect their drinking water to be safe;" and "To provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing"	<i>Safe Drinking Water Act, 2002</i>
"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"	<i>Ontario Water Resources Act</i>
"To provide for the protection and conservation of the natural environment," which includes "the water ... of the Province of Ontario"	<i>Environmental Protection Act</i>
"The betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment," where "environment" means "air, land or water, plant and animal life, including human life ..."	<i>Environmental Assessment Act</i>
"No person ... shall discharge or cause or permit the discharge of a pesticide or of any substance or thing containing a pesticide into the environment that, causes or is likely to cause impairment of the quality of the environment ..."	<i>Pesticides Act</i>
"To provide for the management, protection, preservation and use of the waters of the lakes and rivers of Ontario ..."	<i>Lakes and Rivers Improvement Act</i>

English and Wabigoon rivers, and established an \$85 million trust to fund remediation activities.

- **Mercury levels in fish from the Great Lakes are declining at a slower rate.** After a long period of steady decline, mercury levels now are declining very slowly, not changing, or even increasing slightly in some areas such as Lake Erie.

- **Concentrations of phosphorus declined from the 1970s to 1990s due mainly to improvements in sewage treatment plants.**

Sources of phosphorus include mainly agricultural and urban run-off. High nutrient levels in Lake Erie, and some other parts of the Great Lakes, are contributing to increases in toxic cyanobacteria and beach fouling by

nuisance algae. In parts of Lake Erie, they have actually increased slightly since the mid-1990s, increasing the frequency and severity of harmful algal blooms. Reports of algal blooms have also increased in inland lakes across the province.

- **Chloride levels have been increasing in streams, rivers and lakes in areas with relatively high human population and road density**, due largely to increased urbanization and the use of road salt on roads, parking lots and sidewalks. The high salt levels are damaging aquatic ecosystems in some urban areas and making some water sources undrinkable.
- **While municipal drinking water sources are becoming better protected, water sources for Indigenous communities, areas outside Conservation Authority boundaries (primarily in northern Ontario) and private wells are not.** In response to the 2000 Walkerton tragedy, when contaminated drinking water killed seven people and sickened thousands more, the government passed the *Clean Water Act, 2006*. In implementing this law, Ontario has identified pollution threats to sources of municipal drinking water and implemented measures to reduce the risks from activities that may pollute municipal drinking water. However, significant risks remain for drinking water sources for Indigenous communities and areas outside Conservation Authority boundaries, as well as private wells, which in total serve about 18% of Ontario's population. Additionally, 22 First Nation communities are subject to long-term drinking water advisories in Ontario due to a variety of treatment plant and distribution system issues.
- **Water temperatures in many Ontario lakes are increasing** due to climate change. Increases in water temperature are more noticeable in northern lakes. For example, Lake Superior has the highest upward trend, with summer surface water temperatures

increasing 2.5°C from 1979 to 2006. Healthy water bodies depend on seasonal processes to keep their ecosystems functioning. The warmer climate can have negative impacts on these processes. For example, warming lakes mean a longer growing season for algae, which may cause more toxic algal blooms. The average annual lake ice cover in Lake Ontario has decreased by 2.3% per year from 1973 to 2010. Ice cover protects fish habitat by maintaining deep water temperatures near 4 °C. Many cold water fish like lake trout deposit their eggs in the fall so they can incubate slowly through the winter. Winter fisheries rely on ice cover, and winter ice roads connect 31 remote First Nation communities to a permanent highway or railway systems. Another benefit of colder lake water temperature is more efficient nuclear energy generation, because nuclear power plants use cool water to condense the steam that drives their turbines. Lake water is also used to cool spent nuclear fuel safely.

Main Challenges

Urban development, industry, agriculture, climate change and invasive species continue to increase the stress on Ontario's water bodies:

- **Population growth and urban development** have also contributed to higher volumes of sewage and stormwater runoff. Stormwater flows over roads and sidewalks and carries contaminants like pesticides, road salt, litter and potentially dangerous pathogens like *E. coli*. Higher volumes of stormwater can overwhelm sewer systems and discharge a mix of raw sewage and contaminated stormwater directly into nearby lakes and waterways.
- **Nutrient pollution** has contributed to more frequent and severe toxic algae blooms in many lakes across Ontario since the mid-1990s. Harmful algal blooms can produce toxins (poisons) that can cause serious illness

or death in people, animals and fish. They also threaten biodiversity by degrading wild-life habitat and interfere with recreational activities such as swimming, boating and fishing. Pollution from manure, fertilizers and septic waste, primarily from urban and agricultural runoff, is made worse by warming lake water temperatures in some areas. In Ontario, phosphorus tends to be the key nutrient that influences the growth of algae.

- **Toxic chemicals** in municipal sewage and industrial wastewater continue to be discharged into Ontario water bodies. Sewage treatment plants are not designed to remove contaminants like flame retardants (e.g., chemicals found in clothing, carpets, paints and glues), cleaning products, degreasers and heavy metals (e.g., lead and mercury) that come from homes and businesses. This results in the release of these chemicals into waterways.
- **Pharmaceuticals and microplastics** are also increasingly showing up in Ontario's lakes and rivers. Pharmaceuticals can be flushed down toilets directly, or indirectly through human waste. Microplastics are present in many personal care products and clothing. The full risks and effects of these contaminants in the environment are not yet known. There are concerns about chemical breakdown, as well as ingestion by animals and humans.
- **Invasive species continue to cause substantial ecological and economic impacts to the Great Lakes**, for example species such as sea lamprey, zebra and quagga mussels, and *Phragmites* (a perennial grass). Invasive species are discussed in **Section 3.4** on nature and wildlife.

3.3 Land, Resources and Waste

Ontario depends on many land-based resources: soil, minerals, metals, and energy resources such as oil and natural gas. Land is necessary to grow

food, build homes, develop industries, transport goods and people, provide nature and habitat (see **Section 3.4**), provide recreational opportunities and secure food supply for present and future generations. Indigenous peoples have a right to self-government and traditional ways of managing and protecting the land.

Human use of land and resources leads to many different environmental impacts. For example, habitat for plants and animals can be destroyed, fertile agricultural soil can be paved for roads or become less nutritious for crops, and poor waste management can emit air pollutants, generate greenhouse gases, and leak toxins into the soil. Examples of goals Ontario has set out for land, resources and waste are found in **Figure 9**.

Trends

Pressures on Ontario's land and resources continue:

- **Ontario's population continues to grow, mostly in urban areas, using more land and more resources.** The population has grown from 7.8 million in 1971 to 14.5 million in 2019. By 2046, Ontario's population is forecast to be 19.8 million. Populations in lower-density suburban areas are increasing five times faster than core urban areas. From 1996-2016, the suburbs became home to 2.4 million more people, compared to an additional 0.5 million in urban areas.
- **Soil health and resistance to erosion is not improving, despite efforts.** Healthy soil is full of organisms that decompose organic matter, providing nutrients that plants need to grow. As plants die or are eaten by animals and become manure, organic matter is fed into the carbon cycle. Globally, the top metre of soil contains three times as much carbon as the entire atmosphere. Human activities like deforestation, ploughing and slash-and-burn agriculture can harm soil health in two ways:
 - By exposing soil to oxygen and speeding up decomposition rates, soil organic

Figure 9: Examples of Ontario's Land and Resource Protection Goals

Prepared by the Office of the Auditor General of Ontario

Existing Provincial Objectives	Provincial Legislation, Plan or Policy
Land Use	
"To plan for growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life"	Growth Plan for the Greater Golden Horseshoe, 2019
"Increase the redevelopment and clean-up of contaminated lands in Ontario to put land back into good use"	Made-in-Ontario Environment Plan, 2018
"Land use must be carefully managed to accommodate appropriate development to meet the full range of current and future needs, while achieving efficient development patterns and avoiding significant or sensitive resources and areas which may pose a risk to public health and safety"	Provincial Policy Statement, 2014 under the <i>Planning Act</i>
"To enable decisions about growth to be made in ways that sustain a robust economy, build strong communities and promote a healthy environment and a culture of conservation"	<i>Places to Grow Act</i> , 2005
"To provide for the protection and conservation of the natural environment," which includes "the land ... of the Province of Ontario"	<i>Environmental Protection Act</i>
"The betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment," where "environment" means "air, land or water, plant and animal life, including human life"	<i>Environmental Assessment Act</i>
Resources	
"Soil management practices" to sustain and enhance "soil health and productivity for economic, environmental and societal needs"	New Horizons: Ontario's Agricultural Soil Health and Conservation Strategy, 2018
"To prioritize the highest and best use of our food resources in Ontario ... in order to move towards a sustainable model of waste reduction and resource recovery"	Food and Organic Waste Policy Statement, 2018
"Explore opportunities to recover the value of resources in waste"	Made-in-Ontario Environment Plan, 2018
"To minimize the impact of these activities on public health and safety and the environment"	<i>Mining Act</i>
"To minimize adverse impact on the environment in respect of aggregate operations"	<i>Aggregate Resources Act</i>
Waste	
"Reduce and divert food and organic waste from households and businesses;" "Reduce plastic waste;" and "Make producers responsible for the waste generated from their products and packaging"	Made-in-Ontario Environment Plan, 2018
"Waste reduction and resource recovery through preventing and reducing food waste, effectively and efficiently collecting and processing food and organic waste, and reintegrating recovered resources back into the economy"	Food and Organic Waste Policy Statement, 2018
"To move toward zero waste and zero greenhouse gas emissions from waste sector;" and To "increase food and organic waste diversion ... Potential targets could include 40 per cent of organic wastes diverted by 2025 and 60 percent by 2035"	Strategy for a Waste Free Ontario: Building the Circular Economy, 2017
Existing Provincial Objectives	
"To minimize the generation of waste, including waste from products and packaging;" "To minimize the environmental impacts that result from resource recovery activities and waste reduction activities, including from waste disposal;" "To provide efficient, effective, convenient and reliable services related to resource recovery and waste reduction, including waste management services;" and "To increase the reuse and recycling of waste across all sectors of the economy"	<i>Resource Recovery and Circular Economy Act</i> , 2016
"To promote the reduction, reuse and recycling of waste;" and "To provide for the operation of waste diversion programs"	<i>Waste Diversion Transition Act</i> , 2016

carbon is released as carbon dioxide at a faster rate than it is stored back into the soil. Over 80% of Ontario farmland has been losing its stores of soil organic carbon every year. This is primarily due to land-use changes, most notably a shift toward annual crops with less diverse rotations, such as cereals, and away from perennial crops such as pastures.

- By exposing soil to the weather, soil can be eroded, transported and degraded in quality, which negatively impacts soil health and agricultural productivity. Over 68% of farmland is at a high risk of erosion. This is due to more tillage, fewer windbreaks, and the shift toward annual crops.
- **Ontario continues to generate over 12 million metric tonnes of municipal solid waste per year, even with ongoing waste reduction efforts.** Since 2008, Ontario has generated over 900 kilograms (kg) of municipal solid waste per person each year. Municipal solid waste is defined as “any material for which the generator has no further use, and which is managed at waste disposal, recycling or composting sites,” including residential and most industrial waste. About 700 kg of that is sent to landfills or incinerators, which emit dioxins (highly toxic chemicals that can affect reproduction, development, and the immune system) and other harmful pollutants. Other countries with similarly high household incomes dispose of an average of 580 kg per capita, while Japan disposes of just 377 kg per capita. Resource scarcity, a rapid rise in disposal costs due to scarce landfill space, and associated hazards pushed Japan to minimize consumption and reduce environmental impact.
- **Rates of diverting municipal solid waste stagnated at about 25% from 2008 to 2016.** Diversion methods include recycling and composting organic waste. If disposal and diversion rates do not change, the Ontario

Waste Management Association estimates that the province’s landfill capacity will be fully exhausted in nine to 13 years (depending on how much waste is exported to the United States). Due to international bans on imports of contaminated recycling in 2018, diversion rates are expected to decrease, which would direct more waste to landfills, depleting landfill capacity more quickly.

- **Ontario produces approximately 500,000 tonnes of hazardous waste annually**—about 450,000 tonnes from industries and manufacturing and about 30,000 tonnes of municipal hazardous or special waste. Municipal hazardous waste includes batteries, paints, fertilizers, pharmaceuticals and used hypodermic needles (sharps). Ontario also produces about 50,000 tonnes of electronic waste.
- **Nuclear waste continues to accumulate in a temporary, above-ground holding container.** Ontario’s used nuclear fuel from power generation is highly radioactive and will be dangerous for hundreds of thousands of years. Currently, it is stored at nuclear generating stations with water as shielding, then transferred to dry storage using steel and concrete that protects from radioactivity. Ontario Power Generation has plans to eventually transfer all nuclear waste to a proposed Deep Geologic Repository site for permanent disposal, but the plans have not received all approvals. No long-term repository for used nuclear reactor fuel yet exists anywhere in the world.

Main Challenges

Urban expansion and increasing consumption continue to challenge Ontario’s land-based resources:

- **Urban expansion**, particularly low-density outward growth, has a number of negative impacts. These include loss of natural habitats and agricultural areas, reduced resilience to

flooding and extreme weather, and increased greenhouse gas emissions from greater use of personal vehicles. Between 1971 and 2011, cities and suburbs across Ontario grew by an average of 220%, converting 570,200 hectares of agricultural and natural land to urban development. Most of this expansion (72%) replaced high-quality farmland. From 1996 to 2016, the total farm area dropped 11% to 5.0 million hectares.

- **Businesses, industry and institutions such as schools and hospitals produce over half of Ontario's municipal solid waste.** Only about 17% of total waste from the industrial, commercial and institutional sector is diverted from landfill compared to households, which recycle or compost about 37% of their total waste.
- **Ontario diverts less than 40% of the province's total food and other organic waste,** mostly through composting; the remainder is sent to landfill. Organic waste in landfills releases greenhouse gases as it decomposes, contributing to climate change.
- **Much of the plastic we put in blue bins is not easily recyclable** or not recyclable at all because of increasingly complex mixes of material in plastic packaging, or contamination from non-recyclable material. Stewardship Ontario also reports that contamination in Blue Boxes is an ongoing and increasing problem.
- **Many recycling export markets are no longer accepting Ontario's recycling** and Ontario does not have enough local capacity or infrastructure to manage the amount of recyclables we generate. China used to import over half of the world's recycling but banned imports of contaminated recycling in January 2018. The ban has disrupted global waste management and increased recycling costs by as much as 40%. Recyclable materials that used to be diverted are accumulating in some local Ontario recycling yards, and

may now be going to landfill. This recent development has not yet been captured in diversion rates, because the latest available rates are from 2016.

- **Potential mining of industrial metals with toxic by-products.** Mining requires access roads, transmission lines, mines, smelters and tailings ponds, which typically require land use changes and can result in habitat destruction. Ontario's remote northern "Ring of Fire" has been considered to be one of the most promising mineral development opportunities in Ontario, with over 13,000 active mining claim units held by 18 companies and individuals, covering approximately 2,127 square kilometres (km²). This area is in one of the world's largest wetlands, which provides important wildlife habitat and carbon storage. Mining operations can pose risks to air, water and wildlife.
- **Ontario has many contaminated sites, on private and public land.** Land can be contaminated by chemicals that are hazardous to the environment or to human health. In some cases, the province is responsible because it owns the site or directly caused the contamination of the land through its own activities. As reported in the 2018/19 Public Accounts, the province's liability for remediating its known contaminated sites was estimated to be \$1.8 billion on March 31, 2019. Properties contaminated from prior industrial or commercial use are often known as brownfields. They can be located in areas desirable for redevelopment, but can be left vacant or underutilized.

3.4 Nature and Wildlife

Biodiversity is the variety of life on earth. It is the variability of native species and the wealth of ecological systems that form the layer of life around our planet. The more variety that is present in a population or ecosystem, the more capable that

system is to withstand changes to the environment and to continue to provide the ecosystem services that support our quality of life, such as clean drinking water and fresh air. Loss of biodiversity can negatively affect the quality of the air we breathe, the water we drink, the soils we depend on for our food, and the lands and waters we depend on for

our natural resources and livelihoods. Ontario's wildlife species and their habitats are affected by habitat loss and degradation, pollution, over-harvesting, invasive species and climate change. Examples of goals Ontario has set out to protect nature and wildlife are found in **Figure 10**.

Figure 10: Examples of Ontario's Nature and Wildlife Protection Goals

Prepared by the Office of the Auditor General of Ontario

Existing Provincial Objectives	Provincial Legislation, Plan or Policy
"Improve the resilience of natural ecosystems;" "Support conservation and environmental planning;" "Promote parks and increase recreational opportunities;" "Sustainable Forest Management;" and "Protect species at risk and respond to invasive species"	Made-in-Ontario Environment Plan, 2018
"To protect and restore the natural habitats and biodiversity of the Great Lakes-St. Lawrence River Basin"	<i>Great Lakes Protection Act, 2015</i>
To "prohibit any activity that is likely to increase the threat of the invasive species to the natural environment in Ontario"	<i>Invasive Species Act, 2015</i>
To maintain, restore or, where possible, improve "the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, ... recognizing linkages between and among natural heritage features and areas, surface water features and ground water features"	Provincial Policy Statement, 2014 under the <i>Planning Act</i>
"To expand the system of protected areas and conservation lands, protect species diversity, and integrate biodiversity into land use and resource management planning"	Ontario Government Plan to Conserve Biodiversity, 2012-2020
To protect "areas of cultural value ... and ecological systems ... by including at least 225,000 square kilometres of the Far North in an interconnected network of protected areas"	<i>Far North Act, 2010</i>
"To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk"	<i>Endangered Species Act, 2007</i>
"To permanently protect a system of provincial parks and conservation reserves that includes ecosystems that are representative of all of Ontario's natural regions, protects provincially significant elements of Ontario's natural and cultural heritage, maintains biodiversity and provides opportunities for compatible, ecologically sustainable recreation"	<i>Provincial Parks and Conservation Reserves Act, 2006</i>
To protect "the ecological and hydrological integrity of the Oak Ridges Moraine Area;" and To ensure "that the Oak Ridges Moraine Area is maintained as a continuous natural landform and environment for the benefit of present and future generations"	<i>Oak Ridges Moraine Conservation Act, 2001</i>
To provide for the "long-term health" of Crown forests "to meet social, economic and environmental needs of present and future generations"	<i>Crown Forest Sustainability Act, 1994</i>
"To provide for the protection and conservation of the natural environment"	<i>Environmental Protection Act</i>
"The betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment," where "environment" means "air, land or water, plant and animal life, including human life"	<i>Environmental Assessment Act</i>

Trends

- **The world's species and the ecosystems on which they depend are deteriorating rapidly.** The UN Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has determined that the world is now experiencing a global species extinction event. The IPBES found that on average 25% of assessed animal and plant species are threatened globally, suggesting that around 1 million species already face extinction, many within decades. The rate of species extinction is already 1,000 times higher than the natural background rate estimated to be around one per ten million species per year. Without action, the rate will continue to accelerate and is likely to reach 10,000 times higher.
- **Wildlife populations are shrinking globally.** The IPBES has determined that average abundance of native species in most major land ecosystems has fallen by at least 20%. More than a third of all marine mammals, 40% of amphibians, about 33% of reef-forming corals, and an estimated 10% of insects are threatened globally. North America has lost over 3 billion or 29% of its total bird population, including common abundant birds. For example, Canada has rapidly lost about 40% to 60% of the populations of grassland birds, shorebirds, and aerial insectivores such as barn swallows and common nighthawks. Birds are important in the ecosystem because they contribute to pest control, seed dispersal and pollination. They are good indicators of the health of our water, air and land. Another example is the decline of about 20% in Ontario's moose populations in the last ten years.
- **The number of Species at Risk in Ontario is increasing.** At-risk species range from the threatened polar bear in southern Hudson Bay to the Canada warbler, a species of special concern. Species at risk include all

types of species including mammals, birds, plants, insects, reptiles, amphibians, and fish. "At risk" means these species are no longer present in Ontario, or are endangered, threatened or of special concern. Ontario has listed a total of 243 Species at Risk in Ontario. There have been 65 newly listed and 29 uplisted (i.e., at increased risk) species compared to 19 species downlisted and nine delisted (i.e., removed from the Species at Risk in Ontario List) since 2009. For example, of the 88 known mammals in Ontario, 16 are on the Species at Risk in Ontario List (18%). There are many species whose status has not yet been assessed but may also be at risk or in decline, especially very small or rare organisms.

- **Invasive species are steadily increasing in Ontario.** Invasive species can be any type of non-native organism that harms ecosystems, including plants, animals, insects or fungi. Invasive species can cause harm in many ways including preying on native species, outcompeting for food, water or habitat, spreading diseases, preventing native species from reproducing, killing eggs or young, and by providing little food value to other wildlife. If there are no natural predators or controls, invasive species can breed and spread quickly, crowding out native species. In 2017, 183 invasive species were known to be established in the Great Lakes basin. Invasive species were detected in 46% of Ontario's inland lakes sampled between 2008 and 2012. Around 66% of Ontario's Species at Risk are threatened by plant invaders such as garlic mustard (an herbaceous plant) and Phragmites, and fish like the round goby.

Main Challenges

- **Ontario has not met national and international commitments** to designate 17% of its land as protected area by 2020. Currently

10.7% of the province is protected. Protected areas are permanently set aside and managed to conserve nature, where nature can function largely unimpaired by human activities. Examples in Ontario include provincial parks, conservation reserves, wilderness areas, dedicated protected areas and national parks. Protected areas are a very important tool for safeguarding nature. Ontario needs to add 68,000 km² of protected area to meet 17% coverage by 2020.

- **Climate change will change Ontario's nature and wildlife.** The province's ecosystems are changing in response to warming air and water temperatures as well as changing patterns of rain, snow and ice. While some native species may be able to adapt to these changing conditions, the Intergovernmental Panel on Climate Change has found that most plant species will not be able to naturally shift their ranges fast enough to keep up with current rates of climate change and many small mammals will not be able to keep up at projected future rates. Species that previously did not live in Ontario, for example the blacklegged tick, are already starting to expand their ranges into the province. These ecosystem changes will have serious implications for our communities and economy.
- **Invasive species are one of the biggest threats to biodiversity globally.** Ontario is the province with the highest risk of invasion by non-native species because large amounts of goods and people move within the province and across borders. Invasive species can also have economic consequences. For example, zebra mussels feed rapidly on tiny plankton, reducing the amount of food for other aquatic species, clearing the water, and allowing more vegetation to grow. They also clog infrastructure and equipment. The Ministry of Natural Resources and Forestry estimated in 2010 that the total annual economic impact of invasive zebra mussels in Ontario is between \$75 million and \$91 million.
- **Southern Ontario has lost nearly three-quarters of its wetlands in the last two centuries.** About 14,700 km² of wetlands have been drained for agriculture or settlement. Wetlands are lands that are often covered by shallow water or where the water table is close to the soil surface, providing transitional habitat where land and aquatic ecosystems are connected. Ontario is home to 6% of the world's remaining wetlands and about 25% of Canada's total, mostly located in Northern Ontario. Wetlands provide vital wildlife habitat for many species and important ecosystem services for people, including resilience to floods and other effects of climate change. For example, over 20% of Ontario's species at risk are directly dependent on wetland habitats. Wetlands continue to be lost for infrastructure and development—an additional 61.5 km² of wetlands were drained in southern Ontario between 2000 and 2011.
- **Southern Ontario's forest cover is less than required for healthy ecosystems.** Environment and Climate Change Canada defines 50% forest cover as the threshold for watersheds to be likely to support most of the potential species and healthy aquatic systems. More than half of southern Ontario watersheds have less than 30% forest cover, the high-risk threshold for only marginally functional ecosystems. Some municipalities in southwestern Ontario have less than 10% forest cover, and one, Essex County, has as little as 3% left and has lost 40% of its forest birds. Forest cover is also needed to keep the ecosystems that clean our drinking water healthy.
- **Wildlife diseases can have devastating impacts on plants, animals, our economy and our own health.** For example, there have been catastrophic declines in Ontario's species of bats from white-nose syndrome, a rapidly-spreading disease that is almost always fatal. Bat colonies decline by 99%

within two years of exposure. There are eight species of bat that are native to Ontario—four of the five hibernating species have been listed as endangered due to this disease. From 5.6 to 6.7 million bats in the northeastern United States and Canada have died since the disease was first discovered in 2006. Bats control insect populations and pollinate many different plants, including some agricultural crops. A study in 2011 placed the estimated agricultural losses in the United States due to bat population declines at more than \$3.7 billion per year. The loss of biodiversity poses a serious risk to global food security by decreasing the resilience of many agricultural systems, making them more vulnerable to threats like pests, diseases and climate change.

- **Wildlife health and our own health are inextricably linked.** Researchers estimate that over 60% of existing infectious diseases are passed from animals to people. For example Severe Acute Respiratory Syndrome (SARS), Lyme disease and at least 75% of emerging infectious diseases have animal origins.

3.5 Climate Change

Ontario is experiencing higher average annual and seasonal temperatures as well as heat waves and increased storm events. These impacts are

projected to become more severe as greenhouse gas levels in the atmosphere continue to rise, mainly due to worldwide human activities such as burning fossil fuels.

Climate change also acts as an amplifier of other drivers of environmental change by increasing pressure on already-stressed natural systems. Examples of goals the Ontario government has set out to mitigate and adapt to climate change are found in **Figure 11**.

Trends

- **World temperatures are expected to increase more than 3°C by 2100**, even if all countries achieve the emission reductions promised in their current policies, according to the Intergovernmental Panel on Climate Change (IPCC). Without these policies, the IPCC expects the world will warm by more than 4°C. These levels of warming are associated with “severe, pervasive and in some cases irreversible detrimental impacts,” according to the IPCC.
- **Ontario is heating up faster than the global average.** According to Environment and Climate Change Canada, Ontario’s average annual temperature increased by 1.3°C, while the global average warmed 0.8°C between 1948 and 2016. Ontario’s summers are more often hotter: the average number of days over

Figure 11: Examples of Ontario’s Climate Change Mitigation and Adaptation Goals

Prepared by the Office of the Auditor General of Ontario

Existing Provincial Objectives	Provincial Legislation, Plan or Policy
“Make climate change a cross-government priority;” “To do our share to address climate change and protect our environment;” “Ontario will reduce its emissions by 30% below 2005 levels by 2030;” and To prepare “families and communities for the costs and impacts of climate change”	Made-in-Ontario Environment Plan, 2018
“The Government shall establish targets for the reduction of greenhouse gas emissions in Ontario and may revise the targets from time to time”	<i>Cap and Trade Cancellation Act, 2018</i>
To “minimize greenhouse gas emissions resulting from resource recovery activities and waste reduction activities”	<i>Resource Recovery and Circular Economy Act, 2016</i>
“To protect and improve the capacity of the Great Lakes-St. Lawrence River Basin to respond to the impacts and causes of climate change”	<i>Great Lakes Protection Act, 2015</i>

30°C increased 500% between 1950 and 2013 (from an average across Ontario of 0.6 days to 3.6 days). Ontario's winters are more often milder, recording an increase of 2°C between 1948 and 2016. This may bring more winter floods and variable freeze-thaw cycles. By the end of this century, the rate of warming in Ontario is expected to be almost double that of the global average. For example, if average global warming hits 2.2°C, Ontario is expected to warm an average of 3.9°C.

- **Ontario's greenhouse gas emissions per capita are high by global standards.** At 11 tonnes of emissions per person per year in 2017, Ontarians emit almost double the world per-person average of around 6 tonnes. This rate is higher than all but six G20 countries. If the greenhouse gas emissions from international air travel and the net imports of goods and services were included, Ontario's per capita emissions would be higher.
- **Ontario has made some progress in reducing greenhouse gas emissions.** However, Ontario still needs to reduce its greenhouse gas emissions. The Ministry projects that emissions in 2030 will be 160.9 Mt. To reach the target of 30% below 2005 levels (or 143.3 Mt), over 17 Mt of reductions would be required. Ontario's target is stated to align with Canada's 2030 target (30% below 2005 levels by 2030). However, the Intergovernmental Panel on Climate Change has recently determined that global emissions must be reduced 45% below 2010 levels by 2030 to limit global warming by 1.5°C and avoid some of the more severe impacts associated with higher global temperatures. This would mean reducing Canada's emissions by at least 39% below 2005 levels by 2030 and reaching net zero emissions by 2050. Canada has not committed to a revised reduction target.
- **Emissions from transportation increased from 42 million tonnes in 1990 to 56 million tonnes in 2017.** Ontario's freight sector

has more than doubled its emissions since 1990. Any improvements in vehicle fuel efficiency and biofuel requirements have been offset by the increase in passenger and freight travel.

- **Emissions from buildings in Ontario, mainly from natural gas used for heating,—increased by 26% between 1990 and 2017, accounting for 22% of Ontario's total emissions in 2017.** These emissions are increasing due to growth in both population and floor space per person.
- **Emissions from industry are still high.** While they have been decreasing since the 1990s, industry still accounted for 30% of Ontario's total greenhouse gas emissions in 2017. More than half of industrial reductions since 1990 are due to the closure in 2009 of a single chemical manufacturing operation at the Invista Canada facility in Maitland, Ontario.
- **Extreme weather, such as heat waves, droughts, severe cold, heavy rainfall and storms, are all becoming more frequent and intense.** Such extreme weather events have resulted in environmental, economic and social impacts across the province. Examples of impacts exacerbated by climate change in Ontario include infrastructure damage, forest fires, agricultural losses, and an increase in the reported prevalence of Lyme disease.
- **Disaster relief and insurance costs are increasing in Canada.** Overall, federal government disaster relief spending has risen from an average of \$40 million a year in the 1970s to an average of \$100 million a year in the 1990s, hitting a record of \$1.4 billion in 2013. According to the Insurance Bureau of Canada, large catastrophic events are those that exceed \$25 million in insured damages. In 2018, such events reached almost \$1.4 billion across Ontario. One of Canada's largest property insurers has raised premiums by as

much as 15% to 20% in response to increasing costs of weather-related property damage.

Main Challenges

Ontario needs to reduce greenhouse gas emissions and adapt to climate change at the same time:

- **Reducing carbon emissions requires systemic changes** to shift current high-carbon habits to low-carbon options. While there are some simple lifestyle shifts, technical solutions, like electric vehicles, come with upfront replacement costs.
- **Climate change will have accelerating costs.** The National Round Table on the Environment and the Economy expected the impacts of climate change to cost Canada from about \$5 billion per year in 2020 to about \$21 billion to \$43 billion per year by 2050. This is roughly 0.8% to 1% of Canada's future gross domestic product (GDP) every year. However, if global emission rates remain high, climate change could cost over \$150 billion per year in Canada by 2050.
- **Climate change will impact certain regions of Ontario more severely.** While climate change is a global phenomenon, impacts are felt locally. Impacts can vary due to conditions unique to an area, such as proximity to lakes and rivers, landforms, level of urbanization and micro-climates. Some regions may experience more adverse effects than others, such as places already prone to flooding in severe storms.
- **Land degradation like deforestation is amplifying climate change.** Trees and plants naturally remove carbon from the atmosphere through photosynthesis. This carbon is stored in living plant tissue (roots, trunk/stem, branches and leaves/needles), dead plant material on the soil surface, as well as in the soil itself. Globally, billions of tonnes of carbon are stored in forests and wetlands, including about 4.3 billion tonnes stored in

Ontario-managed Crown forest. Disturbing these ecosystems through activities such as permanent deforestation can cause this stored carbon to be emitted to the atmosphere and contribute to climate change.

- **Lack of detailed climate change risk assessment and planning.** The 2018 collaborative report on climate change action from the Auditors General across Canada found that most provincial and territorial governments had not fully assessed climate change risks and had not developed detailed adaptation plans.
- **Ontario's overall state of readiness to respond to emergencies needs significant improvement.** Improvements are needed in the resiliency of infrastructure, the protection of natural systems and the safety and well-being of Ontarians in floods, severe weather events, and public health crises, for example. In our audit of Emergency Management in Ontario in our *2017 Annual Report*, we noted that risk identification and assessment processes were not sufficient because they were based on emergencies before 2009 and the Provincial Emergency Response Plan had not been updated since 2008.

See **Chapter 3** for our review of Ontario's current plan to reach climate change targets.

4.0 Establishing Annual, Consolidated Environmental Reporting in Ontario

In researching material for this report, our Office noted that the Ministry of the Environment, Conservation and Parks (Ministry) does not issue a comprehensive annual report on environmental indicators covering areas like air quality, water quality, and biodiversity conservation. Such "state of the environment" reports are produced in other

jurisdictions in Canada, collecting data from numerous sources to show the overall environmental state of affairs and changes over time. Aside from reporting on environmental indicators, it is also important for the Ministry to publicly report on the government's success in meeting its environmental commitments. Ontario does not yet issue such progress reports. The Ministry does publish regular progress reports on some environmental topics as required by various laws. Much of this information could be used in producing a more comprehensive annual environment report.

In November 2018, as part of its new Environment Plan, the Ministry committed to developing key progress indicators and reporting regularly on progress implementing the plan.

There is not yet the same level of standardization in environmental reporting as there is in financial reporting in Canada. Ontario could nonetheless implement current best practices in environmental reporting. Making environmental information available to the public in a more comprehensive and understandable manner would increase transparency and the likelihood that Ontario's commitments to environmental protection will be successfully implemented.

It is very difficult to determine Ontario's total annual environment-related expenditures because expenditures are distributed throughout ministries, agencies, government organizations and the broader public sector.

RECOMMENDATIONS

In order to meet its commitment to report publicly on its progress in further developing and implementing the 2018 Made-in-Ontario Environment Plan, we recommend that the Ministry of the Environment, Conservation and Parks:

- develop key quantitative and qualitative indicators and related targets;
- establish an annual reporting timeline;
- report publicly in accordance with this timeline; and
- incorporate reporting on environmental expenditures as part of annual reporting.

MINISTRY RESPONSE

As outlined in the draft Made-in-Ontario Environment Plan, the Ministry proposes to report regularly on the progress against its plan and to develop key indicators of progress. The Ministry appreciates the Auditor General's recommendations and will consider these recommendations as it develops its approach to public reporting, monitoring and evaluating progress against the commitments in its plan.

Operation of the *Environmental Bill of Rights, 1993*

1.0 Summary

The *Environmental Bill of Rights, 1993* (Act) recognizes the common goal of the people of Ontario of protecting, conserving and restoring the environment for the benefit of present and future generations. **Figure 1** lists the names of the 15 ministries that were subject to the Act in 2018/19 and how we refer to them in this report.

The Act provides a set of rights for the Ontario public and obligations for Ontario government ministries that are intended to work together to improve environmental protection. These obligations include requirements for ministries to:

- have a Statement of Environmental Values that explains how they consider the purposes of the Act when making decisions that may significantly affect the environment;
- notify and consult the public through a website called the Environmental Registry when developing or changing policies, laws and regulations, and issuing permits and approvals that may significantly affect the environment; and
- respond to applications from Ontarians asking them to review laws, policies, regulations, permits or approvals, or to investigate alleged contraventions of environmental laws, regulations or approvals.

Effective April 1, 2019, our Office became responsible for reporting annually on the operation of the Act. This responsibility includes reporting

on the public's use of its environmental rights and the government's compliance with the Act. We do so through this report, for the period from April 1, 2018, to March 31, 2019.

Appendix 1 identifies which of the Act's obligations each of the ministries in **Figure 1** must meet. Individual ministry report cards are contained in **Appendices 2 to 16** and highlight areas where ministries have met, partially met or did not meet their obligations under the Act or best practices in accordance with our agreed upon criteria in **Appendix 17**. **Figure 2** summarizes this year's report cards.

Appendix 18 provides a glossary of terms.

Overall Conclusion

Our work identified a number of areas where certain ministries did not comply with parts of the Act or best practices in 2018/19. Where ministries have not carried out their responsibilities consistent with the Act's purposes, it makes it more difficult for Ontarians to use their environmental rights and, in turn, support or contribute to government decisions about the environment.

We also concluded that the Environment Ministry did not lead by example in complying with the requirements of the Act. The Environment Ministry has the primary responsibility for protecting the environment in Ontario, and is responsible for administering the Act and its regulations, as well as for operating the Environmental Registry and, as of April 1, 2019, providing educational programs

Figure 1: The 15 Prescribed Ministries and How We Refer to Them in This ReportSource of data: O. Reg. 73/94, made under the *Environmental Bill of Rights, 1993* (Act)

Ministry ¹	How We Refer to It
Ministries with a High Level of Activity under the Act	
Environment, Conservation and Parks	Environment
Natural Resources and Forestry	Natural Resources
Ministries with a Medium Level of Activity under the Act	
Municipal Affairs and Housing	Municipal Affairs
Energy, Northern Development and Mines	Energy and Mines
Government and Consumer Services—Technical Standards and Safety Authority ²	Government Services
Agriculture, Food and Rural Affairs	Agriculture
Transportation	Transportation
Ministries with a Low Level of Activity under the Act	
Tourism, Culture and Sport ³	Tourism
Health and Long-Term Care ⁴	Health
Infrastructure	Infrastructure
Economic Development, Job Creation and Trade	Economic Development
Indigenous Affairs	Indigenous Affairs
Education	Education
Labour ⁵	Labour
Treasury Board Secretariat	Treasury Board

1. Ministries are presented in descending order based on the total historical volume of their activities under the *Environmental Bill of Rights, 1993*.

2. The Technical Standards and Safety Authority posts notices related to the *Technical Standards and Safety Act, 2000*, on behalf of the Ministry of Government and Consumer Services.

3. On October 21, 2019, the Ministry of Tourism, Culture and Sport was renamed the Ministry of Heritage, Sport, Tourism and Culture Industries. As this occurred after the end of the 2018/19 reporting year (i.e., after March 31, 2019), our findings in this report apply to the former Ministry of Tourism, Culture and Sport.

4. On June 20, 2019, the Ministry of Health and Long-Term Care was split into the Ministry of Health and the Ministry of Long-Term Care. As this occurred after the end of the 2018/19 reporting year (i.e., after March 31, 2019), our findings in this report apply to the former Ministry of Health and Long-Term Care.

5. On October 21, 2019, the Ministry of Labour was renamed the Ministry of Labour, Training and Skills Development. As this occurred after the end of the 2018/19 reporting year (i.e., after March 31, 2019), our findings in this report apply to the former Ministry of Labour.

about the Act. The Ministry works with the other ministries, providing education and advice and sharing information related to the Act. However, in 2018/19 we identified several significant issues with the way the Environment Ministry carried out its responsibilities under the Act.

In contrast, the Treasury Board Secretariat and the ministries of Economic Development and Indigenous Affairs ministries fully met their responsibilities under the Act. With the exception of needing to update its Statement of Environmental Values, the Transportation Ministry met all of its responsibilities. The Agriculture, Government

Services and Infrastructure ministries met almost all of their responsibilities.

Our specific findings are as follows:

Statements of Environmental Values

- **Statements of Environmental Values of 10 of the 15 prescribed ministries are not up-to-date, and therefore ministries may not be considering current priorities, including the government's priority to address climate change, each time they make a decision that affects the environment.** A Statement of Environmental Values (Statement) is a document required under the Act

Figure 2: Summary of Ministry Report Card Results for the 2018/19 Reporting Year under the *Environmental Bill of Rights, 1993*

Prepared by the Office of the Auditor General of Ontario

Legend: ○ Met criteria ● Partially met criteria ● Did not meet criteria

Prescribed Ministry ¹	Statement of Environmental Values		Use of the Environmental Registry								Applications for Review and Applications for Investigation		
	Up-to-Date	Considered	Notice is Given	Comment Period Extended Based on Act	Proposals for PARs ² are Informative	Proposals for Instruments ³ are Informative	Notice of Decision is Prompt	Decisions for PARs ² are Informative	Decisions for Instruments ³ are Informative	Proposals are Up-to-Date	Ministry Reviews to Extent Warranted	Ministry Investigates to Extent Warranted	Ministry Meets Timelines
Ministries with a High Level of Activity Under the Act													
Environment	●	○	●	●	○	●	●	○	○	●	●	○	●
Natural Resources	●	○	○	○	●	○	●	○	●	●	○	○	○
Ministries with a Medium Level of Activity Under the Act													
Municipal Affairs	●	○	○	○	●	●	●	○	●	○	●	—	○
Energy and Mines	○	○	○	●	●	○	●	○	●	●	—	—	—
Government Services	●	○	○	○	○	●	○	○	○	○	—	—	—
Agriculture	○	○	○	○	○	n/a	○	○	n/a	○	○	n/a	●
Transportation	●	○	—	—	—	n/a	○	○	n/a	○	—	n/a	—
Ministries with a Low Level of Activity Under the Act													
Tourism	●	—	—	—	—	n/a	—	—	n/a	○	n/a	n/a	n/a
Health	●	—	—	—	—	n/a	—	—	n/a	—	—	n/a	—
Infrastructure	●	—	○	○	○	n/a	—	—	n/a	●	n/a	n/a	n/a
Economic Development	○	○	○	○	○	n/a	—	—	n/a	○	n/a	n/a	n/a
Indigenous Affairs	○	—	○	○	○	n/a	○	○	n/a	—	n/a	n/a	n/a
Education	●	—	—	—	—	n/a	—	—	n/a	—	—	n/a	—
Labour	●	—	—	—	—	n/a	—	—	n/a	—	n/a	n/a	n/a
Treasury Board	○	—	—	—	—	n/a	—	—	n/a	—	n/a	n/a	n/a

— The ministry did not execute any responsibilities under this category in this reporting year

n/a The ministry is not prescribed for this category

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

1. Ministries are presented in descending order based on the total historical volume of their activities under the *Environmental Bill of Rights, 1993*.
2. Policies, acts and regulations.
3. Instruments include permits, licences, approvals, authorizations, directions and orders.

that explains how the Ministry will apply the purposes of the Act when making decisions that might significantly affect the environment, and guides ministry staff in how to integrate its environmental values with social, economic and scientific considerations each time they make an environmentally significant decision. The government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environment plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

Using the Substantially Equivalent Section to Not Give Notice and Consult through the Environmental Registry

- **The Ontario Divisional Court concluded that the Environment Ministry should not have relied on the "substantially equivalent" exception provision of the Act when it repealed the cap and trade program.** In July 2018, the Environment Ministry revoked the Cap and Trade Program Regulation without first giving notice on the Environmental Registry or undertaking public consultation under the Act. The Ministry instead posted an "exception notice" on the Registry to inform the public of the decision, indicating that the recent Ontario election was a substantially equivalent process of public consultation. In October 2019, the majority of the Ontario Divisional Court concluded that the government's recent election did not relieve it of its obligation to follow the public consultation requirements set out in the Act, but did not declare the regulation unlawful.

Extending the Time to Comment on Proposals on the Environmental Registry

- **Although the Environment Ministry and Energy and Mines Ministry provided the minimum 30 days for the public to comment on three significant proposals, providing the public with additional time may have enabled the Ministry to have received more informed feedback.** The Act requires prescribed ministries to provide a minimum of 30 days for the public to comment on environmentally significant proposals, but also requires ministries to consider providing more time "to permit more informed public consultation" on proposals based on the complexity of the matters, the level of public interest, or other factors. To meet the intent of the Act to permit informed public consultation—and to support better government decisions by ensuring ministries receive and consider informed feedback before making a decision—comment periods should be long enough to enable interested individuals to become aware of the proposal, have time to fully review and evaluate their content, and still have time to prepare and submit feedback by the submission deadline. The ministries posted three significant and complex proposals in 2018/19 that could have benefited from having more time to enable more informed consultation:
 - the Environment Ministry's proposal for the *Cap and Trade Cancellation Act, 2018*;
 - the Environment Ministry's proposal to change the regulation of sulphur dioxide emissions from petroleum facilities; and
 - the Energy and Mines Ministry's proposal to repeal the *Green Energy Act*.

Providing Informative Proposal Notices on the Environmental Registry

- **Many proposal notices posted on the Environmental Registry did not provide all**

of the information needed for the public to fully understand and to provide informed comments on the proposal. Eleven (or 52%) of the 21 proposal notices for policies, acts and regulations posted by the Natural Resources, Municipal Affairs, and Energy and Mines ministries in 2018/19 did not adequately describe important aspects of the proposal, such as the environmental implications of the proposal. Similarly, 53 (or 71%) of the 75 proposal notices we reviewed for permits and approvals posted by the Environment, Municipal Affairs, and Government Services ministries in 2018/19 did not adequately describe important aspects of the proposal. For example, in 76% of the proposals that we reviewed that were posted by the Technical Standards and Safety Authority (under the Government Services Ministry) to approve a variance from the Liquid Fuels Handling Code, the Authority did not explain which environmental and safety standards would not have to be met or why. In these cases, Ontarians were not given the full information needed to understand and provide informed input on the proposals.

Providing Prompt Notice of Decisions on the Environmental Registry

- **An average of six months was taken to notify the public of 57% of environmentally significant decisions that we reviewed made by four ministries.** The Act requires ministries to give notice “as soon as reasonably possible” after they have passed an act, filed a regulation, implemented a policy, or decided to issue or revoke a permit, licence or approval. Prompt notice is important for transparency and for the public’s right to appeal some permits and approvals, which is triggered by the posting of a decision notice. Several ministries—including the Natural Resources, Municipal Affairs, and Energy and Mines ministries—have adopted a service

standard to post decision notices within two weeks of making a decision. In 2018/19, these ministries, plus the Environment Ministry, collectively took more than two weeks to inform the public of 57% of their decisions that we reviewed. For example, the Natural Resources Ministry took over four years to post a decision notice about a Fisheries Management Plan.

Providing Informative Decision Notices on the Environmental Registry

- **Thirty-nine percent of decision notices for permits and approvals by the Natural Resources, Municipal Affairs, and Energy and Mines ministries that we reviewed did not provide all of the information necessary for the public to fully understand what decision they made.** The Energy and Mines Ministry was particularly deficient: 76% of its decision notices for permits and other approvals that we reviewed did not include details of its decision, nor links to the final (issued) permits or approvals. For example, its decision notices for issued mineral exploration permits often stated “permit issued,” but did not include any details that would allow readers to determine whether the permits were issued as proposed or with changes.

Keeping Proposals on the Environmental Registry Up-to-Date

- **A total of 165 proposal notices remained open on the Environmental Registry for over two years without an update or decision.** For the Registry to be an accurate and reliable source of information for Ontarians, proposal notices on it must be kept up to date. However, in some cases ministries abandon, transfer responsibility for, or make decisions about proposals without posting a decision notice on the Registry, or, in other cases, proposals remain under active consideration

for years, but ministries do not update the proposal notices to let the public know that the proposal is still being considered. As of March 31, 2019, there were 165 proposal notices that had been on the Registry for two years or more with no update or decision notice. The Natural Resources Ministry, the Environment Ministry and the Energy and Mines Ministry were responsible for the majority of these notices (see **Figure 3**). Almost one-third of these notices were originally posted over 10 years ago; for example, the Environment Ministry has not updated its proposal for load reduction targets for pollutants in Lake Superior since it was posted in 1996.

Responding to Applications for Review

- **The Environment Ministry did not, to support its conclusion that a review of the regulation of industrial emissions of nitrogen dioxide and fine particulate matter was not necessary, provide evidence that the current regulatory framework sufficiently protects against environmental harm.** An environmental law charity asked the Environment Ministry to review its air standard for nitrogen dioxide, noting that the provincial standard is far less restrictive than the federal standard, and to develop a standard for industrial emissions of fine particulate matter. The applicant cited evidence that human exposure to these contaminants has cardiovascular, respiratory and other health impacts, as extreme as premature death. In denying the requested review, the Ministry did not provide evidence that the provincial standards are sufficient to protect against harm from nitrogen dioxide and fine particulate matter.
- **The Municipal Affairs Ministry did not, to support its conclusion that a review of the regulation of septic systems was not necessary or its conclusion that a review of the**

Figure 3: Proposal Notices That Had Been on the Environmental Registry for Over Two Years without a Decision or Update by Ministry as of March 31, 2019

Source of data: Environmental Registry

Ministry	# of Notices	% of Ministry's Total Open Proposal Notices
Natural Resources	92	40
Environment	44	6
Energy and Mines	26	19
Infrastructure	2	40
Municipal Affairs	1	2
Total	165	

rules for “habitat offsets” was not necessary, provide evidence that the current regulation and rules sufficiently protect against environmental harm. Two associations asked the Municipal Affairs Ministry to review the regulation of septic systems, and specifically, the need for stronger rules related to the inspection, maintenance and record-keeping of septic systems. There are over one million septic systems in Ontario, and the failure of any one of these systems can release untreated human sewage into the environment. In denying the requested review, the Ministry did not provide evidence that the current regulation of septic system is sufficient to protect against environmental harm of malfunctioning septic systems polluting water. In another case, two Ontario residents asked the Ministry to review the land use planning rules for habitat offsets for species of special concern. A habitat offset is replacement habitat created to compensate for the destruction of an original habitat in order to develop it. Habitat destruction is a significant threat to the survival of species. The applicants stated that the current rules for habitat offsets are not effective. The Ministry denied the request on the basis that it had reviewed the Provincial Policy Statement

in 2014, but did not provide evidence that the review had specifically examined the issue of habitat offsets, nor did it provide evidence that the existing regulatory framework is sufficient to protect the habitat of species of special concern when an offset habitat is created.

Meeting Timelines for Applications for Review

- **The Environment Ministry has not completed four of its nine applications for review by the date promised, leaving applicants in one case waiting more than nine years for a review to be completed.**

For four applications for review that were not completed as of March 31, 2019, the Environment Ministry missed the original deadline it told the applicants it would meet for completing the review, provided a revised deadline, which it then also did not meet, and has not provided a new deadline. These ongoing reviews are of: the Act itself (ongoing for over nine years); the rules governing the siting of landfills (ongoing for over six years); and two reviews related to pesticide use on golf courses (ongoing for over two years). Applications for review are used by the public to ask the government to better protect the environment. When a ministry agrees to undertake a review, the Act requires the ministry to complete the review “within a reasonable time.”

This report contains 34 recommendations, consisting of 42 actions, to address our findings.

OVERALL ENVIRONMENT MINISTRY RESPONSE

The Ministry of the Environment, Conservation and Parks is committed to preserving and protecting clean air, land, water, species at risk and their habitat, tackling climate change, and managing Ontario’s parks and conservation reserves, now and for future generations.

We are also committed to transparency and accountability—we recognize the importance

of consulting with the public on decisions that affect the environment, and we are committed to educating the public on their rights under the *Environmental Bill of Rights, 1993* (EBR).

We thank the Auditor General of Ontario and her team for their report and insights as to how we can improve our activities around the *Environmental Bill of Rights* and public participation in decisions about the environment.

The Ministry strives to provide overall leadership on environmental matters by modernizing the Environmental Registry to facilitate public engagement, fully meeting our obligations under the EBR and coordinating efforts with other ministries. As of April 1, 2019, the Ministry took on additional responsibilities under the Act, including providing education, outreach and training to the public.

Specifically, we are working diligently to complete applications for review in a prompt timeframe, and ensure information published on the registry is clear, accessible, accurate and timely.

We will continue to engage the people of Ontario in environmental decision-making processes including ongoing consultation on our Made-in-Ontario Environment Plan to help protect our air, land and water, address litter and reduce waste, support Ontarians to continue to do their share to reduce greenhouse gas emissions, and help communities and families prepare for climate change.

2.0 Background

2.1 Overview of the *Environmental Bill of Rights, 1993*

The *Environmental Bill of Rights, 1993* (Act) recognizes that the provincial government has the primary responsibility for protecting the natural environment and the people of Ontario have the

right to participate in government decisions about the environment with the right to hold the government accountable for those decisions. The purposes of the Act are to:

- protect, conserve and, where reasonable, restore the integrity of the environment;
- provide for sustainability of the environment; and
- protect the right of Ontarians to a healthful environment.

The Act and its two regulations set out a number of requirements and rights that work together to help meet these purposes. These include:

- requirements for 15 ministries (the “prescribed ministries” in **Figure 1**) to develop and consider Statements of Environmental Values when making environmentally significant decisions;
- requirements for prescribed ministries to post on the Environmental Registry website proposed policies, acts, regulations and “instruments” (permits, licences and other approvals and orders) that are environmentally significant, and to consult on these proposals;
- the right of Ontarians to submit applications to a prescribed ministry asking it to review existing laws, policies or regulations, or the need for new ones in order to protect the environment (“applications for review”);
- the right of Ontarians to ask a ministry to investigate alleged contraventions of prescribed environmental laws (“applications for investigation”); and
- the right of Ontarians to seek permission to appeal (i.e., challenge) government decisions on certain permits, approvals and orders, the right to sue for harm to the environment or a public resource, and the right to employee protection for employees from reprisals from employers for exercising their environmental rights (i.e., “whistleblower” protection).

The Environment Ministry administers the Act’s two regulations that determine which ministries are subject to the Act (see **Appendix 1**), which

acts are subject to the Act (see **Appendix 19**), and which permits or other approvals are subject to the Act (see **Appendix 20**). The Ministry periodically makes amendments to these regulations and posts notice of changes on the Environmental Registry.

2.2 Legislative Changes in 2018/19

On December 6, 2018, the Legislative Assembly passed the *Restoring Trust, Transparency and Accountability Act*, which transferred some of the responsibilities of the former Environmental Commissioner of Ontario (ECO) to the Office of the Auditor General of Ontario. Our Office will now report annually on the operation of the Act. As well, we may review the government’s progress on activities to promote energy conservation and reduce greenhouse gas emissions, and will report on any other matters our Office considers appropriate. The *Restoring Trust, Transparency and Accountability Act* came into force on April 1, 2019.

With the transfer of responsibilities, the Act continues to be upheld by an independent, non-partisan Officer of the Legislative Assembly, now in the person of the Auditor General. Additionally, every power possessed by the Auditor General in carrying out her functions under the *Auditor General Act* now extends to her oversight of the Act (including, for example, the power to access all the information and records she needs to complete her audits).

The Auditor General appointed the first Commissioner of the Environment as part of our expanded responsibilities. The Commissioner of the Environment works as an Assistant Auditor General and reports to the Auditor General.

All public participatory rights and ministry obligations under the Act remain the same, with two exceptions:

- Beginning April 1, 2019, members of the public must submit applications for review and investigation directly to the ministry they are requesting carry out the review or investigation. Ministries must then send to

the applicants and our Office a copy of their decision to undertake or deny the application and their final decision summary of any undertaken review or investigation. Our Office is responsible for assessing the ministries' handling of the applications. (Prior to the transfer of responsibilities, members of the public submitted their applications to the former ECO, who then sent them to the ministry involved. Ministries were required to send to the applicants and the ECO a copy of their decision to undertake or deny the application and their final decision summary of any undertaken review or investigation.)

- The Environment Ministry is now responsible for educating the public about the Act, and posting notices of appeals and court actions on the Environmental Registry. These were both previously the responsibility of the ECO.

2.3 Statements of Environmental Values

The Act requires each prescribed ministry to develop and publish a Statement of Environmental Values (Statement). These Statements, which can be found on the Environmental Registry (see **Section 2.4**), are how ministries inform the public about their environmental responsibilities and values. Seven ministries (almost half of the prescribed ministries) have proposed or committed to conduct periodic reviews of their Statement every five years and to make any necessary amendments, which would ensure they reflect current responsibilities, priorities and values.

Ministries must consider their Statements each time they make a decision that might significantly affect the environment. While ministries are not required to prioritize environmental values over other values, the process of considering their Statements helps to make ministries more deliberate and transparent about their decisions when conflicting values compete.

2.4 The Environmental Registry

The Environmental Registry is a website that provides the public with access to information about environmentally significant proposals put forward by prescribed ministries. It also facilitates public engagement in the government's environmental decision-making. Through the Registry:

- Prescribed ministries post notices about environmentally significant policies, acts, regulations and instruments (permits and other approvals) they are proposing to put into effect or issue. (Ministries are not required to post notices for environmentally significant proposals where exceptions to the posting requirement apply. Some examples of exceptions include proposals that are predominantly financial or administrative in nature, or for permits and approvals that represent a step to implement a decision under the *Environmental Assessment Act*. They are also not required to post notices for environmentally significant measures found in budget bills.) See **Figure 4** for a description of the types of notices that are posted on the Registry.
- Prescribed ministries provide the public a minimum of 30 days to comment on proposals, or longer in cases where the matter is complex, the level of public interest is high or other factors warrant more time for informed public input. Notices for policies, acts and regulations are often of broad interest to all Ontarians, while notices for site-specific permits to authorize activities or orders to require actions are typically of greatest interest to nearby residents who may be directly impacted by the activities.
- The public can submit comments, and the ministries consider these comments when making a decision on a proposal.
- Prescribed ministries post notices of their decisions on whether or not to proceed with their proposals as soon as reasonably possible

Figure 4: Types and Numbers of Notices Posted on the Environmental Registry, 2018/19Source of data: *Environmental Bill of Rights, 1993* and Environmental Registry

Type of Notice	Requirements for Posting on the Environmental Registry under the <i>Environmental Bill of Rights, 1993</i> ¹	# of Notices Posted on the Environmental Registry in 2018/19
Policy, act or regulation notice	Ministries are required to give notice of and consult on: - environmentally significant proposals for policies (s. 15); - environmentally significant proposals for acts (s. 15); and - environmentally significant proposals for regulations made under a prescribed act (s. 16; see Appendix 19 for prescribed acts). Ministries must post notice of their decisions on these proposals, including an explanation of the effect of public comments (s. 36)	46 proposal notices 49 decision notices ²
Instrument notice	Five ministries must give notice of and consult on all proposals to issue, amend or revoke an instrument that is classified under Ontario Regulation 681/94 (s. 22; see Appendix 1 for the five ministries subject to this requirement and Appendix 20 for prescribed instruments). Ministries must post notice of their decisions on all instrument proposals, including an explanation of the effect of public comments (s. 36).	1,455 proposal notices 1,637 decision notices ²
Appeal notice	The Environment Ministry ³ must post notices to inform the public of any appeal of an instrument, including both direct appeals (where such right is given by a law other than the <i>Environmental Bill of Rights</i>) and applications to seek leave to appeal by third parties under the <i>Environmental Bill of Rights</i> (s. 47).	8 direct appeals and 5 applications for leave to appeal
Exception notice	In two circumstances, a ministry can forgo consulting the public on a proposal in the usual way, but it must instead post an “exception notice” to inform the public of the decision and explain why it did not post a proposal notice and consult the public. The two circumstances are: - where the delay in waiting for public comment would result in danger to public health or safety, harm or serious risk to the environment, or injury or damage to property (s. 29); and - where the proposal will be, or has already been, considered in another public participation process that is substantially equivalent to the public participation process required under the <i>Environmental Bill of Rights</i> (s. 30).	6
Information notice	This is the only notice type that is not required. Ministries can choose to use the Environmental Registry to share information that does not fall into any of the above notice categories—for example, a ministry’s annual report—as well as seek the public’s input on such matters. Ministries also use information notices to fulfill requirements of other laws to provide information to the public (s. 6).	157

1. The section of the *Environmental Bill of Rights, 1993*, that makes the requirement is indicated in parentheses at the end of each stated requirement.

2. Includes decisions on proposal notices posted both in 2018/19 and in an earlier reporting year.

3. The responsibility to post appeal notices was transferred to the Environment Ministry as of April 1, 2019; these notices were previously posted by the Environmental Commissioner of Ontario.

after making a decision; these notices include an explanation of how the public comments affected the final decision.

The Environment Ministry is responsible for operating and maintaining the Environmental Registry. In 2016, the Ministry began modernizing the Environmental Registry to make it easier for the

public to understand and navigate. This work was completed in April 2019.

Since the modernized Registry was not yet fully operational for all notice types during our reporting year of April 1, 2018, to March 31, 2019, reference to Environmental Registry notices in this report

refer to notices as they were posted on the old Registry (unless otherwise stated).

2.5 Applications from Ontario Residents to Ministries Requesting a Review or Investigation

The Act gives Ontarians the right to file an application to a prescribed ministry asking it to:

- review an existing law, policy, regulation or instrument (such as a permit or approval) or review the need to create a new law, policy or regulation in order to protect the environment (“application for review”); and
- investigate an alleged contravention of an environmental law (“application for investigation”).

There must be at least two people making an application. Applicants can act on their own behalf as individuals or as representatives of organizations or corporations. Applicants can range from community residents to students to environmental activists to not-for-profit organizations to corporations or industry groups. Ministries that receive an application must consider the request in accordance with the requirements of the Act, determine whether to undertake or deny the requested review or investigation, and provide a notice of its decision with the reasons to the applicants and our Office. When a ministry agrees to undertake a review or investigation, it must also provide a notice of the outcome of that review or investigation to the applicants and our Office.

2.5.1 Applications for Review

The Act prescribes nine ministries to accept applications for review (see **Appendix 1**). Specific laws must be prescribed under Ontario Regulation 73/94 in order for them and their regulations to be subject to applications for review (see **Appendix 19**). Similarly, permits and other approvals must be prescribed under Ontario Regulation 681/94 to be subject to applications for review (see **Appendix 20**).

The Act directs ministries to consider the following factors to determine if a requested review is warranted:

- the potential for environmental harm if the ministry does not do the review;
- whether the government already periodically reviews the matter;
- any relevant social, economic, scientific or other evidence;
- the staffing and time needed to do the review; and
- how recently the ministry made or reviewed the relevant law, policy, regulation or instrument, and whether the ministry consulted the public when it did so.

The number of applications submitted varies widely from year to year. Over the past five years, the average number of applications per year has been 12, and ministries have agreed to undertake 31% of the requested reviews (see **Figure 5**). Ministries concluded (denied or completed) 17 applications for review in 2018/19 (see **Figure 6**).

2.5.2 Applications for Investigation

Applications for investigation are a way for members of the public to help ensure that the government upholds its environmental laws. Ontarians can formally request an investigation if they believe that someone has broken an environmental law. Generally, members of the public make this request when they believe that the government is not doing enough—or anything—about a problem.

Ontarians can request an investigation of an alleged contravention of any of 19 different prescribed laws (see **Appendix 19**), or of a regulation or prescribed instrument (e.g., permit or other type of approval) under those laws. To date, most of the public’s requests for investigation have been made under the *Environmental Protection Act*.

A minister has a duty to investigate all matters raised in an application for investigation to the extent the minister considers necessary. A minister is not required to investigate where an application is

Figure 5: Applications for Review by Reporting Year Received and the Ministries' Decision to Undertake or Deny, 2014/15–2018/19

Prepared by the Office of the Auditor General of Ontario

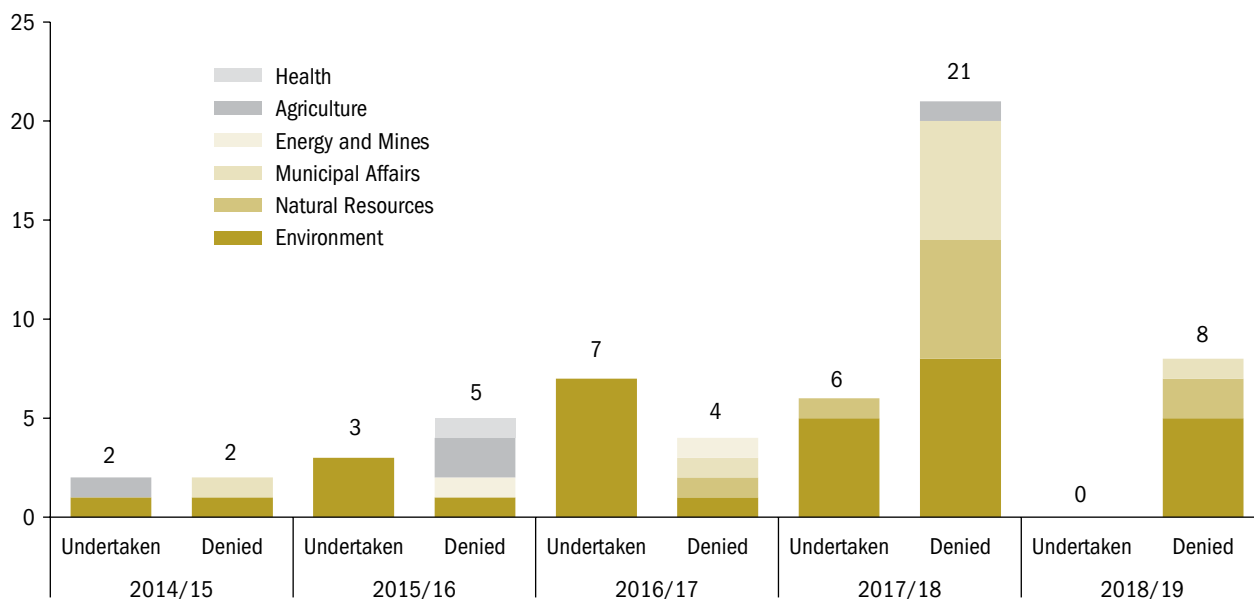


Figure 6: Applications for Review Concluded¹ in 2018/19

Prepared by the Office of the Auditor General of Ontario

Ministry ²	Applications Submitted in 2018/19		Applications Submitted in Previous Years		Total Applications Concluded in 2018/19
	Denied	Undertaken	Denied	Undertaken	
Environment	5	0	2	2	9
Natural Resources	2	0	2	0	4
Municipal Affairs	1	0	2	0	3
Agriculture	0	0	0	1	1
Total	8	0	6	3	17

1. An application has been “concluded” when the ministry has either (a) decided not to undertake the requested review (denied the application) and given notice of its decision to the applicants, or (b) decided to undertake the requested review, completed its review and given notice of the outcome of its review to the applicants.

2. In cases where an application is sent to more than one ministry, it is counted as a separate application for each ministry.

frivolous or vexatious, the alleged contravention is not serious enough to warrant an investigation, or the alleged contravention is not likely to cause harm to the environment. The minister is also not required to duplicate an ongoing or completed investigation.

Similar to applications for review, the number of applications for investigation submitted varies

widely from year to year. Over the past five years, the average number of applications per year has been eight, and ministries have agreed to undertake 46% of the requested investigations (see **Figure 7**). Ministries concluded 11 applications for investigation in 2018/19 (see **Figure 8**).

Figure 7: Applications for Investigation by Reporting Year Received and the Ministries' Decision to Undertake or Deny, 2014/15–2018/19

Prepared by the Office of the Auditor General of Ontario

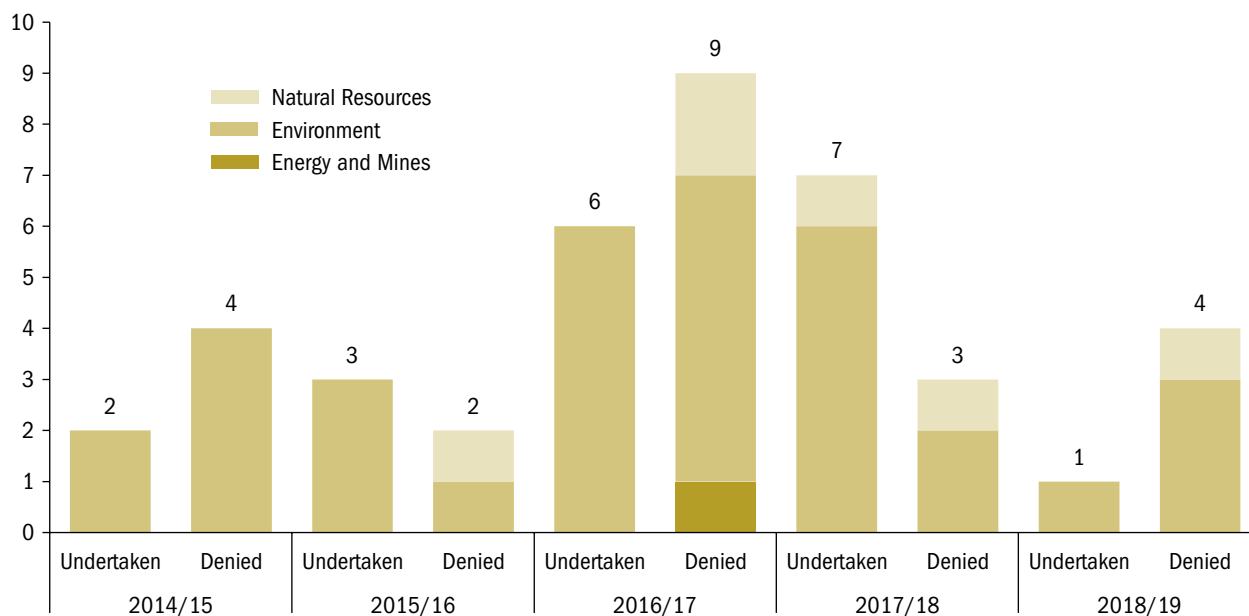


Figure 8: Applications for Investigation Concluded¹ in 2018/19

Prepared by the Office of the Auditor General of Ontario

Ministry ²	Applications Submitted in 2018/19		Applications Submitted in Previous Years		Total Applications Concluded in 2018/19
	Denied	Undertaken	Denied	Undertaken	
Environment	3	1	0	4	8
Natural Resources	1	0	1	1	3
Total	4	1	1	5	11

1. An application has been “concluded” when the ministry has either (a) decided not to investigate (denied the application) and given notice of its decision to the applicants, or (b) decided to investigate, completed its investigation and given notice of the outcome of its investigation to the applicants.

2. In cases where an application is sent to more than one ministry, it is counted as a separate application for each ministry.

2.6 The Right to Appeal Decisions about Permits, Orders, Licenses and Other Approvals

Many laws provide individuals and companies with a right to appeal government decisions affecting them, such as a decision to deny or amend permits and other approvals that they applied for or had previously obtained. A few laws also give other people (“third parties”) the right to appeal ministry decisions about instruments (permits, orders,

licenses and other approvals) issued to others (for example, to appeal the issuance of a renewable energy approval under the *Environmental Protection Act*). The Act expands on these rights by allowing broader third-party appeal rights.

The Act allows any resident of Ontario to “seek leave to appeal” (i.e., permission to challenge) decisions on many types of instruments. For example, a member of the public could use this right to challenge a decision by the Environment Ministry to

issue an approval for an industrial facility to operate or a permit to take water.

Ontario residents who wish to appeal a ministry's decision on a prescribed instrument must submit an application for leave to appeal to the appropriate appellate body (typically the Environmental Review Tribunal) within 15 days of the decision being posted on the Environmental Registry. To be granted leave to appeal, the applicant must successfully demonstrate to the appellate body that "there is good reason to believe" that the decision was not reasonable and that it could result in significant harm to the environment. If an applicant is granted leave to appeal, the instrument decision is "stayed" (put on hold), and the matter can proceed to a hearing, after which the appellate body will make a decision.

The number of applications for leave to appeal varies from year to year. Over the past 10 years, Ontarians have, on average, submitted five applications for leave to appeal each year, and have been granted leave to appeal 21% of the time. In 2018/19, members of the public filed five new applications for leave to appeal under the Act. These applications challenged a permit for a concrete company to take water, an environmental compliance approval for a waste disposal site, an approval for an asphalt plant, and two approvals for a poultry processing facility. Two of the five applications—those related to the approvals for a waste disposal site and an asphalt plant—were denied. Decisions on the other three applications were pending as of March 31, 2019.

2.7 Lawsuits and Whistleblower Protection

The Act provides rights for Ontarians to take court action against anyone harming a public resource or to seek damages for environmental harm caused by a public nuisance. The Act also provides protection for employees ("whistleblowers") who suffer reprisals from their employers for exercising their environmental rights or for complying with, or

seeking the enforcement of, environmental rules. The Ontario Labour Relations Board received and closed one case related to the Act in 2018/19, which is the third case in the last five years.

3.0 Review Objective and Scope

Our review objective was to assess whether the 15 ministries prescribed under the *Environmental Bill of Rights, 1993* (Act) carried out their duties during the 2018/19 reporting year (April 1, 2018 to March 31, 2019) in accordance with the requirements and purposes of the Act and its regulations.

In planning our work, we identified the criteria we would use to evaluate ministry performance for each of their responsibilities under the Act. These criteria were established based on the requirements of the Act and best practices required for a ministry to fulfill its obligations in light of the Act's purposes. These criteria are outlined in **Appendix 17**. Senior management at each prescribed ministry reviewed and agreed with our review objective and associated criteria.

We conducted our review from April 2019 to October 2019. We obtained written representation from senior management at each prescribed ministry that, effective November 12, 2019, they had provided us with all the information they were aware of that could significantly affect the findings or the conclusion of this report.

Our work involved discussions with ministry staff at the Environmental Bill of Rights Office within the Environment Ministry, as well as staff at other prescribed ministries. We reviewed:

- ministries' measures to update their Statements of Environmental Values (Statements), as well as their documentation that showed how they considered their Statements for all decisions on policies, acts, regulations and select instruments;

- all notices for policies, acts and regulations posted on the Environmental Registry in 2018/2019, as well as a random sample of 25 instrument proposal notices and 25 instrument decision notices from each ministry that posts instrument notices;
- the Environmental Registry to identify all proposal notices that were posted more than two years earlier without an update or decision as of March 31, 2019;
- all relevant documentation for all applications for review and applications for investigation that ministries concluded—either denied or completed—in 2018/19 (this included reviewing the applicable laws, policies and regulations, as well as key scientific studies, reports and research relevant to the application subject, as appropriate); and
- the status of all applications for review where the ministry had agreed to undertake the review but had not yet delivered a final decision as of March 31, 2019.

We conducted our work and reported on the results of our examination in accordance with Canadian Standards on Assurance Engagements (CSAE) 3001—Direct Engagements and CSAE 3531—Direct Engagements to Report on Compliance issued by the Auditing and Assurance Standards Board of the Chartered Professional Accountants of Canada. This included obtaining a limited level of assurance on the compliance by all prescribed ministries with the *Environmental Bill of Rights, 1993* (the Act) for the period of April 1, 2018, to March 31, 2019. The interpretation of the significant provisions of the Act are described in **Appendix 17**.

Compliance with the Act is the responsibility of management. Management is also responsible for such internal control as management determines necessary to enable a prescribed ministry's compliance with the Act.

The Office of the Auditor General of Ontario applies the Canadian Standards of Quality Control and, as a result, maintains a comprehensive quality control system that includes documented poli-

cies and procedures with respect to compliance with rules of professional conduct, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Professional Conduct of the Chartered Professional Accountants of Ontario, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

4.0 Ministry of the Environment, Conservation and Parks

4.1 Overview

The Ministry of the Environment, Conservation and Parks has a high level of activity under the Act. The environment is central to its mandate and therefore the Ministry uses the Environmental Registry on a daily basis. See **Appendix 2** for the Ministry's report card for compliance with the Act. The Ministry was responsible for nine applications for review and eight applications for investigation concluded in 2018/19 (see **Appendix 21, Sections 1.1–1.9 and 2.1–2.8**).

4.2 Statement of Environmental Values Needs Updating

In 2017, the former Ministry of the Environment and Climate Change posted a proposal notice to update its Statement, which was last substantially updated in 2008, to incorporate the Ministry's new values, including to reduce greenhouse gas emissions, confirm that it must consider its Statement for permits, approvals and orders (in addition to policies, acts and regulations), and commit to reviewing its Statement every five years. However, the Ministry's Statement was never officially updated to reflect these changes.

Further, in June 2018, the Ministry was assigned new responsibilities, including the conservation of species at risk and the management of protected areas. The Ministry has not updated its Statement to include these new responsibilities. The Statement also does not provide Ministry staff with specific principles to guide decision-making related to them, such as values like the “conservation of biodiversity” that are found in the Statement of the Natural Resources Ministry, which was formerly responsible for these program areas.

The government’s November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario’s environmental plan, including to improve government’s ability to consider climate change when making decisions and “make climate change a cross-government priority.”

RECOMMENDATION 1

So that the Ministry of the Environment, Conservation and Parks’ Statement of Environmental Values (Statement) reflects the Ministry’s current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its new responsibilities.

MINISTRY RESPONSE

The Ministry agrees that its Statement of Environmental Values (Statement), last updated in 2008, requires an update to reflect current values, priorities and responsibilities. The Ministry has initiated the process to update its Statement, which will be informed by the government’s Made-In-Ontario Environment Plan.

4.3 The Ontario Divisional Court Concluded that the Ministry Should Not Have Relied on the “Substantially Equivalent” Exception Provision to Public Consultation When Ending its Cap and Trade Program

On July 3, 2018, the Environment Ministry took the first step to end Ontario’s cap and trade program through the passing of O. Reg. 386/18, which revoked the Cap and Trade Program Regulation (O. Reg. 144/16) under the *Climate Change Mitigation and Low-carbon Economy Act, 2016*. Three days after the Ministry revoked the Cap and Trade Program Regulation, it posted an “exception notice” on the Environmental Registry to inform the public that the government had done so.

Normally, a ministry is required to:

- Post a proposal notice on the Environmental Registry for any proposed regulation under a prescribed act that could have a significant effect on the environment.
- Include a period of at least 30 days for the public to comment on the merits of a proposed regulation before a final decision is made.
- Take every reasonable step to ensure that it considers all public comments submitted during the comment period when making a decision on the proposal.
- Post a decision notice on the Registry that explains how it considered public comments in making its decision.

The Environment Ministry’s exception notice that was posted after revoking the Cap and Trade Program Regulation stated: “...the Minister was of the opinion that the recent Ontario election was a process of public participation that was substantially equivalent to the process required under [the Act] and that the environmentally significant aspects of the regulation were considered during that process because the government made a clear election platform commitment to end the cap and

trade program.” Under the Act, exceptions to the legal requirement to post proposals can be made if a Minister holds the opinion that “the environmentally significant aspects of a proposal for a policy, Act, regulation or instrument have already been considered in a process of public participation, under this Act, under another Act or otherwise, that was substantially equivalent to the process required in relation to the proposal under this Act.”

The legal question of whether the Environment Minister could rely on a recent general election as the basis for using the “substantially equivalent process” exception was the subject of a legal proceeding initiated by Greenpeace. In October 2019, the majority of the Ontario Divisional Court found that the government’s recent election did not relieve it from its obligation to follow the public consultation requirements set out in the Act, but it dismissed Greenpeace’s application to declare the regulation unlawful.

An application for review related to this matter was also submitted by the Canadian Environmental Law Association in July 2018 (see **Appendix 21, Section 1.6**).

RECOMMENDATION 2

To avoid the need for and cost of legal proceedings in the future, and to engage the public in the government’s environmentally significant decision-making, we recommend that the Ministry of the Environment, Conservation and Parks consistently consult with the public in accordance with the requirements under Part II of the *Environmental Bill of Rights, 1993*.

MINISTRY RESPONSE

The Ministry is aware of and understands its obligations under Part II of the *Environmental Bill of Rights, 1993* (EBR). While the Divisional Court dismissed the application for Judicial Review commenced by Greenpeace, the Ministry has reviewed the Court’s comments about the requirements of the EBR and will continue

to ensure that the required public process is undertaken for all proposals that are environmentally significant.

4.4 More Public Consultation Time May Have Provided the Ministry with More Informed Feedback on Two Significant Proposals

For all 19 proposal notices for policies, acts or regulations that the Ministry posted on the Environmental Registry in 2018/19, the Ministry provided between 30 to 60 days for public comment, meeting the minimum of 30 days for public comment required by the Act. While it met the minimum requirements, in two of those cases—for Bill 4, *Cap and Trade Cancellation Act, 2018* and a proposal to revise the regulation of sulphur dioxide emissions from petroleum facilities—the public could have benefited from having more time to comment, given the complexity and significance of the proposals.

For every proposal posted on the Registry, the Act requires ministries to consider, based on factors set out in the Act, providing additional time beyond 30 days “to permit more informed public consultation on the proposal.” A longer comment period may be warranted in particular for proposals that are complex or of high public interest.

Generally, to meet the spirit of the Act to permit informed public consultation—and to support more informed government decisions by ensuring ministries receive and consider all feedback (which can include valuable information and perspectives)—the comment period should be sufficient to enable interested members of the public to:

- become aware of the proposal;
- fully review and evaluate the content of the proposal and any supporting materials, which can be lengthy and technical (including, in some cases, obtaining the supporting materials from the ministry); and
- prepare and submit feedback on the proposal by the submission deadline.

The two proposals where more time could have been beneficial are noted in the following sections.

4.4.1 Bill 4, *Cap and Trade Cancellation Act, 2018*

In September 2018, the Ministry posted Bill 4, *Cap and Trade Cancellation Act, 2018*, for the minimum 30 days for public comment. This proposal (which followed the earlier revocation of the Cap and Trade Program Regulation described in **Section 4.3**) formally ended Ontario's cap and trade program and significantly changed the province's approach to addressing climate change. The proposal set out details related to the wind-down of the program, such as the retirement and cancellation of cap and trade allowances and credits, compensation related to allowances and credits, and legal matters.

The details and implications of ending the province's cap and trade program, including how it may affect previously planned low-carbon programs that were to be funded out of the revenues of the cap and trade program, as well as impacts to industrial emitters that had purchased carbon credits under the program and costs to the province, were complex. The proposal was of high public interest, as evidenced by the widespread media attention that it received.

While numerous individuals (11,222) commented during the consultation period, some commenters may have benefited from having more than 30 days to review the significant implications of the proposal and to prepare detailed, informed comments. In turn, the government may have received more informed feedback.

Historically, the Ministry typically provided the public at least 45 days (and often 60 or more days) to comment where legislative changes are involved. For example, the Ministry provided the public 45 days to comment on its proposal to repeal the *Toxics Reduction Act* in 2018, and provided 95 days to comment on its proposed *Waste-Free Ontario Act* in 2015. When we asked if the Ministry had considered allowing more than

30 days to comment on the cap and trade proposal, it felt that 30 days was sufficient.

If the Ministry had posted the proposal notice on the Registry on the same day that the bill was introduced, which has been common practice, the Ministry would have been able to provide a longer comment period and benefit from more feedback.

4.4.2 Regulation of Sulphur Dioxide Emissions from Petroleum Facilities

The Ministry posted a proposal in November 2018 to revise the regulation of sulphur dioxide (SO₂) emissions from Ontario petroleum facilities, providing the minimum 30 days for public comment. The Ministry proposed to delay certain regulatory requirements intended to reduce emissions of SO₂ from flaring (the burning off of excess chemical gases) until July 2023, while proposing alternate interim measures to reduce SO₂ emissions at petroleum facilities.

This proposal was complex, requiring substantial dedicated time to review and analyze what was being proposed and its implications. The proposal was of high interest to the Aamjiwnaang First Nation, as well as a number of stakeholders—including industry and environmental groups—due to the financial and technical implications for industry and due to the serious and ongoing pollution impacts from petroleum facilities to the Aamjiwnaang First Nation and others living near Sarnia's Chemical Valley. The proposal received 13 comments.

The Ministry told us that it had determined that a 30-day comment period would be appropriate because it had already been having discussions with industry and other parties over the previous two years about SO₂ sources and impacts. However, given this proposal's complexity and significant implications, other Ontarians with whom the Ministry did not meet could have benefited from more time to review and evaluate the proposal and to prepare comments, and the government may have received more informed feedback.

RECOMMENDATION 3

So that the Ministry of the Environment, Conservation and Parks can receive informed feedback on environmentally significant proposals posted on the Environmental Registry, we recommend that the Ministry extend the comment period beyond 30 days for significant and complex proposals to provide enough time to obtain more informed input from the public.

MINISTRY RESPONSE

The Ministry acknowledges its obligation to permit informed public consultation and will continue to ensure that it meets the engagement requirements as prescribed by the *Environmental Bill of Rights, 1993* (i.e., a minimum 30-day posting). This includes consideration of posting periods beyond 30 days (subject to existing exceptions under the Act), and extending the comment period as appropriate.

4.5 Environmental Implications for 72% of the Proposals for Permits and Approvals that We Reviewed Were Not Adequately Described

Eighteen (or 72%) of the 25 proposal notices for permits and approvals posted by the Ministry on the Environmental Registry in 2018/19 that we reviewed did not provide some of the information needed to fully understand the environmental implications of the proposal.

Specifically, for nine of the 15 notices that we reviewed that proposed issuing an environmental compliance approval for sewage, waste or air emissions (i.e., approvals issued by the Ministry under the *Environmental Protection Act* to regulate polluting activities), the Ministry did not describe the potential environmental risks associated with the activity to be approved, the terms of the proposed approval, and/or how these terms of the approval would address the potential environmental risks associated.

Similarly, none of the Ministry's other nine notices that we reviewed that proposed issuing a permit to take water under the *Ontario Water Resources Act* (including two notices for Category 3 permits to take water, which pose a higher risk to the environment) explained why the Ministry proposed to issue the permit despite the risks to the environment, or how the terms and conditions of the permit would address those risks.

The omission of information made it more difficult for the public to provide informed comment on the permits and approvals (such as being able to provide input on the appropriateness of specific terms and conditions of the permits) than if the Ministry had clearly explained how the risks to the environment would be managed.

RECOMMENDATION 4

So that the Ministry of the Environment, Conservation and Parks can receive informed feedback and so that the public can comment on environmentally significant ministry proposals for permits and approvals posted on the Environmental Registry, we recommend that the Ministry describe the environmental implications of each proposed permit or approval in the proposal notice, and explain how the proposal may address those potential risks to the environment.

MINISTRY RESPONSE

The Ministry agrees that it is important to provide appropriate information in its notices to allow the public to fully understand the environmental implications of proposed instruments. The Ministry will provide further training and guidance on the content to be included in notices, including the environmental implications and how the proposal may address risks.

4.6 Over Two Weeks Taken to Give Notice for 52% of the Decisions for Permits and Approvals that We Reviewed

Several ministries have adopted a service standard to post decision notices for permits and approvals within two weeks of making a decision; the Environment Ministry has not.

The Act requires ministries to post each decision notice on the Registry “as soon as reasonably possible” after the decision is made. The purpose of this requirement is so that the public receives timely notice of decisions and the effect of public consultation, and so that the public may exercise its right to appeal decisions for permits and approvals within a reasonable time frame after they are issued. Timely notice is important for transparency and to provide accountability for the outcome of a proposal. In particular, delays in posting decision notices for permits and approvals allow individuals or companies to operate, sometimes for significant periods of time with potential impacts on the environment from their activities, before members of the public are made aware of or can appeal the issued approval.

The Ministry took more than two weeks to give notice for 13 of the 25 decisions for permits and approvals that our Office reviewed in 2018/19. Specifically, the Ministry took from 67 to 638 days to give notice of those decisions. For example, the Ministry took 303 days to post a decision notice for an environmental compliance approval for sewage, and 278 days to post a decision notice for an environmental compliance approval for air emissions.

When asked for the reason for the delay in posting decision notices, the Ministry told us the delays were due to IT issues, administrative errors, or that the reason was unclear. The Ministry told us that it has taken steps to prevent administrative errors in the future.

RECOMMENDATION 5

To give the public prompt notice of its environmentally significant decisions, we recommend that the Ministry of the Environment, Conservation and Parks:

- establish a service standard to post decision notices within two weeks of making a decision to issue or revoke a permit, licence or approval, and within two weeks from the date that a proposed act is passed, a regulation is filed, or a policy is implemented; and
- post all decision notices on the Environmental Registry as soon as reasonably possible, which should reasonably be within two weeks of making a decision to issue or revoke a permit, licence or approval, and within two weeks from the date that a proposed act is passed, a regulation is filed, or a policy is implemented.

MINISTRY RESPONSE

The Ministry is committed to posting all decision notices on the Environmental Registry as soon as reasonably possible. The Ministry will update Environmental Registry training resources to include consideration for posting decision notices on the Environmental Registry within two weeks of a decision being made.

4.7 Forty-Four Proposal Notices Were on the Environmental Registry for Over Two Years without a Decision or Update

The Ministry provided us with its internal guidance documents that established a Ministry-wide process in 2016 to address stale proposal notices and to prevent or limit future ones, directing staff to either close them with decision notices or update the proposals.

As of March 31, 2019, the Ministry had 44 proposal notices on the Environmental Registry

that were posted more than two years earlier and had not been either closed with a decision notice or updated within the last two years. Of these notices, 30 were originally posted more than 10 years earlier. They include a proposal from 1996 for a Lake Superior lakewide management plan (Stage 2: Load Reduction Targets) and a proposal from 1998 for a model sewer use bylaw. When proposal notices stay on the Registry for such long periods without a decision, the public has no way of knowing whether the Ministry is still actively considering them or has abandoned them, and if the latter, why.

When asked about the status of the Ministry's older proposal notices, the Ministry told us that it is currently reviewing the notices and plans to post decisions or updates for as many as possible by the end of 2019.

RECOMMENDATION 6

So that the Environmental Registry is a reliable source of information about the Ministry of the Environment, Conservation and Parks' decisions about the environment, we recommend that the Ministry bring and keep all of its proposal notices up to date, including posting decision notices for proposals that have been decided or that are otherwise no longer under consideration by the Ministry.

MINISTRY RESPONSE

The Ministry recognizes the importance of communicating decisions on proposals and is committed to providing timely information. As part of the modernization of the Environmental Registry, and in order to keep the Registry up to date, the Ministry is currently reviewing out-of-date proposal notices and plans to post decisions or updates imminently for as many of the remaining notices as possible.

4.8 Denial of a Request to Review Two Air Standards Did Not Provide Evidence that the Current Standards Are Adequate to Protect the Environment and Human Health

Overall, we found that the Ministry's handling of applications for review and investigation was appropriate. However, for one request, we found that the Ministry had not provided sufficient information to support its decision.

The Ministry denied an application asking it to review its air standard that limits industrial emissions of nitrogen dioxide (NO₂) and the need for an air standard to regulate industrial emissions of fine particulate matter (PM_{2.5}). The applicants raised concerns that the current regulation of these two air contaminants was inadequate to protect the environment and human health from industrial emissions of NO₂ and PM_{2.5} (see **Appendix 21, Section 1.5** for more details about the application and the Ministry's response).

The Ministry is required to determine whether the public interest warrants a requested review and then to provide a statement of reasons to explain its decision whether to undertake the review. In this case, the Ministry concluded that undertaking the requested review was not in the public interest, but did not provide evidence that the existing regulation of industrial air standards for NO₂ and PM_{2.5} does, in fact, sufficiently protect the environment and human health. In particular:

- The Ministry's response did not explain why it considers Ontario's standard for NO₂ sufficient to protect against harm to human health and the environment, particularly in light of the fact that Ontario's industrial emission standard for NO₂ (as well as its ambient air quality criterion) remains twice as high as the World Health Organization's air quality guideline for NO₂, and more than three times higher than the new Canadian Ambient Air Quality Standard for NO₂ (to come into effect

in 2020), and in light of the absence of an annual standard for NO₂ to limit long-term exposure. Short- and long-term exposure to NO₂ is associated with a range of health risks, including serious respiratory problems.

- The Ministry's response did not specify when it intends to undertake a review of NO₂ (it referred to its practice of undertaking periodic reviews of contaminants and noted that it had prioritized the NO₂ air standard for updating within its standards-setting plan, but did not state any time frame for such a review). The Ministry told us that it will propose a timeline for this update as part of a new standards setting strategy that is currently in development.
- The Ministry's response did not include how—or if—it took into account newer studies about the impacts of PM_{2.5} that have become available since it concluded in 2012 that the regulatory framework for PM_{2.5} was adequate. For example, a 2017 report by the Organization for Economic Co-operation and Development found PM_{2.5} is “the most serious pollutant globally from a human health perspective,” and is associated with adverse cardiovascular and respiratory effects and premature death. A 2016 joint report by Public Health Ontario and Cancer Care Ontario called exposure to PM_{2.5} “a significant public health concern in Ontario,” and found that it is associated with 290 to 900 cancer cases per year.

Some parts of Ontario that have been identified by the Ministry as communities with particular air pollution challenges, such as the Hamilton and Sarnia areas, have pollution levels that have exceeded the Canadian Standards for annual PM_{2.5}. Given the Ministry's acknowledgement in its decision to deny this review that the primary contributors of NO₂ and PM_{2.5} in such communities are industrial sources, a review of Ontario's air standards for industrial emissions of NO₂, and of the lack thereof for industrial emissions of PM_{2.5}, would determine whether stronger standards are needed to alleviate

existing pollution problems. Further, given the Ministry's stated approach of focusing on regulating the precursors to PM_{2.5} rather than PM_{2.5} itself (because most PM_{2.5} is formed through reactions in the air of other contaminants like NO₂, rather than being emitted directly), a review of NO₂ standards could also be an important means to indirectly address PM_{2.5} levels.

RECOMMENDATION 7

To reduce concentrations of, and harm from, air pollution from industrial sources, particularly in areas with high concentrations of pollutants, we recommend that the Ministry of the Environment, Conservation and Parks:

- review its standard for nitrogen dioxide (NO₂);
- based on the results of its review, update its standard for NO₂;
- assess the need for a standard for industrial emissions of fine particulate matter (PM_{2.5}); and
- if the assessment shows a need, establish a standard for industrial emissions of PM_{2.5}.

MINISTRY RESPONSE

The NO₂ standard has been prioritized for review. With respect to PM_{2.5}, the Ministry continues to track science related to PM_{2.5} in air and will take into account the information gathered during the upcoming federal review process for fine particulate matter.

The Ministry has a comprehensive approach for managing industrial and commercial sources of air pollutants to protect public health and the environment. Ontario's Local Air Quality Regulation has air standards for over 130 contaminants, including nitrogen oxides, suspended particulate matter, and precursors of fine particulates. These standards are periodically reviewed and updated as new scientific information becomes available.

4.9 Four of Nine Applications for Review Not Completed by the Date Promised—One Has Been Ongoing for Over Nine Years

As of March 31, 2019, the Ministry had not met its own deadlines for completing four of the Ministry's nine ongoing applications for review (see **Figure 9**). In each of these cases, the Ministry missed the original deadline it told the applicants it would meet for completing the review, and then provided a revised deadline, which it then also did not meet. The Ministry has not provided a new deadline for completing any of these reviews.

Applications for review are used by the public to ask a ministry to better protect the environment. When a ministry agrees to undertake a review, the Act requires the ministry to complete the review "within a reasonable time." The Act does not specify what a reasonable length of time to complete a review might be, as it varies from case

to case, based on the complexity of the matter and other factors (such as a need to gather scientific or technical evidence before completing the review). Ministries have typically completed a review of a discrete or site-specific environmental issue (such as a review of a company's permit), on average, within six months, and of a complex or broad topic (such as a review of a province-wide policy), on average, within three years.

RECOMMENDATION 8

To adhere to the requirements of the *Environmental Bill of Rights, 1993* to complete reviews within a reasonable time, and to give applicants a timely outcome to their applications, we recommend that the Ministry of the Environment, Conservation and Parks provide a new reasonable completion date to each applicant and to complete each review by such time.

Figure 9: Applications for Review Submitted to the Environment Ministry that Were Ongoing as of March 31, 2019

Prepared by the Office of the Auditor General of Ontario

Topic of the Application for Review	Date Received by the Ministry	Status
Review of the <i>Environmental Bill of Rights, 1993</i>	Jan 18, 2010	Did not meet completion date. Promised completion date changed multiple times, most recently changed to 2018
Review of the <i>Environmental Protection Act</i> and the Siting of Landfills	Jul 15, 2013	Did not meet completion date. Promised completion date changed from October 2017 to December 2018
Review of the Lake Simcoe Protection Plan	Jul 15, 2016	Promised to begin review in spring 2019 as part of scheduled review of the Lake Simcoe Protection Plan
Review of Water Management to Improve Climate Resiliency	Sep 8, 2016	Promised completion date was originally January 2019, changed to January 2020
Review of the Monitoring of Pesticide Use on Golf Courses	May 4, 2017	Did not meet completion date. Promised completion date was originally June 30, 2018, changed to August 2018
Review of Deadlines for Annual Pesticide Reports from Golf Courses	May 4, 2017	Did not meet completion date. Promised completion date was originally June 30, 2018, changed to August 2018
Review of Water Quality in Muskrat Lake in the County of Renfrew	Jun 23, 2017	Promised completion date of March 31, 2019 (completed June 28, 2019)
Review of a Waste Disposal Site Approval in the United Counties of Leeds and Grenville	Sep 12, 2017	Promised completion date of May 31, 2019, changed to May 2020
Review of a Waste Disposal Site Approval in the United Counties of Leeds and Grenville	Dec 7, 2017	Promised completion date of May 31, 2019, changed to May 2020

MINISTRY RESPONSE

The Ministry agrees with the importance of providing applicants with timely decisions on applications for review. Some EBR applications raise complex matters requiring an integrated, multi-faceted response by government. The Ministry is committed to concluding outstanding applications for review as soon as reasonably possible, as per the EBR. The Ministry will provide updates to the applicants as work progresses.

4.10 Summaries of All Concluded Applications Should Be Provided to Educate the Public

Providing summaries of concluded applications for review and investigation is a demonstrable means to provide public education on how the Act functions, how the public may exercise its rights, and how the ministries handle applications for review and investigation. The former Office of the Environmental Commissioner provided summaries of concluded applications for review and investigation in executing its educational responsibility under the Act before the transfer of this responsibility to the Environment Ministry. This year, we have provided summaries in **Appendix 21** for all applications for review and investigation concluded in the 2018/19 reporting year. As of April 1, 2019, the Environment Ministry is responsible for providing educational programs to the public about the Act.

RECOMMENDATION 9

As part of the Ministry of the Environment, Conservation and Parks' mandate to provide education to the public about the *Environmental Bill of Rights, 1993*, we recommend that the Ministry post summaries of all completed applications for review and applications for investigation on the Environmental Registry annually.

MINISTRY RESPONSE

The Ministry is committed to educating the public about the *Environmental Bill of Rights, 1993*, including how the Act functions, how the public may exercise its rights and how the ministries handle applications for review and investigation. The Ministry will consider the Auditor General's recommendation and will collaborate with other prescribed ministries to develop a path forward.

5.0 Ministry of Natural Resources and Forestry

5.1 Overview

The Ministry of Natural Resources and Forestry regularly uses the Environmental Registry, as it is the lead provincial body for managing Ontario's Crown lands, forests, fish and wildlife. See **Appendix 3** for the Ministry's report card for compliance with the Act. The Ministry was responsible for four applications for review and three applications for investigation concluded in 2018/19 (see **Appendix 21, Sections 1.7, 1.10, 1.11 and 1.13, and Sections 2.4, 2.8 and 2.9**).

5.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement in 2008. In March 2018, the Ministry posted a proposal notice for an updated Statement to incorporate the Ministry's new priorities, including adding a new commitment to incorporate climate change adaptation into natural resource management, a new commitment to review the Statement every five years and revising the principles set out in its Statement based on current natural resource management practices. However, the Ministry's Statement was never officially updated to reflect these changes.

Further, in June 2018, the Ministry stopped being responsible for species at risk and protected areas (these responsibilities were transferred to the Environment Ministry; see **Section 4.1**).

The government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 10

So that the Ministry of Natural Resources and Forestry's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its current responsibilities.

MINISTRY RESPONSE

The Ministry agrees with this recommendation. Updates to the Ministry's Statement were proposed in March 2018. Although the Ministry's responsibilities changed in June 2018, the current Statement principles generally continue to reflect the priorities of the Ministry. The proposed updates are still under consideration.

5.3 Environmental Implications of Three Policy Proposals Were Not Adequately Described

The Ministry posted three proposal notices on the Environmental Registry in 2018/19 that did not adequately describe the environmental implications:

- The Ministry posted a proposal to establish a hunting season for double-crested cormorants that would allow a bag limit of 50 cormorants per day per hunter (or 14,550 cormor-

ants per season per hunter). The Ministry described the environmental implications of this proposal as "neutral" and stated that the "anticipated levels of harvest aren't expected to affect sustainability." It did not explain further or identify what the impact of the Ministry's projected reduction in the cormorant population would be on local cormorant colonies or the broader ecosystem effects.

- The Ministry posted a proposal in support of the province's review of the *Far North Act* "...with a view to reducing red tape and restrictions on important economic development projects in the Far North including the Ring of Fire, all-season roads and electrical transmission projects for communities." It did not explain the environmental implications of these proposed changes, including the effect of the proposal on the *Far North Act's* objective to protect at least 225,000 km² of the Far North in an interconnected network of protected areas.
- The Ministry posted a proposal to deregulate 172 hectares within West Montreal River Provincial Park, in order to transfer the land to the Matachewan First Nation as part of a treaty settlement. It did not explain the environmental implications of this proposal on the protected area. For example, the Ministry did not explain if any replacement lands were to be added to this protected area to maintain its ecological integrity.

In the absence of such details, readers of these proposals did not have all the facts needed about the environmental implications (positive or negative) to be fully informed and provide constructive input for the Ministry to consider.

RECOMMENDATION 11

So that the Ministry of Natural Resources and Forestry can receive informed feedback and so that the public can comment on environmentally significant ministry proposals, we

recommend that the Ministry describe the environmental implications of each proposal posted on the Environmental Registry.

MINISTRY RESPONSE

The Ministry is committed to full compliance with its legal obligations under the EBR. We will implement best practices, such as describing the potential environmental implications in each proposal notice. The Ministry has a series of internal procedures and templates to fulfil this mandate. We will review and where necessary update these procedures and templates to ensure they provide direction to staff.

5.4 Over Two Weeks Taken to Give Notice for 60% of the Decisions for Permits and Licences that We Reviewed

Several ministries—including the Natural Resources Ministry—have adopted a service standard to post decision notices within two weeks of making a decision. The Act requires ministries to post each decision notice on the Registry “as soon as reasonably possible” after the decision is made. The purpose of this requirement is so that the public receives timely notice of decisions and the effect of public consultation, and so that the public may exercise its right to appeal licence decisions within a reasonable time frame after they are issued. Timely notice is important for transparency and to provide accountability for the outcome of a proposal. In particular, delays in posting decision notices for some licences and approvals allow individuals or companies to operate, sometimes for significant periods of time, before members of the public are made aware of or can appeal the issued approval, potentially resulting in harm to the environment.

The Ministry took over two weeks to give notice for 15 (60%) of the 25 decisions on permits and licences that our Office reviewed in 2018/19. For example, the Ministry took 138 days to post a deci-

sion notice to inform the public that an application for a licence under the *Aggregate Resources Act* was withdrawn.

The Ministry also took over two weeks to give notice for three of its eight decisions on policies and regulations, taking:

- 1,521 days to post a decision notice for the Zone 5 Fisheries Management Plan;
- 1,012 days to post a decision notice for its Independent Forest Audit Modernization; and
- 123 days to post a decision notice for a land addition to Stoco Fen Provincial Park.

When we asked the Ministry about the delayed posting of some decision notices, it told us that it posts decision notices as soon as possible and as time and resources permit.

RECOMMENDATION 12

To give the public prompt notice of its environmentally significant decisions, we recommend that the Ministry of Natural Resources and Forestry post all decision notices on the Environmental Registry as soon as reasonably possible after making a decision, which should reasonably be within two weeks of making a decision as stipulated in its own service standard.

MINISTRY RESPONSE

The Ministry will ensure that prompt notice is provided to the public on the Environmental Registry. The Ministry will review its internal procedures to ensure that decision notices are posted as soon as reasonable possible, and within two weeks when possible, once a decision is made.

5.5 None of the Ministry's Notices for Permits and Licences that We Reviewed Provided Links to Final Documents

None of the 25 decision notices for permits or licences that were granted by the Ministry that we reviewed included links to the issued licence. Additionally, four of these notices did not provide adequate details about the decision, stating only that “approval was granted” with no further details. This may have impeded the ability of concerned citizens to fully understand what decision had been made.

Many of these cases involved licences under the *Aggregate Resources Act* relating to pits and quarries. The public has the right to challenge these licences (for example, if they are concerned about the operations harming the environment). It is therefore important that such decision notices on the Environmental Registry include complete details about the decision that was made (which may be most easily achieved by including a link to the final issued licence), so Ontarians can understand and exercise their right to challenge the activities occurring in their communities.

RECOMMENDATION 13

To give members of the public sufficient information about decisions on licences, permits and approvals, we recommend that the Ministry of Natural Resources and Forestry, for all decision notices:

- clearly describe the details of its decisions; and
- provide links to the final (issued) approval.

MINISTRY RESPONSE

The Ministry will review its procedures and processes to ensure that the details of all its environmentally significant decisions are described clearly. The Ministry's current system is not capable of providing the public with

online access to approved *Aggregate Resources Act* licences. The Ministry is working towards a new system that would enable this in the future. In the interim, ministry decision notices do identify a district contact person that can provide copies of the instrument upon request to the public.

5.6 Ninety-Two Proposal Notices Were on the Environmental Registry for Over Two Years without a Decision or Update

The Ministry's internal procedures state that it is good practice to update proposal notices that have been outstanding for over two years.

The Ministry had 92 proposal notices on the Environmental Registry that were posted more than two years earlier and had not yet been either closed with a decision notice or updated within the last two years. This represents 40% of the Ministry's total proposal notices that remained open on the Environmental Registry at the end of the reporting year. Twenty-one of those notices were originally posted more than 10 years earlier. They include a proposal to establish a new conservation reserve and add to existing protected areas, and a proposal to issue a forest resource processing facility licence, both of which were originally proposed in 2004 and last updated in 2006.

When proposal notices stay on the Registry for such long periods without a decision, the public has no way of knowing whether the Ministry is still actively considering them or has abandoned them, and if the latter, why.

The Ministry told us that some of the older proposals are no longer being considered, while a small number of others are still active, and that the Ministry anticipated posting decision notices or updates for those proposals shortly. The Ministry also told us that responsibility for a number of other older proposals related to provincial parks and conservation reserves was transferred to the Environment Ministry. However, the Ministry did not update the

proposals (or close them with a decision notice) to reflect that it no longer has responsibility for them. Consequently, the public has no way of knowing the status of the proposals—including whether either ministry is still actively considering them—years after the Ministry posted them.

RECOMMENDATION 14

So that the Environmental Registry is a reliable source of information about the Ministry of Natural Resources and Forestry's decisions about the environment, we recommend that the Ministry bring and keep all of its proposal notices up to date, including posting decision notices for proposals that have been decided or that are otherwise no longer under consideration by the Ministry.

MINISTRY RESPONSE

The Ministry will ensure that all outdated registry proposal notices are up to date. The Ministry has remedied the majority of outdated proposals. We are also taking steps to address the notices that the Environment Ministry is now responsible for and taking steps to avoid outdated notices in the future.

6.0 Ministry of Municipal Affairs and Housing

6.1 Overview

The Ministry of Municipal Affairs and Housing regularly uses the Environmental Registry, as it oversees land use planning decisions that determine the balance between socio-economic interests such as new housing developments and infrastructure projects and the preservation of the natural environment. See **Appendix 4** for the Ministry's report card for compliance with the Act. The Ministry was responsible for three applications

for review concluded in 2018/19 (see **Appendix 21, Sections 1.3, 1.8 and 1.13**).

6.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement in 2008. Briefly in 2016, the Ministry separated into the Ministry of Municipal Affairs and the Ministry of Housing; while the ministries were separated, each posted a proposal notice to create its own up-to-date Statement, which also included new cross-government priorities, such as incorporating commitments to mitigate and adapt to climate change. However, later in 2018 the two ministries merged again, and the combined Ministry has not officially updated its Statement to reflect the earlier proposed changes.

Additionally, while its current Statement states that the Ministry will "support initiatives of other ministries" on climate change, the Statement does not reflect making climate change a cross-government priority for the Ministry itself, as directed in the government's November draft 2018 Made-in-Ontario Environment Plan.

RECOMMENDATION 15

So that the Ministry of Municipal Affairs and Housing's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its current responsibilities.

MINISTRY RESPONSE

The ministry is currently reviewing its Statement and aiming to post a proposal notice for an updated Statement on the Environmental Registry in fall 2019. This will include consideration of the government's Made-in-Ontario Environment Plan.

6.3 Environmental Implications of Six Proposals for Policies, Acts and Regulations Were Not Adequately Described

Six of the 10 proposal notices for policies, acts and regulations the Ministry posted on the Environmental Registry in 2018/19 did not describe the environmental implications of the proposal. For example, in the Ministry's proposals relating to a new economic development tool under the *Planning Act* (the "open-for-business planning by-law"), the Ministry did not explain the potential impacts to the environment of allowing a municipality to pass an open-for-business planning bylaw to which environmental protections found under various pieces of legislation, such as the *Clean Water Act, 2006*, and the *Greenbelt Act, 2005*, would not apply. In the absence of such information, readers of these proposals did not have all the facts needed about the implications of the proposal (positive or negative) to be fully informed and provide constructive input for the Ministry to consider.

6.4 Environmental Implications for 52% of the Proposals for Planning Approvals that We Reviewed Were Not Adequately Described

The Ministry's internal procedures direct that notices for approvals contain a detailed explanation of what it is proposing and why. For 13 (52%) of the 25 proposal notices for land use approvals that our Office reviewed from this Ministry, the proposal did not adequately describe the environmental implications. For example, the proposal to approve the new Official Plan for the Municipality of Sioux Lookout provided few details of what was being amended, no description of environmental implications and no links to supporting information. Without such detail, the public may not have had all of the information necessary to understand and provide informed input on the proposal.

RECOMMENDATION 16

So that the Ministry of Municipal Affairs and Housing can receive informed feedback and so that the public can comment on environmentally significant ministry proposals for planning approvals posted on the Environmental Registry, we recommend that the Ministry describe the environmental implications of each proposed planning approval in the proposal notice, and explain how the proposal may address those potential risks to the environment.

MINISTRY RESPONSE

The ministry agrees with this recommendation. We will review options on how the Ministry can enhance the information provided in instrument proposal notices.

6.5 Over Two Weeks Taken to Give Notice for 71% of the Decisions for Policies, Acts and Regulations

Several ministries—including the Municipal Affairs Ministry—have adopted a service standard to post decision notices within two weeks of making a decision. The Act requires ministries to post each decision notice on the Registry "as soon as reasonably possible" after the decision is made. The purpose of this requirement is so that the public receives timely notice of decisions and the effect of public consultation. Timely notice is important for transparency and to provide accountability for the outcome of a proposal.

The Ministry posted five (71%) of the seven decision notices for policies, acts and regulations more than two weeks after the decision was made. For example, the Ministry took 514 days to post a decision notice after Schedule 4 of Bill 7 (*Promoting Affordable Housing Act, 2016*) received Third Reading, and took 668 days to give notice of a decision on a proposal for provisional consent (a time-limited approval with conditions) under the *Planning Act*.

The Ministry also posted 11 (44%) of the 25 decisions notices for planning approvals that we reviewed more than two weeks after the decision was made.

When asked for the reason for the delay in posting decision notices, the Ministry told us Bill 7 was interconnected with other notices, so it waited until all decisions had been made to post a decision. In other cases, the Ministry told us that the posting of decision notices was impacted by the timing and scope of other government priorities at the time. In the case of why it took 668 days to post one decision, the Ministry told us that it was overlooked and an error.

RECOMMENDATION 17

To give the public prompt notice of its environmentally significant decisions, we recommend that the Ministry of Municipal Affairs and Housing post all decision notices on the Environmental Registry as soon as reasonably possible after making a decision, which should reasonably be within two weeks of making a decision as stipulated in its own service standard.

MINISTRY RESPONSE

The Ministry agrees with this recommendation. We will review options on how the Ministry can improve its timeliness in posting all decision notices.

6.6 One-Quarter of the Notices for Planning Approvals that We Reviewed Did Not Adequately Describe the Decision and None Provided Links to the Final Documents

Six of the 25 decision notices from the Ministry that our Office reviewed did not clearly explain what decision was made. In five of those notices, which all related to official plans, the Ministry stated that the plans were approved with a number of

modifications, but either did not explain at all, or adequately explain, what the modifications were. Also, none of the Ministry's decision notices for planning approvals that we reviewed included links to the final (issued) document, which also may have impeded the ability of concerned citizens to understand what decision had been made.

The Ministry told us that it is difficult to accurately and succinctly summarize the modifications of an entire official plan, and that the modifications are best read with the entirety of the official plan. In other words, it is best to read the entire plan to understand the modifications, and so the user of the Registry needs access to that plan. However, the Ministry also told us that it cannot provide a link to the final official plans in some cases because it does not post them anywhere online. This may make it difficult for people living in the municipalities whose official plans have been changed to know what those changes were and what the Ministry decided.

RECOMMENDATION 18

To give members of the public sufficient information about government decisions about planning approvals, we recommend that the Ministry of Municipal Affairs and Housing:

- clearly describe the details of its decisions; and
- provide links to the final (issued) approvals.

MINISTRY RESPONSE

The Ministry agrees with this recommendation. We will review options on how the Ministry can enhance the information provided in the instrument decision notices.

6.7 Denial of a Request to Review the Regulation of Septic Systems Did Not Provide Sufficient Evidence that the Current Requirements Are Adequate to Protect the Environment

An application asking the Ministry to review the regulation of septic systems (i.e., small, on-site systems that collect and partially treat sewage from a home or business) was denied. Specifically, the applicants were concerned that the current requirements under the Ontario Building Code for the operation and maintenance of septic systems are not sufficient to protect the environment from potential harm, such as from malfunctioning systems contaminating water sources with untreated human sewage (see **Appendix 21, Section 1.3** for more details about the application and the Ministry's response; the application was also sent to the Environment Ministry, but the matter falls primarily under the jurisdiction of the Municipal Affairs Ministry).

The Ministry is required to determine whether the public interest warrants a requested review and then to provide a statement of reasons to explain its decision whether or not to undertake the review. In this case, the Ministry concluded that undertaking the requested review was not in the public interest, primarily because it had reviewed the matter 16 months earlier. Specifically, in October 2016, the Ministry posted a proposal notice on the Environmental Registry that proposed to include new requirements for regular inspections, pumping out of septic tanks and retention of maintenance records as part of a broader review of requirements under the Ontario Building Code.

However, the Ministry did not provide any information to explain to the applicants, nor to the public through the decision notice it later posted on the Environmental Registry for the proposal, why the Ministry had ultimately decided not to proceed with the proposed new requirements for septic systems. Further, the Ministry did not provide any information or evidence regarding the sufficiency

of the existing requirements under the Ontario Building Code to protect the environment from malfunctioning septic systems.

There are over one million septic systems in use in Ontario. When any one of these systems fails, it can release untreated human sewage into the surrounding soil, groundwater and surface water. Outside of a few areas in Ontario (i.e., the Lake Simcoe watershed and a few vulnerable zones within drinking-water source protection areas), there is little regulation and oversight of the ongoing maintenance and operation of septic systems to ensure proper performance. The lack of mandatory inspections or ongoing maintenance requirements outside these areas creates potential environmental risks from unaddressed faulty septic systems, including contributing to nutrient-related algae problems in Ontario lakes and rivers.

RECOMMENDATION 19

To address the risk of pollution from malfunctioning septic systems, we recommend that the Ministry of Municipal Affairs and Housing:

- review the effectiveness of the Ontario Building Code requirements governing the operation and maintenance of septic systems; and
- based on the results of its review, update the Ontario Building Code requirements governing the operation and maintenance of septic systems.

MINISTRY RESPONSE

The Ministry will work with municipal stakeholders, conservation authorities and health units to assess the scope of the issue and identify potential next steps. The ministry will then take appropriate steps as identified through this process.

The Ontario Building Code includes provisions related to the operation and maintenance of small on-site sewage systems (including septic systems), and which authorize local sewage system maintenance inspection programs.

6.8 Denial of a Request to Review the Rules Governing Habitat Offsets Did Not Provide Sufficient Evidence that the Current Requirements Are Adequate to Protect Species at Risk

A request to review the rules governing habitat offsets for species at risk (that is, the practice of developers obtaining approval for projects that destroy significant wildlife habitat by creating new habitat as a substitute, or an offset) was denied. The applicants were concerned that provisions in the Provincial Policy Statement under the *Planning Act*, which prohibit development in significant wildlife habitat unless the developer demonstrates that “that there will be no negative impacts,” do not in fact adequately protect habitat when that has been achieved through the creation of a habitat offset. The applicants used their municipality as an example, stating that their municipality had proposed an industrial development project that would harm new habitat for the golden-winged warbler that was to be established based on a previous habitat offset agreement (see **Appendix 21, Section 1.13** for more details about the application and the Ministry’s response; the application was also sent to the Natural Resources Ministry).

The Ministry concluded that undertaking the requested review was not in the public interest, based on the fact that it had completed a review of the Provincial Policy Statement in 2014. However, the Ministry did not provide any evidence to the applicants that its review of the Provincial Policy Statement had examined habitat offsets. Further, the Ministry did not provide any evidence that the existing regulatory framework is sufficient to protect habitat for species at risk that was created as an offset.

When asked if it specifically considered this issue during the review of the Provincial Policy Statement, the Ministry told us that it would have considered any input on habitat offsets had anything been submitted by the public. The Ministry

stated that some municipalities and stakeholders had requested greater support and resources to help implement the significant wildlife habitat policies. The Ministry also told us that it reviewed and considered various parts of the Provincial Policy Statement related to significant wildlife habitat and species at risk but provided no evidence that the current requirements function effectively. The Ministry also stated that it is currently reviewing and consulting on proposed changes to the Provincial Policy Statement. Our Office notes that these changes would allow aggregate extraction operations (pits and quarries) to occur in significant wildlife habitat provided that a long-term rehabilitation plan can demonstrate no negative impacts.

The Municipal Affairs Ministry is responsible for the Provincial Policy Statement under the *Planning Act*, which provides the main direction for land use planning in many parts of Ontario. The Natural Resources Ministry serves a supporting role by producing supporting policies and technical guidance intended to protect significant wildlife habitat (and other natural heritage features). Ontario is experiencing an ongoing loss of biodiversity. The loss of wildlife habitat due to land development is a key contributor to the loss of both species at risk and biodiversity more generally. A review by the Ministry of the policies and rules for conserving the natural environment could determine if stronger or clearer rules are needed to help address this loss of biodiversity.

RECOMMENDATION 20

To address the risks of loss of wildlife habitat and biodiversity, we recommend that the Ministry of Municipal Affairs and Housing review the effectiveness of protecting habitat for species at risk that was created as an offset, as part of its current review of the Provincial Policy Statement.

MINISTRY RESPONSE

The Ministry is working with the Ministry of the Environment, Conservation and Parks—which

is the lead ministry responsible for policies dealing with wildlife habitat and species at risk protection—to determine how this issue was raised as part of the review of the Provincial Policy Statement (PPS), and consider the comments received. The PPS review involved a 90-day consultation that closed on October 21, 2019.

7.0 Ministry of Energy, Northern Development and Mines

7.1 Overview

The Ministry of Energy, Northern Development and Mines regularly uses the Environmental Registry in its role in regulating energy supply, mines and mineral development. See **Appendix 5** for the Ministry's report card for compliance with the Act.

7.2 More Public Consultation Time May Have Provided the Ministry with More Informed Feedback on One Significant Proposal

For two of the five proposal notices for policies, acts and regulations that the Ministry posted on the Environmental Registry in 2018/19, the Ministry provided 44 and 45 days for public comment, respectively. For the remaining three proposals, the Ministry provided 30 days for public comment. While it met the minimum legal requirements required by the Act for all three of those proposals, in one case—a proposal for Bill 34, the *Green Energy Repeal Act, 2018* posted in September 2018—both the public and the Ministry could have benefited from having more time to comment and receive feedback, given the complexity and significance of the proposal.

For every proposal posted on the Registry, the Act requires ministries to consider, based on factors set out in the Act, providing additional time beyond

30 days “to permit more informed public consultation on the proposal.” A longer comment period may be warranted in particular for proposals that are complex or of high public interest.

Generally, to meet the spirit of the Act to permit informed public consultation—and to support more informed government decisions by ensuring ministries receive and consider all feedback (which can include valuable information and perspectives)—the comment period should be sufficient to enable interested members of the public to:

- become aware of the proposal;
- fully review and evaluate the content of the proposal and any supporting materials, which can be lengthy and technical (including, in some cases, obtaining the supporting materials from the ministry); and
- prepare and submit feedback on the proposal by the submission deadline.

The Ministry's proposal for Bill 34, the *Green Energy Repeal Act, 2018*, was for significant, complex legislation that would: repeal the *Green Energy Act, 2009*, reintroduce some energy efficiency and conservation provisions in the Electricity Act, 1998, and make amendments to several other acts, including the *Environmental Protection Act* and the *Planning Act*. The proposal would make broad changes to renewable energy generation in Ontario, including restoring municipal planning authority over the siting of renewable energy generation facilities and providing for regulations to prohibit the approval of renewable energy projects where demand for electricity is not demonstrated.

Given the significance and complexity of the proposal, commenters may have benefited from having more than 30 days to review the proposal and to prepare detailed, informed comments. In turn, the Ministry may have received more informed feedback.

When asked if it considered allowing more than 30 days to comment, the Ministry told us that it chose to post for the minimum legal requirement and noted that public consultation also occurred as the Bill moved through the legislative process,

including public hearings held by the Standing Committee on Social Policy. While a public hearing in the Legislature is an important process, it serves a different purpose than public consultation under the Act. In addition, each process involves different rights. For example, under the Act, the Ministry must take every reasonable step to consider all public comments received and explain to the public the effect of the comments, if any, on the decision, while no such requirements exist for the Standing Committee process.

RECOMMENDATION 21

So that the Ministry of Energy, Northern Development and Mines can receive informed feedback on environmentally significant proposals posted on the Environmental Registry, we recommend that the Ministry extend the comment period beyond 30 days for significant and complex proposals to provide enough time to obtain more informed input from the public.

MINISTRY RESPONSE

The Ministry agrees with the recommendation. The Ministry routinely considers posting its proposals for longer than 30 days, as well as other opportunities available for public input.

7.3 Environmental Implications of a Proposed Act Were Not Adequately Described

The Ministry's internal procedures reflect our Office's criterion that proposal notices should enable the public to ascertain the environmental significance and/or potential environmental impacts of the proposal.

The Ministry posted one proposal notice in 2018/19 that did not adequately describe the environmental implications. The Ministry posted a proposal to enact Bill 32, the *Access to Natural Gas Act, 2018*, which would facilitate the expansion of natural gas distribution systems across Ontario, but

did not describe the environmental implications of this proposal. Specifically, the Ministry did not explain that expanding the use of natural gas would impact Ontario's greenhouse gas emissions and air pollution (by increasing or reducing emissions, depending on which energy sources it replaced).

In the absence of such information, readers of the proposal did not have all the facts needed about the environmental implications (positive or negative) to be fully informed and provide constructive input for the Ministry to consider.

RECOMMENDATION 22

So that the Ministry of Energy, Northern Development and Mines can receive informed feedback and so that the public can comment on environmentally significant Ministry proposals, we recommend the Ministry describe the environmental implications of each proposal posted on the Environmental Registry.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation and, to the extent that they are known at the time of posting, will describe the environmental implications of future proposals posted on the Environmental Registry.

7.4 Over Two Weeks Taken to Give Notice for All Regulation Decisions

The Act requires ministries to post each decision notice on the Registry "as soon as reasonably possible" after the decision is made. The purpose of this requirement is so that the public receives timely notice of decisions and the effect of public consultation.

The Ministry took over two weeks to give notice for all of its seven regulation decisions. For example, two regulation decision notices were posted more than five months after the regulations had been filed.

The Ministry also did not provide the dates of its decisions in any of the 25 decision notices for permits and approvals that we reviewed, nor did it include links to the final documents, which would indicate the date they were issued and whether the notices were posted soon after the decision. The Ministry confirmed that 23 of these notices (92%) were posted more than two weeks after the decision was made.

When asked for the reason for its delay in posting decision notices, the Ministry told us that it has since developed better processes and guidance materials to ensure the timely posting of decisions on the Environmental Registry. The Ministry also told us that it is updating its internal procedures to include the date the decision was made and links to issued permits.

RECOMMENDATION 23

To give the public prompt notice of its environmentally significant decisions, we recommend that the Ministry of Energy, Northern Development and Mines post all decision notices on the Environmental Registry as soon as reasonably possible after making a decision, which should reasonably be within two weeks of making a decision.

MINISTRY RESPONSE

The Ministry agrees with the recommendation to always post decisions in a timely manner. The Ministry has developed better processes and guidance materials that have been distributed to staff to ensure the timely posting of the Ministry's decisions to the Environmental Registry.

7.5 Eighty Percent of Notices for Permits and Approvals that We Reviewed Did Not Adequately Describe the Decision and None Provided Links to the Permits

The Ministry's internal procedures reflect our Office's criterion that decision notices should describe in sufficient detail what was decided and why, including providing links to key documents.

Twenty of the 25 decision notices for permits and approvals (80%) posted by the Ministry that we reviewed did not provide sufficient information about what was decided. For example, 17 of the Ministry's decision notices for mineral exploration permits under the *Mining Act* did not provide details, often stating simply "permit issued." The notices did not make clear whether the permits were issued exactly as proposed or with changes. In two decision notices, the Ministry stated "permit issued with conditions," but did not explain what the conditions were. In another case, it was unclear what decision the Ministry had even made and whether it had approved or denied the proposed amendments to a mine's closure plan.

None of the Ministry's decision notices included links to the final (issued) permit. This lack of information may have impeded the public's ability to understand what decision had been made.

RECOMMENDATION 24

To give members of the public sufficient information about government decisions about licences, permits and approvals, we recommend that the Ministry of Energy, Northern Development and Mines:

- clearly describe the details of its decisions; and
- provide links to the final (issued) licences, permits or approvals.

MINISTRY RESPONSE

The Ministry agrees with the recommendation. While information is already provided about decisions made, the Ministry is working to update its procedure guidelines and decision posting templates to include a copy of the issued permit, and to provide more information in the decision summary, which would include the decision, instrument number, the address/location, the proponent name, and what is being proposed/decided.

7.6 Twenty-Six Proposal Notices Were on the Environmental Registry for Over Two Years without a Decision or Update

The Ministry's internal procedures acknowledge that notices that are not up to date undermine the public's confidence in the Environmental Registry as a reliable and useful source of information. The Ministry had 26 proposal notices on the Environmental Registry that were posted more than two years earlier and had not been either closed with a decision notice or updated within the last two years.

In addition, the Ministry was not clear about updates to notices that it may have made. Specifically, it added the words "notice updated 02-20-19" to 15 notices without providing any additional information. Without an informative update, Ontarians with an interest in these notices had no way of knowing what updates, if any, had actually been made to understand the current status of these proposals.

When asked if it was still actively considering its older proposals, the Ministry told us that some of the proposals are no longer under consideration and others are on hold due to concerns raised by an Indigenous community.

RECOMMENDATION 25

So that the Environmental Registry can be a reliable source of information about the Ministry of Energy, Northern Development and Mines' decisions about the environment, we recommend that the Ministry bring and keep all of its proposal notices up to date, including posting decision notices for proposals that have been decided or that are otherwise no longer under consideration by the Ministry.

MINISTRY RESPONSE

The Ministry agrees with this recommendation and will improve its processes. The Ministry will update its procedure guidelines to ensure that proposal notices for applications on temporary hold are updated, or a decision notice is posted if the applicant has withdrawn their proposal.

8.0 Ministry of Government and Consumer Services—Technical Standards and Safety Authority

8.1 Overview

The Ministry of Government and Consumer Services has, for the most part, delegated responsibility for carrying out its obligations under the Act to the Technical Standards and Safety Authority. This body is a not-for-profit administrative authority that is responsible for administering regulations under the *Technical Standards and Safety Act, 2000*, on behalf of the Ministry. The Ministry (including the Technical Standards and Safety Authority) regularly uses the Environmental Registry, as part of its role in regulating technology, products and infrastructure that can create risks for public safety and the environment. See **Appendix 6** for the Ministry's report card for compliance with the Act.

8.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement in 2009. The Ministry was assigned new responsibilities, including the addition of consumer services, in 2014. The Ministry has not updated its Statement to contain these new responsibilities. Additionally, the government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 26

So that the Ministry of Government and Consumer Services' Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its new responsibilities.

MINISTRY RESPONSE

The Ministry acknowledges the recommendation and plans to update our Statement of Environmental Values to reflect our new responsibilities.

8.3 Proposal Notices for 88% of Exemptions from the Liquid Fuels Handling Code that We Reviewed Did Not Adequately Describe What Was Being Proposed

In 19 (or 76%) of the 25 proposal notices that we evaluated, the Ministry proposed to allow exemptions from the Liquid Fuels Handling Code without explaining which requirements would not be followed, or why. Three other proposed exemptions (or 12%) of the reviewed notices did specify the

exemptions from Code requirements, but did not explain how the environmental risks of allowing a proponent to not follow a requirement of the Code would be addressed. The Ministry also used technical wording, jargon and unexplained acronyms in its proposal notices, making them difficult to understand. This lack of clear information made it more difficult for the public to provide informed comment than if the Ministry had explained how the risks to the environment would be managed.

RECOMMENDATION 27

So that the Ministry of Government and Consumer Services—Technical Standards and Safety Authority can receive informed feedback and so that the public can comment on environmentally significant proposals for approvals posted on the Environmental Registry, we recommend that the Ministry provide clear and easy-to-read descriptions of what is being proposed in the notices it posts on the Environmental Registry.

MINISTRY RESPONSE

The Technical Standards and Safety Authority agrees with and will carry out the recommendation. Going forward, we will ensure that the notices we post on the Environmental Registry provide clear and easy-to-read descriptions of what is being proposed, so that they are as understandable and accessible to the public as possible. We will ensure that any technical wording, jargon and acronyms are clearly explained.

9.0 Ministry of Agriculture, Food and Rural Affairs

9.1 Overview

The Ministry of Agriculture, Food and Rural Affairs occasionally uses the Environmental Registry as part of its role to ensure the sustainability of

agriculture in Ontario, including its impacts on the environment. See **Appendix 7** for the Ministry's report card for compliance with the Act.

9.2 Notice of Outcome of Review Was Delivered 21 Days Late

The Ministry was responsible for one application for review concluded in 2018/19 (see **Appendix 21, Section 1.12**). The Ministry provided its notice of outcome for this review 21 days late. The Ministry told us that this was due to an administrative oversight.

10.0 Ministry of Transportation

10.1 Overview

The Ministry of Transportation occasionally uses the Environmental Registry, but many transportation projects are subject to the *Environmental Assessment Act*, which has its own consultation processes, making these projects exempt from the consultation requirements of the Act. See **Appendix 8** for the Ministry's report card for compliance with the Act.

10.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement in 2008. The government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 28

So that the Ministry of Transportation's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its new priorities.

MINISTRY RESPONSE

The Ministry recognizes the importance of considering environmental values within our Acts and Policies. We will, working with our partner ministries, continue to review our Statement of Environmental Values to ensure it reflects current government policies and priorities.

11.0 Ministry of Tourism, Culture and Sport

11.1 Overview

The Ministry of Tourism, Culture and Sport seldom uses the Environmental Registry as its programs rarely directly affect the environment. See **Appendix 9** for the Ministry's report card for compliance with the Act.

11.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement of Environmental Values in 2008, when this Ministry was two separate ministries: the former Ministry of Culture and the former Ministry of Tourism. In 2010, these two ministries merged into one ministry, with further changes to its name and responsibilities in 2011. The Ministry's Statement was never officially updated to reflect these changes. Additionally, the government's November 2018 draft Made-in-Ontario Environment Plan directed

all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 29

So that the Ministry of Tourism, Culture and Sport's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its new responsibilities.

MINISTRY RESPONSE

The Ministry remains committed to meeting the objectives and requirements of the *Environmental Bill of Rights, 1993*, and accepts the recommendation to review and update the Statement of Environmental Values with public consultation using the Environmental Registry.

12.0 Ministry of Health and Long-Term Care

12.1 Overview

The Ministry of Health and Long-Term Care seldom uses the Environmental Registry as its programs rarely directly affect the environment. See **Appendix 10** for the Ministry's report card for compliance with the Act. In June 2019, after the end of the 2018/19 reporting year, the Ministry split into the Ministry of Health and the Ministry of Long-Term Care.

12.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement in 2008. The government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 30

So that the Ministry of Health's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it as needed.

MINISTRY RESPONSE

The Ministry agrees with the recommendation to update the Statement of Environmental Values and will endeavour to complete this work before the end of the 2019/20 fiscal year.

13.0 Ministry of Infrastructure

13.1 Overview

The Ministry of Infrastructure seldom uses the Environmental Registry as many projects are carried out by Infrastructure Ontario, which is not subject to the Act. See **Appendix 11** for the Ministry's report card for compliance with the Act. Also, infrastructure projects are often subject to the *Environmental Assessment Act*, which has its own consultation processes, making these projects exempt from the consultation requirements of the Act.

13.2 Statement of Environmental Values Needs Updating

The former Ministry of Economic Development, Employment and Infrastructure last updated its Statement in 2015. In 2018, the Ministry, after it became a new, separated ministry, posted a proposal on the Environmental Registry for a new Statement to reflect its changed status and incorporate commitments to mitigate and adapt to climate change. However, the Ministry's Statement was never officially updated to reflect these changes.

Additionally, the government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 31

So that the Ministry of Infrastructure's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry complete its public review of its Statement and update it to reflect its new responsibilities.

MINISTRY RESPONSE

The Ministry supports this recommendation. The Ministry will complete its public consultation on the Ministry's Statement through the Registry and, after considering any feedback received, will update the Statement to reflect the Ministry's current responsibilities and priorities.

13.3 Two Proposal Notices Were on the Environmental Registry for Over Two Years without a Decision or Update

As of March 31, 2019, the Ministry had two proposal notices on the Environmental Registry that

were posted more than two years earlier and had not been either closed with a decision notice or updated within the last two years (representing 40% of its five open proposal notices).

The Ministry posted a decision notice for one of the two proposals, for consultation on a municipal asset-management-planning regulation, in April 2019.

The Ministry told us that the other proposal, for proposed amendments to Regulation 334 under the *Environmental Assessment Act*, was no longer the Ministry's responsibility, as responsibility for government realty was transferred to the Government Services Ministry in June 2018. The proposal notice has remained on the Registry under the Infrastructure Ministry's name since July 2016. The Ministry did not update the proposal (or close it with a decision notice) to reflect that it no longer has responsibility for the proposal. Consequently, the public has no way of knowing the status of the proposal—including whether the Ministry is still actively considering it, has abandoned it, and if the latter, why—more than two years after the Ministry posted it.

RECOMMENDATION 32

So that the Environmental Registry is a reliable source of information about the Ministry of Infrastructure's decisions about the environment, we recommend that the Ministry bring and keep all of its proposal notices up to date, including posting decision notices for proposals that have been decided or that are otherwise no longer under consideration by the Ministry.

MINISTRY RESPONSE

The Ministry agrees that for the Registry to be a reliable source of information for Ontarians, proposal notices on the Registry must be kept up to date. The Ministry has now updated its older proposal notices and agrees to regularly review its notices on the Registry to ensure that all proposal notices are kept up to date by either

posting a decision notice if a proposal has been decided or providing an update.

14.0 Ministry of Economic Development, Job Creation and Trade

14.1 Overview

The Ministry of Economic Development, Job Creation and Trade seldom uses the Environmental Registry as its programs rarely directly affect the environment. The Ministry met the criteria for the responsibilities that it carried out in 2018/19. See **Appendix 12** for the Ministry's report card for compliance with the Act.

15.0 Ministry of Indigenous Affairs

15.1 Overview

The Ministry of Indigenous Affairs seldom uses the Environmental Registry as its programs rarely directly affect the environment. The Ministry met the criteria for the responsibilities that it carried out in 2018/19. See **Appendix 13** for the Ministry's report card for compliance with the Act.

16.0 Ministry of Education

16.1 Overview

The Ministry of Education seldom uses the Environmental Registry as curricula are not subject to the Act and its remaining programs rarely directly affect the environment. See **Appendix 14** for the Ministry's report card for compliance with the Act.

16.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement in 2013. The government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 33

So that the Ministry of Education's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its new priorities.

MINISTRY RESPONSE

The Ministry agrees with the recommendation to update the Ministry's Statement of Environmental Values. We have begun the process of reviewing the Statement with the goal of finalizing our revised Statement by December 2020. The Ministry of Education remains committed to fulfilling our obligations under the *Environmental Bill of Rights*.

17.0 Ministry of Labour

17.1 Overview

The Ministry of Labour seldom uses the Environmental Registry as its programs rarely directly affect the environment. See **Appendix 15** for the Ministry's report card for compliance with the Act.

17.2 Statement of Environmental Values Needs Updating

The Ministry last updated its Statement in 2008. The government's November 2018 draft Made-in-Ontario Environment Plan directed all ministries to update their Statements to reflect Ontario's environmental plan, including to improve government's ability to consider climate change when making decisions and "make climate change a cross-government priority."

RECOMMENDATION 34

So that the Ministry of Labour's Statement of Environmental Values (Statement) reflects its current environmental values and responsibilities, we recommend that the Ministry review its Statement with public consultation through the Environmental Registry and update it to reflect its new priorities.

MINISTRY RESPONSE

The Ministry is currently undertaking an internal consultation on updating its Statement. Once the internal review is complete, the Ministry will upload the document to the Registry, and coordinate the public review and consideration of any feedback received through that process.

18.0 Treasury Board Secretariat

18.1 Overview

The Treasury Board Secretariat seldom uses the Environmental Registry as its programs rarely directly affect the environment. The Treasury Board met the criterion for the responsibility that it carried out in 2018/19. See **Appendix 16** for the Treasury Board's report card for compliance with the Act.

Appendix 1: Prescribed Ministry Responsibilities, 2018/19

Source of data: O. Reg. 73/94 and O. Reg. 681/94, made under the *Environmental Bill of Rights, 1993*

Ministry	Prepare and Consider SEV	Post Policies and Acts*	Post Regulations under Prescribed Acts*	Post Proposals for Prescribed Instruments	Respond to Applications for Review	Respond to Applications for Investigation
Environment, Conservation and Parks	✓	✓	✓	✓	✓	✓
Natural Resources and Forestry	✓	✓	✓	✓	✓	✓
Municipal Affairs and Housing	✓	✓	✓	✓	✓	✓
Energy, Northern Development and Mines	✓	✓	✓	✓	✓	✓
Government and Consumer Services	✓	✓	✓	✓	✓	✓
Agriculture, Food and Rural Affairs	✓	✓	✓		✓	
Transportation	✓	✓			✓	
Tourism, Culture and Sport	✓	✓	✓			
Health and Long-Term Care	✓	✓	✓		✓	
Infrastructure	✓	✓				
Economic Development, Job Creation and Trade	✓	✓				
Indigenous Affairs	✓	✓				
Education	✓	✓			✓	
Labour	✓	✓				
Treasury Board Secretariat	✓	✓				

* If they could have a significant effect on the environment if implemented.

Appendix 2: Ministry of the Environment, Conservation and Parks Compliance Report Card for the 2018/19 Reporting Year

Legend: ○ Met criteria ● Partially met criteria ● Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	● Section 4.2 —The Ministry has not updated its Statement since 2008, despite subsequent changes to its responsibilities. The Statement also does not yet reflect new Ministry and government priorities, such as addressing climate change.
b. Statement is considered when making decisions	○ The Ministry met this criterion.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	● Section 4.3 —The Ministry appropriately posted 19 proposal notices for policies, acts and regulations, and 1,041 for permits and approvals on the Registry. However, the Ministry did not post a significant regulation ending the province's cap and trade program.
b. Time to comment is extended based on the factors in the Act	● Section 4.4 —The Ministry provided the statutory minimum of 30 days for the public to comment on two significant proposals for which the Ministry could have received more informed feedback if the public had more time to provide comments on: the proposal for Bill 4, the <i>Cap and Trade Cancellation Act, 2018</i> , and the new regulation for sulphur dioxide emissions from Ontario petroleum facilities.
c. Proposal notices for policies, acts and regulations are informative	○ The Ministry posted 19 proposal notices for policies, acts and regulations on the Registry, which met this criterion.
d. Proposal notices for permits, approvals and orders are informative	● Section 4.5 —The Ministry posted 1,041 proposal notices for permits and approvals on the Registry, and we reviewed a sample of 25 notices. All 25 met the minimum information requirements; however, 18 notices (72%) did not provide information a reader would need to fully understand the environmental implications of the proposed approval, such as potential environmental risks associated with the activity to be approved, or how the terms and conditions of the permit or approval, if approved, would address those risks.
e. Prompt notice of decisions is given	● Section 4.6 – The Ministry posted 20 decision notices for policies, acts and regulations and 1,236 decision notices for permits and approvals on the Registry. The Ministry posted four (20%) of the 20 decision notices for policies, acts and regulations more than two weeks after the decision was made, and posted 13 (52%) of the 25 decision notices for permits and approvals that we reviewed more than two weeks after the decision was made.
f. Decision notices for policies, acts and regulations are informative	○ The Ministry posted 20 decision notices for policies, acts and regulations on the Registry, which met this criterion.
g. Decision notices for permits, approvals and orders are informative	○ The Ministry posted 1,236 decision notices for permits and approvals on the Registry. We reviewed a sample of 25 notices, which met this criterion.
h. Proposal notices are up-to-date	● Section 4.7 —As of March 31, 2019, the Ministry had 44 proposal notices that had been on the Registry for over two years without a decision or update.
3. Applications for Review and Applications for Investigation	
a. Ministry reviews all matters to the extent necessary	● Section 4.8 —The Ministry concluded nine applications for review in 2018/19 (see following table). However, in denying one significant application, the Ministry did not provide evidence that the existing regulation of industrial air standards for NO ₂ and PM _{2.5} sufficiently protects the environment and human health, to support its conclusion that the requested review was not necessary (see Appendix 7, Section 1.5).
b. Ministry investigates all matters to the extent necessary	○ The Ministry concluded eight applications for investigation in 2018/19 (see following table), and the Ministry met this criterion for those applications.
c. Ministry meets all timelines	● Section 4.9 —The Ministry did not meet legislated timelines for two of its 17 concluded applications (see following table), providing its decision to deny an application to review the air standards for NO ₂ and PM _{2.5} 198 days late, and its decision to deny an application to establish a conservation reserve in the Township of Long seven days late. In addition, as of March 31, 2019, four of the Ministry's nine open applications for review were not completed by the date promised by the Ministry, and one has been ongoing for over nine years.

Concluded Applications for Review and Investigation by the Environment Ministry in 2018/19

Applications for Review	Undertaken or Denied	Ministry Reviews All Matters to the Extent Necessary	Ministry Meets All Timelines
Municipal Class Environmental Assessment Process	Undertaken	☐	☐
Approval to Address Odours from an Ethanol Plant in Hamilton	Undertaken	☐	☐
Regulation and Oversight for Onsite Septic Systems	Denied	☐	☐
Renewable Energy Approval in Prince Edward County	Denied	☐	☐
Regulation of Pollution from Nitrogen Dioxide (NO ₂) and Fine Particulate Matter (PM _{2.5})—Section 4.8	Denied	☒	☒
Cancellation of Cap and Trade	Denied	☐	☐
Deer Hunt in Short Hills Provincial Park	Denied	☐	☐
Regulation of Recreational Open-Air Wood Burning	Denied	☐	☐
Need to Establish Conservation Reserve in the Township of Long	Denied	☐	☐

Applications for Investigation	Undertaken or Denied	Ministry Investigates All Matters to the Extent Necessary	Ministry Meets All Timelines
Odours from a Cosmetics Factory in Toronto	Undertaken	☐	☐
Water Taking at a Quarry in the Town of Greater Napanee	Undertaken	☐	☐
Operation of an Asphalt Plant in Horton Township	Undertaken	☐	☐
Wetland Drainage in the Township of West Lincoln	Undertaken	☐	☐
Pesticides in Ornamental Plants Sold by Retailers	Denied	☐	☐
Dust and Noise from Asphalt Equipment at a Quarry in Elginburg	Undertaken	☐	☐
Dust and Noise at a Metrolinx Site in Toronto	Denied	☐	☐
Wetland Drainage in Loyalist Township	Denied	☐	☐

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 3: Ministry of Natural Resources and Forestry Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 5.2 —The Ministry has not updated its Statement since 2008, despite subsequent changes to its responsibilities. The Statement also does not yet reflect new Ministry and government priorities, such as addressing climate change.
b. Statement is considered when making decisions	☐ The Ministry met this criterion. The Ministry provided documentation that it considered its Statement for all 17 decision notices for which it was requested.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	☐ The Ministry posted six proposal notices for policies and acts, and 49 proposal notices for permits and licences on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	☐ The Ministry met this criterion.
c. Proposal notices for policies, acts and regulations are informative	☒ Section 5.3 —The Ministry posted six proposal notices for policies and acts on the Registry. The Ministry did not adequately describe the environmental implications of three of those proposals: changes to the hunting season for double-crested cormorants, a review of the <i>Far North Act</i> , and deregulating part of a provincial park.
d. Proposal notices for permits, approvals and orders are informative	☐ The Ministry posted 49 proposal notices for permits and licences on the Registry. We reviewed a sample of 25 notices, which met this criterion.
e. Prompt notice of decisions is given	☒ Section 5.4 —The Ministry posted eight decision notices for policies, acts and regulations and 47 decision notices for permits and licences on the Registry. The Ministry posted three (38%) of the eight decision notices for policies, acts and regulations more than two weeks after the decision was made, and posted 15 (60%) of the 25 decision notices for permits and licences that we reviewed more than two weeks after the decision was made.
f. Decision notices for policies, acts and regulations are informative	☐ The Ministry posted eight decision notices for policies and regulations on the Registry, which met this criterion.
g. Decision notices for permits, approvals and orders are informative	☐ Section 5.5 —The Ministry posted 47 decision notices for permits and licences on the Registry, and we reviewed a sample of 25 notices. The Ministry did not adequately explain what decision was made in four (16%) of those decision notices, and did not include links to copies of the final (issued) permits or licences in any of the 25 decision notices that we reviewed.
h. Proposal notices are up-to-date	☒ Section 5.6 —As of March 31, 2019, the Ministry had 92 proposal notices that had been on the Registry for over two years without a decision or update.
3. Applications for Review and Applications for Investigation	
a. Ministry reviews all matters to the extent necessary	☐ The Ministry concluded four applications for review in 2018/19 (see following table), and the Ministry met this criterion for those applications.
b. Ministry investigates all matters to the extent necessary	☐ The Ministry concluded three applications for investigation in 2018/19 (see following table), and the Ministry met this criterion for those applications.
c. Ministry meets all timelines	☐ The Ministry met this criterion for all applications (see following table).

Concluded Applications for Review and Investigation by the Natural Resources and Forestry Ministry in 2018/19

Applications for Review	Undertaken or Denied	Ministry Reviews All Matters to the Extent Necessary	Ministry Meets All Timelines
Deer Hunt in Short Hills Provincial Park	Denied	☐	☐
The <i>Conservation Authorities Act</i> and the Expropriation of Private Land	Denied	☐	☐
Quarry Expansion in Burlington	Denied	☐	☐
Habitat Offsets for Species at Risk under the <i>Planning Act</i>	Denied	☐	☐

Applications for Investigation	Undertaken or Denied	Ministry Investigates All Matters to the Extent Necessary	Ministry Meets All Timelines
Wetland Drainage in the Township of West Lincoln	Denied	☐	☐
Harm to Species at Risk and their Habitat in South Frontenac	Undertaken	☐	☐
Wetland Drainage in Loyalist Township	Denied	☐	☐

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 4: Ministry of Municipal Affairs and Housing Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 6.2 —The Ministry's Statement has not been updated since 2008, and it does not yet reflect new Ministry and government priorities, such as addressing climate change.
b. Statement is considered when making decisions	☐ The Ministry met this criterion. The Ministry provided documentation that it considered its Statement for all 11 decision notices for which it was requested.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	☐ The Ministry posted 10 proposal notices for policies, acts and regulations, and 61 proposal notices for planning approvals on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	☐ The Ministry met this criterion.
c. Proposal notices for policies, acts and regulations are informative	☒ Section 6.3 —The Ministry posted 10 proposal notices for policies, acts and regulations on the Registry. The Ministry did not adequately describe the environmental implications of six of those proposals, including a proposal to allow municipalities to pass an open-for-business planning bylaw.
d. Proposal notices for permits, approvals and orders are informative	☐ Section 6.4 —The Ministry posted 61 proposal notices for planning approvals on the Registry, and we reviewed a sample of 25 notices. All 25 met the minimum information requirements; however, 13 notices (52%) did not provide information a reader would need to fully understand the proposal or its environmental implications.
e. Prompt notice of decisions is given	☐ Section 6.5 —The Ministry posted seven decision notices for policies, acts and regulations, and 59 decisions notices for planning approvals on the Registry. The Ministry posted five (71%) of the seven decision notices for policies, acts and regulations more than two weeks after the decision was made, and posted 11 (44%) of the 25 decisions notices for planning approvals that we reviewed more than two weeks after the decision was made.
f. Decision notices for policies, acts and regulations are informative	☐ The Ministry posted seven decision notices for policies, acts and regulations on the Registry, which met this criterion.
g. Decision notices for permits, approvals and orders are informative	☐ Section 6.6 —The Ministry posted 59 decision notices for planning approvals on the Registry, and we reviewed a sample of 25 notices. The Ministry did not adequately explain what decision was made in six (24%) of those decision notices, and did not include links to copies of the final (issued) planning approvals in any of the decision notices that we reviewed.
h. Proposal notices are up-to-date	☐ The Ministry met this criterion. As of March 31, 2019, the Ministry had a single proposal notice that had been on the Registry for over two years without a decision or update. This proposal notice represented 2% of the Ministry's total number of open proposal notices on the Registry.
3. Applications for Review	
a. Ministry reviews all matters to the extent necessary	☒ Sections 6.7 and 6.8 —The Ministry concluded three applications for review in 2018/19 (see following table). In denying two of the applications for review, the Ministry did not provide evidence that the current rules and requirements sufficiently protect against environmental harm.
c. Ministry meets all timelines	☐ The Ministry met this criterion for all applications (see following table).

Concluded Applications for Review by the Municipal Affairs and Housing Ministry in 2018/19

Applications for Review	Undertaken or Denied	Ministry Reviews All Matters to the Extent Necessary	Ministry Meets All Timelines
Regulation and Oversight for Onsite Septic Systems—Section 6.7	Denied	●	○
Habitat Offsets for Species at Risk under the <i>Planning Act</i> —Section 6.8	Denied	●	○
Regulation of Recreational Open-Air Wood Burning	Denied	○	○

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 5: Ministry of Energy, Northern Development and Mines Compliance Report Card for the 2018/19 Reporting Year

Legend: ○ Met criteria ● Partially met criteria ● Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	○ The former Ministry of Energy and the former Ministry of Northern Development and Mines last updated their Statements in 2013 and 2008, respectively. In June 2019, the Ministry posted a proposal for an updated Statement that reflects changes to the now-combined Ministry's mandate and new government priorities, such as addressing climate change. The proposal is still within the time frame allowed in the Act before being finalized.
b. Statement is considered when making decisions	○ The Ministry met this criterion. The Ministry provided documentation that it considered its Statement for all 16 decision notices for which it was requested.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	○ The Ministry posted five proposal notices for policies, acts and regulations and 266 proposal notices for permits and approvals on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	● Section 7.2 —The Ministry provided the statutory minimum of 30 days for the public to comment on a significant proposal—Bill 34, the <i>Green Energy Repeal Act, 2018</i> —for which the Ministry could have received more informed feedback if the public had more time to provide comments.
c. Proposal notices for policies, acts and regulations are informative	● Section 7.3 —The Ministry posted five proposal notices for policies, acts and regulations on the Registry. The Ministry did not adequately describe the environmental implications of one of those proposals: Bill 32, the <i>Access to Natural Gas Act, 2018</i> , which would facilitate the expansion of natural gas distribution systems across Ontario.
d. Proposal notices for permits, approvals and orders are informative	○ The Ministry posted 266 proposal notices for permits and approvals on the Registry. We reviewed a sample of 25 notices, which met this criterion.
e. Prompt notice of decisions is given	● Section 7.4 —The Ministry posted seven decision notices for regulations and 255 decision notices for permits and approvals on the Registry. The Ministry posted all seven decision notices for regulations more than two weeks after the decision was made, and posted 23 (92%) of the 25 decision notices for permits and approvals that we reviewed more than two weeks after the decision was made.
f. Decision notices for policies, acts and regulations are informative	○ The Ministry posted seven decision notices for regulations on the Registry, which met this criterion.
g. Decision notices for permits, approvals and orders are informative	● Section 7.5 —The Ministry posted 255 decision notices for permits and approvals on the Registry, and we reviewed a sample of 25 notices. The Ministry did not adequately explain what decision was made in 20 (80%) of those decision notices, and did not include copies of the final (issued) permits or approvals in any of the decision notices that we reviewed.
h. Proposal notices are up-to-date	● Section 7.6 —As of March 31, 2019, the Ministry had 26 proposal notices that had been on the Registry for over two years without a decision or update.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 6: Ministry of Government and Consumer Services – Technical Standards and Safety Authority Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 8.2 —The Ministry has not updated its Statement since 2009, despite subsequent changes to its responsibilities in 2014, including the addition of consumer services. The Statement also does not yet reflect new government priorities, such as addressing climate change.
b. Statement is considered when making decisions	☐ The Ministry met this criterion. The Ministry provided documentation that it considered its Statement for the two decision notices for which it was requested.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	☐ The Ministry posted two proposal notices for regulations and 38 proposal notices for approvals on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	☐ The Ministry met this criterion.
c. Proposal notices for policies, acts and regulations are informative	☐ The Ministry posted two proposal notices for regulations on the Registry, which met this criterion.
d. Proposal notices for permits, approvals and orders are informative	☒ Section 8.3 —The Ministry posted 38 proposal notices for approvals on the Registry, and we reviewed a sample of 25 notices. All 25 met the minimum information requirements; however, 22 notices (88%) did not provide information a reader would need to fully understand what was being proposed. For example, 19 of the notices proposed to approve variances from the Liquid Fuels Handling Code, but did not state which requirements of the Liquid Fuels Handling Code it proposed to allow to not be followed.
e. Prompt notice of decisions is given	☐ The Ministry posted one decision notice for a regulation and 40 decision notices for approvals, which met this criterion.
f. Decision notices for policies, acts and regulations are informative	☐ The Ministry posted one decision notice for a regulation on the Registry, which met this criterion.
g. Decision notices for permits, approvals and orders are informative	☐ The Ministry posted 40 decision notices for approvals. We reviewed a sample of 25 notices, which met this criterion.
h. Proposal notices are up-to-date	☐ The Ministry met this criterion. The Ministry had two open proposal notices as of March 31, 2019, both of which were posted within the last two years.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 7: Ministry of Agriculture, Food and Rural Affairs Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☐ In 2019, the Ministry updated its Statement, and it now reflects the Ministry's current responsibilities and new Ministry and government priorities, such as addressing climate change.
b. Statement is considered when making decisions	☐ The Ministry met this criterion. The Ministry provided documentation that it considered its Statement for the one decision notice for which it was requested.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	☐ The Ministry posted one proposal notice for a regulation on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	☐ The Ministry met this criterion.
c. Proposal notices for policies, acts and regulations are informative	☐ The Ministry posted one proposal notice for a regulation on the Registry, which met this criterion.
e. Prompt notice of decisions is given	☐ The Ministry posted one decision notice for a policy on the Registry, which met this criterion.
f. Decision notices for policies, acts and regulations are informative	☐ The Ministry posted one decision notice for a policy on the Registry, which met this criterion.
h. Proposal notices are up-to-date	☐ The Ministry met this criterion. The Ministry had four open proposal notices as of March 31, 2019, all of which were either posted or updated within the last two years.
3. Applications for Review and Applications for Investigation	
a. Ministry reviews all matters to the extent necessary	☐ The Ministry concluded one application for review in 2018/19 (see following table), and the Ministry met this criterion for that application.
c. Ministry meets all timelines	☒ Section 9.2 —The Ministry provided its notice of outcome of its one application for review three weeks after the deadline in the Act.

Concluded Application for Review by the Agriculture, Food and Rural Affairs Ministry in 2018/19

Applications for Review	Undertaken or Denied	Ministry Reviews All Matters to the Extent Necessary	Ministry Meets All Timelines
Soil Health in Agriculture	Undertaken	☐	☒

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 8: Ministry of Transportation Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 10.2 —The Ministry's Statement has not been updated since 2008, and it does not yet reflect new government priorities, such as addressing climate change.
b. Statement is considered when making decisions	☐ The Ministry met this criterion. The Ministry provided documentation that it considered its Statement for all four decisions notices for which it was requested.
2. Use of the Environmental Registry (Registry)	
e. Prompt notice of decisions is given	☐ The Ministry posted four decision notices for policies on the Registry, which met this criterion.
f. Decision notices for policies, acts and regulations are informative	☐ The Ministry posted four decision notices for policies on the Registry, which met this criterion.
h. Proposal notices are up-to-date	☐ The Ministry had three open proposal notices as of March 31, 2019, all of which were either posted or updated within the last two years.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 9: Ministry of Tourism, Culture and Sport Compliance Report Card for the 2018/19 Reporting Year

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 11.2 —The Ministry has not updated its Statement since 2008, despite subsequent changes to its responsibilities. The Statement also does not yet reflect new government priorities, such as addressing climate change.
2. Use of the Environmental Registry (Registry)	
h. Proposal notices are up-to-date	☐ The Ministry met this criterion. The Ministry had one open proposal notice on the Registry as of March 31, 2019, which was posted within the last two years.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 10: Ministry of Health and Long-Term Care Compliance Report Card for the 2018/19 Reporting Year

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 12.2 —The Ministry has not updated its Statement since 2008, and it does not yet reflect new government priorities, such as addressing climate change.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 11: Ministry of Infrastructure Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 13.2 —The Ministry has not updated its Statement since 2015, despite subsequent changes to its responsibilities. The Statement also does not yet reflect new government priorities, such as addressing climate change.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	☐ The Ministry posted one proposal notice for a policy on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	☐ The Ministry met this criterion.
c. Proposal notices for policies, acts and regulations are informative	☐ The Ministry posted one proposal notice for a policy on the Registry, which met this criterion.
h. Proposal notices are up-to-date	☐ Section 13.3 —The Ministry had two proposal notices, one for a policy and one for a regulation, that as of March 31, 2019, had been on the Registry for over two years without a decision or update. These proposal notices represented 40% of the Ministry's total open proposal notices.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 12: Ministry of Economic Development, Job Creation and Trade Compliance Report Card for the 2018/19 Reporting Year

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☐ The Ministry's Statement, which was last updated in 2017 (when the Ministry was the Ministry of Economic Development and Growth) reflects the Ministry's current responsibilities and new government priorities, such as addressing climate change. However, the Statement does not reflect the Ministry's current name.
b. Statement is considered when making decisions	☐ The Ministry met this criterion. The Ministry provided documentation that it considered its Statement for the one decision notice for which it was requested.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	☐ The Ministry posted one proposal notice for an act on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	☐ The Ministry met this criterion.
c. Proposal notices for policies, acts and regulations are informative	☐ The Ministry posted one proposal notice for an act on the Registry, which met this criterion.
h. Proposal notices are up-to-date	☐ The Ministry met this criterion. The Ministry had one open proposal notice as of March 31, 2019, which was posted within the last two years.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 13: Ministry of Indigenous Affairs Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☐ The Ministry's Statement, which was last updated in 2018 (when the Ministry was the Ministry of Indigenous Relations and Reconciliation), reflects the Ministry's current responsibilities and new government priorities, such as addressing climate change. However, the Statement does not reflect the Ministry's current name.
2. Use of the Environmental Registry (Registry)	
a. Notice of proposals is given	☐ The Ministry posted one proposal notice for a policy on the Registry. No issues came to our attention about environmentally significant proposals that were not posted on the Registry.
b. Time to comment is extended based on the factors in the Act	☐ The Ministry met this criterion.
c. Proposal notices for policies, acts and regulations are informative	☐ The Ministry posted one proposal notice for a policy on the Registry, which met this criterion.
e. Prompt notice of decisions is given	☐ The Ministry posted one decision notice for a policy on the Registry, which met this criterion.
f. Decision notices for policies, acts and regulations are informative	☐ The Ministry posted one decision notice for a policy on the Registry, which met this criterion.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 14: Ministry of Education Compliance Report Card for the 2018/19 Reporting Year

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 16.2 —The Ministry has not updated its Statement since 2013, and it does not yet reflect new government priorities, such as addressing climate change.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 15: Ministry of Labour Compliance Report Card for the 2018/19 Reporting Year

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☒ Section 17.2 —The Ministry has not updated its Statement since 2008, and it does not yet reflect new government priorities, such as addressing climate change.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 16: Treasury Board Secretariat Compliance Report Card for the 2018/19 Reporting Year

Legend: ☐ Met criteria ☐ Partially met criteria ☒ Did not meet criteria

Criterion	OAGO Comments
1. Statement of Environmental Values (Statement)	
a. Statement is up-to-date	☐ The Ministry last updated its Statement in 2017, and its Statement reflects the Ministry's responsibilities and new government priorities, such as addressing climate change.

Note: Whether a ministry partially met or did not meet a criterion depends on the volume of non-compliance issues and/or the significance of the non-compliance issue(s) we found.

Appendix 17: Review Criteria

Prepared by the Office of the Auditor General of Ontario

Criterion	Requirement in <i>Environmental Bill of Rights, 1993</i>	What Our Office Looks For to Assess Compliance
1. Statement of Environmental Values (Statement)		
a. Statement is up-to-date	The ministry must have a Statement that explains how it will apply the purposes of the Act when making decisions that might significantly affect the environment, and how it will integrate consideration of the purposes of the Act with other considerations, including social, economic and scientific considerations. The ministry may amend its Statement from time to time. (Sections 7-10)	The ministry has a Statement that reflects its current values, priorities and responsibilities.
b. Statement is considered when making decisions	The ministry must take every reasonable step to consider its Statement whenever it makes a decision that might significantly affect the environment. (Section 11)	The ministry documents its consideration of its Statement of Environmental Values when making decisions that might significantly affect the environment.
2. Use of the Environmental Registry (Registry)		
a. Notice of proposals is given	The ministry must give notice on the Registry, for at least 30 days, of each proposed: - act or policy if the proposal could have a significant effect on the environment and the public should have an opportunity to comment on the proposal before implementation (Sections 15 and 27); - regulation under a prescribed act if the proposal could have a significant effect on the environment (Sections 16 and 27); and - classified instrument (i.e., permit, approval or order) (Sections 22 and 27), unless an exception applies (Sections 15(2), 16(2), 29, and 30, 32 and 33).	The ministry posts proposal notices for all of its environmentally significant proposals on the Registry, providing at least 30 days for public consultation, unless there is a valid exception under the Act.
b. Time to comment is extended based on the factors in the Act	The ministry must consider allowing more time to permit more informed public comment. In determining the length of time, the ministry must consider the proposal's complexity, the level of public interest, the period of time the public may require to comment, any private or public interest, and any other factor the minister considers relevant. (Sections 17, 23 and 8(6))	Ministry considers extending time to comment for all proposals, and extends the time to comment when warranted based on the factors set out in the Act.
c. Proposal notices for policies, acts, and regulations are informative	Each notice must include a brief description of the proposal. (Section 27(2))	The proposal notice includes a brief description of the proposal, including its purpose and its potential environmental implications, so that the public has the information needed to understand and meaningfully comment on the proposal.
d. Proposal notices for permits, approvals and orders are informative	Each notice must include a brief description of the proposal. (Section 27(2))	The proposal notice includes a brief description of the proposal, including its purpose and its potential environmental implications, so that the public has the information needed to understand and meaningfully comment on the proposal.

Criterion	Requirement in <i>Environmental Bill of Rights, 1993</i>	What Our Office Looks For to Assess Compliance
e. Prompt notice of decisions is given	The ministry must give notice on the Registry of its decision on each proposed policy, act or regulation “as soon as reasonably possible” after it is implemented (Section 36(1) and 1(6)). The ministry must give notice on the Registry of its decision whether or not to implement a proposal for a permit, approval or order (instrument) “as soon as reasonably possible” after a decision is made. (Section 36(1) and 1(7))	The ministry posts a decision notice on the Registry, which is typically no more than two weeks after making a decision.
f. Decision notices for policies, acts and regulations are informative	Each notice must advise the public what was decided. The ministry must take every reasonable step to consider all relevant comments received from the public, and include a brief description in the notice of the effect (if any) of the comments on the ministry’s decision. (Sections 35 and 36)	The decision notice enables the public to understand what was decided and the effect of public comments.
g. Decision notices for permits, approvals and orders are informative	Each notice must advise the public what was decided. The ministry must take every reasonable step to consider all relevant comments received from the public, and include a brief description in the notice of the effect (if any) of the comments on the ministry’s decision. (Sections 35 and 36)	The decision notice enables the public to understand what was decided and the effect of public comments.
h. Proposal notices are up-to-date	The Environmental Registry is to provide a means of giving information about the environment to the public, which includes information about decisions that could affect the environment. (Section 6)	The ministry identifies proposals that have remained open on the Registry for over two years, and posts: • decision notices on decided proposals (including proposals that were withdrawn, cancelled or abandoned); and • updates for proposals that remain under consideration by the ministry, with information about the status of the proposal.

3. Applications for Review and Applications for Investigation

a. Ministry reviews all matters to the extent necessary	The ministry must consider each application for review in a preliminary way to determine whether the public interest warrants the review. The ministry may consider: • its statement of environmental values; • the potential for environmental harm if the review is not done; • whether the matter is already periodically reviewed; • relevant social, economic, scientific or other evidence; • submissions from other persons with a direct interest; • the staffing and time to do the review; and • how recently the ministry made or reviewed the law, policy, regulation or approval in question, and whether the ministry consulted the public when it did so. (Section 67) The ministry must deny a request to review a decision that was made in the last five years if the ministry had consulted the public on that decision in a manner consistent with the Act, unless there is evidence that significant environmental harm will occur if the review is not done and that evidence was not taken into account when the decision was made. (Sections 68)	Where the ministry denies a request for review, it provides a statement of reasons to support its conclusion that a review is not warranted. Where the ministry decides to complete a review, the ministry reviews the matter to the extent necessary. The ministry states what action, if any, the minister has taken or proposes to take as a result of the review.
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Criterion	Requirement in <i>Environmental Bill of Rights, 1993</i>	What Our Office Looks For to Assess Compliance
	The ministry must provide a brief a statement of reasons for its decision to accept or deny the review. (Section 70) For undertaken reviews, the ministry must give notice of the outcome that states what action, if any, the ministry has or will take as a result of the review. (Section 71)	
b. Ministry investigates all matters to the extent necessary	The ministry must investigate all alleged contravention(s) set out in the application “to the extent that the ministry considers necessary.” The ministry may deny a request for investigation if: - the application is frivolous or vexatious; - the alleged contravention is not serious enough to warrant an investigation; - the alleged contravention is not likely to cause harm to the environment; or - the requested investigation would duplicate an ongoing or completed investigation. (Section 77) The ministry must provide a brief a statement of the reasons for its decision not to investigate. (Section 78(1)) For completed investigations, the ministry must give notice of the outcome that states what action, if any, the ministry has or will take as a result of the investigation. (Section 80)	Where the ministry decides not to investigate, it provides reasons to support its conclusion that an investigation is not necessary. Where the ministry undertakes a requested investigation, the ministry investigates the matter to the extent necessary. The ministry states what action(s) the minister has taken as a result of the investigation.
c. Ministry meets all timelines	The ministry must acknowledge receipt of the application to the applicants within 20 days of receipt. (Section 65 for reviews and Section 74(5) for investigations) The ministry must notify the applicants and the Auditor General of its decision to undertake or deny the requested review within 60 days of receipt. (Section 70) The ministry must conduct each undertaken review “within a reasonable time.” (Section 69(1)) The ministry must give notice of the outcome of the review to the applicants and the Auditor General within 30 days of completing the review. (Section 71(1)) If the ministry decides not to investigate, it must notify the applicants, the alleged contraveners and the Auditor General of this decision within 60 days of receiving the application. (Section 78(3)) If the ministry undertakes an investigation, it must, within 120 days of receiving the application, either: - complete the investigation; or - give a written estimate of the time required to complete it, and then complete the investigation within the estimated timeframe or provide a new estimated timeline. (Section 79) The ministry must notify the applicants, the alleged contraveners and the Auditor General of the outcome of the investigation within 30 days of completing the investigation. (Section 80(1))	The ministry also notifies the Auditor General that it has received the application within 20 days of receipt. The ministry provides an anticipated completion date to applicants and the Auditor General, and if this date changes, the ministry communicates the new date, with an explanation for the delay. The ministry completes the review within a reasonable time based on the complexity of the matter.

Appendix 18: Glossary of Terms

Prepared by the Office of the Auditor General of Ontario

Act: Also known as a law, legislation or statute, an act is made by the provincial (or federal) government to delineate rules about specific situations.

Application for Investigation: A right under the *Environmental Bill of Rights, 1993* (under Part V), allowing two members of the public to formally ask a prescribed ministry to investigate an alleged contravention of an act, regulation or instrument that has the potential to harm the environment.

Application for Review: A right under the *Environmental Bill of Rights, 1993* (under Part IV), allowing two members of the public to formally ask a prescribed ministry (or ministries) to review (and potentially amend) an existing policy, act, regulation or instrument, or review the need to create a new policy, act or regulation.

Environmental Compliance Approval: A type of approval under the *Environmental Protection Act* and the *Ontario Water Resources Act* issued by the Environment Ministry and obtained by proponents that seek to undertake certain activities related to air, noise, waste and sewage.

Environmental Registry: A website maintained by the Environment Ministry, and used by all prescribed ministries, to provide information about the environment to the public, including notices about proposals and decisions that could affect the environment, pursuant to the *Environmental Bill of Rights, 1993*. The Environmental Registry of Ontario (ero.ontario.ca) became the official Environmental Registry in April 2019. The previous site (ebr.gov.on.ca) remains online for archival purposes.

Exception notice: A notice posted on the Environmental Registry to inform the public about an environmentally significant decision that was made without public consultation, for one of two reasons: 1) there was an emergency, and the delay required to consult the public would result in danger to public health or safety, harm or serious risk to the environment or injury or damage to property; or 2) the environmentally significant aspects of the proposal had already been considered in a process of public participation substantially equivalent to the process required under the *Environmental Bill of Rights, 1993*.

Information notice: Information notices (called Bulletins on the new Environmental Registry of Ontario) are used by prescribed ministries to voluntarily share information about any activity or other matter that they are not required to post under the *Environmental Bill of Rights, 1993*. In some cases, Information Notices are also used when legislation other than the *Environmental Bill of Rights, 1993* requires a prescribed ministry to give notice of something using the Environmental Registry (for example, the *Clean Water Act* requires the Environment Ministry to give notice of approved source protection plans using the Environmental Registry).

Instrument: A permit, licence, approval, authorization, direction or order issued under the authority of an act or regulation.

Leave to appeal: Permission to challenge. Under the *Environmental Bill of Rights, 1993*, members of the public may seek leave to appeal the decisions of prescribed ministries to issue certain types of instruments. The decision whether to grant or deny leave to appeal is made by the adjudicative body that would hear the appeal, such as the Environmental Review Tribunal.

Notice (general): A posting on the Environmental Registry to inform the public of environmentally significant activities that prescribed ministries are considering or carrying out.

Notice—Proposal: A notice posted on the Environmental Registry by a prescribed ministry to notify the public that it is considering creating, issuing or making changes to an environmentally significant policy, act, regulation or instrument, and to seek the public's comments on the proposal.

Notice—Decision : A notice posted on the Environmental Registry by a prescribed ministry to notify the public that it has made a decision whether or not to proceed with a proposal for a policy, act, regulation or instrument. A decision notice must explain what effect, if any, the public's comments on the proposal had on the ministry's final decision.

Permit to Take Water: An approval under the *Ontario Water Resources Act* that allows a person or organization to take water from the environment.

Policy: A written set of rules or direction by a ministry.

Prescribed ministry: A government ministry that is required under O. Reg. 73/94 to carry out responsibilities under the *Environmental Bill of Rights, 1993*.

Public interest: The welfare or well-being of the general public and society.

Public consultation: Under the *Environmental Bill of Rights, 1993*, a prescribed ministry providing an opportunity for the public to submit comments or feedback on proposed acts, regulations, policies or instruments. A minimum of 30 days must be allowed for this process, and it takes place through the Environmental Registry.

Regulation: A regulation deals with topics related to the act under which it is made; the purpose of a regulation is to provide details to give effect to the act.

Statement of Environmental Values: All prescribed ministries are required under the *Environmental Bill of Rights, 1993* to publicly consult on and implement a policy that guides the ministry when it makes any decision that might affect the environment. A Statement of Environmental Values describes how the prescribed ministry will integrate environmental values with social, economic and scientific considerations when making a decision.

Appendix 19: Prescribed Acts under the *Environmental Bill of Rights*

Source of data: O. Reg. 73/94 and O. Reg. 681/94, made under the *Environmental Bill of Rights, 1993*

Act	Ministry to Post Notices for Regulations under the Act	Subject to Applications for Review	Subject to Applications for Investigation
Ministry of Agriculture, Food and Rural Affairs			
<i>Food Safety and Quality Act, 2001</i>	Y ¹	N	N
<i>Nutrient Management Act, 2002</i>	Y	Y	N
Ministry of the Environment, Conservation and Parks			
<i>Clean Water Act, 2006</i>	Y	Y	N
<i>Climate Change Mitigation and Low-carbon Economy Act, 2016</i> (Repealed in November 2018)	Y	Y	N
<i>Conservation Authorities Act</i>	Y	Y	Y
<i>Endangered Species Act, 2007</i>	Y ²	Y ²	Y
<i>Environmental Assessment Act</i>	Y	Y	Y
<i>Environmental Bill of Rights, 1993</i>	Y	Y	N
<i>Environmental Protection Act</i>	Y	Y	Y
<i>Great Lakes Protection Act, 2015</i>	Y	Y	N
<i>Lake Simcoe Protection Act, 2008</i>	Y	Y	N
<i>Ontario Water Resources Act</i>	Y	Y	Y
<i>Pesticides Act</i>	Y	Y	Y
<i>Provincial Parks and Conservation Reserves Act, 2006</i>	Y	Y	Y
<i>Resource Recovery and Circular Economy Act, 2016</i>	Y	Y	N
<i>Safe Drinking Water Act, 2002</i>	Y	Y	Y ⁷
<i>Toxics Reduction Act, 2009</i>	Y	Y	Y
<i>Waste Diversion Transition Act, 2016</i>	Y	Y	N
<i>Water Opportunities Act, 2010</i>	Y ³	Y ³	N
Ministry of Energy, Northern Development and Mines			
<i>Green Energy Act, 2009</i> (Repealed in January 2019)	Y	Y	Y
<i>Mining Act</i>	Y	Y	Y
<i>Ontario Energy Board Act</i>	Y ³	Y ³	N
Ministry of Government and Consumer Services			
<i>Technical Standards and Safety Act, 2000</i>	Y ⁴	Y ⁴	Y ⁴
Ministry of Health and Long-Term Care			
<i>Health Protection and Promotion Act</i>	Y ⁵	Y ⁵	N
Ministry of Municipal Affairs and Housing			
<i>Building Code Act</i>	Y ⁶	Y ⁶	N
<i>Greenbelt Act, 2005</i>	Y ²	Y	N
<i>Oak Ridges Moraine Conservation Act, 2001</i>	Y ²	Y	Y ⁷
<i>Places to Grow Act, 2005</i>	Y	Y	N
<i>Planning Act</i>	Y	Y	Y ⁷

Act	Ministry to Post Notices for Regulations under the Act	Subject to Applications for Review	Subject to Applications for Investigation
Ministry of Natural Resources and Forestry			
<i>Aggregate Resources Act</i>	Y	Y	Y
<i>Crown Forest Sustainability Act, 1994</i>	Y	Y	Y
<i>Far North Act, 2010</i>	Y	Y	Y
<i>Fish and Wildlife Conservation Act, 1997</i>	Y	Y	Y
<i>Invasive Species Act, 2015</i>	Y	Y	Y
<i>Kawartha Highlands Signature Site Park Act, 2003</i>	N	Y	Y
<i>Lakes and Rivers Improvement Act</i>	Y	Y	Y
<i>Niagara Escarpment Planning and Development Act</i>	Y	Y	Y ⁷
<i>Oil, Gas and Salt Resources Act</i>	Y	Y	Y
<i>Public Lands Act</i>	Y	Y	Y
Ministry of Tourism, Culture and Sport			
<i>Ontario Heritage Act</i>	Y	N	N

1. Limited to disposal of deadstock.
2. With some exceptions.
3. For parts of the Act.
4. Limited to fuel handling.
5. Limited to small drinking-water systems.
6. Limited to septic systems.
7. Limited to certain instruments under the Act.

Appendix 20: Permits and Other Approvals (Instruments) Subject to the *Environmental Bill of Rights, 1993*

Source of data: O. Reg. 681/94, made under the *Environmental Bill of Rights, 1993*

This is an overview summary for information purposes. Some licences, approvals, authorizations, directions or orders (collectively referred to as “instruments”) are prescribed in only limited circumstances. For the full list of instruments subject to the *Environmental Bill of Rights, 1993*, see O. Reg. 681/94 (Classification of Proposals for Instruments).

Ministry of the Environment, Conservation and Parks

Conservation Authorities Act

Approval for the sale, lease or other disposition of land by a conservation authority

Endangered Species Act, 2007

Stewardship agreement

Amendment to a stewardship agreement

Permit for activities necessary for the protection of human health or safety

Permit for species protection or recovery

Permit for activities with conditions that should achieve overall benefit or that will result in a significant social or economic benefit to Ontario

Amendment of a permit

Revocation of a permit

Environmental Protection Act

Director's order to suspend or remove a registration from the Environmental Activity and Sector Registry

Approval to use a former waste disposal site for a different use

Director's control order

Director's stop order

Director's approval of a control/preventative program

Director's order for remedial work

Director's order for preventative measures

Environmental Compliance Approval (waste management system/waste disposal site)

Environmental Compliance Order (air)

Environmental Compliance Order (sewage works)

Order for removal of waste

Order for conformity with the Act for waste disposal site

Renewable Energy Approval

Minister's directions in respect of a spill

Minister's order to take actions in respect of a spill

Director's order for performance of environmental measures

Director's order to comply—Schedule 3 standards

Approval of a site-specific standard

Director's order to take steps related to a site-specific standard

Approval of a registration for a technical standard for air pollution (industry standard)

Approval of a registration in respect of an equipment standard

Minister's orders regarding curtailment based on the Air Pollution Index

Declaration of or termination of a sulfur dioxide alert

Certificate of Property Use

Ontario Water Resources Act

Permits to take water
Permit authorizing a new transfer or an increased transfer
Director's order prohibiting or regulating sewage discharges
Director's order for measures to alleviate effects of impairment of quality of water
Director's order for unapproved sewage works
Director's order to stop or regulate discharge of sewage into sewer works
Direction to maintain or repair sewage or water works
Director's report to a municipality respecting sewage works or water works
Direction for sewage disposal
Directions for measures to be taken if a well produces water that is not potable
Director's order designating an area as an "area of public water service" or an "area of public sewage service"

Pesticides Act

Classification of a pesticide
Reclassification or declassification of a pesticide
Agreement with a body responsible for managing a natural resources management project that would allow a prescribed pesticide to be used
Emergency notice
Stop order
Control order
Order to repair or prevent damage

Safe Drinking Water Act, 2002

Approval of a municipal drinking water system
Drinking water works permit
Municipal drinking water licence
Order or notice with respect to a drinking water system (drinking water health hazard)

Ministry of Natural Resources and Forestry**Aggregate Resources Act**

Approval of a licensee's amendment to a site plan
Revocation of an aggregate licence
Aggregate permit
Written notice of relief to a licensee/permittee from compliance with any part of the regulations under the Act
A Minister's determination of the natural edge of the Niagara Escarpment
Class A or B aggregate licences
Amendment to an aggregate licence to add, rescind or vary a condition of the licence
Amendment to an aggregate licence to vary or eliminate a condition to the licence if the effect will be to authorize an increase in the number of tonnes of aggregate to be removed
Requirement that a licensee amend its site plan

Conservation Authorities Act

Minister's requirement that a conservation authority carry out flood control operations
Minister's requirement that a conservation authority follow the Minister's instructions for the operation of a water control structure
Minister takes over the operation of a water control structure and requires conservation authority to reimburse costs
Minister's requirement for the council of a municipality to carry out flood control operations
Minister's requirement for the council of a municipality to follow the Minister's instructions for the operation of a water control structure
Minister takes over the operation of a water control structure and requires council of a municipality to reimburse costs

Crown Forest Sustainability Act

Forest resource processing facility licence

Far North Act

Minister's order approving a land use plan

Order to amend the boundaries of a planning area after a community based land use plan is approved

Exempting order

Exception order

Fish and Wildlife Conservation Act, 1997

Authorization to release wildlife or an invertebrate

Aquaculture licence

Lakes and Rivers Improvement Act

Order to repair or remove dam

Order to rectify a problem

Order to do what Minister considers necessary to further purposes of the Act

Order to provide a fishway

Order to regulate the use of a lake or river or the use and operation of a dam

Order to take steps to maintain, raise or lower the water level on a lake or river

Order to take steps to remove any substance or matter

Niagara Escarpment Planning and Development Act

Declaration that a by-law, improvement or other development or undertaking of a municipality is deemed not to conflict with the Niagara Escarpment Plan

Order amending a local plan to make it conform to the Niagara Escarpment Plan

Approval of an amendment to the Niagara Escarpment Plan

Oil, Gas and Salt Resources Act

Permit to inject a substance other than oil, gas or water into a geological formation in connection with a project for enhancing oil or gas recovery

Amendment, suspension, revocation or addition of a term, condition, duty or liability imposed on a permit

Suspension or cancellation of a permit

Public Lands Act

Designation of an area as a planning unit

Permit to erect a building or structure or make an improvement on private land if the building, structure or improvement will be located within 20 metres of the edge of a body of water

Ministry of Municipal Affairs and Housing***Building Code Act, 1992***

A ruling that relates to the construction, demolition, maintenance or operation of a sewage system

Oak Ridges Moraine Conservation Act, 2001

Minister's order to amend a municipality's Official Plan

Minister's order to amend a municipality's zoning bylaw

Approval by the Minister of an Official Plan amendment

Approval by the Minister of a zoning bylaw amendment

Planning Act

Approval by the Minister of an Official Plan

Approval by the Minister of an Official Plan amendment

Approval by the Minister for a consent in an area where there is no Official Plan in place

Approval by the Minister of a plan of subdivision

Ministry of Energy, Northern Development and Mines
Mining Act

Consent to undertake surface mining within 45 metres of a highway or road limit

Sale or award by the Minister of surface rights

Reinstatement of a licence of occupation that was previously terminated

Permission to test mineral content

Disposition Order directing that buildings, structures, machinery, chattels, personal property, ore, mineral slimes or tailings do not belong to the Crown

Issuance of an exploration permit

Lease of surface rights

Minister's direction to include reservations or provisions

Permission to cut and use trees on mining lands

Approval to rehabilitate a mine hazard

Acknowledgment of receipt by Director of closure plan for advanced exploration or commencing mine production

Acknowledgment of receipt by Director of certified closure plan

Director's order requiring a proponent to file amendments to a closure plan

Director's order requiring changes to a filed closure plan or to amendments to a closure plan

Director's order requiring the performance of a rehabilitation measure

Director's order requiring a proponent to file a certified closure plan to rehabilitate a mine hazard

Proposal for the Crown to enter lands to rehabilitate a mine hazard site

Minister's order directing a proponent to rehabilitate a hazard that may cause immediate and dangerous adverse effect

Minister's direction to employees and agents to do work to prevent, eliminate and ameliorate adverse effect

Minister's decision to alter or revoke a decision of the Mining and Lands Tribunal

Director's order requiring a proponent to comply with the requirements of a closure plan or to rehabilitate a mine hazard in accordance with the prescribed standards

Director's decision to have the Crown rehabilitate after proponent non-compliance with order

Issuance or validation by the Minister of an unpatented mining claim, licence of occupation, lease or patent

Minister's acceptance of a surrender of mining lands

Ministry of Government and Consumer Services
Technical Standards and Safety Act, 2000

Director's variance from section 9 of O. Reg. 217/01 (Liquid Fuels) (permission to use equipment that is not approved)

Director's variance from any of the prescribed clauses of the Liquid Fuels Handling Code

Appendix 21: Concluded Applications for Review and Investigation

Prepared by the Office of the Auditor General of Ontario

This appendix provides a summary of each application that was concluded (i.e., the review or investigation was either denied or, if undertaken, was completed) between April 1, 2018 and March 31, 2019.

1.0 Applications for Review

1.1 Review of the Municipal Class Environmental Assessment Process

What the Applicants Asked For

In February 2017, two associations—the Residential and Civil Construction Alliance of Ontario and the Municipal Engineers Association (Ontario)—submitted an application asking the Environment Ministry to review the *Environmental Assessment Act* and the regulations, policies and guidance documents associated with the Municipal Class Environmental Assessment process (Municipal Class EA). The Municipal Class EA applies to infrastructure projects such as roads, water and wastewater projects. The applicants stated that a review was warranted so that projects can be completed in a timely, efficient and effective manner.

The *Environmental Assessment Act* requires those proposing certain projects to do an assessment of the potential environmental effects of the project before it begins. The Municipal Class EA sets out a standardized process for a particular class of projects that are routine and have predictable environmental effects, so that the proponents do not have to complete a full environmental assessment. The Environment Ministry, which is the approval body under the *Environmental Assessment Act*, last approved changes to the Municipal Class EA in 2015.

The reasons the applicants wanted a review included the delays and costs involved in the Municipal Class EA process, the fact that the Environ-

ment Ministry committed to update the process but had not done so, and past recommendations by the former Environmental Commissioner of Ontario (ECO) and our Office on the subject. The applicants stated that the Ministry should conduct the review to:

- minimize project delays resulting from Part II order requests submitted by the public (i.e., requests to the Ministry to require a project to undergo a higher level of assessment), including exempting the lowest-risk projects (known as Schedule A and A+ projects) from the Part II order process, delegating the responsibility for decision-making from the Minister to a Director to speed up the process, and standardizing the information required to support a Part II order request;
- improve transparency and access to information by posting relevant documents for each Municipal Class EA project on the Environmental Registry, including those relating to Part II order requests for the projects;
- better harmonize the Municipal Class EA and the *Planning Act* processes, including their public consultation processes, to avoid duplication and inconsistent conclusions;
- provide guidance on scoping reports for medium- and high-risk projects (known as Schedule B and C projects) to address the increasing costs of completing such reports, as well as provide guidance on addressing climate change concerns in a cost-efficient and timely manner; and
- provide more timely responses to proposed changes to the Municipal Class EA.

Review Undertaken by the Environment Ministry

In April 2017, the Ministry agreed to undertake the requested review and committed to complete it by the end of December 2018. In January 2019, the Ministry provided notice of its completed review to the applicants. The Ministry stated that it had worked with the Municipal Engineers Association, as well as held seven engagement sessions with municipalities from March to May 2018, to inform the review. The Ministry stated that it had already taken the following measures to address some of the issues raised by the applicants:

- The Ministry reviewed statistics for Part II order requests submitted between 2012 and 2017, and found that only two of 117 pertained to the lowest-risk categories of projects. Given their infrequency, having the Minister decide these requests would likely not slow down the process; nevertheless, in April 2017, the Ministry delegated the Minister's authority for deciding on Part II orders for lowest-risk projects to the Director.
- As of July 2018, the Ministry required the public to use a new form to submit a Part II order request, which the Ministry stated would ensure that it had all of the information needed to properly evaluate the request in a timely manner.

The Ministry also stated that it would release a discussion paper in spring 2019 for public comment on revitalizing the environmental assessment program. The Ministry stated that this discussion paper would consider: measures to improve transparency of documentation relating to Municipal Class EA projects; exempting projects in the lowest-risk categories from environmental assessment requirements altogether (and thus Part II order requests); and other potential changes, such as the scope of supporting reports. The Ministry stated that it would continue to work closely with the Municipal Engineers Association to consider amendments to the Municipal Class EA.

Our Office noted that, in April 2019, the Ministry posted a discussion paper on modernizing Ontario's environmental assessment program on the Environmental Registry for public comment. On the same day, the Ministry posted a second proposal notice to introduce amendments to the *Environmental Assessment Act* to exempt the lowest-risk projects in the Municipal Class EA from environmental assessment requirements, as well as amendments to set time limits on both requesting Part II orders and issuing decisions.

1.2 Review of an Approval to Address Odours from an Ethanol Plant in Hamilton

What the Applicants Asked For

In February 2017, two Hamilton area residents living near Canadian Liquids Processors Limited—a company in Hamilton that converts sub-standard sugar and alcohol-based liquid goods to ethanol—submitted an application requesting a review of the company's Environmental Compliance Approval (approval). The applicants stated that the approval (issued in December 2013) was not protective enough of human health, and that operations under the approval resulted in odour emissions that caused unacceptable disruptions and discomfort in their daily lives, especially during the warmer months of 2015 and 2016. They stated that there were at least 12 days in June to August 2016 when they and other local residents had to stay indoors with their windows closed and were unable to do any outdoor activities due to odours. The applicants asserted that the odours caused difficulty breathing, burning throats and watering eyes.

Review Undertaken by the Environment Ministry

The Ministry undertook this review in April 2017 and provided notice of its outcome in May 2018. In

its review, the Ministry considered the compliance history of the company, the company's application for a new approval submitted in December 2017, and comments submitted during the Environmental Registry consultation on the proposed new approval. The Ministry concluded that the conditions in the company's previous approval from 2013, as well as those in its December 2017 approval application, were inadequate to minimize odours from the facility.

The Ministry outlined the company's compliance history as of 2012, including the Ministry's site visits and the various odour abatement measures that it had required. Specifically, the Ministry found that the company had stored waste in areas and volumes contrary to its waste approval in 2012, and again in 2015. The Ministry also found in February 2017 that the company had ceased operating equipment outlined in the approval, and had failed to prepare an operations and maintenance manual as required by the approval. The Ministry noted that it had received numerous odour complaints through 2015 and 2016, and confirmed the company was contributing to the odours. Based on a site inspection and the results of an odour survey, the Ministry issued two Provincial Officer's Orders in March 2017 (shortly after receiving the application for review) requiring the company to implement odour abatement measures, and prepare best management practices and procedures to address odour sources.

In December 2017, the company submitted an application to amend its air approval to incorporate these odour abatement measures. The company had also applied for a new approval for its waste handling in 2016, which the Ministry had not yet approved.

During the review of the 2017 approval application, the Ministry concluded that the company must take a variety of measures to reduce odour sources, such as reduce outside waste piles, clean up liquid ("leachate") that has seeped out, and create a proper ventilation system with odour removal equipment.

Consequently, in May 2018, the Ministry issued an amended air approval with several new conditions to help reduce odour emissions from all possible sources. The new air approval requires the company to: submit a plan detailing preventive actions; install odour control equipment; conduct source testing to ensure the equipment is effective; and record odour complaints and take appropriate action to resolve them. The Ministry also updated the company's approval for waste disposal, adding conditions to prevent standing water on the site to further avoid fugitive odour emissions (leaks and other unintended releases).

1.3 Review of the Regulation and Oversight for Septic Systems

What the Applicants Asked For

In February 2018, the Ontario Onsite Wastewater Association and the Federation of Ontario Cottagers' Association submitted an application requesting a review of the rules for onsite septic systems (i.e., smaller sewage collection systems with a capacity of less than 10,000 litres/day that are located on the same property as the home or building that they serve). These smaller, onsite systems are regulated by the Municipal Affairs Ministry under the Ontario Building Code, whereas larger sewage systems are regulated by the Environment Ministry under the *Ontario Water Resources Act*.

Septic systems collect and partially treat wastewater from a home or business. There are over 1 million septic systems in use in Ontario. When any one of these systems fails, it can release untreated human sewage into the surrounding environment, which can contaminate nearby water bodies, with pathogens, nutrients and other pollutants. Regular inspections can identify faulty or leaking systems, which can then be repaired or replaced before the system causes water pollution problems. Septic systems that are pumped out to remove accumulated solids and generally well maintained

can reduce the potential of leaking pollutants into the soil, groundwater and surface water.

The applicants asked the Municipal Affairs Ministry to review the portion of the Ontario Building Code that sets out the requirements for the operation and maintenance of septic systems, asserting that the current requirements are not sufficient to protect the environment and public health. The applicants also asked the Environment Ministry to consider the need for new regulatory provisions under the *Ontario Water Resources Act* to govern the operation and maintenance of septic systems.

The applicants asserted that a lack of information about septic systems—such as installation permits and maintenance records—prevents the government from being able to verify the functioning of these systems. The applicants provided statistics from a survey of septic systems in Ontario that showed that 41% of the inspected systems had a major deficiency, and 65% of those deficient systems were over 30 years old (i.e., near or past their life expectancy). The applicants also provided data to show that most septic systems lacked any documentation, including the age of the system. Accordingly, they asserted that imposing requirements for provincial tracking of all septic systems (such as through a central registry of permits and other records) would enable the government to track and verify septic systems. This would, in turn, enable the government to better identify and address malfunctioning septic systems, and ultimately reduce environmental harm.

The applicants also argued for mandatory re-inspections for all septic systems throughout Ontario to ensure proper performance. Since 2012, the Ontario Building Code has required five-year re-inspection programs for septic systems in parts of the Lake Simcoe watershed and in areas where source protection committees have identified septic systems as a significant threat to municipal drinking-water sources. Municipalities, conservation authorities and boards of health may establish inspection programs elsewhere, but there is no requirement to do so. In most areas of Ontario,

after the initial installation-related permit inspection, systems may be used for decades without any maintenance or inspection requirements.

Finally, the applicants requested that the government assess the appropriateness of transferring the oversight of septic systems from the Municipal Affairs Ministry to the Environment Ministry. The applicants noted that the Environment Ministry already regulates large sewage systems and argued that its mandate and programs are better suited to carrying out the ongoing oversight of septic systems.

Review Denied by the Municipal Affairs Ministry and the Environment Ministry

In April 2018, both ministries denied the application, stating that the public interest did not warrant the requested review.

The Municipal Affairs Ministry stated that the Ontario Building Code already undergoes regular review with public consultation. Specifically, the Ministry reviewed the Ontario Building Code in October 2016 and had consulted through the Environmental Registry on proposed changes to provisions relating to the operation and maintenance of septic systems (among other changes). This included proposals to require the pumping out of septic tanks on a set frequency, regular inspections of septic systems, and the keeping of maintenance records. However, the Ministry did not move forward with these proposals. The Ministry stated in its decision notice to the applicants that the current maintenance and operational requirements and the scope of mandatory inspection programs under the Ontario Building Code meet the Ministry's commitment to support a "regulatory system that enhances environmental integrity and resource conservation."

The Environment Ministry similarly concluded that denying the request to review the need for new regulatory provisions under the *Ontario Water Resources Act* would not result in harm to human health and the environment, as septic systems

are already regulated under the Ontario Building Code. To the extent that the issues raised in the application fall under its jurisdiction, the Environment Ministry stated that it would consider the applicants' concerns in future reviews of the source protection plans under the *Clean Water Act* and the upcoming review of the Lake Simcoe Protection Plan, anticipated to begin in 2019. The Ministry committed, as part of these future reviews, to assess the effectiveness of current mandatory inspection programs, as well as consider the need for new reporting requirements for sewage systems within the Lake Simcoe watershed.

Finally, the Environment Ministry stated that transferring responsibility to it for overseeing the operation and maintenance of septic systems under the *Ontario Water Resources Act*, while leaving responsibility for permit and design requirements with the Municipal Affairs Ministry, would lead to regulatory confusion and inefficiencies.

See **Section 6.7** of our report for more information.

1.4 Review of a Renewable Energy Approval in Prince Edward County

What the Applicants Asked For

In March 2018, two groups—the Alliance to Protect Prince Edward County and Prince Edward County Field Naturalists—submitted an application requesting a review of White Pines Wind Inc.'s renewable energy approval issued in July 2015 for a wind turbine project in Prince Edward County. The applicants asserted that the project would cause irreparable harm to migratory birds and species at risk, such as Blanding's turtles and little brown bats.

The Alliance to Protect Prince Edward County, along with two other parties, had previously appealed the approval to the Environmental Review Tribunal in 2015. In 2017, the Tribunal ruled that the approval, as issued, would cause serious harm to the little brown bat and Blanding's

turtle. The Tribunal ordered several modifications to the approval to mitigate harm from the project's operations.

The applicants argued that, despite the Tribunal's decision:

- the company was misapplying the Tribunal's requirement to implement measures to protect the Blanding's turtle habitat by treating only a small part of the project area as turtle habitat, rather than the entire project site;
- the company had added a new concrete production plant, which had not been part of the original environmental impact study and would result in trucking routes that would fragment Blanding's turtle habitat;
- the company had not proposed mitigation measures to protect the turtles if they emerge before May 1 or remain past October 15 (i.e., the period defined in the approval as the turtle's active season), despite evidence that, in recent years, Blanding's turtles have emerged from hibernation before April 30;
- the approval had not been updated to include the Tribunal's recommendations in respect of migratory birds; and
- the project's mitigation plan had not been updated to address changes made to the project stemming from the Tribunal's decision to change the number of turbines.

Review Denied by the Environment Ministry

The Ministry concluded in May 2018 that the public interest did not warrant the requested review given that a decision on the project was made within the last five years, with public participation, and there was no new evidence that a failure to review the decision could result in significant harm to the environment. The Ministry stated that there was some information included in the application that was not available to it at the time it had issued the renewable energy approval in 2015, but that information was subsequently considered by the Tribunal in its 2017 ruling.

Our Office notes that, after the Ministry rendered its decision on this application, the province passed the *White Pines Wind Project Termination Act, 2018* in July 2018 that cancelled this renewable energy project.

1.5 Review of the Regulation of Pollution from Nitrogen Dioxide and Fine Particulate Matter

What the Applicants Asked For

In May 2018, Ecojustice, an environmental law charity, submitted an application on behalf of two members of the public that asked the Environment Ministry to review Ontario's regulatory and policy framework relating to air emissions standards for nitrogen dioxide (NO₂) and fine particulate matter (PM_{2.5}). Specifically, the applicants asked the Ministry to review:

- the standard for NO₂ set out in Schedule 3 of O. Reg. 419/05 (Air Pollution—Local Air Quality), under the *Environmental Protection Act*;
- Ontario's Ambient Air Quality Criteria (AAQC) for NO₂; and
- the lack of a legally binding standard or AAQC for PM_{2.5}.

A standard under O. Reg. 419/05 puts a legal limit on the concentration of a contaminant that any one regulated facility may emit into the air. By contrast, an AAQC specifies a desirable concentration of a contaminant in the air and is used to assess general air quality in a community. At the federal level, Canadian Ambient Air Quality Standards (Canadian Standards) are objectives for managing air quality across Canada; in communities where the Canadian Standards are exceeded, such as the Hamilton and Sarnia areas in Ontario, provincial ministers of the environment are expected to take action.

The applicants stated that Ontario's standard and AAQC for NO₂ are both outdated. Both are more than three times higher than the Canadian Standards for NO₂, which the federal government

adopted in 2017 and will take effect in 2020, and are twice as high as the World Health Organization air quality guideline for NO₂. Further, the Environment Ministry sets limits only on short-term NO₂ emissions and does not have an annual standard for NO₂ to limit long-term exposure.

The applicants were also concerned that the Environment Ministry has neither a legally binding standard nor AAQC for PM_{2.5}. The Ministry does have a 24-hour limit for PM_{2.5} listed in its AAQCs, but does not consider the limit to be a true AAQC, treating it as a less authoritative guide for decision-making. The federal government, by contrast, adopted 24-hour and annual Canadian Standards for PM_{2.5} in 2012. The applicants argued that the lack of standards for PM_{2.5} makes it more difficult to take compliance and enforcement actions against facilities that emit significant levels of the contaminant.

The applicants asserted that the Ministry's weaker standards and AAQC for NO₂ and lack of standards and AAQC for PM_{2.5} pose serious risks to human health. They cited evidence that health risks associated with short- and long-term exposure to NO₂ include a range of adverse respiratory effects, and that PM_{2.5} is associated with adverse cardiovascular and respiratory effects and premature death. The applicants noted recent studies have found that there is no safe level of exposure to PM_{2.5}. For example, a 2017 report by the Organisation for Economic Co-operation and Development found that PM_{2.5} is "the most serious pollutant globally from a human health perspective." The applicants also cited a 2016 joint report by Public Health Ontario and Cancer Care Ontario that called exposure to PM_{2.5} "a significant public health concern in Ontario," and found that it is associated with 290 to 900 cancer cases per year.

The applicants stated that health risks from NO₂ and PM_{2.5} are particularly serious for people living in close proximity to major emitters, such as those in communities near Chemical Valley in the Sarnia area and in Hamilton's industrial core, as well as children, the elderly and people with asthma.

The applicants recommended that the Ministry update its standard and AAQC for NO₂, and establish a legally binding standard and AAQC for PM_{2.5}, with the effect of at least matching the Canadian Standards. The applicants also stated that, given the health effects associated with long-term exposure to NO₂, the government should consider introducing an annual standard for NO₂ that is in accordance with the Canadian Standards. The applicants stated that “updated and new Ontario standards should be set at concentrations that are protective of the environment and human health, including individuals who are biologically more vulnerable to air pollutants.”

Review Denied by the Environment Ministry

The Ministry denied this application in November 2018 (more than four months after the 60-day timeline required under the Act), concluding that, based on its consideration of the factors in the Act, the public interest did not warrant a review.

The Ministry stated that the *Environmental Protection Act*, along with its associated regulations and compliance and enforcement tools, provide a variety of approaches to address concerns about air quality. The Ministry stated that O. Reg. 419/05 has standards that address NO₂ and the precursors to PM_{2.5} from industrial and commercial facilities, “providing a level of protection for human health.” The Ministry explained that it does not set standards for PM_{2.5} in O. Reg. 419/05 because the majority of PM_{2.5} is formed by other contaminants in the air, rather than being emitted directly. Instead, the Ministry sets health-based air standards for the key contaminants that contribute to PM_{2.5}, such as sulphur dioxide, nitrogen oxides, volatile organic compounds and metals.

The Ministry noted that O. Reg. 419/05 is just one part of its approach to managing air quality. The Ministry also supports community-based activity to help address transportation and residential sources of those contaminants, which form the majority of the province’s NO₂ and PM_{2.5} emissions

but are not regulated under O. Reg. 419/05. The Ministry stated that all sources need to be considered when undertaking actions to improve air quality.

The Ministry stated that it has already prioritized the NO₂ air standard for updating in its standards-setting plan (a plan that identifies which of the 130 regulated contaminants should be prioritized for updating). The review of the NO₂ air standard was to be informed by a national process, which the Ministry noted occurred in the 2017 Canadian Standards, but the Ministry did not explain what, if any, steps it would take now that the national process is complete. The Ministry noted that it engages stakeholders and the public in consultation processes when updating or adding new air standards under O. Reg. 419/05. The Ministry also stated that it completed a review of the effectiveness of its policy framework for PM_{2.5} in 2012 (in response to an earlier application for review) and found it to be effective.

Finally, the Ministry acknowledged that, while the majority of the province’s NO₂ and PM_{2.5} come from transportation and residential sources, in some communities the primary contributors of these contaminants are industrial/commercial sources. The Ministry highlighted work that it has undertaken in Hamilton and in the Sarnia area to address community concerns with air pollution, such as supporting community-based initiatives in Hamilton and developing the Sarnia Air Action Plan.

See **Section 4.8** of our report for more information.

1.6 Review of the Cancellation of Cap and Trade

What the Applicants Asked For

On July 18, 2018, two representatives of the Canadian Environmental Law Association, a non-profit organization, submitted an application asking the Environment Ministry to review O. Reg. 386/18

(Prohibition against the Purchase, Sale and other Dealings with Emissions Allowances and Credits), the regulation that revoked O. Reg. 144/16 (Cap and Trade Program), under the *Climate Change Mitigation and Low-carbon Economy Act, 2016*. The revocation of that regulation effectively ended Ontario's cap-and-trade program.

The applicants stated that a review was necessary because abolishing the cap-and-trade program was “contrary to the public interest and may cause or contribute to significant harm to the environment and human health and safety, particularly since the provincial government has not announced any alternative programs that will be undertaken in order to reduce greenhouse gas emissions and transition Ontario to a resilient low-carbon economy.”

The applicants also stated that a review was necessary because the Ministry did not notify or consult the public before making the regulation, contrary to its duties under the *Environmental Bill of Rights, 1993* (Act) to allow public participation in environmentally significant matters. Instead, it posted an exception notice on the Environmental Registry on July 6, 2018. The notice asserted that the Ministry was not required to consult the public on O. Reg. 386/18 because the regulation's effect of ending cap and trade was a matter that had already been considered during the recent Ontario election. The Ministry stated that the election was a public participation process substantially equivalent to the process required under the Act.

The applicants disagreed that a provincial election replicates the public consultation provisions under the Act. They asserted that the Minister's decision not to post the regulation on the Environmental Registry for public consultation “cannot be justified under any of the statutory exceptions to public participation under the [Act].”

The applicants contended that, to comply with the Act, the Ontario government must:

- immediately revoke O. Reg. 386/18;
- provide the public with an appropriate opportunity to comment on any future regulatory proposals under the *Climate Change Mitiga-*

tion and Low-carbon Economy Act, 2016, by giving notice on the Environmental Registry; and

- consider the public's comments before making any decisions about the future of the cap-and-trade program.

On July 25, 2018—after the applicants submitted the application for review—the government introduced Bill 4 (*The Cap and Trade Cancellation Act, 2018*) in the Ontario Legislature to repeal the *Climate Change Mitigation and Low-carbon Economy Act, 2016*, to end Ontario's cap-and-trade program. On September 11, 2018, six weeks after Second Reading on Bill 4 had commenced, the Ministry posted Bill 4 on the Environmental Registry for a 30-day public comment period. Members of the public submitted 11,222 comments on Bill 4. The *Cap and Trade Cancellation Act, 2018*, received Royal Assent on October 31, 2018.

Review Denied by the Environment Ministry

The Ministry denied this application for review on September 21, 2018. The Ministry concluded that the public interest did not warrant a review because, at the time of the Ministry's decision, another public consultation for the matters raised in the application was in the process of happening (that which was going on for the 30 days after Bill 4 was posted on the Environmental Registry on September 11, 2018). The Ministry stated that the resources to conduct the requested review therefore “would be duplicative or unnecessary.”

The Ministry stated that, in any event, it was required to deny the request for review based on section 68(1) of the Act, which precludes a ministry from undertaking a review of a decision made within the last five years if the decision was made in a manner consistent with the purpose and intent of Part II of the Act (which sets out requirements for public participation in government decision-making). In other words, a ministry can not undertake a review of a matter if, at some point in the last five years, the public already had the opportunity to

participate in the decision-making process around it, and if that opportunity to participate was consistent with the notice and public consultation requirements of the Act.

Our Office notes that in September 2018, Greenpeace filed an application for judicial review of the repeal of O. Reg. 144/16 (Cap and Trade Program). Greenpeace asserted that the Ministry's use of an exception notice was unreasonable and that a provincial election was not a substantially equivalent process to the Act. In October 2019, the Ontario Divisional Court found that the government's recent election did not relieve it from its obligation to follow the public consultation requirements set out in the Act.

See **Section 4.3** of our report for more information.

1.7 Review of the Deer Hunt in Short Hills Provincial Park

What the Applicants Asked For

In September 2018, the Animal Alliance of Canada, a non-profit organization, requested a review of all relevant acts, regulations and policies relating to the archery deer hunt that has been carried out since 2013 in Short Hills Provincial Park by the Haudenosaunee (the Six Nations of the Grand River). The applicants specifically requested that the government review the *Environmental Assessment Act*, and any other relevant law or regulation, to require an environmental assessment of the First Nation's deer hunt in Short Hills Provincial Park to determine the impacts of the hunt on the park environment.

The applicants stated that the deer hunt by the Haudenosaunee, which is facilitated by ministry staff, is foremost a resource management project with the objective of reducing the deer herd within the provincial park. The Ministry's estimates of deer population and density from 2018, included in the application, estimated that there are 600 to 700 deer in the park, which is approximately 15 times the density that the park can ecologically support.

The applicants stated that the hunt is damaging the park and it has been ineffectual in reducing the number of deer, and that the park's deer population is not overabundant. The applicants argued that, in effect, the Ministry is sidestepping doing an environmental assessment by depending on the First Nation to reduce deer numbers. To support their claims of damage to the park environment, the applicants provided photographic evidence of damage from passenger and all-terrain vehicles.

Review Denied by the Natural Resources Ministry and the Environment Ministry

This application was sent to both the Natural Resources Ministry and the Environment Ministry. The ministries provided a consolidated response to the applicants in November 2018 denying the request for a review.

The ministries stated that the Haudenosaunee have a treaty right to hunt in southwestern Ontario, including Short Hills Provincial Park. The Natural Resources Ministry was notified by the Haudenosaunee that this right would be exercised and, accordingly, Ontario Parks' role was then to ensure public safety and monitor the hunt. The ministries stated that this archery hunt was not undertaken by or on behalf of the government, and for that reason the *Environmental Assessment Act* did not apply.

The ministries stated that there is a distinction between a deer herd reduction (which occurs in other provincial parks) and a harvest, or hunt, by a First Nation (such as this case). The goal of a deer herd reduction program is for Ontario Parks to actively manage a deer population to ensure that the impacts to a park ecosystem from deer browsing do not significantly affect vegetation regeneration. The deer hunts in Short Hills Provincial Park have been initiated by the Haudenosaunee in exercising their treaty rights and, thus, are not a deer herd reduction program.

The ministries stated that Ontario Parks carried out a number of activities to ensure public safety during the deer hunt, including responding to

public complaints and reports of trespassing, as well as moving deer to the gathering area when doing so promotes the safety of the hunters. Further, staff collected data from harvested deer to assess the health and status of the deer population in the park. The ministries stated that only staff are permitted to operate passenger and all-terrain vehicles in the park, and that these vehicles are used to assist in the safety and efficiency of the hunt. Further, Ontario Parks has no conservation concerns with the Haudenosaunee's deer hunt based on the size of the deer population in the park.

1.8 Review of the Regulation of Recreational Open-Air Wood Burning

What the Applicants Asked For

In November 2018, two members of the public from southwestern Ontario requested a review of the need for a new provincial policy or regulation to prohibit recreational open-air wood burning within 220 metres of any residence, school, daycare centre, health-care facility, playground or playing field. Further, the applicants requested that all existing municipal bylaws and policies that allow recreational open-air wood burning in such areas be revoked.

The applicants stated that recreational open-air wood burning emits pollutants that have adverse effects on both the environment and human health. The applicants also asserted that the government's Air Quality Health Index is based on a limited number of air monitoring stations that do not adequately capture air-quality data at the local level. Further, the applicants stated that municipal approvals for recreational open-air wood burning are based on fire safety considerations rather than environmental and human health protection.

Review Denied by the Environment Ministry and the Municipal Affairs Ministry

The Environment Ministry and the Municipal Affairs Ministry both denied the application, determining that the public interest did not warrant a review, in December 2018 and January 2019 respectively. The ministries noted that open-air burning is regulated by municipalities under the *Municipal Act, 2001*, and the *City of Toronto Act, 2006*. These acts afford broad powers to municipalities to pass bylaws, including those affecting the environment and the health, safety and well-being of persons in their jurisdiction. Further, both ministries noted that the 2016 guidance developed by the Canadian Council of Ministers of the Environment, which has been provided to municipalities, sets out "best practices to help ensure residential, agricultural, and ecological open-air burning activities are conducted in a responsible manner, thereby minimizing potential adverse human health and environmental impacts."

1.9 Review of the Need to Establish a Conservation Reserve in the Township of Long

What the Applicants Asked For

In November 2018, the Member of Provincial Parliament for Algoma-Manitoulin and a member of the public submitted an application for review asking the Environment Ministry to create a conservation reserve in the Township of Long on the north shore of Lake Huron. The applicants stated that this area comprises a wetland complex (a group of functionally linked wetlands) that provides habitat to a large population of Blanding's turtles and other species at risk. The applicants asserted that the turtles may be harmed by a proposed aggregate operation (a quarry) at the site. Conservation reserves are a type of regulated protected area in which this type of aggregate operation is prohibited.

Blanding's turtles are regulated as a threatened species. Threatened species are at-risk plants

or animals whose status may worsen to become endangered if steps are not taken to address the factors threatening them. Habitat destruction is a significant threat to the survival of this species at risk. Additionally, Blanding's turtles are susceptible to severe population declines even when just a few of them die.

The applicants stated that a research study conducted by Laurentian University and the Northern Ontario School of Medicine, initiated in 2017 and ongoing, of the area of Crown land where the quarry is proposed has led to the discovery of a potentially significant population of Blanding's turtles. This study estimates that the local population may exceed 100 mature individuals, at a density of approximately 0.7 turtles per hectare. The applicants stated that this wetland complex provides critical habitat for the species as it provides a combination of overwintering, nesting and seasonal habitats. The applicants asserted that the ongoing results of this scientific research are grounds for this site to be regulated as a protected area.

Review Denied by the Environment Ministry

The Environment Ministry denied this application in February 2019. The Ministry's response, which was co-written with the Natural Resources Ministry, concluded that the public interest does not warrant a review because the potential for harm is "nil or negligible."

The ministries stated that Blanding's turtles and their habitat are protected under the *Endangered Species Act, 2007*, which will continue to protect Blanding's turtles from being killed or having their habitat destroyed regardless of future land uses.

The ministries noted that the *Aggregate Resources Act* and its standards require that an impact assessment report be prepared to determine any negative effects as part of a quarry's approvals process. This report would identify proposed measures to prevent, mitigate or remedy any harm. The ministries also stated that a disposition of Crown land

for a quarry is screened by the Natural Resources Ministry under its class environmental assessment.

The ministries stated that the Natural Resources Ministry screens any request to establish a conservation reserve as a Crown land-use-planning decision, and can choose to consider it immediately, defer it, refer it to another process, request additional information or reject it. In this case, the Ministry rejected the request, stating that such a land-use change "would not be considered consistent with broader government policy" as the issues raised are "better suited for the *Endangered Species Act, 2007* and are not within the scope of [C]rown land use planning."

The ministries stated that the "representative land values" raised in this application (that is, threatened species and their habitat) are too small or dispersed to warrant the establishment of a new protected area. They stated that such representative land values already receive protection in Matinenda Provincial Park, north of this site. Finally, they stated that land-use planning done in the 1970s and the 1990s led to this area of Crown land currently being managed primarily for commercial forestry; other permitted land uses include aggregate extraction, mineral exploration and development, commercial tourism and commercial power generation.

1.10 Review of a Quarry Expansion in Burlington

What the Applicants Asked For

In February 2018, two representatives of the Burlington Green Environmental Association, a non-profit charity, submitted an application requesting that the Natural Resources Ministry review the licence and site plan conditions for an aggregate (quarry) operation run by Meridian Brick Canada Ltd. in Burlington. The applicants were concerned about the impacts of the proposed expansion of quarrying, including the loss of trees, the loss of habitat for species at risk, and the loss of a carbon

sink to mitigate against (or reduce) the effects of climate change.

This site has been actively quarried for almost a century, and was licenced under the *Pits and Quarries Control Act* in 1972. In 2015, the company proposed to quarry a new area, referred to as the East Cell Quarry Lands. The applicants asserted there are important woodlands and multiple species at risk on the site.

This application was the second from these applicants asking for a review relating to the East Cell Quarry Lands. In February 2018, the applicants requested that the Municipal Affairs Ministry issue a Ministerial Zoning Order to either rezone parts of the East Cell Quarry Lands or create a temporary moratorium on aggregate extraction until the environmental features of the area are evaluated. The Municipal Affairs Ministry denied that review in April 2018.

In response to another application for review submitted by different applicants (Tyandaga Environmental Coalition Inc.) in November 2017, the Natural Resources Ministry has been reviewing the aggregate licence and related site plan for this property, examining issues at the site relating to regulated species at risk and noise mitigation measures. Our Office will report on the outcome of that review once it is completed.

Review Denied by the Natural Resources Ministry

In April 2018, the Ministry denied the application, concluding that the public interest does not warrant a review. The Ministry stated that the licence for the site, which authorizes tree removal, is in good standing. The Ministry also noted that it has amended the site plan several times to include more up-to-date environmental and rehabilitation requirements. The current site plan, which the Ministry approved in 2010, requires final rehabilitation to 100% forest cover.

The Ministry also stated that operations must comply with the *Endangered Species Act, 2007*, and

that the Ministry is in the process of conducting a separate application for review related to species at risk and this site. Lastly, the Ministry stated that it will continue to incorporate climate change adaptation and mitigation through its broader programs, planning and policies.

1.11 Review of the *Conservation Authorities Act* and Expropriation of Private Land

What the Applicants Asked For

In May 2018, two residents living near Hamilton submitted an application asking the Natural Resources Ministry to review the *Conservation Authorities Act* and its provision on expropriations. This section says that, through the *Expropriations Act*, conservation authorities have the right to acquire property belonging to others to achieve any purpose that falls within their statutory responsibilities. The applicants were concerned about a specific case involving the expropriation of 387 ft² of land by the Hamilton Conservation Authority to enlarge a hiking trail access point for safety purposes.

Review Denied by the Natural Resources Ministry

The Ministry denied this application in July 2018, concluding that a failure to do the review would not result in significant harm to the environment. The Ministry stated that the *Conservation Authorities Act* recently underwent a review that involved significant public input. It noted that the legal purpose of conservation authorities is to provide programs and services related to “the conservation, restoration, development and management of natural resources,” which includes recreational programs and services, and that they may expropriate land to that end. The Ministry stated that the *Expropriations Act*, which applies to conservation authorities, provides a process of

notification and opportunity for the landowner to request a hearing before the Local Planning Appeal Tribunal before a decision is made on whether the expropriation is allowed.

1.12 Review of Soil Health in Agriculture

What the Applicants Asked For

In January 2015, two members of the public with expertise in sustainable agriculture requested that the Agriculture Ministry review the need for a new policy, act, regulation or program to encourage farmers to adopt sustainable soil management practices. The applicants were concerned that, without adequate government supports and incentives, many farmers would continue to engage in practices that compromise soil health and the environment. They provided numerous studies to demonstrate the importance of healthy soil for productive agriculture as well as for improved water quality, erosion reduction, disease suppression, and climate change mitigation and adaptation.

The applicants stated that the review should consider financial measures, such as property tax incentives, to motivate farmers to engage in farming practices that are good for soil. The applicants also discussed methods for monitoring soil management, the need for reliable soil-quality indicators, and the potential of other activities and programs to achieve soil health.

Review Undertaken by the Agriculture Ministry

In March 2015, the Ministry undertook the review. The Ministry agreed that decreased soil quality puts the productive capacity of Ontario's agri-food system at increased risk. The Ministry acknowledged that poorer-quality soils can impact water quality and increase greenhouse gas emissions, and are less resilient to climate change impacts such as extreme weather.

As part of the review, the Ministry established a working group of stakeholders to provide input and consulted the public using the Environmental Registry. The Ministry ultimately released a document called *New Horizons: Ontario's Agricultural Soil Health and Conservation Strategy* in April 2018. The strategy is a long-term framework that sets a vision, goals and objectives for research, investments and activities until 2030. The strategy provides actions to meet the goals, including putting in place financial incentives for soil care, as well as methods to measure progress.

The strategy directs the Ministry to establish a collaborative group to deliver long-term oversight of the strategy's implementation, including overseeing the development of an implementation plan. The strategy states, "This group's purpose and objectives, membership and roles, and operating guidelines, as well as a schedule for regular review and progress reporting will be established. Once established, the group will develop annual work plans, to include delivery by partners, based on the actions and phasing outlined in the Strategy."

Our Office followed up with the Ministry after this application was concluded. As of August 2019, the Ministry had not yet established the collaborative group to oversee the strategy's implementation, so an implementation plan had not yet been developed. The Ministry told us that it planned to establish the group in fall 2019.

1.13 Review of Habitat Offsets for Species at Risk under the *Planning Act*

What the Applicants Asked For

In March 2018, two residents of Brockville submitted an application requesting a new policy to clarify the rules, processes and responsibilities that apply to the use of habitat "offsets" for species at risk. This is the practice of developers obtaining approval for projects that destroy significant wildlife habitat by creating new habitat as a substitute,

or offset, for the habitat to be destroyed. The applicants stated that this review was needed because the Provincial Policy Statement under the *Planning Act*, as well as the *Endangered Species Act, 2007*, inadequately protect the golden-winged warbler from development. The golden-winged warbler is a species of special concern, which means that, while it is not currently endangered or threatened, it may become so due to a combination of its biological characteristics and identified threats. This species does not receive protection under the *Endangered Species Act, 2007*. Specifically, the applicants were concerned that their municipality has proposed an industrial development project that overlaps with a previously established habitat offset and has not addressed how it will compensate for the lost warbler habitat.

The applicants stated that sites where the golden-winged warblers are found are considered to be “significant wildlife habitat.” The *Provincial Policy Statement, 2014*, prohibits development and site alteration in significant wildlife habitat unless the developer demonstrates that “there will be no negative impacts on the natural features or their ecological functions.” One mechanism that is used to allow development in significant wildlife habitat is to propose to create new habitat as an offset for habitat that will be destroyed. However, the applicants expressed concern that the current rules are ineffective.

The applicants stated that there was a need for clearer offset rules relating to legal authorities, eligibility criteria, verification, duration of offsets, monitoring and reporting, and public notice and right to comment. The applicants stated that such clearer rules are needed to ensure that the developers proposing offset projects demonstrate that there will be no negative impacts on natural features or their ecological functions whenever habitat offsets are used to bring planning decisions into effect.

Review Denied by the Natural Resources Ministry and the Municipal Affairs Ministry

In May 2018, both ministries concluded that the public interest does not warrant undertaking this review.

The Natural Resources Ministry’s denial of the application stated that the Municipal Affairs Ministry has the primary responsibility for municipal land-use-planning decisions. The Ministry also explained that the protections in the *Endangered Species Act, 2007*, do not apply to species of special concern (such as the golden-winged warbler), only threatened and endangered species. The Ministry acknowledged that its role is to provide technical guidance to the Municipal Affairs Ministry and municipalities to support the implementation of the Provincial Policy Statement. The Ministry provided examples of various guidance documents that contain advice, recommendations and best management practices, but explained that these are all only advisory in nature. The Ministry noted that the primary requirement within these guides is for planning authorities to gather a comprehensive understanding of ecological systems before making decisions that could cause negative environmental impacts. The Ministry argued that this requirement, in combination with the technical guidance and advice it provides to municipal planning authorities, is sufficient direction for planning authorities to protect species of special concern.

The Municipal Affairs Ministry declined to undertake the review on the basis that the Provincial Policy Statement had undergone a comprehensive review that was completed in 2014. The Ministry also stated that municipalities are the primary implementers of provincial land-use-planning policies, and the *Planning Act* requires decisions to be consistent with the Provincial Policy Statement.

See **Section 6.8** of our report for more information.

2.0 Applications for Investigation

2.1 Investigation of Odours from a Cosmetics Factory in Toronto

What the Applicants Asked For

In September 2017, two Toronto residents living near a cosmetic products factory owned by Lush Manufacturing Ltd. submitted an application for investigation alleging that its facilities were discharging airborne contaminants that caused adverse effects, in violation of the *Environmental Protection Act*. The alleged adverse effects included material discomfort and the loss of enjoyment of property. The facilities are located in a mixed residential and industrial neighbourhood in Toronto.

The applicants stated that they experienced persistent odours from the facility, which resulted in nausea, burning sensations in their noses and throats, and itchy and irritated eyes. They also stated that the emissions caused disruptions to daily life, including not being able to open windows or use their yards. The applicants kept pollution journals that documented the time, extent, and impact of odour occurrences.

The applicants acknowledged that the company had taken steps to mitigate odour impacts, including installing generators, charcoal filters and air purifiers to neutralize and reduce odours, decreasing exhaust, installing cladding and sealing the building to reduce fugitive emissions (leaks and other unintended releases), and acquiring a new building across the street and further from homes to relocate the most odourous processes. However, the applicants stated that odour impacts did not decrease in frequency or severity as a result of these measures. They also argued that the new and amended Environmental Compliance Approvals (approvals) for the facilities, when issued, should contain stringent, effective and enforceable conditions to prevent the continuation of odour impacts.

Investigation Undertaken by the Environment Ministry

The Environment Ministry agreed in November 2017 that an investigation was warranted. The Ministry issued the notice of outcome of its investigation in May 2018.

The Ministry first received odour complaints about the facilities in fall 2014. At that time, it asked the company to apply for an amended approval to address the odour issues. Ministry staff visited the facilities 40 times between fall 2014 and May 2018, both during and after business hours (23 visits preceded its receipt of the application, and 17 occurred after). The Ministry stated that during site visits its staff confirmed the presence of odours from the facilities, but not at the (subjective) threshold for an “adverse effect” under the *Environmental Protection Act*.

The Ministry had identified other compliance issues prior to receiving the application. In September 2017, Ministry staff found that the company was operating outside its permitted operating hours. In October 2017, the Ministry issued a Provincial Officer’s Order requiring the company to adhere to the operating hours specified in its approval. When the company contravened the order the next day, the Ministry referred the matter to its enforcement branch, which is responsible for determining if charges will be laid.

After receiving this application for review, the Ministry issued a second Provincial Officer’s Order in April 2018, requiring the company to apply for an approval for its new facility across the street from the original location, apply for an amendment to the approval for the original facility to include requirements to reduce odour emissions, and cease discharging emissions at both facilities outside its permitted operating hours.

Ultimately, the Ministry’s notice of outcome concluded that the company had not committed offences in relation to odour emissions. The Ministry stated that it was continuing to take action to

ensure the company reduced its odour emissions and did not operate outside of the permitted hours.

The Ministry noted that the company was required to complete source testing under a “worst case scenario” in support of its approval application. The Ministry stated that once it received the company’s new approval applications and source-testing results, it would conduct a thorough review and would only issue the approvals if the company demonstrated that it “can operate in accordance with ministry requirements and in a manner that limits its potential to adversely impact the surrounding environment.”

Our Office followed up with the Ministry after this application was concluded. The Ministry provided our Office with a chronology and description of its site visits, which included an additional 13 site visits after the notice of outcome, between May 2018 and July 2019. Resulting from what it found on these site visits, the company worked with the Ministry to undertake a number of voluntary odour control measures. The company submitted its applications for approvals in August 2018 and the Ministry ultimately issued new approvals for both facilities in May 2019. As of August 2019, there was an active case before the courts related to a January 28, 2019, charge in which the Environment Ministry charged the company with six violations under the *Environmental Protection Act*. The charges relate to failing to comply with a Ministry approval, including requirements relating to hours of operation. The Ministry also issued a provincial offences ticket to the company on October 18, 2018, for failing to comply with a condition of its approval.

2.2 Investigation of Water Taking at a Quarry in the County of Hastings

What the Applicants Asked For

In February 2018, two County of Hastings’ residents living near a quarry owned by C.H. Demill Holdings Inc. requested that the Environment Ministry investigate alleged contraventions in 2016 of the condi-

tions of the company’s water-taking permit (permit) and environmental compliance approval (approval). The permit was issued under the *Ontario Water Resources Act* and the approval was issued under the *Environmental Protection Act*. The quarry has been in operation for approximately 80 years and is licenced under the *Aggregate Resources Act* to excavate below the water level of a shallow aquifer (an underground layer of rock, gravel, sand or silt that contains water). To enable extraction, the company has a permit to dewater the quarry and an approval to discharge the pumped-out water into a nearby creek. The permit includes restrictions on when and how much water the company may remove, with extra restrictions during drought conditions, to minimize impacts on the area’s groundwater supply.

The applicants asserted that in 2016, the company:

- first, repeatedly violated a condition in its approval that allows the company to discharge pumped-out water into a creek, but only a minimum of 48 hours after the end of a rain event that produces runoff;
- second, violated the permit and approval by pumping higher volumes than permitted following a storm; and
- third, violated the condition in its permit that restricted pumping volumes during a low-water advisory (i.e., to take no more water than the amount of rain that fell onsite the preceding day). The Quinte Conservation Authority issued such an advisory in summer 2016, and the applicants alleged that the water taken by the company exceeded this allowed amount.

The applicants expressed concern that the company’s water-taking potentially interferes with local groundwater resources, especially during drought conditions, as local residential properties and farms rely on private wells. They also expressed concern about the potential impacts of the pumped-out water discharged into the local creek.

Investigation Undertaken by the Environment Ministry

The Environment Ministry agreed in May 2018 that an investigation was warranted and provided its notice of outcome in August 2018.

The Ministry concluded that there were some instances of non-compliance in 2016:

- With regard to the first allegation, the Ministry stated that the non-compliance resulted from a discrepancy between the company's permit and its approval. The permit had been amended by the Environmental Review Tribunal, following an appeal hearing in 2015, to alter requirements for pumping out water to prevent flooding. But the approval, which was not amended, had conflicting requirements so that the company could not comply with both. The Ministry amended the approval to resolve the discrepancy.
- With regard to the second allegation, the Ministry found no evidence that the company pumped higher volumes than permitted following a storm.
- With regard to the third allegation, the Ministry determined that there were instances where the company had pumped more water out of the quarry than fell during the previous day. However, the Ministry stated that the total volume pumped out in the days following the rain was less than the total volume of rain that entered the quarry and that the actions of the company were reasonable given the heavy rain conditions. The Ministry therefore concluded that the company's water-taking did not violate the intent of the permit and there were no resulting harmful impacts.

The Ministry stated that groundwater levels have stabilized after many years of quarrying below the level of the shallow aquifer, and that the water being pumped out of the quarry is predominantly precipitation and snowmelt. Ministry staff have also followed up on local complaints regarding impacts to well water quality and quantity, but they have

not substantiated any impacts. The Ministry noted that the company's permit and approval include requirements to conduct groundwater and surface water monitoring to identify any potential water quality or quantity impacts, and to take steps if any are identified. The Ministry determined that the company complied with these requirements and did not identify any impacts to local water quality or quantity in 2016. Finally, the Ministry stated it would continue to conduct site inspections to assess compliance with the company's approval and permit.

2.3 Investigation of the Operation of an Asphalt Plant in Horton Township

What the Applicants Asked For

In March 2018, two residents of Horton Township in eastern Ontario requested that the Environment Ministry investigate the operation at a nearby site owned by the Miller Group Inc. of a portable asphalt plant and a permanent asphalt plant (both of which prepare hot mix asphalt for paving) and an aggregate washing plant (which removes silt, clay and other matter from the aggregates).

The applicants alleged that the two asphalt plants' operations caused adverse effects of noise, dust and odour between 2015 and 2018. Specifically, the applicants alleged contraventions of the *Environmental Protection Act's* requirements for air approvals and prohibition against discharges of contaminants that cause adverse effects; regulations under the *Environmental Protection Act* for the operation of hot mix asphalt facilities; and the company's environmental compliance approvals (approvals) for the operation of a portable and a permanent hot mix asphalt plant.

The applicants also alleged contraventions of the *Ontario Water Resources Act*, which prohibits discharging any material into water that may impair the quality of the water and require approval of sewage works. The applicants alleged that the

aggregate washing plant was taking water from a nearby water body and discharging the wastewater back into the water body, despite the fact that the washing plant is meant to be a closed-loop system (without any discharge to the environment). The applicants also alleged contraventions of the company's permit to take water.

Investigation Undertaken by the Environment Ministry

In June 2018, the Ministry undertook the investigation and in September 2018 provided notice of the outcome of the investigation. The Ministry stated that it had received numerous complaints over the years about the site from these applicants and that it had completed over 70 inspections, surveys and assessments of the site's operation between 2012 and 2018.

With regard to the allegations of noise, dust and odour impacts, the Ministry found that, overall, the company was in compliance with the *Environmental Protection Act* and its approvals. The Ministry did identify, however, that the company had failed to provide a consolidated manual for inspection, preventative maintenance and operations, as required by a previous inspection. The Ministry extended the due date for the company to provide this manual from September 21, 2018, to November 30, 2018.

The Ministry concluded, based on its previous inspection findings and site visits dating back to 2014, that the company's aggregate washing plant complied with its permit. The Ministry was satisfied that the washing facility did not pose a significant risk to groundwater or surface water on- or off-site.

The Ministry did determine that, as of 2017, the aggregate washing plant required a sewage approval because the system, even though it is closed-loop, contains sewage; the *Ontario Water Resources Act* requires an approval for any sewage system, unless the system has a capacity of less than 10,000 litres per day, which this company did not. The Ministry allowed the company to continue operating but directed it to submit an approval

application by November 30, 2018. The Ministry posted a proposal notice for the new approval on the Environmental Registry in January 2019 and posted a decision notice granting the new approval in May 2019.

2.4 Investigation of Wetland Drainage in the Township of West Lincoln

What the Applicants Asked For

In March 2018, two property owners submitted an application alleging that various authorities contravened several laws by constructing a drainage works that resulted in the draining, flooding and/or contamination of a provincially significant wetland on their property. Specifically, the applicants asserted that the Niagara Peninsula Conservation Authority, the Natural Resources Ministry, the Environment Ministry, and the Township of West Lincoln contravened the following laws: the *Conservation Authorities Act* (and a relevant regulation under it), the *Environmental Protection Act*, the *Pesticides Act*, and the *Environmental Assessment Act* (as well as two other laws not subject to applications for investigation).

The applicants claimed that, in 2012, the township constructed a drainage works in a roadside ditch within the buffer zone of a provincially significant wetland. They stated that the drainage works resulted in flooding on their property. They asserted that, instead of constructing the drainage work, clearing an existing driveway culvert would have allowed water to flow to its natural outlet.

The applicants further alleged that neighbouring landowners had installed agricultural tile drains without proper approvals. They alleged that these drains had caused drastic changes to water levels, causing flooding on their land and loss of wildlife habitat. They asserted that the wetlands are being degraded from water level changes and from fertilizer, manure and pesticide runoff as a result of the flooding.

The applicants had previously submitted a similar application for investigation in 2015 to the Natural Resources Ministry and the Environment Ministry, alleging contraventions of the *Environmental Protection Act*, the *Pesticides Act* and the *Ontario Water Resources Act*. The Natural Resources Ministry denied the application but the Environment Ministry undertook an investigation. The Environment Ministry conducted two site inspections and reviewed the neighbouring agricultural practices but did not find any contraventions.

Investigation Undertaken by the Environment Ministry and Denied by the Natural Resources Ministry

The application was sent to the Natural Resources Ministry, which administers parts of the *Conservation Authorities Act*, and to the Environment Ministry, which administers the other acts cited by the applicants.

The Natural Resources Ministry denied this application, stating that the Niagara Peninsula Conservation Authority has the primary responsibility for administering and enforcing the applicable requirements under the *Conservation Authorities Act* and its regulations.

The Environment Ministry agreed that an investigation was warranted in May 2018 and provided notice of its outcome in September 2018. The Ministry concluded that there were no contraventions of the *Environmental Protection Act*, the *Pesticides Act*, or the *Environmental Assessment Act*. The Ministry contacted the applicants and verified that there had been no change in the supporting information provided by them since their 2015 application. To cover most of the applicants' concerns, the Ministry reiterated the outcomes from the earlier investigation, including:

- explaining that the *Environmental Protection Act* provisions for spills do not apply to normal agricultural runoff and that the neighbouring farm practices are considered normal;

- explaining that drainage design is regulated under the *Drainage Act*, which is not subject to applications for investigation, but that the applicants could follow up with the Agriculture Ministry and their township to discuss their drainage concerns; and
- stating that the *Pesticides Act* had not been contravened, as the Ministry did not observe or find evidence of the discharge of any pesticide outside of normal practices.

The one new allegation in the 2018 application was that the Township of West Lincoln had contravened the *Environmental Assessment Act* by not undertaking an environmental assessment prior to doing work on the roadside ditch. The Ministry explained that this work falls under the *Drainage Act* and does not require an environmental assessment.

2.5 Investigation of Pesticides in Ornamental Plants Sold by Retailers

What the Applicants Asked For

In April 2018, Friends of the Earth Canada, a non-governmental charitable organization, submitted an application alleging that three Ottawa area garden centres operated by Home Depot, Lowe's, and Canadian Tire, respectively, were selling ornamental flowering plants that contained residues of several pesticides known as "Class 9" pesticides under O. Reg. 63/09 of the *Pesticides Act*. The applicants' main allegation was that this violated the *Pesticides Act*, which prohibits anyone from using, or permitting the use of, Class 9 pesticides for cosmetic purposes.

The applicants purchased flowers at the three garden centres and had samples from them analyzed by the University of Guelph's Agriculture and Food Laboratory. The samples were found to contain residues of five Class 9 pesticides, at levels that the applicants alleged were above scientific standards for harm. Two of these pesticides were systemic pesticides, which are absorbed by plants

and spread throughout the entire plant to deter pests. The applicants expressed concern about the effects of these pesticides on human health and the environment, and in particular their effects on pollinators.

To support their request for an investigation, the applicants provided evidence of the alleged contraventions, including photographs, receipts, a summary of the sampling procedure and lab results. The applicants also provided a clause-by-clause analysis of the relevant provisions of the *Pesticides Act* to demonstrate the applicability of this law to the sale of ornamental plants.

Investigation Denied by the Environment Ministry

In June 2018, the Environment Ministry denied the application. The Ministry explained its interpretation of each provision of the *Pesticides Act* raised by the applicants and concluded that the alleged activities do not constitute a violation of any of those provisions. Under the Ministry's interpretation of the *Pesticides Act*, a flowering plant containing a pesticide residue does not constitute a "pesticide," and therefore, the *Pesticides Act*'s prohibition against the use of Class 9 pesticides would not apply to the use of an ornamental plant that contains residue of a pesticide. Moreover, even if a plant containing pesticide residue was considered a pesticide, the Ministry said that the act of selling such plants would not constitute the "use" or "discharge" (or permitting the use or discharge) of a pesticide.

The Ministry also confirmed that the horticultural operations that supplied the ornamental plants to the retailers, if located in Ontario, are permitted to use Class 9 pesticides because Ontario agricultural operations are exempt from the cosmetic pesticides ban.

2.6 Investigation of Dust and Noise from Asphalt Equipment at a Quarry in Elginburg

What the Applicants Asked For

In August 2018, two Elginburg residents living beside an aggregate operation (quarry) run by Cruickshank Construction Limited submitted an application requesting that the Environment Ministry investigate the quarry. They alleged that the company was non-compliant with conditions in its approvals for operating a permanent hot mix asphalt plant, a portable hot mix asphalt plant and a portable crushing plant. The applicants had numerous concerns relating to noise and dust, and the daily timing of various activities on the site. The applicants stated that dust from the quarry was impacting their health and the noise was affecting their enjoyment of their property.

The quarry operates under multiple approvals from the Environment Ministry, as well as an aggregate licence from the Natural Resources Ministry under the *Aggregate Resources Act*. It has been in operation for more than 50 years.

The applicants filed an application for review in 2016 asking the Environment Ministry to review the approvals. The Ministry undertook that review, which included an assessment of related compliance activities. The Ministry's response to that application outlined its prior enforcement activity, including its referral of some issues to its investigations and enforcement branch, and noted that all previously identified instances of non-compliance had been resolved.

Investigation Undertaken by the Environment Ministry

In November 2018, the Environment Ministry agreed that an investigation was warranted and provided notice of its outcome in February 2019. The Ministry examined the company's compliance from 2016 onward, given the review it had undertaken

in 2016, and provided an overview of the site from 2016 to the present:

- In March 2016, the company submitted an application for an amendment to its approval for the permanent hot mix asphalt plant, which was issued in 2013. The company requested approval of a previously installed burner, ventilation changes to the asphalt plant and longer operating hours. The Ministry issued a notice of refusal because the company had not provided a requested site-wide acoustic assessment report with a detailed noise abatement action plan.
- In March 2017, the Ministry discovered that an exhaust fan for the asphalt plant's ventilation system had been installed without its approval. The Ministry referred this matter to its investigations and enforcement branch, which issued a warning letter to the company.
- In April 2017, the company submitted another application for an amended approval, again requesting approval of the previously installed burner and ventilation changes to the hot mix asphalt plant dryer, as well as permission to operate the permanent hot mix asphalt plant seven days a week, up to 24 hours per day. The Ministry requested a site-wide assessment report to identify emissions from all operations at the site, including from a ready-mix concrete batch plant also located on the site.
- In June 2018, a different company became the owner and operator of the site, and withdrew the amendment application. The new company continues to operate the permanent hot mix asphalt plant under the authority of the original 2013 approval, which places conditions on the plant's operations, maintenance, noise and fugitive dust, and includes reporting requirements.

The Ministry provided a detailed accounting of how it responded to public complaints from November 2016 to July 2018, including site visits and com-

pany record reviews, and summarized the actions of the original owner to address complaints.

The Ministry explained that it had also conducted unannounced site visits at the quarry approximately once per week between June 2018 and October 2018, to make observations with respect to truck traffic, noise and dust issues. Ministry staff did not observe any non-compliance or other issues at these site visits.

In response to the applicants' concerns that the company was operating outside of the hours permitted by the municipal noise bylaw, the Ministry clarified that provincial approvals take precedence over municipal noise bylaws. It explained that the site plan issued by the Natural Resources Ministry authorizes certain round-the-clock operations at the quarry if the market demands, which may include the use of the portable hot mix asphalt plant if other conditions are met. However, the Environment Ministry's approvals still restricted crushing operations and the operation of the permanent hot mix asphalt plant to between 7 a.m. and 7 p.m. The Ministry stated that it had issued a ticket for one incident of non-compliance in September 2017 when the permanent hot mix asphalt plant operated for 22 minutes past 7 p.m.

The Ministry committed to continue site visits at the quarry and to follow up on all public complaints. The Ministry also committed to continue to work with the new company on the submission of a new application for an approval amendment, which must include a site-wide acoustic (noise) assessment.

2.7 Investigation of Dust and Noise at a Metrolinx Site in Toronto

What the Applicants Asked For

In December 2018, two Toronto residents living near a Metrolinx works yard submitted an application requesting that the Environment Ministry investigate Metrolinx and one of its contractors for noise and dust emissions. This works yard is

used to store concrete, soil and gravel for a rail-line construction project, and for emergency maintenance and repair work. The applicants asserted that they have been adversely affected by noise and dust from the site, which has caused health impacts and loss of enjoyment of property.

Investigation Denied by the Environment Ministry

In February 2019, the Ministry concluded that an investigation was not warranted, as the Ministry was already actively investigating issues at this site. The Ministry reported that it had received approximately 25 complaints from six complainants between April 2018 and November 2018 about this site. The Ministry stated that it conducted nine site visits between May 2018 and January 2019, and confirmed that the operations at the works yard and the associated truck traffic had noise and dust impacts on the neighbouring community.

In April 2018, the Ministry requested that Metrolinx develop and implement a dust management plan to address dust discharges from the works yard, as well as set hours of operation that are compatible with the neighbouring residential community (in other words, that it not operate on evenings and weekends). Metrolinx initially provided the Ministry with generic operating procedures, which the Ministry considered to be insufficient. In June 2018, Metrolinx provided the Ministry with a new dust plan, which the Ministry again considered to be insufficient; the Ministry confirmed the plan's inadequacy after conducting site visits.

In July 2018, Metrolinx informed the Ministry that it would take the following measures to minimize dust from the works yard: lower the soil piles from 20 feet to 12 feet, cover the soil piles located close to the residential area with tarps, cover the road areas within the yard with crushed asphalt material as an interim measure prior to paving and periodically spray water on the crushed asphalt. The Ministry shared these measures with local resi-

dents. It then conducted a site visit that determined that the mitigation measures remained insufficient.

In December 2018, Metrolinx informed the Ministry that it was proposing to take further action, including retaining a qualified expert to revise the contractors' mitigation plan to the satisfaction of the Ministry, holding the contractor accountable for complying with the terms of the mitigation plan and establishing a one-window Metrolinx contact for the submission of all community concerns about usage of the site. In January 2019, Metrolinx advised the Ministry of further actions to be taken, including building a noise wall and submitting a revised dust and noise mitigation plan to the Ministry by February 2019. The Ministry committed to considering mandatory abatement measures if the issues remain unresolved.

Our Office followed up with the Ministry after this application was concluded. Metrolinx submitted revised mitigation plans in February, March and May 2019 but the Ministry found them to be lacking in detail. As of August 2019, the Ministry told us that no new mitigation plans have been submitted as the dust issues have been abated due to numerous on-site actions.

2.8 Investigation of Wetland Drainage in Loyalist Township

What the Applicants Asked For

In January 2019, two property owners submitted an application requesting that the Environment Ministry and the Natural Resources Ministry investigate the drainage of a wetland in Loyalist Township, near Kingston. The applicants alleged that in February 2012, the Cataraqui Regional Conservation Authority authorized either Hydro One or Loyalist Township to install a four-foot steel culvert that drained water from a provincially significant wetland, in contravention of the *Conservation Authorities Act* and its regulations.

The applicants also alleged that the parties did not have the necessary approvals for the culvert

under the *Endangered Species Act, 2007*, and the *Fish and Wildlife Conservation Act, 1997* to alter a beaver dam. They asserted that the culvert damaged the wetland and the habitats of endangered species. They also asserted that the installation of the culvert contravened the *Canadian Environmental Protection Act, 1999*; however, this federal law is not subject to applications for investigation under the *Environmental Bill of Rights, 1993*.

Investigation Denied by the Environment Ministry and the Natural Resources Ministry

In March 2019, both the Environment Ministry, which administers the *Endangered Species Act, 2007*, and some parts of the *Conservation Authorities Act*, and the Natural Resources Ministry, which administers the *Fish and Wildlife Conservation Act* and other parts of the *Conservation Authorities Act*, denied this application. Both ministries concluded that there were no contraventions of the various laws.

The Natural Resources Ministry stated that the Cataraqui Regional Conservation Authority has the authority to approve an application to interfere with a wetland under Ontario Regulation 148/06 (Cataraqui Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses). The Ministry explained that the culverts were blocked by beaver debris and activity, impeding the flow of water and affecting Hydro One's access to the overhead transmission line to carry out emergency maintenance. Hydro One had requested permission from the conservation authority in 2012 to replace the culvert due to the blockage, and the conservation authority granted it as part of emergency repairs and to provide access to the site.

The Ministry stated that the removal of a beaver dam in this context was conducted for the protection of Hydro One's property, and therefore Hydro One was not required to obtain the Ministry's authorization for removal of a beaver dam under the *Fish and Wildlife Conservation Act, 1997*. The Ministry also reviewed other parts of this legislation

and determined that there were no contraventions. Similarly, the Environment Ministry determined that there were no contraventions of the *Endangered Species Act, 2007*.

2.9 Investigation of Harm to Species at Risk and their Habitat in South Frontenac

What the Applicants Asked For

In January 2018, two South Frontenac residents requested that the Natural Resources Ministry investigate alleged contraventions of the *Endangered Species Act, 2007*. The applicants alleged that in 2012 and 2016, Magenta Waterfront Development engaged in road development, blasting and extensive clearing on a site in the Township of South Frontenac, north of Kingston, without the Ministry's approval. They asserted that these activities may have harmed or killed species at risk, including gray ratsnakes, Blanding's turtles, butternut trees, eastern whip-poor-wills and little brown bats. The applicants also asserted that the company may have damaged or destroyed the habitat of these species.

Investigation Undertaken by the Natural Resources Ministry

The Ministry decided in March 2018 that this investigation was warranted and provided notice of its outcome in June 2018. The Ministry divided its investigation into two phases: phase one examined the company's initial access road development in April 2012, and phase two examined further work that took place on the property in April 2016. The Ministry ultimately concluded that there were no contraventions of the *Endangered Species Act, 2007*, during either phase.

The Ministry stated that, based on an environmental impact assessment that had been prepared by the company's consultant in 2012, there were no documented occurrences of species at risk on the site prior to construction of the initial access road in

the same year. Accordingly, the Ministry concluded that it was not possible for it to prove species or their habitats were present and harmed. Additionally, some of the species in question were not afforded protection under the *Endangered Species Act, 2007*, at that time, and moreover, the five-year limitation period for prosecuting offences under this Act had passed.

For the activities in 2016, the Ministry stated that it was contacted by concerned members of the public in April 2016. The Ministry stated, however, that it was not invited onto, nor could it access, the privately owned land in question. It was therefore unable to confirm if any development activities had occurred. The Ministry did nevertheless inform the company and its consultant about the consequences of contravening the *Endangered Species Act, 2007*.

In May 2016, the company's consultant submitted information about species at risk on the site to the Ministry; the Ministry responded that impacts to the species at risk on the site could not be avoided, and it would work with the company on applying for an "overall benefit" permit (a permit that authorizes a party to engage in an activity otherwise prohibited by the *Endangered Species Act, 2007*).

In June 2016, members of the public again contacted the Ministry with concerns that habitat was allegedly damaged by this company's development activity.

In August 2016, the Ministry advised the company that it would have to obtain an overall benefit permit for the gray ratsnake and Blanding's turtle

before any activities that might impact these species or their habitat could take place. Later that month, the company invited the Ministry onto the site.

In September 2016, the Ministry received an application for an overall benefit permit from the company. The Ministry reviewed the information it received from the company in support of the application and concluded that impacts from the company's proposed development activities on butternut trees, bats and eastern whip-poor-wills would not contravene the *Endangered Species Act, 2007*. However, the Ministry determined that the impacts on Blanding's turtles and gray ratsnakes (Frontenac Axis population) require a permit.

In November 2017, the proposed overall benefit permit for the development was posted on the Environmental Registry for a 30-day consultation period. Forty-six public comments were received by the Ministry, many raising concerns about the proposed permit, including that there were additional species at risk potentially present on the site, the permit's conditions for achieving the overall benefit were inadequate and there would be potential impacts to adjacent lands. In October 2018, the Ministry issued an overall benefit permit to the company.

Our Office notes that the Ministry's response to the applicants was unclear and that the *Endangered Species Act, 2007*, authorizes Ministry staff to enter and inspect a site if they obtain a warrant; it also allows inspections without a warrant in "exigent circumstances" or to determine compliance with a permit, order, agreement or regulation.

Climate Change: Ontario's Plan to Reduce Greenhouse Gas Emissions

1.0 Summary

High concentrations of greenhouse gases in Earth's atmosphere, mainly from humans burning fossil fuels, have contributed to an increase in the planet's average surface temperature. While global temperatures vary from year to year, eight of the warmest years on record have occurred in the past 10 years (2009-2018). Human-caused climate change includes higher average global temperatures (often called global warming) as well as more local and regional events, such as heat waves, droughts and increased storm events.

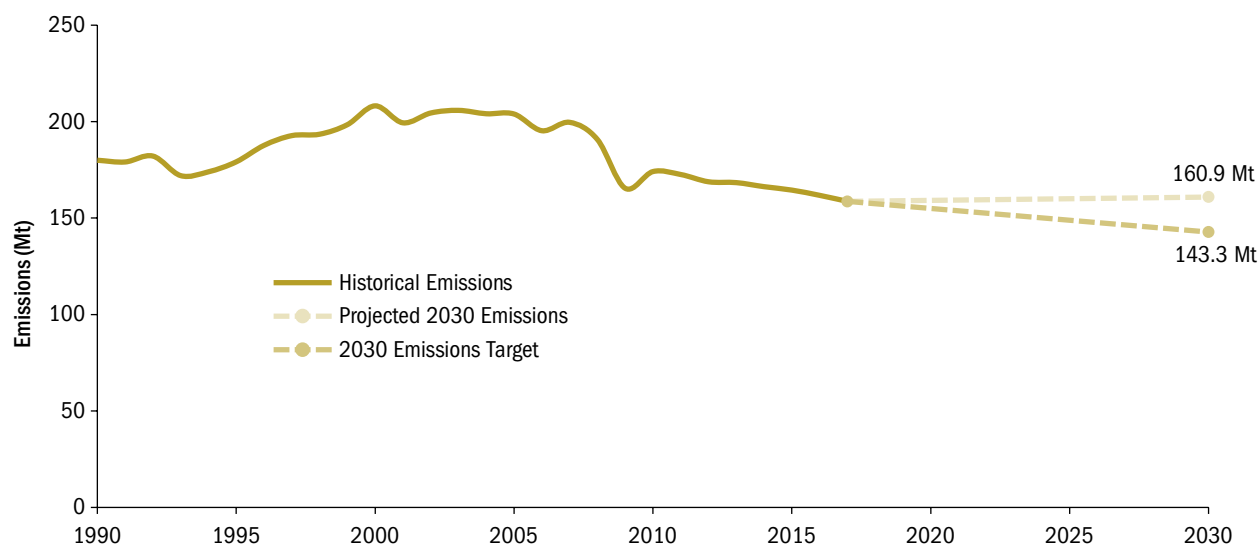
Greenhouse gas emissions in Ontario reached a historical peak of 208 megatonnes (Mt) in 2000. Since then, Ontario's emissions have decreased. According to the most recent data, Ontario's 2017 emissions were 159 Mt. Canada produces 1.5% of global emissions (see **Figure 10**). Ontario produces 22.2% of the Canadian total, and 0.3% of global emissions. The average emissions per person per year in Ontario of 11 tonnes are the second-lowest in Canada after Quebec. However, this is higher than in many developed countries, and almost twice the world average of six tonnes per person per year. With Ontario's well-educated population and its history of innovation in technology, Ontario is well-positioned to demonstrate leadership with its decision to further reduce its emissions while being economically competitive.

Scientific, public and political attention to the impacts posed by climate change has increased in recent years. Established by the United Nations Environment Programme and the World Meteorological Organization in 1988, the Intergovernmental Panel on Climate Change (Panel) is dedicated to providing the world with an objective, scientific view of climate change, its natural, political and economic impacts and risks, and possible response options. Over the years, the Panel has released five assessment reports with increasing clarity on the science of climate change and the contribution that human-caused emissions have had on global warming. In 2014, the Panel warned that climate change was already having widespread impacts on human and natural systems, and that continued greenhouse gas emissions would increase the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.

Partly in response to scientific and public concerns about the significant risks to humankind and biological diversity posed by climate change, international bodies, and national and subnational (e.g., Ontario) governments established targets and made commitments to reduce greenhouse gas emissions. The 2015 United Nations Paris Agreement characterizes climate change as an "urgent threat." The Paris Agreement outlines a goal of holding "the increase in the global average temperature to well below 2°C above pre-industrial levels" while pursuing "efforts to limit the temperature increase to 1.5°C." Limiting the global temperature

Figure 1: Ontario's Historical Greenhouse Gas Emissions, Projected Greenhouse Gas Emissions, and 2030 Target

Prepared by the Office of the Auditor General of Ontario



increase to 1.5°C would help avoid some of the more severe impacts associated with higher global temperatures.

With the proclamation of the *Cap and Trade Cancellation Act, 2018* (Act), the Ontario government committed to establish greenhouse gas emission-reduction targets, and the Ministry of the Environment, Conservation and Parks (Ministry) became required to prepare a new climate change plan.

In November 2018, the Ministry released “Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan” (Plan). The Plan was posted for a 60-day public comment period on the Environmental Registry on November 29, 2018.

At the time the Plan was drafted, the Ministry estimated that, if no further emission-reduction actions are taken, Ontario’s greenhouse gas emissions would increase by 0.1 Mt—from an estimated 160.8 Mt in 2018 to 160.9 Mt in 2030. Also known as the “business-as-usual forecast,” this is Ontario’s projection of future emissions if economic growth continues and no additional emission-reduction initiatives are taken. Estimating this forecast as accurately as possible is important because it provides the starting point for assessing and planning emission-reduction programs.

The Plan sets a target to reduce Ontario’s greenhouse gas emissions to 30% below 2005 levels by 2030. Based on the emissions data available to the Ministry at the time, this represents a reduction to 143.3 Mt by 2030—17.6 Mt lower than the 2030 business-as-usual forecast of 160.9 Mt (See **Figure 1**). The Plan states that this target aligns Ontario with Canada’s 2030 target under the Paris Agreement (30% below 2005 levels by 2030).

To achieve Ontario’s proposed 2030 target, the Plan outlines eight areas where the Ministry expects emissions reductions (see **Figure 2**). The Ministry estimated reductions for each area based on proposed initiatives and various assumptions.

Our audit focused on the process the Ministry used to develop the Plan, and the evidence underlying the proposed emissions reductions identified in the Plan to achieve the 2030 target.

Our audit found that the Ministry’s projected emissions forecast, and the estimated emissions reductions for all eight areas, are not yet supported by sound evidence. As a result, our analysis found that the initiatives in the Plan have the potential to achieve between 6.3 Mt and 13.0 Mt of the 17.6 Mt emission-reduction target. Specifically, we found:

- **The Plan’s “business-as-usual” emissions projection for 2030 was re-estimated**

Figure 2: Emission-Reduction Areas in Plan to Reach 2030 Target

Prepared by the Office of the Auditor General of Ontario

Plan Area	Description	Ministry Estimate (Mt) ¹	OAGO Revised Estimate (Mt)	Section References in This Report
"Business As Usual" Emissions Forecast	Ontario's 2030 emissions if no new emission-reduction actions taken	160.9	163.6²	S.4.3
Emissions Reductions		Reduced By		
Low Carbon Vehicles Uptake	Increased uptake of electric vehicles	2.6	0.0	S. 4.4.1
	Increased uptake of compressed natural gas-powered freight vehicles	0.2	0.0	S. 4.4.2
Clean Fuels	Increased renewable content in gasoline	1.0	1.0	No issues noted
	Increased renewable natural gas supply	2.3	0.0	S. 4.4.3
Federal Clean Fuel Standard	Proposed federal standard that would require fuel suppliers to reduce the carbon intensity of their fuels	1.3	0.0–6.5	S. 4.4.4
Natural Gas Conservation	Natural gas conservation and efficiency programs delivered by utilities	3.2	3.2	S. 4.4.5
Industry Performance Standards	Facility- or sector-specific standards for industry to pay a price for emissions that exceed set levels	2.7 ³	1.0	S. 4.4.6
Emission Reduction Fund	Loans to pay for the capital costs of energy-efficiency projects for buildings	0.5	0.3	S. 4.4.7
	Reverse auction (funding projects with the lowest cost emission reductions)	0.1	0.0–0.1	S. 4.4.8
Other Policies	Improved diversion of food and organic waste from landfills	1.0	0.7	S. 4.4.9
	Implementation of the GO Regional Express Rail across the GO Transit network	0.1	0.1	S. 4.5
Innovation	Increased energy storage capacity	0.3	0.0	S. 4.4.10
	Cost-effective fuel switching (from high-carbon heating to electricity in buildings)	0.2	0.0	S. 4.4.10
	Future Innovation (other future market-developed technologies)	2.2	0.0	S. 4.4.11
Net Emissions Reductions⁴		17.6	6.3–13.0	
Net Emissions		143.3	150.6–157.3	

1. Note that the Plan does not account for the potential impact of the federal carbon pricing system.

2. In August 2019, our Office received an updated 2030 projection from the Ministry of 163.6 Mt. This includes a 4.1 Mt increase in electricity sector emissions due to changes in the electricity sector since Ontario's 2017 Long-Term Energy Plan was released.

3. Subsequent to the release of the Plan, the Ministry finalized the Industry Performance Standards. The Ministry now estimates that 1.0 Mt in emissions reductions will be achieved in 2030.

4. Net emissions reductions may not add due to rounding.

in August 2019 to be 163.6 Mt. Since November 2018, new information has been incorporated into the model the Ministry used to project emissions. In August 2019, our Office requested that the Ministry re-run the

model to estimate the 2030 projection again. This time, the model estimated that Ontario's emissions in 2030 would be 163.6 Mt if no further emission-reduction actions are taken—2.7 Mt higher than the projection

on which the Plan is based. This changed projection is a result of a number of factors, including new emissions data. Moreover, in November 2018, when projecting what Ontario's business-as-usual emissions would be in 2030, the Ministry included electricity-sector policies factored into Ontario's 2017 Long-Term Energy Plan. The Long-Term Energy Plan is based on initiatives that were in place in 2017 that would lower the emissions of electricity generation. Some initiatives, including renewable energy contracts, were cancelled before the Ministry calculated its 2030 projection. This demonstrates that projected emissions will change due to a number of factors and should be regularly re-estimated to account for changes in policies and programs.

- **The Plan's estimate for emissions reductions from Low Carbon Vehicles Uptake includes reductions from cancelled programs that supported electric vehicle adoption.** In estimating the 2.6 Mt in emissions reductions from the uptake of electric vehicles, the Ministry assumed there would be 1.3 million electric vehicles on Ontario's roads by 2030. This is a more than 3,000% increase from approximately 41,000 electric vehicles in 2019. This estimate is based on a number of factors, including the impact of programs that were cancelled in summer 2018. These programs provided incentives for leasing or buying electric vehicles, and installing workplace and home charging stations. The Ministry has not yet identified any planned initiatives that could increase the uptake of electric vehicles in Ontario to achieve the greenhouse gas reductions forecasted for this area.
- **The Plan estimates emissions reductions from natural gas customers switching to renewable natural gas, though evidence shows that the higher cost of renewable natural gas means that few customers**

would switch. To achieve 2.3 Mt of emissions reductions, the Plan proposes that Ontario require utilities to offer customers the option of purchasing renewable natural gas. However, evidence in both Ontario and British Columbia has shown that few natural gas utility customers purchase renewable natural gas. In fact, during the Plan's development, Ministry staff estimated there would be "negligible" emissions reductions (0.0049 Mt in 2030) from this voluntary initiative because of the higher costs and therefore lower sales of renewable natural gas. Instead of using the staff analysis, the emissions reductions in the Plan are based on a submission to the Ministry from the Ontario Energy Association (OEA), an industry association that represents Ontario's electricity and natural gas utilities, among other companies. In its submission, the OEA described the potential to achieve 2.3 Mt of emissions reductions through renewable natural gas supply as "illustrative and [indicated that] more pilot programs are required to demonstrate provincial and regional potential."

- **The Plan relies on the federal government's proposed Clean Fuel Standard for emissions reductions of 1.3 Mt by 2030. The Standard is not yet finalized, and is tentatively planned to come into effect two to three years from now.** Since 2017, Environment and Climate Change Canada has held consultations to develop a Clean Fuel Standard to reduce Canada's greenhouse gas emissions. By setting performance standards for liquid, solid and gaseous fossil fuels, the proposed standard would require fuel suppliers to reduce emissions throughout the life cycle of their fuels. In June 2019, Environment and Climate Change Canada released a proposed regulatory approach and plans to continue consultations over the next few years. Liquid fuel regulations are planned to take effect in January 2022 and gaseous

and solid fuel regulations would take effect in January 2023. Because the Plan counts on reductions from the implementation of these proposed federal regulations to meet its 2030 target, there would be an emission-reduction shortfall if the federal regulations are not implemented.

- The Plan double counts some emissions reductions that are targeted by more than one program.** The expected emission-reduction impact of the Plan was estimated by measuring the impact of several initiatives, most of which were estimated in isolation. The emission-reduction impacts of some initiatives will overlap with those of others. The Ministry partially accounted for this overlap but double counted in some instances. This resulted in an overstatement of total emissions reductions. For example, the Plan contains two separate programs aimed at reducing emissions from natural gas use (Natural Gas Conservation and an Emission Reduction Fund, referred to in the Plan as the Ontario Carbon Trust). The Plan estimates 3.2 Mt in emissions reductions from Natural Gas Conservation programs. These programs provide incentives to customers, including residential, commercial and industrial customers, to reduce their natural gas use. In estimating these reductions, the Ministry based its calculations on a study that modelled various future potential scenarios. The Ministry selected a scenario that assumes that all cost-effective natural gas conservation would be funded and achieved. Under such a scenario, homeowners would not require loans through the Emission Reduction Fund to take measures to reduce the use of natural gas, like insulating attics and basements. The Plan overestimates the emissions reductions associated with the Emission Reduction Fund, as it does not account for the overlap of the Emission Reduction Fund and Natural Gas Conservation, and attributes emissions reduc-

tions achieved through residential natural gas conservation to both programs. Furthermore, the Plan estimates 2.7 Mt in emissions reductions in 2030 from the Industry Performance Standards. This is an overestimation as it does not account for the overlap with both Natural Gas Conservation and the federal Clean Fuel Standard. Since releasing the Plan, the Ministry finalized the Industry Performance Standards and now estimates that this initiative will result in only 1.0 Mt in emissions reductions by 2030.

- The Plan improperly counts emissions reductions expected from reducing exported organic waste.** Food and organic waste that is sent to landfill decomposes and creates methane, a potent greenhouse gas. Currently, approximately 40% of Ontario's municipal solid waste for disposal is exported and landfilled in the United States. The Ministry expects about 0.3 Mt of emissions reductions will result from diverting food and organic waste that would otherwise be exported and landfilled in the United States. However, the guidelines of the Intergovernmental Panel on Climate Change require the emissions generated by this exported and landfilled waste to be counted in the United States' emissions inventory—not Ontario's inventory. Therefore, any reduction in these emissions would be accounted for in the United States.
- The Plan states that Future Innovation will reduce emissions, but no emission-reduction programs have yet been identified.** The Ministry estimates that 2.2 Mt of emissions reductions by 2030 will come from Future Innovation. The Ministry was unable to provide any evidence to support this estimate, indicating that the amount represents the projected remaining emissions needed to reach the 2030 target. At the time of our audit, there were no planned initiatives or

staff assigned to develop initiatives to achieve emissions reductions in this area.

In reviewing the process used by the Ministry to develop the Plan, our Office learned that Ministry staff estimated 2030 emissions based on three scenarios: the Reference Case (the emissions expected if no new climate policies are pursued); the Climate Change Plan Case (the emissions expected if initiatives in the Plan are put in place); and the Extended Policy Case (the emissions expected if additional or enhanced policies are pursued). Ministry staff internally noted that actions in the Plan are not yet sufficient to achieve the 2030 target; staff estimated that implementing initiatives in the Plan could likely achieve only 10.9 Mt in emissions reductions, 6.7 Mt less than the 17.6 Mt presented in the Plan.

Our audit also found that:

- **The Ministry did not fully estimate costs for more than half of the emission-reduction areas included in the Plan.** Of the 147 proposed initiatives that the Ministry compiled and considered for inclusion in the Plan, 69 were identified as having the potential for measurable emissions reductions. Of these, the costs of implementation were estimated for 28 (41%). Of the eight emission-reduction areas that were ultimately included in the Plan, the Ministry estimated the total costs for three areas. When the Ministry released the Plan, it had not yet evaluated the total costs of the other five: Low Carbon Vehicles Uptake, Clean Fuels, the federal Clean Fuel Standard, Industry Performance Standards, and Innovation.
- **An expert panel has not yet been appointed to provide advice on Ontario's climate change plan.** Under the *Cap and Trade Cancellation Act, 2018*, the Minister may appoint panels to provide advice to assist in developing the climate change plan.
- **Other provincial ministries are making decisions that may increase Ontario's emissions.** Under the Plan, the Ministry of the Environment, Conservation and Parks

has the responsibility to co-ordinate Ontario's actions on climate change. However, many of the emission-reduction initiatives in the Plan are not within the Ministry's control and are the responsibility of other ministries. The Ministry is the lead for five initiatives, which account for 5.6 Mt (31%) of the estimated 17.6 Mt reductions expected from implementing the Plan. Several recent decisions by other ministries and agencies, such as the expansion of natural gas infrastructure, changes to the Building Code, and amendments to the Growth Plan for the Greater Golden Horseshoe, are likely to adversely impact Ontario's emission-reduction goals. The government has established a cross-ministry Climate Change Leadership Team to make climate change a cross-government priority, but it is unclear whether the team has the capacity and resources to deliver results. The team has no authority over whether ministries adopt its recommendations, and instead must rely on working collaboratively and making suggestions. It is working on several pilot projects that could support decision making in other ministries.

Overall Conclusion

Our audit concluded that the emission-reduction estimates in the Plan are not based on sound evidence or sufficient detail. In its current early state, the Plan is not likely to achieve its proposed emission-reduction target. The Ministry recognizes that more time is needed to develop, refine and update the Plan for future publication.

Given the limited time available to develop the Plan, the Ministry was unable to use an integrated model to properly select, design or accurately estimate reductions associated with emission-reduction initiatives. Our assessment of the assumptions and emissions double counting found that the Plan overestimates the emissions reductions expected. Overall, our analysis found

that the initiatives in the Plan have the potential to achieve between 6.3 Mt and 13.0 Mt of the 17.6 Mt emission-reduction target (see **Figure 2**). Ministry staff estimated that implementing initiatives in the Plan could achieve about 10.9 Mt in emissions reductions. Additional, unidentified policies would be needed to fill the gap.

Our audit also found that most of the initiatives to reduce emissions lay outside the Ministry's control, and that recent decisions by other ministries could undermine progress.

This report contains 19 recommendations, consisting of 22 actions, to address our audit findings.

OVERALL MINISTRY RESPONSE

The Ministry appreciates the work of the Auditor General and the recommendations on how we can best move forward with our greenhouse gas reduction initiatives.

Our Made-in-Ontario Environment Plan was developed using the best available information and modelling at the time. The province will continually evolve the Plan with updated modelling, information and actions so that it contains the most effective and affordable ways to reduce greenhouse gas emissions. We remain committed to lowering greenhouse gas emissions to 30% below 2005 levels by 2030, a target that aligns with the federal government's Paris commitments.

The province has already taken significant steps to reduce our greenhouse gas emissions, with Ontario's emissions down 22% since 2005. We continue to take important actions such as finalizing Ontario's Emissions Performance Standards for large, industrial emitters to ensure polluters are accountable for their greenhouse gas emissions.

The Auditor General points out ways that we can strengthen our Plan by ensuring emission-reduction efforts are based on current and best-available information, public reporting, and

improving collaboration on emission-reduction efforts across the government.

We will consider the Auditor General's report and recommendations carefully as we continue to consult and collaborate with stakeholders and other governments to evolve and implement our Plan.

2.0 Background

With the proclamation of the *Cap and Trade Cancellation Act, 2018*, the Ontario government committed to establish greenhouse gas emission-reduction targets, and the Ministry of the Environment, Conservation and Parks (Ministry) became required to prepare a new climate change plan. In November 2018, the Ministry released "Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan" (Plan) for public consultation.

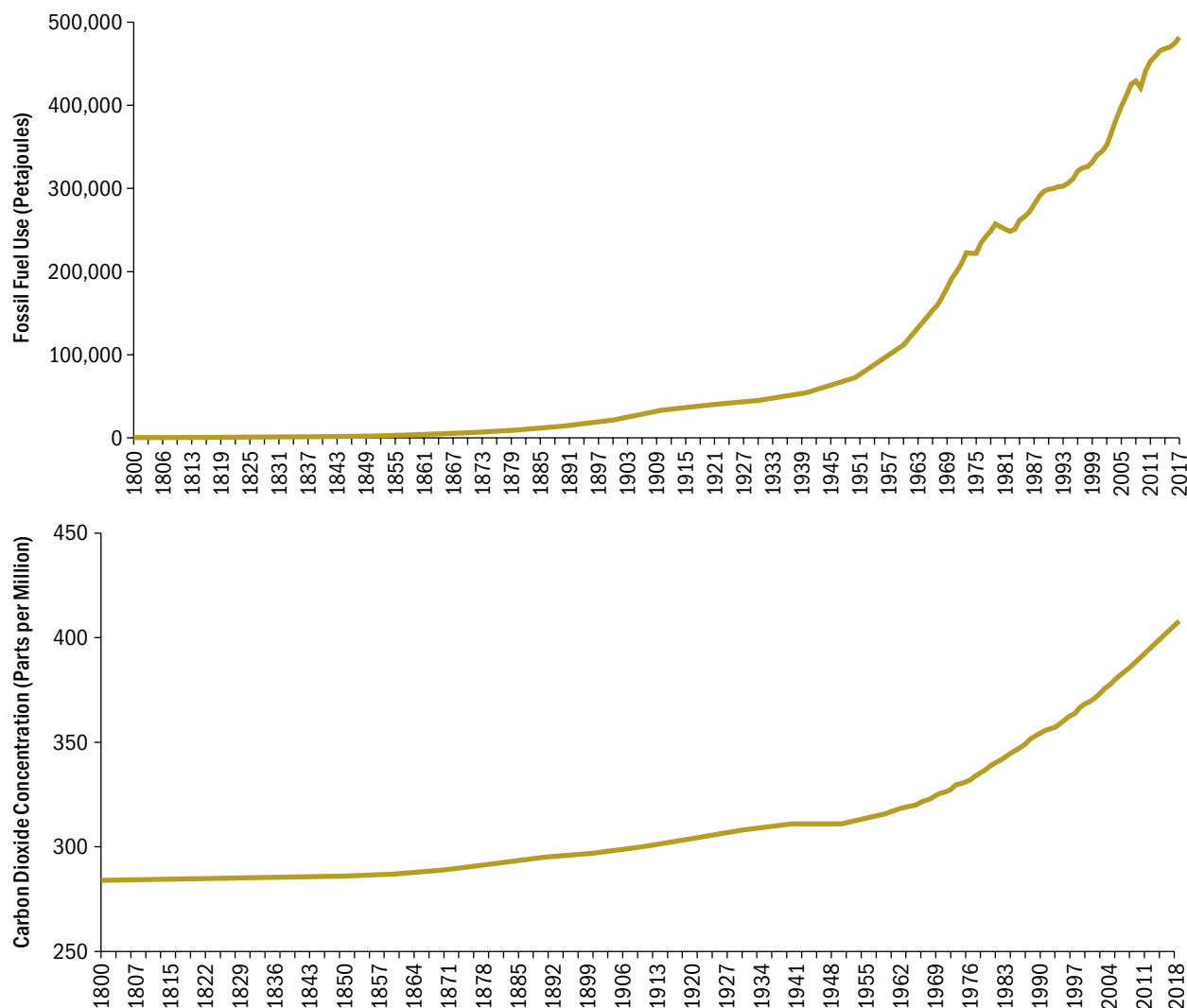
2.1 Greenhouse Gas Emissions and Climate Change

Greenhouse gases in Earth's atmosphere let the sun's energy in, but block its heat from escaping, like glass traps heat in a greenhouse. The most common greenhouse gas emitted into the atmosphere through human activity is carbon dioxide, but others, including methane and nitrous oxide, are powerful heat trappers, even at very low concentrations. Greenhouse gases, some of which are produced naturally from forest fires, volcanoes, and decomposing organic matter, have helped regulate Earth's temperature for millions of years. (For the definition of greenhouse gas and other terms, see the glossary in **Appendix 1** of this report).

However, since the 1800s, human activity has resulted in the release of large volumes of greenhouse gases into Earth's atmosphere (see **Figure 3**). The most common sources are the fossil fuels, such as coal, oil and natural gas, that are burned

Figure 3: Historical Global Fossil Fuel Use and Atmospheric Carbon Dioxide Concentration Levels

Source of data: Vaclav Smil (2017) *Energy Transitions: Global and National Perspectives*, BP Statistical Review of World Energy, and National Oceanic and Atmospheric Administration

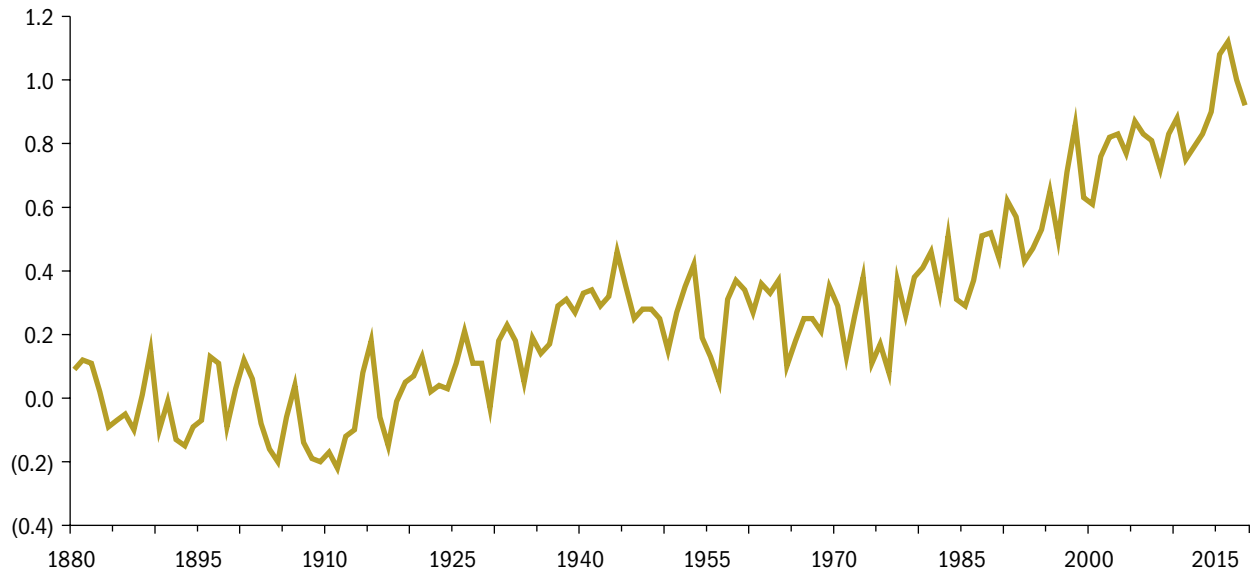


for electricity generation, industrial activities, transportation, and heating buildings. Other contributors include the decomposition of food and organic waste in landfills, excess use of artificial fertilizers, and emissions from cattle and other livestock. Deforestation and other land use changes also release carbon dioxide and methane into the atmosphere. At the start of the industrial revolution in about 1750, carbon dioxide levels in the atmosphere were about 280 parts per million (ppm). By 2018, this global average level had increased to 407 ppm.

As greenhouse gases accumulate over time, they increase global temperatures (**Figure 4**). The release of greenhouse gases from human activity has already caused an increase in global average surface temperatures of 0.8°C to 1.2°C compared with pre-industrial levels. The impact of greenhouse gas emissions on global temperature lasts for years because emissions can remain in the atmosphere for decades or more, depending on the type of gas, contributing to the cumulative total in the atmosphere. It does not matter where emissions occur—the total of all emissions in Earth’s atmosphere have an impact on global warming.

Figure 4: Change in Global Average Air Temperatures Since 1880, Compared to 1850–1899 Average (°C)

Source of data: HadCRUT4: UK Met Office Hadley Centre and University of East Anglia Climatic Research Unit



In addition, increased temperatures can create feedback loops that increase warming even more. For example, oceans absorb carbon dioxide. But as ocean waters warm, they absorb less carbon dioxide. This means more carbon dioxide remains in the atmosphere, which results in even more rapid warming. Warmer temperatures melt snow and ice that reflect the sun's rays, revealing the darker water and land underneath. The darker water and land absorb more heat than snow and ice, resulting in even more warming.

Ontario is warming faster than the global average. Between 1948 and 2016, the global average temperature increased 0.8°C, while Ontario warmed 1.3°C. Environment and Climate Change Canada expects the rate of warming in Ontario to be almost double the global average by the end of this century. This is due to a number of factors, including the melting snow and ice in Northern Ontario and Ontario's large land mass.

2.1.1 The Impacts of Climate Change

Warmer global temperatures contribute to melting glaciers and sea ice, rising sea levels, increased acidity and decreased oxygen in the

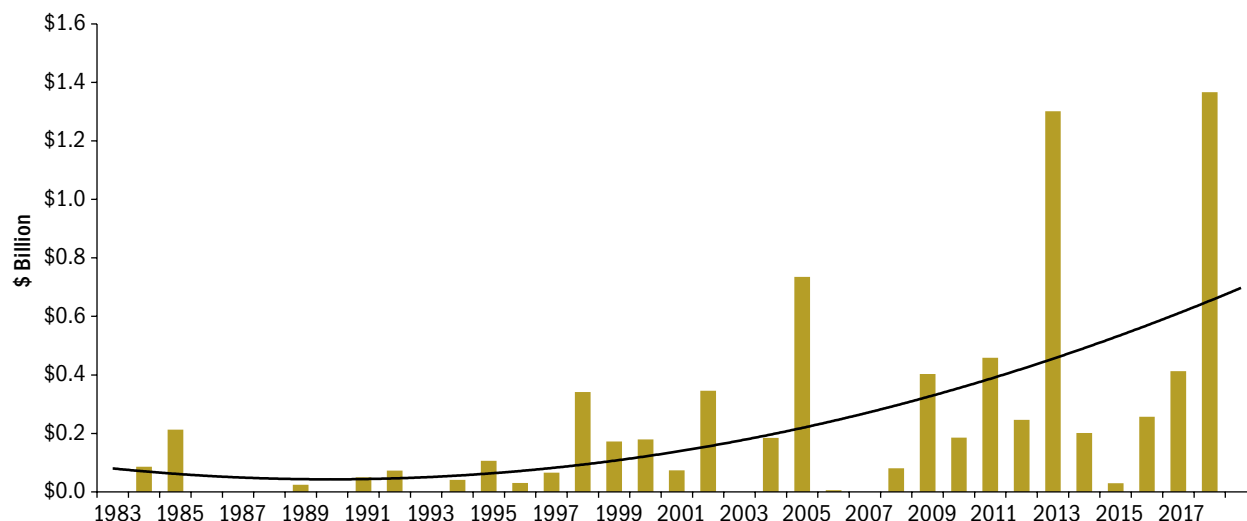
ocean, extended heat waves and droughts, and an increased severity and frequency of storms, flooding and wildfires. Significant impacts on biodiversity and ecosystems, infrastructure, agriculture, food and water supply and security, human and wildlife health, transportation systems and tourism have been attributed to climate change.

Climate change impacts have already been observed in Ontario, and will continue contributing to wide-ranging negative effects that could include:

- More intense, more frequent, and longer heat waves that can adversely affect human health. According to Public Health Ontario, between 2003, the first full year data was collected, and 2018, the rate of heat-related emergency department visits in Ontario more than tripled from 4.6 visits per year per 100,000 Ontarians to 14.6 visits.
- Warmer temperatures that can limit water availability, affect crop production, damage vineyards and distress livestock.
- Milder winters that can increase winter floods, shorten the winter ice road season in Northern Ontario, and affect recreational activities like skiing, skating and ice fishing.

Figure 5: Total Insured Losses in Ontario Due to Large Catastrophic Events

Source of data: Insurance Bureau of Canada Facts Book, CatIQ, PCS, Swiss Re, Munich Re, and Deloitte



Note: Each bar represents costs due to the damage of personal and commercial property, and automobiles, excluding adjustment expenses. Large catastrophic losses include damage due to wind, water, ice, snow, hail, fire, lightning and earthquakes. Only events where total insured losses were greater than \$25 million are included. Values in 2018 \$ Cdn. The line is the estimated trend line.

- Milder winters that can facilitate the spread of invasive species like the Emerald Ash Borer, which feeds on Ash trees. Milder winters can also facilitate the spread of diseases, such as West Nile virus spread by infected mosquitos and Lyme disease spread by blacklegged ticks. According to Public Health Ontario, Lyme disease rates have increased more than 1,600%, from 0.4 reported cases per 100,000 Ontarians in 2005 to 7.0 in 2017.
- Changes in weather patterns, including heat waves, rainfall and freeze-thaw cycles, can affect infrastructure like wastewater treatment plants, bridges and roads, public transit and electricity distribution, and cause flooding of farms and homes. According to the Insurance Bureau of Canada, large catastrophic events in 2018 caused almost \$1.4 billion in insured damage across Ontario (see **Figure 5**).

Ontario is also expected to be affected by the indirect effects of climate change, including impacts on the availability and delivery of food from other parts of the world. In its Plan, the Ministry of the Environment, Conservation and Parks stated that “people across the province—especially Northern

communities—and all sectors of the economy are feeling the impacts of climate change and paying more for the costs associated with those impacts.”

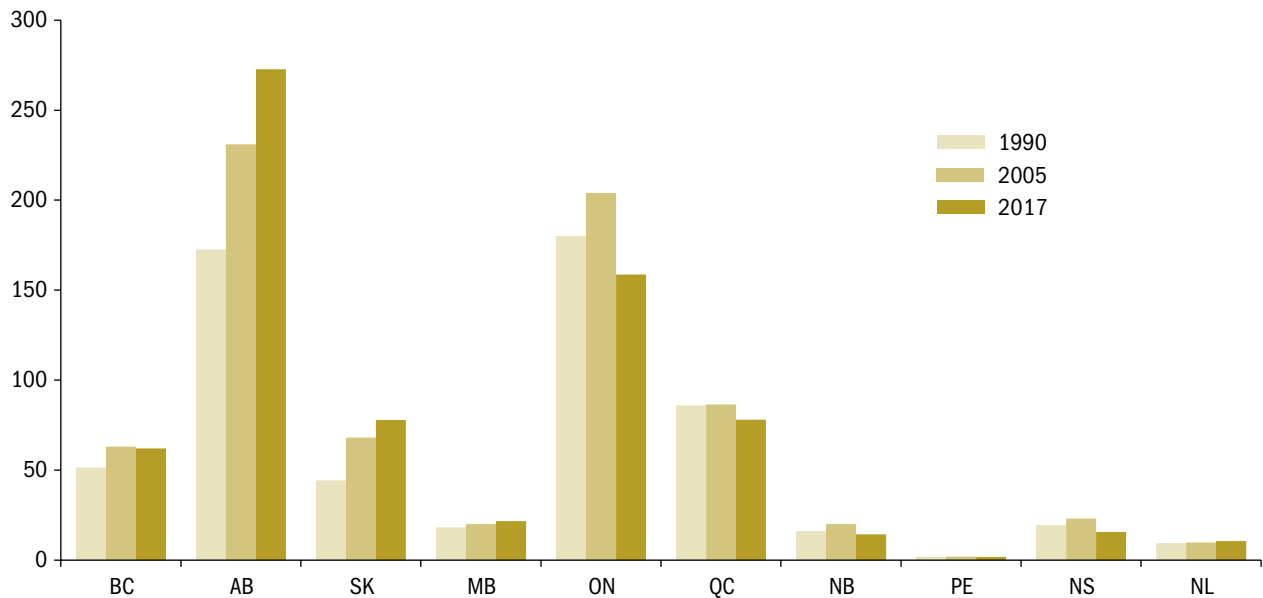
2.1.2 Ontario's Greenhouse Gas Emissions

In Canada, national reporting on greenhouse gas emissions began in 1992 with emissions estimates for 1990. Greenhouse gas emissions, which are estimated in tonnes (t) and megatonnes (Mt), are generally not measured directly but are estimated from data and calculations, such as how much fuel is burned or how much organic waste is sent to landfills. When quantifying and studying greenhouse gases, the global warming impacts of different gases (e.g., methane, nitrous oxide) are compared in terms of their carbon dioxide equivalent—that is, the amount of carbon dioxide that would create the same amount of warming over a specified period of time.

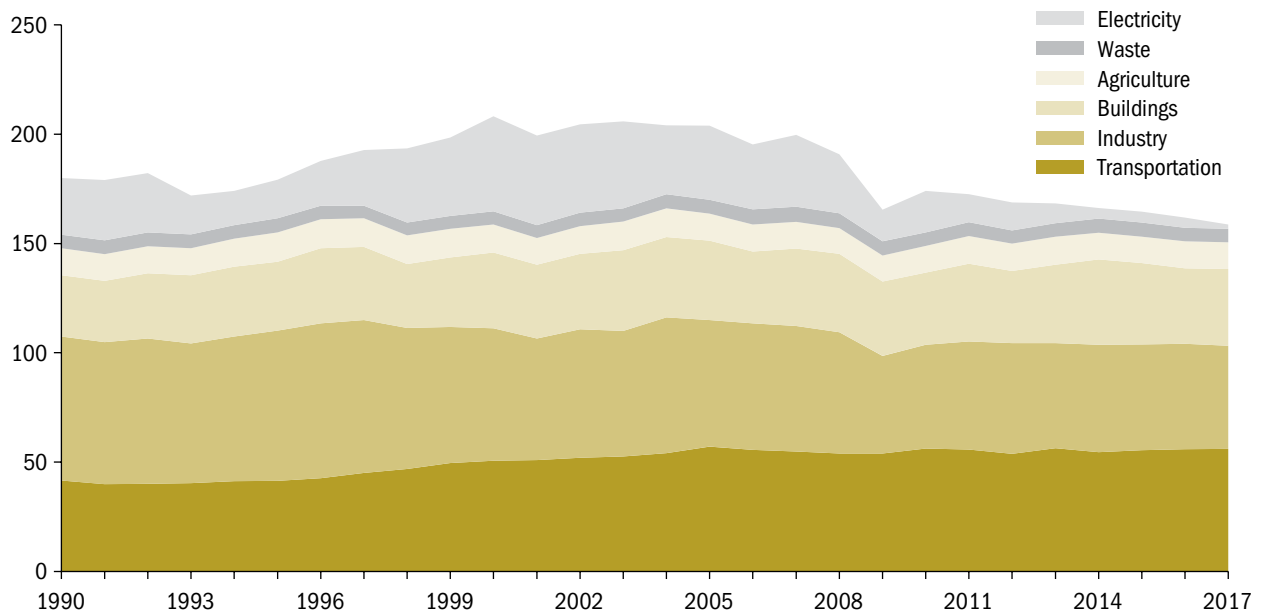
Greenhouse gas emissions in Ontario reached a historical peak of 208 Mt in 2000 (see **Figure 1**). Since then, Ontario's emissions have decreased. According to Environment and Climate Change Canada, Ontario's greenhouse gas emissions in 2017 were 159 Mt, 12% below the 1990 level of

Figure 6: Greenhouse Gas Emissions Produced by Provinces in 1990, 2005 and 2017 (Mt)

Source of data: Environment and Climate Change Canada (2019)

**Figure 7: Ontario's Greenhouse Gas Emissions by Sector, 1990–2017 (Mt)**

Source of data: Environment and Climate Change Canada (2019)



180 Mt. Ontario is not the only province to have reduced its emissions below 1990 levels. **Figure 6** shows the change in greenhouse gas emissions produced by Ontario and other Canadian provinces.

Ontario's decreasing greenhouse gas emissions have resulted mostly from changes in how we produce electricity. Between 2005 and 2014, Ontario

phased out burning coal to generate electricity. However, while emissions decreased by 24 Mt in Ontario's electricity sector between 1990 and 2017, the combined emissions from all other sectors increased by 2 Mt (**Figure 7**).

Other, non-electricity greenhouse gas emissions come from transportation, industry, buildings,

Figure 8: Ontario Greenhouse Gas Emissions Sources and Ways to Reduce Them, by Economic Sector

Source of data: Environment and Climate Change Canada (2019)

Economic Sector and 2017 Emissions	Most Common Sources of Emissions	Primary Actions to Reduce Emissions	Examples of Means of Implementing these Actions
Transportation 56 Mt (35% of total)	Gasoline cars and trucks, diesel trucks	- Reduce the travel distances required - Switch to low- or zero-carbon modes of transport	- Design walkable communities - Work from home - Walk, bicycle, use public transit, rideshare, or drive an electric vehicle
Industry 47 Mt (30% of total)	Natural gas and coke boilers, industrial processes	- Minimize energy use and material waste - Switch to low- or zero-carbon industrial inputs - Use carbon capture and storage (CCS) technology	- Use renewable energy in industrial processes - Use materials for producing low-carbon cement and steel - Install CCS at facilities that produce highly concentrated carbon dioxide emissions
Buildings 35 Mt (22% of total)	Natural gas furnaces and hot water tanks and refrigerants	- Minimize building heating requirements - Switch to passive or high-efficiency heating and ventilation technologies that use low- or zero-carbon energy sources - Reduce leakage of refrigerants	- Insulate and improve air tightness - Install heat pumps, and energy/heat recovery ventilators - Use air conditioners with refrigerants that have a low global warming potential, and collect waste refrigerants
Agriculture 12 Mt (8% of total)	Fertilizer, livestock, manure, on-farm fuel use	- Build up farm soils to increase carbon storage - Optimize use of fertilizers/manure	- Practise no-till agriculture - Use precision agriculture techniques
Waste 6 Mt (4% of total)	Organic waste decomposition, waste water treatment, incineration	- Reduce waste generation - Divert waste from landfills - Capture landfill gas	- Design products for easy repair, reuse and/or recycling - Compost organic waste - Install landfill gas capture systems
Electricity 2 Mt (1% of total)	Natural gas power plants	- Reduce electricity consumption at times of peak demand - Phase out greenhouse gas-intensive power	- Behaviour change - Use hydro, nuclear, wind, solar, and biomass power while enhancing energy storage
Ontario Total – 159 Mt			

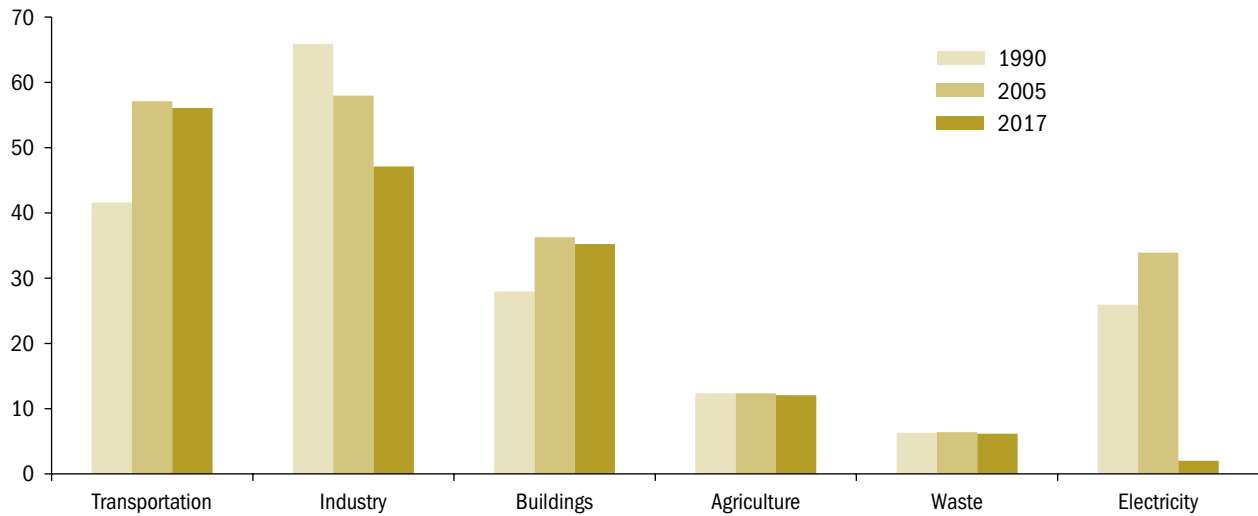
agriculture and waste. In 2017, transportation was the largest contributor to Ontario's greenhouse gas emissions (35%), followed by industry (30%), buildings (22%), agriculture (8%) and waste (4%). Electricity generation contributed 2 Mt, or 1% of Ontario's total emissions (**Figure 8**). See **Figure 9** for the changes in Ontario's emissions by sector since 1990. See **Appendix 2** for a detailed breakdown of greenhouse gas emissions from economic sectors and subsectors. See **Appendix 3** for a list of

the 25 highest greenhouse gas emissions reporters in 2017.

Despite decreases in Ontario's greenhouse gas emissions overall since 1990, the average emissions per person, per year, in Ontario are higher than in many developed countries, and almost twice the world average. However, the Ontario average of 11 tonnes is less than the Canadian average of 20 tonnes per person (**Figure 10**). In Canada, Saskatchewan and Alberta's per capita emissions

Figure 9: Ontario's Greenhouse Gas Emissions by Economic Sector in 1990, 2005 and 2017 (Mt)

Source of data: Environment and Climate Change Canada (2019)



are more than three times higher than any other province, mainly due to emissions from the oil and gas sector, and coal-fired electricity generation. Canada produces 1.5% of global emissions. Ontario produces 22.2% of the Canadian total, and 0.3% of global emissions.

2.2 Reducing Greenhouse Gas Emissions

There are two types of strategies for addressing climate change: *mitigation* focuses on slowing down global warming by reducing greenhouse gas emissions, and *adaptation* focuses on reducing the harm caused by the effects of climate change. Typically, mitigation efforts include:

- limiting or reducing the amount of greenhouse gas emissions from burning fossil fuels by conserving energy or using renewable fuels, for example; and
- capturing and storing carbon dioxide. This can be done by capturing carbon from industrial and energy-related sources, such as coal-fired power plants, and storing it long term in geological formations, such as oil and gas fields, coal beds, and oceans. These approaches can be very expensive on a per-tonne basis. Carbon can also be stored

by preserving or creating carbon sinks, which include natural environments like forests and peatlands, as well as soils. Land use development, mining, forestry and agriculture can negatively impact natural carbon sinks.

Several options, each with benefits and challenges, are available to governments to get people and businesses to reduce their greenhouse gas emissions. These include:

- **legislation and regulations:** the government sets laws or rules that apply to businesses and/or consumers to limit emissions. This may require reducing emissions to a certain level, switching fuels or installing technologies. The costs of making such changes may be passed on to consumers.
- **pollution pricing:** the government applies a price to greenhouse gas emissions, which may be passed on to consumers. There are several ways this has been done, including:
 - Using a cap and trade approach. A limit is placed on the amount of greenhouse gases that may be emitted, but individual entities covered by the system are allowed to buy the right to produce additional emissions from those who have reduced theirs.
 - Using a carbon levy. A price is charged directly for emitting greenhouse gases.

Figure 10: Comparison of Greenhouse Gas Emissions by Jurisdiction

Sources of data: Potsdam Institute For Climate Impact Research, World Bank, Environment and Climate Change Canada, and Statistics Canada

	Population (000)	Emissions per Capita (t)	Total Emissions (Mt)
World	7,426,103	6	47,200
G20 Members			
China	1,378,665	9	12,700
United States	323,071	20	6,570
European Union	511,219	9	4,353
India	1,324,510	2	2,870
Russia	144,342	18	2,670
Japan	126,995	10	1,310
Brazil	206,163	5	1,050
Germany	82,349	11	918
South Korea	51,246	14	732
Mexico	123,333	6	718
Canada	36,109	20	716
Saudi Arabia	32,443	21	676
Indonesia	261,554	3	674
Australia	24,191	23	552
South Africa	56,204	9	531
Turkey	79,821	6	504
United Kingdom	65,596	8	494
France	66,860	7	468
Italy	60,627	7	433
Argentina	43,590	8	334
Canadian Provinces and Territories			
Alberta	4,244	64	273
Ontario	14,071	11	159
Quebec	8,298	9	78
Saskatchewan	1,151	68	78
British Columbia	4,922	13	62
Manitoba	1,335	16	22
Nova Scotia	951	16	16
New Brunswick	767	19	14
Newfoundland and Labrador	529	20	11
Prince Edward Island	151	12	2
Yukon	40	13	1
Nunavut	38	16	1
Northwest Territories	45	28	1

* Note: Per capita emissions are in tonnes per person. Data is from 2017 for Canadian jurisdictions, and from 2016 for G20 countries and the world.

The levy is usually applied to fossil-fuel purchases, such as gasoline. The government controls the price and may choose to charge the levy to individuals and/or businesses.

- **financial investments:** government funding, subsidies and rebates that encourage businesses and/or consumers to reduce their emissions.
- **information programs:** the government provides information that encourages voluntary actions to reduce emissions.

Appendix 4 presents examples of options used in Ontario to reduce greenhouse gas emissions.

Appendix 5 presents examples of best practice elements of an effective climate change plan.

2.2.1 International Actions to Reduce Emissions

In the last 30 years, countries around the world have worked to develop international agencies and agreements to address climate change (see **Appendix 6**).

In 1987, the international community agreed to the Montreal Protocol on Substances that Deplete the Ozone Layer. Under this global agreement, countries agreed to phase out the production and consumption of ozone depleting substances that are used in refrigeration, air conditioning, aerosols and other applications. Since many of these substances are also greenhouse gases, their elimination has significantly contributed to combatting climate change.

In 1988, the Intergovernmental Panel on Climate Change (Panel) was established by the United Nations Environment Programme and the World Meteorological Organization as an expert, international organization to assess the science of climate change, its impacts and future risks. The Panel does not conduct its own scientific research, but assesses the current scientific literature to provide advice to governments. Since 1988, the Panel has released five comprehensive assessment reports

outlining the state of the science on climate change. The Fifth Assessment Report, released as separate volumes in 2013 and 2014, concludes that human activities are the main cause of climate change, and that the impacts will become much worse unless a significant reduction in global greenhouse gas emissions is achieved.

In addition to establishing the Panel, the global community has negotiated several agreements to establish an international approach to this challenge. For example, the United Nations Framework Convention on Climate Change (UN Framework Convention) is an international treaty negotiated at the United Nations Earth Summit in 1992. The UN Framework Convention requires that countries follow standardized guidelines for reporting greenhouse gas emissions released within their own boundaries to the UN Framework Convention Secretariat.

In 2015, the international community negotiated the Paris Agreement under the UN Framework Convention. It came into effect in 2016 and there are now 187 parties to the agreement. The Paris Agreement aims to keep the global average temperature increase well below 2°C compared to pre-industrial levels, and ideally below 1.5°C, to help avoid some of the more severe impacts associated with higher temperatures.

According to the Panel, an increase of global average temperature from 1.5°C to 2°C would increase the risk of extreme heat, floods, droughts, storms, and sea level rise, as well as negative impacts to ecosystems and fisheries. This could potentially affect the livelihoods of hundreds of millions of the most vulnerable people around the world by 2050.

The Panel determined that restricting the temperature increase to 1.5°C requires limiting total cumulative carbon emissions, also known as the global carbon budget. At current emission rates—about 42 gigatonnes per year—the 1.5°C carbon budget will be depleted in 10 to 14 years.

According to the Panel's 2018 special report on limiting global warming to 1.5°C, this goal can be

met by reducing net human-caused carbon dioxide emissions across the globe by 45% below 2010 levels by 2030, and reaching net-zero emissions by 2050. Net-zero, or carbon neutrality, means that there is an equal balance of carbon emissions and carbon sinks.

2.2.2 Federal Actions to Reduce Emissions

Canada has made several climate change commitments since joining the United Nations Framework Convention on Climate Change in 1992. Under the UN Framework Convention, Environment and Climate Change Canada produces an annual National Inventory Report. These reports contain detailed information for all provinces and territories on: greenhouse gas sources; the activities that produce emissions; and sinks—the natural reservoirs, like forests, that store carbon. National Inventory Reports provide the most recent greenhouse gas emissions data for each sector. These emissions data are often updated and restated, a result of continuous evaluation and improvements in how emissions are modelled and calculated.

The reports must be submitted to the UN Framework Convention's Secretariat each April, following the standard requirements for reporting emissions. Under the 2015 Paris Agreement, Canada committed to reducing its greenhouse gas emissions by 30% below 2005 levels by 2030. Based on the 2019 National Inventory Report data on greenhouse gas sources, this means a nation-wide reduction of 219 Mt, from 730 to 511 Mt.

Canada has regulated greenhouse gas emissions from light-duty vehicles since model year 2011 and from new heavy-duty vehicles since model year 2014. The regulations establish increasingly stringent greenhouse gas emissions requirements for the average of all new vehicle sales. Vehicle manufacturers comply by improving the efficiency of their vehicles, selling fewer high-emission vehicles and/or selling more low-emission vehicles.

In 2016, Canada and all provinces and territories, except for Saskatchewan and Manitoba,

adopted the Pan-Canadian Framework on Clean Growth and Climate Change (Pan-Canadian Framework). The Pan-Canadian Framework has four main pillars: pricing carbon pollution; complementary measures to further reduce emissions; adapting and building resilience to climate change; and actions to accelerate innovation and support clean technology. Manitoba subsequently signed on to the Pan-Canadian Framework in 2018. Since the Pan-Canadian Framework was adopted, federal actions on climate change have focused on its implementation.

For example, Environment and Climate Change Canada has been consulting since 2017 on developing a Clean Fuel Standard to reduce greenhouse gas emissions. The proposed standard would require fuel suppliers to reduce the life-cycle carbon intensity of their fuels. This can be done, for example, by blending ethanol—a lower emissions fuel—with gasoline. These regulations are expected to come into effect for liquid fuels in 2022 and for gaseous and solid fuels in 2023.

In June 2018, Canada passed the *Greenhouse Gas Pollution Pricing Act*, implementing a federal carbon pricing system for provinces and territories that either do not have a carbon pricing system, or have a system that does not meet the federal benchmark requirements. The federal pricing system has two components: a charge on fossil fuels, and a carbon pricing system for industrial facilities based on their production levels. In October 2018, Canada announced how this carbon pricing system would apply in different provinces and territories across Canada (see **Appendix 7**). Because Ontario did not have its own carbon pricing system in place, the federal carbon pricing system took effect in Ontario in 2019; a carbon pricing system for industrial facilities took effect in January 2019, and a charge on fossil fuels took effect in April 2019.

In 2018, Canada projected that, without further action on climate change beyond the policies that were in place or that could be readily modelled at the time, Ontario's emissions in 2030 would be 160 Mt. Canada projected that further federal

Figure 11: Ontario's Actions to Reduce Greenhouse Gas Emissions

Prepared by the Office of the Auditor General of Ontario

Year	Event
2005	Ontario begins decommissioning five coal-fired generating stations to improve air quality.
2007	Ontario releases "Go Green: Ontario's Action Plan on Climate Change," establishing emission-reduction targets for 2014, 2020 and 2050. Enacts regulation that prohibits the use of coal to generate electricity after December 2014.
2008	Ontario joins the Western Climate Initiative, a group of US states and Canadian provinces collaborating on reducing emissions.
2009	Ontario passes the <i>Green Energy and Green Economy Act</i> to expand low-carbon energy generation (solar and wind power) and amends the <i>Environmental Protection Act</i> to enable the creation of an Ontario cap and trade system.
2014	Ontario closes the Thunder Bay Generating Station. This completes the phase-out of coal-fired electricity generation in Ontario. The closure of the five stations* is the single largest greenhouse gas reduction action in North America.
2015	Ontario announces it will create a cap and trade system to price carbon emissions, and sets a 2030 emission-reduction target of 37% below 1990 levels (to 113 Mt). Ministry releases Ontario's Climate Change Strategy.
2016	Ontario passes the <i>Climate Change Mitigation and Low-carbon Economy Act</i> . The Act establishes a legal framework for emissions reductions and reductions targets for 2020, 2030 and 2050. A cap and trade program is established by regulation under the Act. A five-year Climate Change Action Plan is released, with plans to reduce emissions across all sectors.
2017	Cap and trade program launched. In its 18-month duration, the program raises \$2.9 billion, earmarked for programs to reduce emissions. The revenues were used mainly for energy efficiency retrofits for homes, businesses, hospitals and educational institutions, as well as electric vehicles, cycling infrastructure and transit.
2018	Ontario passes the <i>Cap and Trade Cancellation Act</i> , which repeals the <i>Climate Change Mitigation and Low-carbon Economy Act</i> . This cancels the cap and trade program and programs dependent on its revenues. Ontario also withdraws from the Western Climate Initiative. The Ministry of the Environment, Conservation and Parks releases an Environment Plan, outlining a proposed new path to meet a new 2030 greenhouse gas emissions target of 30% below 2005 levels by 2030 (143 Mt).

* Ontario's five coal-fired electricity generating stations included Nanticoke, Atikokan, Lambton, Lakeview and Thunder Bay. They were closed between 2005 and 2014. The Hearn Generating Station, also coal-fired, was closed in 1983.

government action, like the federal carbon pricing system, federal Clean Fuel Standard, and funding for private and public projects, would reduce Ontario's emissions 17 Mt down to 143 Mt in 2030.

For a chronology of Canada's climate change activities, see **Appendix 8**.

2.2.3 Ontario Actions to Reduce Emissions

Ontario's phase-out of coal-fired electricity generation was one of the most significant actions that improved Ontario's air quality, and had the added benefit of reducing greenhouse gas emissions. Between 2005 and 2014, five coal-fired generating stations at Nanticoke, Atikokan, Thunder Bay, Lambton and Lakeview were decommissioned, contributing to a 29 Mt decrease in greenhouse gas emissions by 2014. **Figure 11** outlines Ontario's

actions to reduce greenhouse gas emissions since 2005, and **Figure 12** outlines Ontario's previous and proposed emission-reduction targets.

In 2007, the Ministry of the Environment, Conservation and Parks, then the Ministry of the Environment, released Go Green: Ontario's Action Plan on Climate Change, establishing greenhouse gas emission-reduction targets for 2014, 2020 and 2050. These targets were based on 1990 emission levels. Because 1990 is the first year reliable emissions inventories for industrialized countries were compiled, it is considered the most common international base year.

From 2008 to 2011, a Climate Change Secretariat operated out of Cabinet Office. The Secretariat's role was to co-ordinate and report on climate change initiatives. The Secretariat did not have the authority to require ministries to take specific

Figure 12: Ontario's Previous and Proposed Greenhouse Gas Reduction Targets

Prepared by the Office of the Auditor General of Ontario

Year	Source of Target	Target Year	Target Emission Reductions	Target Emissions (Mt)	Target Status
2007	Go Green: Ontario's Action Plan on Climate Change	2014	6% lower than in 1990 ¹	169	Achieved
		2020	15% lower than in 1990 ¹	153	Repealed in 2018
		2050	80% lower than in 1990 ¹	36	Repealed in 2018
2016	<i>Climate Change Mitigation and Low-carbon Economy Act, 2016</i>	2030	37% lower than in 1990 ¹	113	Repealed in 2018
2018	Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan	2030	30% lower than in 2005 ²	143	Current target

1. Ontario's 1990 emissions were 180 Mt.

2. Ontario's 2005 emissions were 204 Mt.

emission-reduction actions, but instead could only make suggestions. Ministries could choose to implement or ignore the suggestions made. According to former members, to be effective, the Secretariat needed more independence and cross-ministry influence, and should have reported directly to Cabinet to ensure climate change was given priority along with the goals of each ministry.

In 2014, the government established a Climate Change Directorate within the Ministry of the Environment and Climate Change. The role of this group was to co-ordinate, report on, and drive climate action across all ministries.

In 2015, the province set a 2030 emission-reduction target, and in 2016, legislated the 2020, 2030 and 2050 targets in the *Climate Change Mitigation and Low-carbon Economy Act, 2016*. Also in 2015, a Minister's Table on Climate Change was established to engage ministers from ten ministries on climate change-related issues. The Minister's Table was disbanded in 2018. In June 2016, the Ministry released a five-year Climate Change Action Plan.

In 2016, it was confirmed that the 2014 emission-reduction target set in 2007 had been met, mainly by closing Ontario's coal-fired power plants. Other policies and actions, like spending on public transit, renewable energy, and energy conservation, were planned to help meet Ontario's future greenhouse gas reduction targets. In 2017, the province

launched a cap and trade program, requiring businesses that emit above a certain level of greenhouse gases to obtain allowances equal to their emissions. The program also permitted these allowances to be bought and sold between emitters. The *Climate Change Mitigation and Low-carbon Economy Act, 2016*, stipulated that the revenues generated by the cap and trade program were to be used to fund emission-reduction initiatives. A number of other existing programs and initiatives affect Ontario's greenhouse gas emissions in various sectors (see **Figure 13**).

In fall 2018, Ontario passed the *Cap and Trade Cancellation Act, 2018* and repealed the *Climate Change Mitigation and Low-carbon Economy Act, 2016*, cancelling Ontario's cap and trade program and its 2020, 2030 and 2050 reduction targets. The *Cap and Trade Cancellation Act, 2018*, administered by the Ministry of the Environment, Conservation and Parks, establishes a new legislative framework for reducing Ontario's greenhouse gas emissions and addressing climate change. The Act requires the government to establish and publicize greenhouse gas reduction targets. The Act also requires the Minister to prepare a climate change plan, regularly prepare reports on the climate change plan, and make the reports available to the public.

Figure 13: Examples of Current Ontario Programs and Initiatives that Affect Greenhouse Gas Emissions

Prepared by the Office of the Auditor General of Ontario

Sector of Emissions	Program or Legislation
Transportation	- Ethanol in gasoline – O. Reg. 535/05 under the <i>Environmental Protection Act</i> requires 5% of all gasoline to be comprised of ethanol biofuel - Greener diesel – O. Reg. 97/14 under the <i>Environmental Protection Act</i> requires 4% of diesel to be biofuel 2041 Regional Transportation Plan – increase availability and use of public transit throughout the Greater Toronto and Hamilton Area - Speed-limiting systems for commercial motor vehicles – reduced truck speed results in reduced greenhouse gas emissions - Land use planning and approval of municipalities' official plans
Industry	- Emissions reporting – O. Reg. 390/18 under the <i>Environmental Protection Act</i> requires large emitters to report and verify their emissions data - Natural gas conservation programs (encourages reducing natural gas use)
Buildings	- Ontario Building Code – specifies levels of insulation and energy efficiency in buildings - Natural gas utility conservation programs (encourage reducing natural gas use) - Broader Public Sector energy reporting and conservation – O. Reg. 507/18 under the <i>Electricity Act</i> requires public agencies to have energy conservation and demand management plans
Waste	- Food and organic waste diversion (to minimize methane-producing organic waste in landfills) - Landfill gas – O. Reg. 232/98 under the <i>Environmental Protection Act</i> requires the collection, burning or use of methane gas at landfilling sites
Electricity	- Time-of-use energy pricing to reduce electricity use during peak times - Energy-efficiency standards for appliances and equipment (under <i>Electricity Act</i> regulations) - Electricity conservation programs through the Independent Electricity System Operator (under <i>Electricity Act</i> directives)

2.2.4 The Process and Timing for Drafting “Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan” (the Plan)

The Ministry's Climate Change Policy Branch (Branch) led the development of a climate change plan. In July 2018, Ministry staff began considering options, including the plan's vision, targets, principles, actions, structure, and process. The Branch proposed six pillars under which key actions in the climate change plan would focus, including:

- Building Resilience
- Making Polluters Pay
- Leveraging the Private Sector
- Leading by Example
- Using Energy Wisely, and
- Being Transparent.

In September 2018, the Minister of the Environment, Conservation and Parks announced that the Ministry would introduce a plan in fall 2018 that would fight climate change. With the objective of releasing a climate change framework in the fall, the Minister wrote to 14 other ministries in September 2018 outlining next steps and asking them to consider any existing or new initiatives under development that could be included. The ministries had a deadline of 20 days to provide ideas on what could be included in a climate change framework.

In October 2018, the Branch compiled a list and conducted a quantitative and qualitative assessment of initiatives proposed by other ministries, the Minister's Office, and other stakeholders (see **Appendix 9** for examples of ideas that were submitted but not included). The quantitative assessment used a points system to rank the proposals, and gave a point for each of the following criteria:

- new programs or new modifications to existing programs;
- programs that demonstrated ambition;
- projects that achieved significant greenhouse gas reductions (more than 1 Mt);
- programs that had little or no cost to government;
- programs that had demonstrated co-benefits; and
- projects that had reductions that can be quantified and verified.

The Ministry's qualitative assessment was based on: alignment with the six pillars and plan objectives; and whether it was a short- or long-term action. These assessments were compiled to help select emission-reduction initiatives for the plan.

From October 17, 2018, to November 16, 2018, the Ministry used an online portal to invite public input on key areas of focus for climate change. The Ministry received more than 8,000 comments.

In mid-October 2018, the Ministry expanded the climate change plan into a larger environment plan. Other divisions within the Ministry led the development of other sections of the environment plan. In November 2018, the Ministry held meetings and roundtables with industry, financial institutions and environmental organizations, asking for input on the climate change components of the environment plan.

On November 28, 2018, the government gave approval for the Ministry to release the environment plan for public consultation. As such, on November 29, 2018, the Ministry released "Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan" (Plan), and posted it on the Environmental Registry for a 60-day public consultation period.

As of September 25, 2019, the Ministry had not yet updated the Plan to factor in any changes that may have resulted from information or ideas garnered during the public consultation period, or posted a decision notice on the Environmental Registry.

Figure 14 provides a timeline of the development of the Plan and related events.

2.2.5 The Content of the Plan

The Plan outlines the province's proposed approach for achieving progress in four main environmental areas:

- protecting Ontario's air, lakes and rivers
- reducing litter and waste, and keeping land and soil clean;
- conserving land and greenspace; and
- addressing climate change.

According to the Ministry, the Plan's climate change chapter fulfils the commitment under the *Cap and Trade Cancellation Act, 2018* to prepare a climate change plan.

At the time the Plan was drafted, the Ministry estimated that if no further climate change actions are taken, Ontario's emissions will be 160.9 Mt in 2030—0.1 Mt higher than Ontario's estimated emissions for 2018 (see **Figure 1**). This is similar to Canada's 2018 estimate of Ontario's projected 2030 emissions (160 Mt). The Plan sets a target to reduce Ontario's greenhouse gas emissions by 30% below 2005 levels by 2030. Achieving this 30% reduction target would mean bringing Ontario's emissions down to 143.3 Mt by 2030. This would require a 17.6 Mt reduction below the Ministry's projected 2030 emissions for the province (160.9 Mt).

The Plan states that this target aligns Ontario with Canada's 2030 target under the Paris Agreement (30% below 2005 levels by 2030). However, if the global emission-reduction goal determined by the Intergovernmental Panel on Climate Change to limit the global temperature increase to 1.5°C was applied to Canada, this would mean reducing Canada's emissions by at least 39% below 2005 levels by 2030—more aggressive than Canada's target (30% below 2005 levels by 2030), to which Ontario's target is aligned.

To achieve Ontario's proposed 2030 target, the Plan outlines eight areas where the Ministry expects emissions reductions to occur (see

Figure 14: Timeline of Plan Development and Plan-Related Events

Prepared by the Office of the Auditor General of Ontario

Date	Event
Jul 2018	Ministry staff develop initial options for new climate change plan. Bill 4 (<i>Cap and Trade Cancellation Act, 2018</i>) introduced.
Aug 2018	Ministry staff develop internal briefings and produce research on key components of plan.
Sep 6-26, 2018	Minister asks other ministries to submit ideas to include in plan within 20 days.
Sep 11, 2018	Bill 4 posted on Environmental Registry for 30-day public consultation period.
Early Oct, 2018	Ministry reviews submissions of climate change plan ideas from other ministries.
Oct 17, 2018	Ontario launches online portal for public consultation on new climate change plan.
Oct 22, 2018	Ministry expands scope of plan beyond climate change to include broader environmental priorities.
Oct 31, 2018	Bill 4 receives Royal Assent.
Nov 13-22, 2018	Ministry consults stakeholders from industry, finance, energy and waste sectors on the climate change plan.
Nov 14, 2018	Ontario repeals <i>Climate Change Mitigation and Low-carbon Economy Act, 2016</i> .
Nov 27-28, 2018	Treasury Board and Cabinet approve posting plan for public consultation on the Environmental Registry.
Nov 29, 2018	Ontario releases <i>Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan (Plan)</i> and posts it on the Environmental Registry for 60 days.
Jan 1, 2019	Federal carbon pricing for industry takes effect in Ontario.
Jan 14, 2019	Climate Change Leadership Team established by Cabinet to "embed climate change considerations across government" and establish directions and guidance for ministries.
Jan 28, 2019	Public consultation period on Plan ends.*
Feb 12, 2019	Ontario posts two proposal notices on the Environmental Registry for public comment: Increasing Renewable Content in Fuels and Industrial Emission Performance Standards.
Mar 6, 2019	Ontario releases discussion paper on reducing litter and waste.
Apr 1, 2019	Federal carbon pricing for fossil fuels takes effect in Ontario.
Jun 2019	Ministry develops a draft reporting and implementation strategy for the Plan. Inter-ministry working group established to co-ordinate implementation of climate change initiatives.
Jul 5, 2019	Ontario finalizes the Industrial Emission Performance Standards as an alternative to federal carbon pricing for industry.

* As of October 1, 2019, no decision notice for the Environment Plan has been posted on the Environmental Registry.

Figures 2 and 15). The emissions reductions expected in each area are based on various assumptions and actions (see **Appendix 10**).

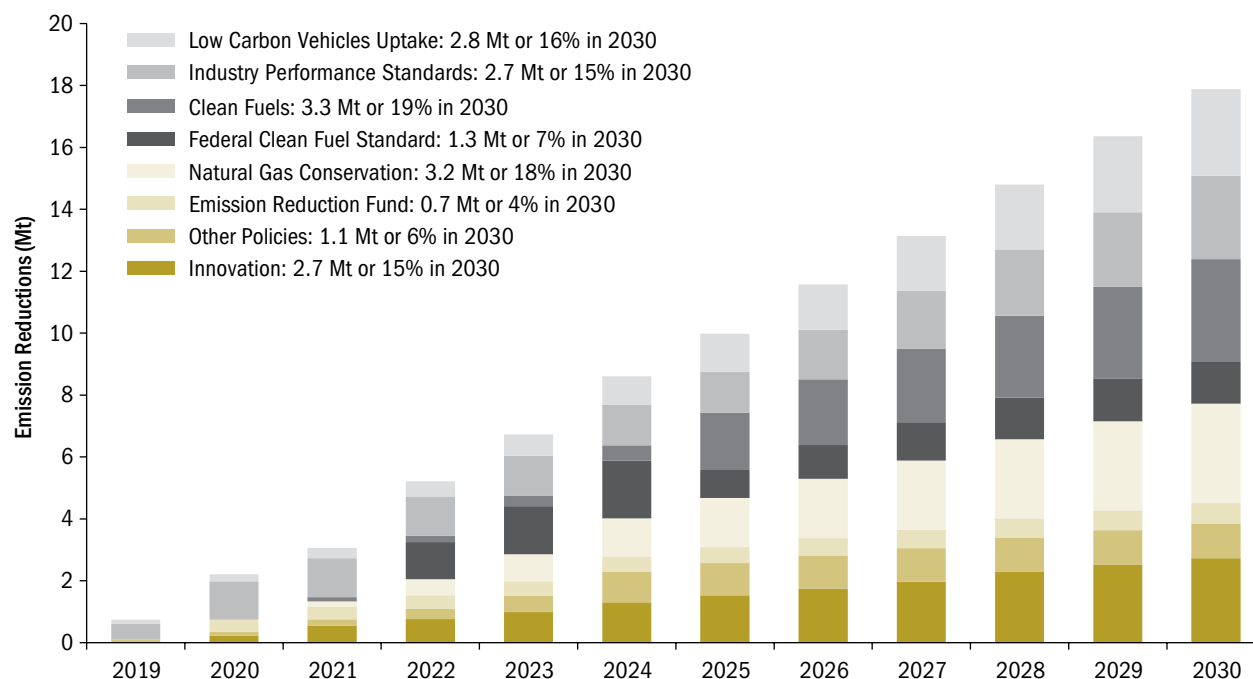
The Plan not only outlines how it expects Ontario's emissions to be reduced, but also contains a commitment to engage on international climate issues by providing Ontario's perspective to Canada's international climate negotiations. Ontario has the opportunity to both lead by example and to work with Canada to encourage other jurisdictions to collectively reduce global emissions. In working to reduce emissions both within Ontario and abroad, Ontario can leverage market changes

to its economic benefit. On this, the Plan states that Ontario will encourage the federal government to ensure that international climate negotiations improve our cleantech sector's access to emerging global markets for low-carbon technologies, helping local companies create new green jobs.

The Plan also contains a commitment to establishing an advisory panel on climate change.

Figure 15: Estimated Emissions Reductions Associated with the Plan's Eight Areas, from Business-as-Usual Level

Source of data: Ministry of the Environment, Conservation and Parks



2.3 Ministry Organization and Key Climate Change Related Activities

The Ministry's Climate Change and Resiliency Division designs, develops and delivers policies and programs to help protect the environment, reduce greenhouse gas emissions and increase Ontario's resilience to climate change. For the 2019/20 fiscal year, this Division has an operating budget of \$18.9 million, 6% of the Ministry's total budget, and 106 full-time staff. The five branches of this Division coordinate greenhouse gas mitigation and adaptation activities (see **Appendix 11**). They are the:

- **Climate Change Policy Branch**, responsible for the overall development, co-ordination and delivery of initiatives to address climate change, including the development of policy, key guidance and tools.
- **Climate Change Programs and Partnerships Branch**, responsible for the development of programs and regulations to increase access to clean fuels and reduce regulatory barriers to low-carbon solutions. The branch works with internal and external partners to deliver a range of government priorities.
- **Environmental Economics Branch**, responsible for using modelling and other analytical techniques to support policy development. The branch works with other branches to assess environmental and financial effects of proposed policies and programs.
- **Financial Instruments Branch**, responsible for leading the development and delivery of programs and initiatives to encourage the industrial sector to reduce greenhouse gas emissions.
- **Adaptation and Resilience Branch**, responsible for leading the development and delivery of Ontario's adaptation and resilience initiatives.

3.0 Audit Objective and Scope

Our audit objective was to assess whether the Ministry of the Environment, Conservation and Parks has effective systems and processes in place to ensure:

- credible information is used on an ongoing basis to assess, plan and undertake government initiatives to mitigate greenhouse gas emissions;
- initiatives to mitigate greenhouse gases are comprehensive, co-ordinated and cost-effective;
- initiatives to mitigate greenhouse gases are likely to achieve provincial greenhouse gas reduction targets, and are likely to contribute to global long-term mitigation goals; and
- the effectiveness of greenhouse gas mitigation initiatives is monitored, evaluated and reported to the public.

In planning for our work, we identified the audit criteria (see **Appendix 12**) we would use to address our audit objectives. These criteria were established based on a review of applicable legislation, policies and procedures, internal and external studies, and best practices. Senior management at the Ministry reviewed and agreed with the suitability of our objectives and associated criteria.

We conducted our audit from April to September 2019. We obtained written representation from Ministry management that, effective November 15, 2019, they had provided our Office with all the information they were aware of that could significantly affect the findings or the conclusion of this report.

Our audit work focused on the Plan's proposed path to reduce greenhouse gas emissions, examining: the process through which the Plan was developed; its underlying assumptions and supporting evidence used to estimate emissions reductions; the Ministry's evaluation and consideration

of costs; and its approach to achieving the target. During our audit, we:

- reviewed documentation provided by the Ministry, other provincial ministries and agencies, Metrolinx and Public Health Ontario, for example, and other jurisdictions;
- met with and/or obtained information from staff to obtain an understanding of roles and responsibilities, the process of developing the Plan, and the methods and assumptions used to estimate expected emissions and emissions reductions;
- requested that the Ministry's Environmental Economics Branch run various scenarios in a greenhouse gas emissions model and reviewed the results;
- reviewed relevant reports from external parties; and
- interviewed and obtained information from external stakeholders, the non-profit organization Plug'n Drive, and consulting firms.

We conducted our work and reported on the results of our examination in accordance with the applicable Canadian Standards on Assurance Engagements—Direct Engagements issued by the Auditing and Assurance Standards Board of the Chartered Professional Accountants of Canada. This included obtaining a reasonable level of assurance.

The Office of the Auditor General of Ontario applies the Canadian Standards of Quality Control and, as a result, maintains a comprehensive quality control system that includes documented policies and procedures with respect to compliance with rules of professional conduct, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Professional Conduct of the Chartered Professional Accountants of Ontario, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

4.0 Detailed Audit Observations

4.1 Unclear If Plan Will Be Updated Based on Comments Received Through the Environmental Registry

Before the Plan was released, Ministry staff expressed concern that the Ministry may receive criticism for releasing a Plan for public comment that appeared to already be finalized. Unlike other proposed policies posted on the Environmental Registry for comment, the Plan itself is not marked as a draft. By contrast, the supporting materials for all other 10 policy proposals posted on the Environmental Registry by the Ministry between June 2018 and September 2019 are marked with a label indicating that the policies are either proposed, a draft for consultation or a discussion paper.

During our discussion with the Ministry, we were told that the Plan was always considered an initial plan, and that it would be updated in the future. As of September 25, 2019, the Ministry had not yet posted a decision notice for the Plan on the Environmental Registry, or specified a date as to when it expects to update the Plan after receiving public comments through the Environmental Registry.

RECOMMENDATION 1

To help ensure that the public is aware that plans, strategies and policies, when posted for review and public comment on the Environmental Registry are draft, we recommend that, in the future, the Ministry of the Environment, Conservation and Parks label such documents as draft.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation for future postings on the

Environmental Registry. Going forward, the Ministry commits to labeling draft plans, strategies and policies that are posted on the Environmental Registry as draft.

4.2 No External Advisory Panel Yet Established to Provide Advice on Climate Change Plan

Under the *Cap and Trade Cancellation Act, 2018*, the Minister may, for the purpose of taking any steps with respect to the climate change plan, appoint panels to perform advisory functions. In addition, the Plan commits to establishing such a panel to provide advice to the Minister on implementation and further development of actions and activities in the Plan specific to climate change.

In July 2018, Ministry staff proposed establishing an advisory group to advise the Minister on potential elements of a new climate change plan, and on the establishment of a long-term approach to support plan implementation. In October 2018, the Ministry drafted Terms of Reference for the Climate Change Advisory Panel and developed a list of 28 potential Panel members. In November 2018, the government approved the creation of this panel and its Terms of Reference. The Panel's mandate is to provide advice to the Minister on "programs and initiatives sufficient to achieve deep greenhouse gas reductions." This includes advising the Minister on implementing the climate change plan, and providing specific advice on key areas such as activating the private sector, government leadership, using energy and resources wisely, as well as ongoing reporting, review, implementation, partnerships and engagement.

As of September 25, 2019, no appointments had yet been made to the Climate Change Advisory Panel. The Ministry advised our Office that, as of that date, the current Minister had not yet been briefed by the Ministry, and no specific briefing date was scheduled.

Establishing a Climate Change Advisory Panel would allow the Minister to benefit from the advice

of experts in a variety of fields, and help ensure that the Plan is better supported by sound evidence and includes the most effective and innovative emission-reduction initiatives to reach the 2030 target. Other jurisdictions, including the United Kingdom and Sweden, have used the best practice of an independent body to provide non-partisan, science-based analysis and advice on reducing greenhouse gas emissions.

RECOMMENDATION 2

So that Ontario's climate change planning can benefit from external expert advice, we recommend that members be appointed to the Climate Change Advisory Panel to review and provide advice on climate change planning and further refine the Ministry's Plan as needed.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General on the importance of gathering expertise and advice to support the refinement and implementation of its climate change plan. The Ministry will continue to support the Minister in establishing the Advisory Panel on Climate Change.

4.3 Better Methods to Estimate Emissions Reductions Needed Going Forward

The Ministry began by identifying the proposed 2030 emissions reduction target—30% below 2005 levels by 2030. Based on the emissions data available to the Ministry at the time, this represents a reduction to 143.3 Mt by 2030. The Ministry then projected what Ontario's 2030 emissions would be if no new initiatives were undertaken. In November 2018, the Ministry used a model to estimate this amount would be 160.9 Mt in 2030. The Ministry then subtracted 143.3 Mt from this estimate to arrive at the 17.6 Mt in emissions reductions needed to achieve the 2030 target.

4.3.1 Emission Projections and Reduction Estimates Need Robust and Ongoing Modelling

Using an integrated model to project greenhouse gas emissions and emissions reductions can allow the user to consider and account for contributing factors, such as economic and demographic factors that influence energy use and greenhouse gas emissions across sectors. Integrated models can also take into account the overlapping, interacting and competing effects of emission-reduction programs, and assist with evidence-based decision making.

To project the 160.9 Mt emissions estimate, the Ministry used an integrated energy-emissions-economy model. A combination of three models, some of which were developed over several decades, this model is a series of mathematical equations. It integrates information, including on government policies, the economy, technologies, and energy use and costs, to simulate policy impacts on energy and emissions trends, the adoption of technologies, and the economy. The model is calibrated regularly with data from sources that include the National Inventory Report, Natural Resources Canada's Comprehensive Energy Use Database, and Statistics Canada. Model simulations are also backcasted, a process by which model results are compared with historical data to ensure that they are reasonable.

Included in this model are assumptions around technological improvements that are expected to occur without new government initiatives. For example, the model assumes that in 2030, 250,000 (3%) of Ontario's 7.7 million on-road vehicles will be primarily or fully powered by electricity rather than by gasoline, a result of lower electric vehicle battery prices and natural market uptake. Also included in the model are assumptions around oil and natural gas prices, as well as economic growth.

The Ministry did not include the emission-reduction impacts of the federal carbon price when estimating the projected emissions for 2030 because the Plan is framed as an alternative to the federal carbon pricing system.

Since November 2018, new emissions data from the National Inventory Report has been released and incorporated into the model. In August 2019, our Office requested that the Ministry re-run the model to estimate the 2030 projection again. This time, the model estimated that Ontario's greenhouse gas emissions in 2030 would be 163.6 Mt if no further climate change actions are taken, 2.7 Mt higher than the estimate presented in the Plan.

In addition to estimating the 2030 emissions projection, the Ministry also used the integrated model to estimate emissions reductions expected from the implementation of Industry Performance Standards. However, the Ministry did not use the integrated model to estimate emissions reductions for the other areas in the Plan, or to help inform and determine the most effective programs for achieving the overall emission-reduction target.

The Ministry used an ad hoc approach to estimate all other emission estimates. The emission-reduction estimate for expanding GO Transit was taken from a Metrolinx technical memorandum. Emission-reduction estimates for energy storage, compressed natural gas and renewable natural gas were either based on, or taken from a submission to the Ministry from the Ontario Energy Association, an industry association that represents Ontario's electricity and natural gas utilities, among other companies. The emission-reduction estimates for Low Carbon Vehicles Uptake, cost-effective fuel switching, renewable content in gasoline, the federal Clean Fuel Standard, Natural Gas Conservation, the Emission Reduction Fund and organic waste diversion were estimated using spreadsheet calculations that did not account for the complex interactions between energy and economic factors and policies that a fully integrated model can provide. The remaining emissions reductions needed to reach the 2030 target were then assigned to Future Innovation. The Ministry informed our Office that it was unable to use the integrated model to estimate emissions reductions from these areas because the program design details needed for modelling were not available at the time.

4.3.2 Ministry's 160.9 Mt Estimate of Projected 2030 Emissions Incorrectly Includes the Emissions Reduction Impact from Now-Cancelled Climate Change Programs

When modelling the 2030 business-as-usual estimate in November 2018, the Ministry included electricity sector policies factored into Ontario's 2017 Long-Term Energy Plan (LTEP). The 2017 LTEP included Ontario initiatives, such as electricity conservation programs, renewable energy contracts, and the cap and trade program. These initiatives were later cancelled. In August 2019, our Office requested that the Ministry model a new 2030 projection that includes, among other updates, changes in the electricity sector since the 2017 LTEP was released. The modelling underlying the Plan projects that baseline electricity sector emissions in 2030 would be 0.5 Mt, whereas the updated projection received by our Office projects emissions for this sector would be 4.6 Mt—an increase of 4.1 Mt. This demonstrates that projected emissions will change due to a number of factors, and should be regularly re-estimated to account for changes in policy and programs.

RECOMMENDATION 3

So that complex interactions between energy, economics and emissions are taken into account when selecting and designing emission-reduction initiatives, and to provide more reliable emissions estimates, we recommend that the Ministry of the Environment, Conservation and Parks:

- use integrated modelling, where appropriate, to better estimate the impact of planned and future initiatives when updating its Plan to meet the 2030 target; and
- annually update its estimates to reflect new information and changes to proposed initiatives, and assess whether it is on track to achieve the targeted reductions.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation about using integrated modelling. The Ministry will make better use of integrated modelling, where appropriate, and up-to-date information as it becomes available when forecasting emissions in the province.

4.4 Emissions Estimates Underlying Plan Not Supported by Sound Evidence

The Plan projects that Ontario's greenhouse gas emissions will be 160.9 Mt in 2030 if no further climate initiatives are taken. To reduce Ontario's emissions by 17.6 Mt to meet the 2030 target, the Plan outlines eight areas where the Ministry expects emissions reductions to occur (**Figure 15**). We reviewed the evidence and assumptions the Ministry used to estimate the emissions projected for 2030, as well as the reductions for each area. Based on our review, several of the estimates are not supported by sound evidence (see **Appendix 10**). Our assessment of the assumptions and double counting of initiatives found that the Plan overestimates the emissions reductions expected. Overall, our analysis found that the initiatives in the Plan have the potential to achieve between 6.3 Mt to 13.0 Mt of the 17.6 Mt emission-reduction goal (see **Figure 2**). We outline our findings for specific emission-reduction areas below.

4.4.1 Low Carbon Vehicles Uptake: Ministry Overestimates Emissions Reductions Expected from Electric Vehicle Uptake by 2.6 Mt

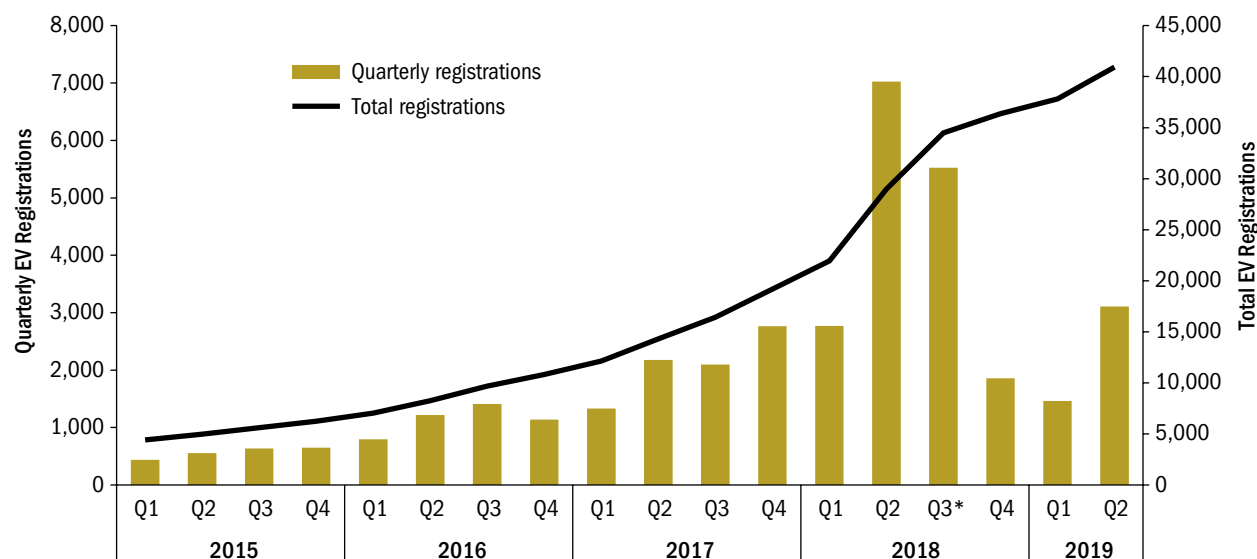
In developing the Plan, the Ministry estimated that 2.6 Mt in emissions reductions in 2030 will come from the increased uptake of low-carbon vehicles. This estimate assumes that 1.3 million vehicles on the road in 2030 will be powered by electricity rather than gasoline. The Plan overestimates the

emissions reductions associated with this assumed uptake of electric vehicles for several reasons:

- *Emissions reductions resulting from the uptake of low-carbon vehicles are already included in the projected 2030 estimate.* The increasingly stringent federal vehicle emissions standards require vehicle manufacturers to reduce the average emissions across the fleet of all vehicles they sell each model year. Manufacturers can meet these standards by selling fewer high-carbon vehicles and more low-carbon ones, such as electric vehicles. The emissions reductions attributed to the federal vehicle emissions standards, and thus the uptake of low-carbon vehicles, are already accounted for in the Ministry's projected 2030 estimate.
- *The Ministry's projection of 1.3 million electric vehicles on the road by 2030 is based on a number of factors, including cancelled programs.* To support the development of Ontario's 2017 Long-Term Energy Plan, the Independent Electricity System Operator (IESO) released a technical report in September 2016 on the adequacy and reliability of Ontario's electricity resources. This technical report forecasted several potential scenarios for the demand of Ontario's electricity through to 2035. These scenarios were based on assumptions for various levels of electricity demand in different sectors. The Ministry's estimate of 1.3 million electric vehicles on Ontario's roads by 2030 is based on the IESO's highest demand scenarios, and represents a more than 3,000% increase from approximately 41,000 electric vehicles in 2019. However, these scenarios included actions and programs identified in Ontario's now-cancelled 2016 Climate Change Action Plan, such as incentives for leasing or buying electric vehicles, and purchasing and installing charging stations in workplaces and residential buildings. Electric vehicle registrations had been increasing in Ontario under these incentive programs (registrations increased 1,168%,

Figure 16: Electric Vehicle (EV) Registrations in Ontario, 2015–2019

Source of data: Ministry of Transportation



* Electric vehicle purchase subsidies cancelled.

from 554 to 7,026 between the second quarter of 2015 and 2018). However, these programs were cancelled in summer 2018, and sales have subsequently declined; 4,574 electric vehicles were registered in the first half of 2019, 53% fewer than in the same period in 2018 (9,796 vehicles). (See **Figure 16** for registration data of electric vehicles since 2015).

- *The Ministry was unable to provide any details of planned initiatives that would result in 1.3 million electric vehicles on the road by 2030. In its emissions projections for 2030, the Ministry based its calculations on the assumption that natural market uptake would result in 250,000 electric vehicles on the road by 2030. The Ministry was unable to provide details of any planned provincial initiatives that could increase the uptake of electric vehicles in Ontario to 1.3 million and achieve the greenhouse gas reductions forecasted for this area. The Ministry was unable to provide any evidence to support its expectation that the sales of electric vehicles in Ontario would exceed the projected natural market uptake.*

RECOMMENDATION 4

To better assess whether Ontario will achieve 2.6 Mt in emissions reductions from the uptake of electric vehicles, we recommend that the Ministry of the Environment, Conservation and Parks, together with key partner ministries, base its estimates on sound evidence.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation on the importance of electric vehicle adoption in Ontario. The Ministry is in the process of refining its emissions forecast and will make better use of integrated modelling and up-to-date information as it becomes available when forecasting emissions in the province.

4.4.2 Low Carbon Vehicles Uptake: Estimate of 0.2 Mt in Emissions Reductions from Compressed Natural Gas Based on Illustrative Estimate

Most freight trucking in Ontario relies on diesel fuel. The Plan expects to achieve 0.2 Mt in

greenhouse gas emissions reductions by 2030 by displacing the use of diesel with compressed natural gas, which consists mainly of methane compressed and stored at high pressure. In 2016, freight trucks in Ontario used 0.1 petajoules of natural gas energy. To achieve the expected emissions reductions, the Ministry estimated an increase in the use of compressed natural gas by 55 petajoules in 2030. This estimate, which assumes that compressed natural gas generates fewer greenhouse gas emissions than diesel, is based on a scenario in a submission from the Ontario Energy Association to the Ministry to help inform the development of the Plan.

However, the Ontario Energy Association described this scenario as an assumed one. Our review found that the Ministry did not assess whether this level of compressed natural gas uptake is feasible or cost effective.

Moreover, while natural gas produces lower carbon dioxide emissions than diesel when burned, natural gas can leak into the atmosphere during fuel production and transportation. Because natural gas consists primarily of methane, a greenhouse gas that is more potent than carbon dioxide, studies that account for this leakage along the supply chain have found that the use of compressed natural gas can result in higher emissions compared with diesel.

RECOMMENDATION 5

To help reach Ontario's emission-reduction target by 2030, we recommend that the Ministry of the Environment, Conservation and Parks analyze the feasibility and emissions impact of increasing the use of compressed natural gas, taking into consideration the life-cycle emissions associated with compressed natural gas.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation. The Ministry will analyze the feasibility and emissions impact of increasing

the use of compressed natural gas, taking into consideration the life-cycle emissions associated with compressed natural gas.

4.4.3 Clean Fuels: Internal Ministry Analysis Estimates 2.3 Mt Less Emissions Reductions Than the Plan Projects

The Plan overstates the Ministry's own internal projection for reductions from proposed clean fuel initiatives. The Plan projects that 19% (3.3 Mt) of reductions in 2030 will result from the increased use of clean fuels, such as ethanol and renewable natural gas. Ethanol is typically made by fermenting organic material like corn and sugar cane, while renewable natural gas is made from decomposing organic material such as green bin and farm waste. Renewable natural gas is almost chemically identical to conventional natural gas, which is a fossil fuel.

Of the total reductions from Clean Fuels, 2.3 Mt (13% of the targeted reductions in the Plan) are projected from renewable natural gas use. To achieve these reductions, the Plan proposes that Ontario require utilities to offer a voluntary renewable natural gas option for customers and consult on the appropriateness of clean content requirements. However, evidence from Ontario and British Columbia shows that few natural gas utility customers purchase renewable natural gas. For example, data from a company that sells renewable natural gas in Ontario indicates that only 6.6 petajoules of renewable natural gas has been sold to Ontarians since 2005, compared to a total of 1,051 petajoules of natural gas sold in 2018 alone. Evidence from the electricity and natural gas distribution utility in British Columbia is similar. Of the 292 petajoules of natural gas used in 2018 in the province, only about 0.3 petajoules was renewable natural gas, provided by FortisBC.

During the Plan's development, internal Ministry staff calculations estimated there would be "negligible" emissions reductions (0.0049 Mt) by 2030 associated with a voluntary renewable natural

gas requirement, due to the higher costs to the consumer, and therefore lower sales, of renewable natural gas. The Ministry estimated that costs for non-renewable natural gas would be less than \$3 per gigajoule, whereas the cost estimates for renewable natural gas would be \$18 per gigajoule.

Instead of using the internal staff analysis, the Plan based emissions reductions in this area on an Ontario Energy Association submission to the Ministry. In its submission, the Ontario Energy Association described the potential to achieve 2.3 Mt of emissions reductions through renewable natural gas supply as “illustrative and [indicated that] more pilot programs are required to demonstrate provincial and regional potential.”

RECOMMENDATION 6

To help reach Ontario’s 2030 emission-reduction target, we recommend that the Ministry of the Environment, Conservation and Parks work with the Ministry of Energy, Northern Development and Mines to assess the feasibility of increasing renewable natural gas supply in Ontario.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General’s recommendation. The Ministry will continue to engage with the Ministry of Energy, Northern Development and Mines and key stakeholders on the feasibility of increasing renewable natural gas in Ontario.

4.4.4 Federal Clean Fuel Standard: Plan Relies on Proposed Standard to Reduce Provincial Emissions by 1.3 Mt

Since 2017, Environment and Climate Change Canada has been consulting the public and stakeholders on developing a Clean Fuel Standard to reduce Canada’s greenhouse gas emissions. By setting regulatory performance standards for liquid, solid and gaseous fossil fuels, the proposed standard

would require fuel suppliers to reduce the life-cycle carbon intensity of their fuels. This is intended to encourage innovation and adoption of clean technologies in the oil and gas sector, and the development and use of low-carbon fuels.

The Plan expects 7% (1.3 Mt) of the province’s emission-reduction target to come from the 2022 implementation of proposed federal fuel standards. However, based on information our Office received from Ministry staff, emissions reductions from the federal Clean Fuel Standard could be as high as 6.5 Mt, as emissions reductions attributed in the Plan to Low Carbon Vehicles Uptake (2.8 Mt) and Renewable Natural Gas (2.3 Mt) are expected to instead result from the Clean Fuel Standard.

In June 2019, as part of its ongoing consultations, Environment and Climate Change Canada released a Proposed Regulatory Approach for the Clean Fuel Standard, building upon input received on discussion papers and through consultation sessions. Environment and Climate Change Canada plans to continue consulting on these regulations over the next few years, with liquid fuel regulations planned to come into effect in January 2022, and gaseous and solid fuel regulations planned to come into effect in January 2023.

Because the Plan counts on reductions from the implementation of these proposed federal regulations to meet its 2030 target, there would be an emission-reduction shortfall if the federal regulations are not implemented. However, if the federal Clean Fuel Standard is implemented, the emission-reduction impacts of these standards will overlap with those of the provincial Industry Performance Standards (see **Section 4.4.6**).

4.4.5 Natural Gas Conservation: Ministry Estimate of 3.2 Mt in Emissions Reductions Assumes an Incremental Cost of \$6.6 Billion Over Ten Years

The Plan estimates 18% (3.2 Mt) of emissions reductions will come from natural gas conservation programs. These programs provide incentives to

industrial, commercial, and residential customers to reduce their natural gas use. In estimating reductions from natural gas conservation efforts, the Ministry based its calculations on a 2016 study submitted by a consulting firm to the Ontario Energy Board. This study modelled various future potential scenarios for natural gas conservation in Ontario. Of several potential scenarios, the Ministry selected a scenario that assumed unlimited funding for all cost-effective natural gas conservation measures. (Cost-effective means that benefits, such as energy cost savings, are greater than the incremental installed cost of the measure. In 2016, every dollar spent on natural gas conservation programs resulted in energy bill savings of about \$2.40). Internally, the Ministry estimated the additional required funding for this scenario from 2021 to 2030 would be \$6.6 billion.

4.4.6 Industry Performance Standards: Emissions Reductions Overstated in Plan Because of Double Counting and Weaker Finalized Standards

The Plan estimates that 15% (2.7 Mt) of the emissions reductions will come from Industry Performance Standards. This is an overestimate.

Industry Performance Standards are sector- or facility-specific benchmarks. Such standards require that industry pay a carbon price for emissions that exceed pre-established levels. To avoid paying the carbon price, industry can reduce its emissions. One way to meet the Industry Performance Standards is for industry to reduce its natural gas use, by replacing less-efficient furnaces with more efficient ones, for example. As described in **Section 4.4.5**, the scenario chosen for Natural Gas Conservation and the emissions reductions associated with such programs assumes unlimited funding would be made available to undertake all cost-effective natural gas conservation measures. Under such a scenario, industry would be able to reduce its emissions beyond the levels required to comply with Industry Performance Standards.

The Plan overestimates the emissions reductions associated with this area, as it does not account for overlap of the Industry Performance Standards and Natural Gas Conservation, and attributes emissions reductions achieved through industrial natural gas conservation to both areas.

Another way for industry to meet Industry Performance Standards is to switch from higher emission fuel, like petroleum coke, to lower emission fuel, like natural gas. This is what Ministry staff modelling indicated would happen in the absence of other Plan initiatives. Because fuel switching would also help industry comply with the federal Clean Fuel Standard, emissions reductions from both of these initiatives would overlap. The Plan overestimates emissions reductions because it does not account for the overlap of the Industry Performance Standards and the federal Clean Fuel Standard, and attributes emissions reductions achieved by shifting to lower emitting fuels to both areas.

Furthermore, since the release of the Plan, the Ministry filed the finalized standards. These standards, now called the Emissions Performance Standards, are in O. Reg. 241/19 under the *Environmental Protection Act*. These finalized standards are weaker than the standards modelled during the development of the Plan. The Ministry now estimates that instead of 2.7 Mt (15%), only 1.0 Mt (6%) of the emissions reductions to be achieved in 2030 would come from the finalized standards.

RECOMMENDATION 7

To better assess the contribution that Industry Performance Standards would make toward Ontario's 2030 emission-reduction target, we recommend that the Ministry of the Environment, Conservation and Parks use best practices, such as integrated modelling, that account for the interactions and overlap with other initiatives.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation on using integrated modelling to account for the interactions and potential overlap between initiatives. The Plan was developed using the best available information and modelling at the time. The Ministry did not model the federal standards as it is unknown what they will be after 2022. The province will continually evolve the Plan with updated modelling, information and actions.

4.4.7 Emission Reduction Fund: Estimated 0.5 Mt Emissions Reductions Are Likely Less Than Projected Due to Funding Assumptions

The Plan overstates the reductions to be achieved from an Emission Reduction Fund (named in the Plan as the Ontario Carbon Trust). The Plan estimates 4% (0.5 Mt) of reductions in 2030 will result from providing \$350 million for energy efficiency loans. These loans would help pay the upfront capital costs of energy-efficiency projects for buildings. The loans would be paid back over time by energy savings. The Ministry estimates that the reductions would result from funding air sealing, as well as wall, attic and basement insulation projects. Half of the 0.5 Mt in emissions reductions are estimated to come from reduced natural gas use.

As described in **Section 4.4.5**, the scenario chosen for Natural Gas Conservation assumes funding would be made available for all cost-effective natural gas conservation measures. According to Ministry staff, this includes funding for 100% of incremental capital costs. For example, a homeowner could receive funding to insulate their attic or basement, minimizing heat loss and reducing their natural gas use. However, if funding is provided to homeowners through a natural gas conservation program for these types of projects, homeowners would not require loans through the Emission Reduction Fund, and the fund would not result in emissions reductions for these projects.

The Plan overestimates the emissions reductions associated with the Emission Reduction Fund, as it does not account for the overlap of the fund and Natural Gas Conservation, and attributes emissions reductions achieved through residential natural gas conservation to both programs.

RECOMMENDATION 8

To better assess the contribution that the Emission Reduction Fund would make toward Ontario's emission-reduction target, we recommend that the Ministry of the Environment, Conservation and Parks use best practices, such as integrated modelling, that account for the interactions and overlap with other initiatives.

MINISTRY RESPONSE

The Ministry agrees with this recommendation and the importance of integrated modelling to accurately forecast anticipated emissions reductions from the Emission Reduction Fund. This iteration of the Plan is one of many that will help us work towards our 2030 target. The Ministry is in the process of updating its estimates and will incorporate the Auditor General's feedback in its work.

4.4.8 Emission Reduction Fund: Plan Estimates 0.1 Mt in Reductions From Projects That May Occur Anyway

A further \$50 million of the Emission Reduction Fund would be designated for an Ontario Reverse Auction, which the Ministry has estimated would result in 0.1 Mt of emissions reductions. A reverse auction allows bidders to compete for funding to finance projects with the lowest cost reductions. Research on reverse auctions, including the program used in Australia, suggests that lowest cost auction bids are often for projects that would have happened regardless of government funding. Unless Ontario's reverse auction is designed to prevent it, government funding could be provided

to projects that would have happened anyway. This funding, therefore, would be unnecessary and the Plan would be overestimating the expected emissions reductions in this area by up to 0.1 Mt.

RECOMMENDATION 9

To help achieve a reverse auction that contributes toward reaching Ontario's 2030 emission-reduction target, we recommend that the Ministry of the Environment, Conservation and Parks design its reverse auction to achieve additional emissions reductions that would not have happened without government funding.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation about the potential outcomes of the reverse auction as proposed in the draft Plan. This iteration of the Plan is one of many that will help us work towards our 2030 target. The Ministry will take this into consideration as it updates the Plan.

4.4.9 Organic Waste: Ministry Improperly Counts 0.3 Mt in Emissions Reductions from Decreasing the Amount of Exported Waste

Food and organic waste that is sent to landfill decomposes and creates methane, a potent greenhouse gas. Approximately 40% of Ontario's municipal solid waste for disposal is exported and landfilled in the United States. The emissions associated with this exported waste are counted in the United States' National Inventory Report—rather than Canada's National Inventory Report—as the emissions occur in the United States, not Ontario.

The Ministry expects 1.0 Mt of Ontario's 2030 emission-reduction target to come from programs that increase the diversion of food and organic waste from landfills. Based on the Ministry's modelling, about 0.3 Mt (30%) of these reductions are expected to come from diverting waste that

would otherwise be exported and landfilled in the United States.

However, the Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories requires emissions generated by waste that is exported and landfilled in the United States to be counted in the United States' inventory—not Ontario's inventory. Therefore, any reduction in those emissions that are a result of waste diversion in Ontario would be accounted for in the United States' inventory. Reductions in emissions that are not counted in Ontario should not be counted toward meeting Ontario's target.

RECOMMENDATION 10

To improve the reliability of estimated emissions reductions associated with organic waste diversion, we recommend that the Ministry of the Environment, Conservation and Parks follow the Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories and transparently account for actions that occur outside Ontario's borders, consistent with international rules.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation. The Ministry agrees that transparent reporting of emissions reductions is critical, including where the emissions reductions occurred and how they relate to the IPCC inventory categories. The Ministry agrees to follow international best practices, including the Paris Agreement rules and IPCC guidelines, where applicable.

4.4.10 Innovation: Plan Assumes 0.5 Mt Emissions Reductions from Energy Storage and Cost-Effective Fuel Switching with No Planned Initiatives

Batteries and other forms of energy storage can be used to store surplus low-carbon energy generated

during times of low electricity demand. This surplus energy can then be released at times of high electricity demand to displace fossil-fuel fired generation from natural gas that would otherwise be needed.

The Ministry's modelling underlying the Plan projects that 0.3 Mt of emissions reductions in 2030 will come from increased energy storage. This assumed reduction was taken directly from a submission from the Ontario Energy Association to the Ministry to inform the development of the Ministry's climate change plan. However, the associated 750 MW of additional energy storage by 2030 was a hypothetical example of the potential for growth, and was presented as illustrative only. The Ministry did not assess the feasibility or cost of this proposed level of energy storage.

The Plan also expects 0.2 Mt of emissions reductions by 2030 through changing heating in buildings from high-carbon fuels to low-carbon fuels, such as electricity, where cost effective. The Plan does not include government actions to achieve the emissions reductions estimated from energy storage or changing building heating to low-carbon fuels.

RECOMMENDATION 11

So that an increase in Ontario's electricity storage capacity contributes to achieving Ontario's overall 2030 emissions reduction target, we recommend that the Ministry of the Environment, Conservation and Parks work with the Ministry of Energy, Northern Development and Mines to identify and assess the feasibility of energy storage initiatives that are supported by sound evidence.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation on assessing the potential of energy storage to contribute to emissions reductions in Ontario. The Ministry acknowledges that its emission forecast in this area represents the potential Ontario has to enhance actions

in the future. Actual reductions achieved will depend on how actions identified in our Plan are finalized based on feedback we get from businesses and communities. We will work with the Ministry of Energy, Northern Development and Mines to identify and assess the feasibility, including cost-benefit analysis, of energy storage initiatives that are supported by sound evidence.

4.4.11 Innovation: No Evidence to Support 2.2 Mt Emissions Reductions from Future Innovation

The Plan expects 15% (2.7 Mt) of emissions reductions to come from the area of Innovation. According to the Ministry, Innovation includes potential advancements and expansion in energy storage, switching some buildings from high-carbon heating to electricity, and Future Innovation.

The Ministry estimates that 2.2 Mt of the 2.7 Mt in emissions reductions under Innovation will come from Future Innovation. However, the Ministry was unable to provide any evidence to support this emission-reduction estimate, indicating that the reduction estimate represents the remaining emissions needed to reach the 2030 target after all other reductions in the Plan are counted. There are currently no planned initiatives or staff assigned to develop initiatives to achieve emissions reductions in this area.

Further, Future Innovation in the form of technological improvements and price reductions expected to occur in the absence of new government initiatives is already taken into account in the 160.9 Mt projected forecast for 2030.

RECOMMENDATION 12

To help achieve emissions reductions from technological improvements beyond those already accounted for in the 2030 emissions projection, we recommend that the Ministry of the Environment, Conservation and Parks

work with key partner ministries to identify and assess the feasibility of initiatives to support the adoption of new and innovative emission-reduction technologies in Ontario.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation about the need to support new and innovative emission-reducing technologies. The Ministry will work across government to support the adoption of new and innovative emission-reducing technology in the province.

4.5 Public Transit Spending in the Plan Not Likely to Result in Significant Emissions Reductions

The Plan includes a commitment to spend an additional \$5 billion on public transit, including GO Transit expansion, subways and relief lines. The Ministry estimates this spending will reduce emissions by 0.1 Mt in 2030. This number is based on an internal Metrolinx memorandum from December 2015, which estimated the potential emissions reductions by 2031 from expanding and electrifying the GO transit system of commuter trains. The reductions are from replacing diesel trains with electric trains, and shifting commuters from cars to trains. The Ministry did not update the Metrolinx analysis to account for recent changes to the GO Rail Expansion program. As well, the Ministry did not estimate the emissions reductions from other public transit spending on subways and relief lines.

Estimating emissions reductions from spending on public transit is complex and uncertain. The outcomes depend on interacting programs and policies, including land use planning, competing and/or complementary transportation planning, fuel prices and commuter choices. Initial estimates from Metrolinx indicate that additional capital spending of \$45 billion for public transit across the Greater Toronto and Hamilton Area will lead to, at best, a minor increase in the share of trips taken by transit

from 14.2% in 2011 to 14.7% in 2041. Independent analysis suggests that this is in part due to a lack of co-ordination between transit investments and land use planning.

Ontario does not require transit spending to align with decisions around land use and growth, and much spending falls short of its potential to shift riders away from personal vehicles and onto transit. At the same time, regional and local land use plans have largely failed to direct future urban growth to areas that would support such a shift. As our Office reported in two chapters that focused on Metrolinx in our 2018 Annual Report, regional interests to maximize transit ridership and emissions reductions can also be overridden by local and stakeholder interests. Frequent changes to transit planning over the past decade have resulted in delays that not only waste money, but also allow car-dominated commuting patterns to continue. As discussed in Recommendation 18 in Section 4.10.3, Treasury Board submissions on decisions that may have an impact on greenhouse gas emissions, including transit-related decisions, should include an evaluation of the greenhouse gas emissions impacts.

4.6 Ministry Analysis Estimates That Current Initiatives in the Plan Will Achieve Less Than 17.6 Mt of Emissions Reductions

In developing the Plan and estimating the emissions reductions expected from different initiatives, Ministry staff estimated emissions based on three scenarios or cases:

- **The Reference Case:** Also known as “business-as-usual,” the greenhouse gas emissions forecasted if no new climate policies are pursued;
- **The Climate Change Plan Case:** The emissions expected if initiatives in the Plan are put in place; and
- **The Extended Policy Case:** The emissions expected if additional or enhanced policies

are pursued. The purpose of the Extended Policy Case was to illustrate how expanding key policies could achieve deeper emissions reductions than those outlined by the Climate Change Plan Case. Staff noted that no policy mechanisms have been identified to achieve the reductions described.

Internal staff analysis estimated that the Climate Change Plan Case would achieve 10.9 Mt in emissions reductions by 2030, and that the Extended Policy Case would achieve an additional 7.0 Mt, which would reach the 17.6 Mt target for 2030. The Ministry's internal estimate that the Climate Change Plan Case would only achieve 10.9 Mt of the Plan's 17.6 Mt target is within the range of our Office's analysis. We found that the initiatives in the Plan have the potential to achieve between 6.3 Mt and 13.0 Mt of emissions reductions in 2030.

Ministry staff advised internally that, because the actions in the Plan are not enough to achieve the 2030 target, the Plan must differentiate between the Climate Change Plan Case and the Extended Policy Case.

On November 19, 2018, the graphics in the version of the Plan to be shared with the public were simplified, and the emissions reductions expected from the Climate Change Plan Case and the Extended Policy Case were merged.

The Plan states that graphs in the Plan show that the "2030 target is achievable," and that the "policies within this plan will put us on the path to meet our 2030 target." As a result of the decision to simplify graphics in the Plan, the Plan in fact depicts the emissions reductions expected from implementing initiatives in the Plan, as well as reductions from additional policies that are not in the Plan.

RECOMMENDATION 13

To support Ontario in achieving the 2030 emission-reduction target, we recommend that the Ministry of the Environment, Conservation and Parks work with partner ministries to update its

climate change plan to include detailed actions, with all estimated emissions reductions based on sound evidence and supported by a comprehensive and transparent feasibility and cost analysis.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation on the importance of sound estimates, feasibility and cost analysis of initiatives in the Plan. The Ministry will conduct such analysis as it refines its proposed policies and programs in future iterations of the climate change plan.

4.7 Ministry Did Not Request or Receive Assurance on IT Controls of Integrated Model Used to Estimate Emissions

The Ministry used an integrated model to estimate the projected emissions for Ontario with no new climate change initiatives, and the emissions reductions expected from Industry Performance Standards. Ministry users access the integrated model's information technology (IT) system using an online connection. The IT system and data are hosted and stored on servers in Vancouver. Because this system is outside of the Ministry's IT environment, the Ministry has no oversight of the system's technology controls, such as security of the stored information, the integrity of the information and reliable access.

The Ministry's October 1, 2018 to September 30, 2019 contract with the consulting firm that owns and maintains the integrated model included terms related to expected deliverables, performance warranty, performance by specified individuals and security clearance. However, the Ministry obtained no assurance on the vendor's technology controls. Although an assurance report is not available on the IT system itself, our Office requested and received from the vendor the System

and Organization Controls reports on the system and operating effectiveness of controls related to the data centre that hosts the model. These reports provide independent assurance regarding the organization's system, suitability of the design and operating effectiveness of controls, and the security and availability of the system throughout the period of October 1, 2017, to September 30, 2018. Based on our review of the reports for the data centre, we did not identify significant IT findings.

RECOMMENDATION 14

To obtain assurance over a vendor's information technology system used for emissions modelling, we recommend that the Ministry of the Environment, Conservation and Parks obtain and review independent assurance reports annually for information technology weaknesses.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation. The Ministry will take steps to obtain and review independent assurance reports for information technology weaknesses in the emissions modelling system the ministry uses.

4.8 Plan Leaves Agricultural Emissions Largely Unaddressed

As shown in **Figure 8**, Ontario's greenhouse gas emissions come from several sectors—transportation (35%), industry (30%) and buildings (22%). (See **Appendix 2** for Ontario's emissions in various economic sectors and subsectors). The eight areas in the Plan to reduce greenhouse gas emissions target many sectors, but do not explicitly address emissions from the agricultural sector, such as those from raising livestock (6.2 Mt) and producing crops (3.6 Mt). Nevertheless, initiatives in the Clean Fuels area may help reduce the emissions produced by on-farm fuel use and livestock manure

management, through the production of renewable natural gas, for example. The reverse auction component of the Emission Reduction Fund may also result in funding for new agricultural emissions reduction projects, as was the case in Australia's reverse auction process. The Ontario Ministry of Agriculture, Food and Rural Affairs has a number of initiatives in place to support improved agricultural management practices that can reduce greenhouse emissions, like the joint Canadian Agricultural Partnership with the federal government. In response to the Ministry's request for ideas to include in a climate change plan, the Ministry of Agriculture, Food and Rural Affairs proposed scaling up existing programs to further reduce emissions from the sector. This option is not yet included in the Plan.

RECOMMENDATION 15

So that all major economic sectors are taken into account when designing emission-reduction initiatives, we recommend that the Ministry of the Environment, Conservation and Parks work with the Ministry of Agriculture, Food and Rural Affairs to include agriculture-specific initiatives in an updated Plan to reduce emissions to meet the 2030 target.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation. The Ministry will work with the Ministry of Agriculture, Food and Rural Affairs to include approved agricultural initiatives in future iterations of the climate change plan.

4.9 Costs of Emission-Reduction Initiatives Were Not Fully Evaluated or Considered

Emission-reduction initiatives, regardless of type, have associated financial costs—costs to the government, businesses and the public. Estimating and considering these costs is a best practice to account

for economic impacts, and are an important factor to consider when deciding which initiatives to undertake.

During the development of the Plan, the financial criterion used to evaluate initiatives was whether or not there were implementation costs. The Ministry's assessment awarded points to proposed ideas with little or no assumed provincial costs. The Ministry did not consider indirect costs to the public and businesses, or to the economy as a whole.

In soliciting proposals to include in the Plan, the Ministry requested that other ministries provide the estimated costs of implementing proposed actions. Of the 147 proposals that the Ministry received, compiled and considered, 69 were identified as having the potential for measurable emissions reductions. Of these, the costs of implementation were estimated for 28 (41%).

When the Plan was released, the Ministry had not yet evaluated the full financial costs of the following emission-reduction areas included in the Plan: Low Carbon Vehicles Uptake, Clean Fuels, the federal Clean Fuel Standard, Industry Performance Standards, or Innovation.

RECOMMENDATION 16

To support the selection of emission-reduction initiatives, we recommend that the Ministry of the Environment, Conservation and Parks accurately assess and compare all costs and net emissions reductions associated with all initiatives under consideration for inclusion in the final Plan.

MINISTRY RESPONSE

The Ministry agrees with the Auditor General's recommendation on the importance of assessing and comparing all costs and net emissions reductions from initiatives in the Plan. The Ministry will consider this feedback as it refines its proposed policies and programs and updates the climate change plan. When drafting the

Plan, we used the latest research and models to estimate costs of actions and the impacts of policies on greenhouse gas emissions. These estimates will continue to evolve as policies and commitments in the Plan are finalized and implemented.

4.10 Decisions Made Separately by Provincial Ministries and Agencies Can Undermine Efforts to Reduce Emissions

4.10.1 Ministry Does Not Have Direct Control over Most Plan Reductions

The Ministry co-ordinates Ontario's actions on climate change, and its Climate Change and Resiliency Division leads the Ministry's efforts to address climate change in support of the Plan. The Division is responsible for the design, development and delivery of policies and programs to help reduce emissions and increase Ontario's resilience to climate change.

Within the Division, the Ministry's Climate Change Policy Branch is currently developing an implementation strategy to facilitate co-ordination within the Ministry and between ministries, set roles and responsibilities, support timely results, and enable public reporting. The Climate Change Plan Implementation Directors' Working Group is responsible for co-ordinating these efforts across ministries. A co-ordinated implementation strategy is important because many emission-reduction initiatives outlined in the Plan are outside the Ministry's control. The Ministry is the lead for five initiatives: Industry Performance Standards, the Emission Reduction Fund, increasing the renewable content of gasoline, organic waste diversion, and cost-effective fuel switching. Together, these initiatives account for 5.6 Mt (31%) of the Plan's estimated 17.6 Mt in emissions reductions by 2030.

4.10.2 Some Recent Decisions by Other Ministries Are Inconsistent With Government Climate Change Goals

Provincial government programs and activities have the potential to increase or decrease emissions. However, provincial ministries and agencies responsible for those programs and activities do not consistently consider this. For example, several recent decisions by other ministries and agencies have the potential to increase greenhouse gas emissions, or make it harder to achieve the emission-reduction goals of the Plan.

- *Changes that undermine electric vehicle uptake:* The Plan states that Ontario will “remove regulatory barriers that block private investors from deploying low-carbon refueling infrastructure that will help increase the uptake of electric...vehicles without government subsidies.” In November 2018, Metrolinx removed 24 electric vehicle charging stations from its GO station parking lots, citing low demand and costs exceeding revenue. However, the majority of parking spaces in Metrolinx’s GO station network have costs that exceed revenue. As of July 2019, Metrolinx had 75,106 parking spaces in its GO station network. Metrolinx did not derive revenue from 69,788 (93%) of these spaces. The total capital cost for each parking space in 2019 was \$42,475.

In May 2019, the Ministry of Municipal Affairs and Housing amended the Ontario Building Code, removing requirements that workplaces provide electric vehicle charging in at least 20% of their parking spaces, and that new homes be built to include supply equipment to permit future installation of electric vehicle chargers. The Ministry of Municipal Affairs and Housing states that these changes were made to reduce costs associated with home construction. Internally, staff at the Ministry of the Environment, Conservation and Parks recommended

against the proposed Building Code changes, indicating that the changes would impact Ontario’s ability to meet its greenhouse gas reduction target. Staff advised that the changes would likely act as a deterrent to electric vehicle uptake. The lack of home charging equipment is a key barrier to the uptake of electric vehicles. Studies from other jurisdictions have found that the costs of retrofitting buildings to install charging equipment can be up to 80% higher than installation at time of construction.

- *Decisions that increase personal vehicle use:* In August 2018, the Ministry highlighted the importance of the Growth Plan for the Greater Golden Horseshoe (Growth Plan) in addressing climate change, and indicated that any changes made to it should support emission-reduction goals by “decreas[ing] deforestation/conversion of lands between settlement and forest land.” In fall 2018, the Ministry of Municipal Affairs and Housing began consulting stakeholders to update the Growth Plan. In December, the Ministry provided input to the Ministry of Municipal Affairs and Housing on draft versions of the Growth Plan. The Ministry expressed concerns that a number of the proposed changes would negatively impact the Growth Plan’s ability to address climate change, by removing limits on urban boundary expansions, for example. The Ministry made suggestions to keep some of the climate change goals and language intact. While the final updated Growth Plan addressed some of the Ministry’s concerns, it included a number of changes that could increase the total area of agricultural and natural land converted to urban development by 2041. By removing limits on urban boundary expansions, among other changes, the updates to the Growth Plan allow development to expand, requiring people to drive more and may contribute

more greenhouse gas emissions through increased vehicle use.

- *Expansion of natural gas infrastructure:* In December 2018, Ontario passed legislation to expand natural gas distribution infrastructure. Natural gas expansion may increase reliance on fossil fuels, leading to a long-term increase in greenhouse gas emissions. Preliminary analysis by the Ministry estimated that for every \$10 million in natural gas infrastructure capital investment, emissions will increase by 0.01 Mt per year.

4.10.3 More Work Needed to Embed Climate Change into Government Decision Making

To ensure that future decisions consider climate change, the Plan includes a commitment to “make climate change a cross-government priority,” by developing a Climate Change Governance Framework to establish clear responsibilities and requirements for ministries to track and report on climate change measures and consider climate change in certain government procurement decisions. The Plan also commits to developing tools to help decision makers understand the climate impacts of government activities and updating ministries’ Statements of Environmental Values to reflect the Plan. A Statement of Environmental Values is a document, required under the *Environmental Bill of Rights, 1993*, that describes how a ministry views its environmental values, priorities and responsibilities. It guides ministry staff in integrating environmental values with social, economic and scientific considerations when making environmentally significant decisions. As discussed in **Chapter 2** of this volume, Statements of Environmental Values are outdated for 10 of the 15 ministries that are required to have one, and therefore these ministries may not be considering climate change each time they make a decision that affects the environment.

Fulfilling the above commitments would be a step toward addressing recommendations made

previously by our Office to support climate-change mitigation efforts government-wide. A number of other jurisdictions have embedded climate change across government decision making. For example, British Columbia has established an independent Climate Solutions and Clean Growth Advisory Council to provide advice to government and report every two years on progress in meeting emissions targets. British Columbia ministries are also required to develop annual service plans that demonstrate how they will implement and measure progress on climate change initiatives.

Best practices used by other jurisdictions to embed climate change in government decisions and operations include:

- integrating climate change goals in key planning documents (energy, infrastructure, land use, annual budgets);
- considering climate change in all submissions to Cabinet and Treasury Board and in regulatory impact analyses; and
- holding specific ministries and agencies accountable for climate change through regular reporting, greater transparency on spending and implementation plans, and clear responsibilities in mandate letters.

Ontario has made progress toward embedding climate change considerations across government, but does not yet use these best practices.

In January 2019, a Climate Change Leadership Team (CCLT) was established. The CCLT is a cross-ministry group responsible for embedding climate change in government procurement, building understanding and capacity within government, and creating a process to update internal directives and guidance to help ensure climate change is considered. The CCLT includes representation from a number of key ministries, including Treasury Board Secretariat, which co-chairs the group with the Ministry, Cabinet Office, the Ministry of Infrastructure, and the Ministry of Finance. The group includes directors who report to senior management within their ministries. The CCLT itself reports to the Assistant Deputy Minister of the

Climate Change and Resiliency Division, and will update Cabinet on progress on the broader Environment Plan.

The CCLT is still at an early stage of development, and has not yet demonstrated whether it is an effective model to meet the commitment of making climate change a cross-government priority. Our Office pointed out in our 2016 report that reporting directly to Cabinet would give such a group greater authority to ensure that other ministries adopt its recommendations. The CCLT has no direct authority over whether other ministries decide to adopt its recommendations. Instead, it must rely on working collaboratively and making suggestions.

Currently, the CCLT is working on several pilot projects to support other ministries when considering climate change in key policy and procurement decisions. Several tools are being developed for the Ontario Public Service. These include a decision tree to identify points where climate could be considered, a carbon emissions inventory to outline the emissions associated with government assets, and a resource guide on using life-cycle assessment for carbon emissions. However, there are no existing concrete plans for ensuring that the results of these pilots are adopted across government. The current approach to incorporating climate change into ministries' decision making is largely ad hoc, with ministries consulting the Ministry on some decisions. Often, the Ministry is involved only toward the end of the policy development process. This process risks making climate change an afterthought in government decisions, rather than an integral factor to consider.

For more than a decade, Ontario has introduced various climate change governance and advisory bodies. These have included a Climate Change Secretariat, an external advisory panel on climate change, and a Minister's Table on Climate Change. To date, these have resulted in little success. Because climate change is a complex problem that affects every aspect of Ontario's economy and society, it requires a transformational, cross-cutting focus across sectors, ministries and agencies.

Climate change must be embedded into all government decision making to ensure progress is made in reducing provincial emissions.

In 2012, the Commission on the Reform of Ontario's Public Services advised that "any transformational process ... must be led from the top. In the case of the Ontario government, this means that the centre of government—the Premier's Office and Cabinet Office—must be directly involved and provide strong leadership to the process for as long as it takes ... A steering committee should be established, with representation from the Premier's Office, Cabinet Office and Ministry of Finance. This committee, supported by a secretariat within Cabinet Office, would be the focal point for the government-wide work necessary to develop implementation proposals for specific reforms and for cross-cutting measures addressing themes that touch on multiple sectors." Although referring to fiscal management, the challenges described apply equally to climate change.

RECOMMENDATION 17

So that actions and decisions made by ministries support Ontario's ability to meet its greenhouse gas reduction target, we recommend that the Secretary of Cabinet, in conjunction with the Ontario Deputy Ministers' Council, require ministries to use the guidance tools developed by the Climate Change Leadership Team.

MINISTRY RESPONSE

The Climate Change Leadership Team (CCLT), comprised of representatives from across government ministries, will be developing tools and guidance to support the consideration of climate change in government decision making and operations. In this respect, we will ask the CCLT to report into Deputy Ministers' Council, from time to time, as the guidance and tools are developed, so that Deputy Ministers have an awareness of the guidance and are able to promote its adoption in their respective ministries.

RECOMMENDATION 18

So that ministries consider the impact that their decisions may have on greenhouse gas emissions, we recommend that the impact of decisions that affect emissions be evaluated and highlighted in all Treasury Board submissions.

MINISTRY RESPONSE

We recognize the importance of taking action on climate change, including climate informed decisions in government. In this respect, Cabinet Office will work with ministries to include considerations and impacts relating to greenhouse gas emissions, where relevant, in submissions that are brought forward for decision making by Cabinet and its committees.

4.11 Public Reporting on Environment Plan Under Development

The *Cap and Trade Cancellation Act, 2018* requires the Ministry of the Environment, Conservation and Parks to regularly prepare and release progress reports on the Ministry's climate change plan. The Plan states that, to ensure progress toward the 2030 target, the Ministry is committed to updating and reporting on estimated greenhouse gas reductions once program details are finalized. The Plan also states that the Ministry is committed to reporting regularly on progress, developing key indicators and reviewing the Plan every four years.

Ministry staff are preparing advice to government on how to meet the Ministry's reporting obligations. This may include releasing two progress reports on climate change:

- *A High-Level Environment Plan Summary Report*—an annual, public-facing web report with progress on all Plan initiatives, statistics on outcomes achieved to date, and a focus on the social and economic benefits of initiatives.

- *A Climate Change Update*—a more detailed, web-based report that will be regularly updated with quantitative results, including modelling and analysis of progress toward targets, as well as timing and performance metrics.

With respect to monitoring and evaluating progress, Ministry staff plan to consult with partner ministries to develop specific performance metrics and align them with best practices. Our review of other jurisdictions found that it is a best practice to provide timely and useful information about progress in specific sectors to complement regular economy-wide reporting (see **Appendix 5**).

For example, the United Kingdom's Committee on Climate Change, an independent body established by legislation that reports to Parliament, produces annual progress reports that not only include sector-wide emissions statistics, including preliminary estimates of the previous year's emissions, but also track 24 separate indicators across eight sectors. The indicators, such as the number of electric car registrations or number of heat pumps installed, help to measure progress in reducing emissions. This provides a more comprehensive picture of where progress is being made, as well as more up-to-date reporting than national emissions inventory reports. Other jurisdictions, including British Columbia, have also committed to reporting more regularly on results from specific climate programs, as well as emissions from the previous year.

Our Office will audit and report on the Ministry's monitoring, evaluation and reporting of progress once the implementation of initiatives is further along.

RECOMMENDATION 19

To help keep Ontarians updated on the status of efforts to reduce emissions, we recommend that the Ministry of the Environment, Conservation and Parks:

- develop and implement a set of performance metrics that are measurable and cover all key sectors;

- report at least annually to the public on the government's performance metrics and overall cumulative progress toward meeting its 2030 emissions target; and
- explain the outcomes of all initiatives to reduce emissions in the annual report.

MINISTRY RESPONSE

The Ministry recognizes the importance of public reporting and has committed to reporting on progress against its Plan and target on a regular basis. The Ministry agrees with the Auditor General's recommendation about the importance of performance metrics and outcome-based reporting, and will consider this advice as it finalizes its approach to public reporting, monitoring and evaluating progress against the commitments in its Plan.

Appendix 1: Glossary of Terms

Prepared by the Office of the Auditor General of Ontario

Adaptation: Actions taken to reduce the potential damage caused by climate change and prepare for its impacts (e.g., higher temperatures, extreme weather, flooding).

Business-as-usual (BAU) forecast: The expected future level of greenhouse gas emissions if no new government actions are taken beyond those already in place. Also known as the baseline or reference scenario.

Cap and Trade Cancellation Act, 2018: The Act that ended Ontario's cap and trade system, and requires the Minister of the Environment, Conservation and Parks to prepare a climate change plan.

Carbon dioxide (CO₂): The principal greenhouse gas responsible for human-caused climate change. Carbon dioxide occurs naturally in the atmosphere, and is also produced by human activities, including the burning of fossil fuels and biomass (e.g., forests), land use changes, and industrial processes (e.g., cement production).

Carbon pricing backstop: The federal backstop consists of two parts (a carbon levy on fossil fuels, and an output-based pricing system for industrial emitters), and was applied to any province or territory that did not have its own equivalent system in place by 2018. As of April 2019, the backstop applied, in full or partially, to Manitoba, New Brunswick, Ontario, Prince Edward Island and Saskatchewan.

Carbon pricing: A policy that captures the external costs of greenhouse gas emissions by attaching a price to the associated carbon dioxide emissions. This generally takes one of two forms: a carbon tax or levy, which attaches a fixed price to each tonne of carbon dioxide emitted; or cap and trade, which sets an overall limit and creates a market for tradeable carbon allowances.

Carbon sinks: Natural reservoirs (like forests, oceans and soils) that store carbon.

Clean Fuel Standard: Proposed federal regulations to encourage the production and adoption of low-carbon fuels through setting performance standards.

Climate Change Action Plan: Ontario's previous five-year plan to address climate change, which was to run from 2016 to 2020. It was replaced in 2018 with *Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan*.

Compressed natural gas (CNG): A substitute for transportation fuels such as gasoline and diesel, consisting of methane (natural gas) compressed and stored at high pressure. CNG can be used in modified internal combustion engine vehicles, or vehicles manufactured to run on CNG.

Electric vehicle (EV): A vehicle that runs entirely or in part on electricity, as opposed to gasoline and other fossil fuels. Can include battery electric vehicles (BEV), which are 100% electric, and plug-in hybrid electric vehicles (PHEV), which can also be recharged by an on-board engine.

Energy storage: The capture of energy (usually electricity) for use at a later time, commonly through a battery or hydroelectric dam. Surplus electricity can be captured and stored until it is needed, usually at times of high demand.

Environment and Climate Change Canada (ECCC): The lead federal department responsible for a wide range of environmental issues and programs, including climate change.

Environmental Registry: The Environmental Registry is an on-line database that allows the public to comment on any proposed new or amended environmental law, regulation, policy or instrument (i.e., permit, approval or order) in Ontario.

Fossil fuel: Fuels such as oil, coal and natural gas, formed from the fossilized remains of dead organisms buried for millions of years. When burned, these fuels release carbon dioxide and other greenhouse gases into the atmosphere, leading to higher temperatures and other climatic impacts.

Gigajoule (GJ): A unit of energy equivalent to 1 billion joules (10⁹), and a standard measure of natural gas use.

Global warming potential: Greenhouse gases differ in the time they remain in the atmosphere and their ability to trap heat. Global warming potential represents the ability of each gas to trap heat compared to carbon dioxide and is measured over a specified time period. The global warming potential for methane is 28, which means it is 28 times more potent than carbon dioxide over a 100-year time period.

Greenhouse gas (GHG): Water vapour, carbon dioxide, methane, nitrous oxide, ozone and other gases that absorb and emit infrared radiation in Earth's atmosphere, causing the greenhouse effect (i.e., letting the sun's energy in, but blocking its heat from escaping). Increasing greenhouse gas emissions from human activities since the industrial revolution are the primary cause of climate change.

Greenhouse Gas Pollution Pricing Act: This federal act creates a system to price greenhouse gas emissions, and was passed by the Canadian parliament in June 2018. The system consists of two parts: a charge on fossil fuels (i.e., the carbon levy), and a pricing system for industrial facilities based on production levels (i.e., Output-Based Pricing System).

Hydrofluorocarbons (HFCs): Compounds containing only hydrogen, fluorine and carbon atoms. They were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial and personal needs.

Independent Electricity Systems Operator (IESO): Administrator of Ontario's wholesale electricity market, which matches electricity supply with demand. Also responsible for long-term planning and procurement to meet Ontario's electricity needs.

Industry Performance Standard: A policy to reduce greenhouse gas emissions from the industrial sector by setting performance standards (i.e., annual emissions limits). Facilities can comply by either paying a fee, or reducing their emissions.

Intergovernmental Panel on Climate Change (IPCC): A United Nations body that provides policymakers with regular scientific assessments on climate change, its implications and potential future risks.

Life-cycle assessment: A method of evaluating the full impacts of a product or technology over its lifetime. For fossil fuels, this includes upstream (extraction, processing, distribution) and downstream (combustion) impacts.

Megatonne (Mt): One million metric tonnes (often in reference to the amount of greenhouse gases emitted by human activities).

Megawatt (MW): A unit of power equivalent to 1 million joules per second.

Methane: A potent greenhouse gas that is the main constituent of natural gas.

Metrolinx: The provincial agency responsible for managing and planning regional transit, including GO Transit, in the Greater Toronto and Hamilton Area.

Mitigation: Actions taken to reduce the quantity of greenhouse gases released (e.g., by switching from fossil fuels to renewable fuels), or absorb emissions from the atmosphere (e.g., through expanding forests).

National Inventory Report (NIR): The annual inventory of Canada's greenhouse gas emissions by sources, and removals by sinks. The NIR is produced by Environment and Climate Change Canada and submitted to the UN Framework Convention on Climate Change.

Natural gas conservation: Refers to a suite of measures and incentives to encourage homeowners, businesses and industry to reduce their use of natural gas.

Ontario Energy Association (OEA): An energy industry group in Ontario that undertakes advocacy, research and education on behalf of its members.

Paris Agreement: A 2015 United Nations agreement at which the international community agreed to limit the global warming increase to well below 2°C, ideally below 1.5°C, compared to pre-industrial levels. Canada is one of 187 states and territories that have ratified the Agreement.

Parts per million (ppm): The standard measure of carbon dioxide concentration in the atmosphere.

Peatlands: Areas of land with a naturally accumulated area of dead plant material (peat) formed under waterlogged conditions.

Petajoule: A unit of energy equal to a quadrillion joules (10^{15} joules).

Pre-industrial: Before the start of large-scale industrial activity (around 1750).

Renewable energy: A source of energy that is naturally replenished on a human timescale. Examples include solar, wind, tidal, and geothermal energy.

Renewable natural gas (RNG): Natural gas produced as a by-product of the decomposition of organic material (e.g., food waste, biomass) that can be substituted for fossil natural gas and distributed through the existing energy grid.

Statistics Canada: Canada's national statistics office, which produces information for citizens and decision makers on the economy, society and environment.

United Nations Environment Programme: A body that co-ordinates the United Nations' environmental activities and supports developing countries to implement environmental and sustainable development projects.

United Nations Framework Convention on Climate Change (UNFCCC): An international treaty negotiated in 1992 at the United Nations Earth Summit. The UNFCCC sets non-binding limits on greenhouse gas emissions and outlines how countries can negotiate international treaties to prevent climate change. It came into force in March 1994.

World Meteorological Organization: An intergovernmental agency with a membership of 193 states and territories, which has a mandate to promote the standardization of meteorological observations.

Appendix 2: Ontario's Greenhouse Gas Emissions from Economic Sectors and Subsectors in 1990, 2005 and 2017

Source of data: Environment and Climate Change Canada (2019)

	Megatonnes				Share of Total in 2017 (%)
	1990	2005	2017	1990–2017 Change ¹	
Transportation	42	57	56	14	35
Cars, Light Trucks and Motorcycles	24	33	32	8	20
Bus, Rail and Domestic Aviation	2	2	3	0	2
Heavy Duty Trucks, Rail	7	16	17	10 ²	11
Domestic Aviation and Marine	1	1	1	0	1
Recreational, Commercial and Residential	7	4	3	(4)	2
Industry	66	58	47	(19)	30
Mining	1	1	1	0	1
Smelting and Refining (Non Ferrous Metals)	1	2	1	0	1
Pulp and Paper	3	2	1	(2)	1
Iron and Steel	15	15	14	(1)	9
Cement	5	6	4	0	3
Lime and Gypsum	2	2	1	(1)	1
Chemicals and Fertilizers	16	7	5	(11) ³	3
Oil and Gas	10	12	9	(1)	6
Light Manufacturing	10	8	6	(4)	4
Construction and Forest Resources	3	3	3	0	2
Buildings	28	36	35	7	22
Service Industry	10	15	16	7	10
Residential	18	21	19	1	12
Agriculture	12	12	12	0	8
On Farm Fuel Use	2	2	2	0	1
Crop Production	3	3	4	1	2
Animal Production	7	7	6	(1)	4
Waste	6	6	6	0	4
Electricity	26	34	2	(24)⁴	1
Total	180	204	159	(21)	100

1. Sums and differences may be affected by rounding.

2. Heavy duty truck emissions increased due to increased trade.

3. Chemical and fertilizer emissions decreased primarily due to closure of an adipic acid factory.

4. Electricity emissions decreased primarily due to closure of coal power plants.

Appendix 3: Ontario's 25 Highest Greenhouse Gas Emissions Reporters in 2017

Source of data: Ministry of the Environment, Conservation and Parks

Ontario Emissions Reporter ¹
Sector: Transportation²/Industry³/Buildings/Agriculture (On-Farm Fuel Use)
Imperial Oil Ontario Petroleum Product Supply
MacEwen Petroleum Inc. (Maxville)
Plains Midstream Canada (Sarnia Fractionation Plant)
Shell Canada Products – Supply
Suncor Energy Ontario Wholesale and Retail Marketing
Valero Energy Distribution
Sector: Industry³/Buildings
Enbridge Gas Distribution Inc.
Union Gas Ltd. – Natural Gas Transmission and Distribution
Sector: Transportation²/Agriculture (On-Farm Fuel Use)
Greenenergy Fuels Canada Inc.
Sector: Heavy Industry (Iron and Steel)
ArcelorMittal Dofasco (Hamilton)
Essar Steel Algoma Inc.
Stelco (Lake Erie)
Sector: Heavy Industry (Cement)
CRH Canada Group (Mississauga)
Lafarge Canada (Bath)
Lehigh Hanson Materials (Picton)
St. Marys Cement (Bowmanville)
St. Marys Cement (St. Marys)
Sector: Heavy Industry (Chemicals and Fertilizers)
Air Products Canada Hydrogen Facility (Corunna)
CF Industries Courtright Nitrogen Complex
NOVA Chemicals (Canada) (Corunna)
Sector: Oil and Gas Industry (Petroleum Refining)
Imperial Oil (Nanticoke)
Imperial Oil (Sarnia Refinery Plant)
Shell Canada Products (Sarnia)
Suncor Energy Products Partnership (Sarnia)
Sector: Oil and Gas Industry (Oil and Natural Gas Transmission)
TransCanada Pipeline, Ontario

1. Reporters are those required to report their emissions under O. Reg. 390/18 (Greenhouse Gas Emissions: Quantification, Reporting and Verification) under the *Environmental Protection Act*. Reporters in the first three sectors include fuel distributors who report emissions that result from the use of fuel sold to their customers.

2. Includes all subsectors: passenger, freight and other transport (recreational, commercial and residential).

3. Includes all subsectors: heavy industry, oil and gas industry and other industry (light manufacturing, construction and forest resources).

Appendix 4: Options Used in Ontario to Reduce Greenhouse Gas Emissions*

Prepared by the Office of the Auditor General of Ontario

Policy Option and Current Examples	How it Works	Benefits	Challenges
Legislation and Regulation: - Ontario Ethanol in Gasoline (O. Reg. 535/05) - Ontario Cessation of Coal Use (O. Reg. 496/07) - Federal Vehicle Greenhouse Gas Emission Regulations (SOR/2010-201)	Government: sets specific rules designed to reduce emissions. Emitters (businesses and/or consumers): must comply with rules and pay for associated costs.	Easier to communicate public benefits: specific regulatory requirements can be easier to understand (e.g., ethanol has lower emissions than gasoline). Low public costs: emitters bear cost of compliance (e.g., buying ethanol). No explicit emitter costs: may help avoid some controversy (e.g., impact of ethanol on fuel price is unclear).	Inflexible: government decides how emitters can comply (e.g., blend ethanol into gasoline). Capital cost barriers: lack of capital could be obstacle to complying (e.g., ethanol infrastructure costs). Potentially high emitter costs: options to comply could exclude more affordable options to reduce emissions (e.g., cannot comply with ethanol regulation by carpooling).
Pollution pricing: - Federal <i>Greenhouse Gas Pollution Pricing Act</i> (S.C. 2018, c 12, s. 186) - Ontario Greenhouse Gas Emissions Performance Standards (O. Reg. 241/19)	Government: sets a pollution price or creates a pollution market that sets the price. Emitters (businesses and/or consumers): pay price for their emissions, which may be passed on to consumers. Emitters with lower emissions would pay less than those with higher emissions.	Flexibility: emitters decide how to reduce their emissions (i.e., not limited by government options). Lower emitter costs: emitters can choose most affordable options to reduce their emissions (e.g., carpooling or public transit). Public revenue: funds available to address affordability issues (e.g., household rebates).	Visible emitter costs: may increase controversy (e.g., pollution price is designed to increase gasoline price). Harder to communicate public benefits: economics can be difficult to understand (e.g., how do people respond to higher gasoline prices?). Capital cost barriers: lack of capital could prevent investments required to achieve deepest emission cuts (e.g., more public transit infrastructure), though pollution pricing revenue can be used to help.

Policy Option and Current Examples	How it Works	Benefits	Challenges
Financial investments: - Ontario natural gas conservation rebates (Demand-side Management Framework, 2015-2020) - Ontario electricity conservation rebates (Conservation First Framework, 2015-2020) - Federal Low Carbon Economy Fund (2017-)	Government: directly or indirectly provides funding for activities that reduce emissions. Emitters (businesses and/or consumers): can choose to participate in activities to earn funding. However, emitters may directly or indirectly be required to pay for program costs regardless (e.g., program costs added to utility bill).	Easier to communicate public benefits: narrow program focus can be easier to communicate (e.g., replacing inefficient furnace can reduce energy use and emissions). Visible emitter cost savings: may help build support and avoid some controversy (e.g., reduced home renovation costs). Capital cost assistance: can provide capital investment required for deepest emissions cuts (e.g., costly upgrade to zero-emission electric heat pumps).	Inflexible: government decides how emitters can earn subsidy (e.g., no rebate for turning down thermostat at night). Visible public costs: public bears cost so revenue source is required (e.g., program cost added to utility bill). High public costs: funding also goes to activities that would have occurred regardless (e.g., rebates for home renovations that would have occurred without rebate) or that may not reduce emissions (e.g., rebate that helps reduce cost of home expansion).
Information programs: - Federal EnerGuide labels (1978-) - Ontario Green Button downloadable energy usage data (2013 Long-Term Energy Plan) - Ontario climate change website	Government: provides information to encourage actions that can reduce emissions, but without any financial incentives. Emitters (businesses and/or consumers): can choose whether or not to take action.	Little or no costs: may help avoid controversy. Complementary: can help support businesses and/or consumers motivated to act by other policies (e.g., recommend paying less carbon price by taking public transit, carpooling or driving a fuel efficient vehicle).	Largely ineffective: decades of empirical evidence show information programs, even with subsidies, have failed to reduce overall emissions. This includes technological innovation and awareness, which also does not reduce emissions on its own (e.g., more efficient engines are increasingly used to power bigger trucks and SUVs rather than to reduce gasoline use).

* The effectiveness of government programs at reducing greenhouse gas emissions depends primarily on the stringency of pollution pricing and/or regulatory requirements, though financial investments and information are also required. Some government programs can include a combination of these elements. For example, the Greenhouse Gas Emissions Performance Standards include pollution pricing, but also regulatory requirements, and financial subsidies.

Appendix 5: Examples of Best Practice Elements of a Climate Change Plan

Prepared by the Office of the Auditor General of Ontario

Examples of Jurisdictions Where Element Has Been Applied	
Government Processes	
Co-ordinated development and implementation of climate policies and programs	Alberta and New Brunswick – Cabinet committees created to oversee/support implementation of climate change plans
Independent bodies providing non-partisan, science-based advice and analysis	UK – Committee on Climate Change Sweden – Climate Policy Council
Stakeholder engagement and public consultation	France – extensive stakeholder engagement prior to 2015 Energy Transition Law
Oversight and accountability (e.g., regular reporting, monitoring and evaluation, setting and tracking performance metrics, transparency)	UK – Committee on Climate Change holds government to account through annual reports to Parliament where it tracks progress on 24 indicators across sectors British Columbia – government must report annually to legislature on spending, program results, interim and projected greenhouse gas emissions reductions
Greenhouse Gas Reduction Targets	
Long-term target in line with Paris Agreement	Sweden – legally binding net-zero emissions target by 2045
Legally binding near- and mid-term targets	France – legally binding targets for 2020, 2030 and 2050
Sectoral targets	New Brunswick – Climate Change Action Plan assigns responsibility for emissions reductions to specific economic sectors and government departments
Mechanisms to increase the stringency of initiatives in place	UK and France – set five-year carbon budgets to gradually increase ambition toward 2050 target California and Germany – set gradually increasing targets for renewable energy and vehicle efficiency
Laws and Policies	
Broad-based policy framework using a range of evidence-based tools	UK – government uses a range of policy tools (including carbon pricing, regulations, investments in infrastructure and subsidies) to meet five-year carbon budgets
Regulations and Standards	Canada – <i>Greenhouse Gas Pollution Pricing Act</i> (2018) sets minimum national standards for pricing carbon pollution Mexico – General Law on Climate Change (2012) embeds emissions trading and energy efficiency targets into law
Integrate climate change into government planning and decision making	France – climate change targets integrated into planning documents across all key sectors Sweden – climate report must be presented with annual budget bill New Brunswick – climate change must be considered in Memorandums to Executive Council and all key government decisions
Funding	
Sustainable/sufficient funding for implementation	France – government undertakes annual assessment of funding needs for implementation; public savings fund provides energy efficiency and low-carbon transport loans to municipalities and others British Columbia – Use carbon tax revenue to fund implementation of climate initiatives

Appendix 6: Events in Global Knowledge and Response to Climate Change

Prepared by the Office of the Auditor General of Ontario

Date	Event	Notes
1820s–1860s	Concept of the greenhouse effect first proposed	Joseph Fourier calculates Earth would be far colder without its atmosphere. John Tyndall's experiments confirm gases in Earth's atmosphere, especially carbon dioxide (CO ₂) and water vapour, trap heat from the sun.
1896	Discovery of link between CO ₂ concentrations in the atmosphere and global temperatures	Svante Arrhenius quantifies how changes in atmospheric CO ₂ levels could impact Earth's surface temperature. The first to suggest that burning fossil fuels is a significant source of CO ₂ and could lead to additional warming.
1909	The term "greenhouse effect" is officially introduced	John Henry Poynting uses term to explain how heat is transferred in Earth's atmosphere.
Late 1950s and early 1960s	Establishment of the first monitoring program for global atmospheric CO ₂ concentrations	Charles David Keeling begins measuring atmospheric CO ₂ concentrations. Results in the Keeling Curve, the longest-running measurement of atmospheric CO ₂ . The curve reveals a clear yearly increase in atmospheric CO ₂ since 1958.
1957	Discovery that Earth's oceans have prevented the full impact of warming by absorbing vast quantities of atmospheric CO ₂	Roger Revelle and Hans Suess show that the oceans have absorbed large amounts of CO ₂ released by fuel combustion since the industrial revolution.
Late 1960s	Greater understanding of impacts	Scientists calculate that doubling CO ₂ in the atmosphere will lead to warming of several degrees, causing polar ice sheet to collapse and sea levels to rise.
1970s–1980s	Creation of the first global climate models	A small group of scientists begin modeling atmospheric circulation and generating future climate projections.
1977	Industry awareness of climate change	Leading oil companies become aware, through their own research programs, of the impact that burning fossil fuels has on Earth's climate.
1979	Oil "energy crisis"	Second global oil crisis leads to upsurge in renewable energy and more efficient vehicles. US National Academy of Sciences releases its first report on the greenhouse effect, stating that doubling CO ₂ levels could raise global temperatures by 1.5°C–4.5°C.
1987	Montreal Protocol on Substances that Deplete the Ozone Layer	Global agreement to curb emissions of substances that deplete the ozone layer. Often cited as an example of successful international collaboration on atmospheric pollution.
1988	Intergovernmental Panel on Climate Change (IPCC) established	The United Nations Environment Programme and World Meteorological Organization create the IPCC. In the same year, atmospheric CO ₂ levels reach 350 parts per million, considered a safe threshold for global temperature rise.
1990	IPCC first global assessment report released	Intergovernmental Panel on Climate Change (IPCC) report concludes "emissions resulting from human activities are substantially increasing the atmospheric concentrations of greenhouse gases."
1992	Earth Summit	United Nations Framework Convention on Climate Change is adopted. Goal is to stabilize greenhouse gas concentrations at a level that would prevent dangerous human-related interference with the climate system.
1994	United Nations Framework Convention on Climate Change (UNFCCC) enters into force	UNFCCC comes into force. 197 countries, including Canada, are currently party to the convention.

Date	Event	Notes
2005	European Union launches carbon Emissions Trading Scheme	First and largest carbon trading system of its kind; operates in 31 countries and covers about 5% of global emissions.
2005	Kyoto Protocol comes into force	First agreement under the UNFCCC. Sets internationally binding targets for all Parties to collectively reduce global emissions from a group of six greenhouse gases by 5.2% below 1990 levels by 2012, with specific targets varying from country to country.
2009	Copenhagen Accord	Successor to the Kyoto Protocol, encouraged developed countries to set economy-wide emissions targets for 2020 and developing countries to implement mitigation actions.
2016	Paris Agreement	Negotiated in 2015, this is a global agreement to keep global temperature rise to well below 2°C above pre-industrial levels, and pursue efforts to limit increase to 1.5°C. Comes into force in November 2016 and 187 parties including Canada have ratified the agreement.
2017	One Planet Summit	Heads of State and non-state representatives gather to put forward concrete initiatives to meet Paris Agreement objectives.
2018	IPCC 1.5°C special report	IPCC report that presents evidence that 1.5°C of warming above pre-industrial levels will lead to significant and damaging impacts worldwide.
2019	Kigali Amendment to the Montreal Protocol comes into force	Global agreement to reduce the production and consumption of hydrofluorocarbons, which are potent greenhouse gases. If fully implemented, it could help avoid global warming by up to 0.4°C this century.

Appendix 7: Current Carbon Pricing in Canadian Provinces and Territories, as of October 2019

Source: Environment and Climate Change Canada

Province/Territory	Carbon Levy on Fuels	Industrial Output-Based Pricing System
Alberta	Federal system (beginning January 2020)	Provincial system
British Columbia		Provincial system
Manitoba		Federal system
New Brunswick		Federal system
Newfoundland and Labrador		Provincial system
Northwest Territories		Territorial system
Nova Scotia		Provincial system
Nunavut		Federal system
Ontario		Federal system
Prince Edward Island	Provincial system	Federal system
Quebec		Provincial system
Saskatchewan	Federal system	Provincial-Federal hybrid system
Yukon		Federal system

Appendix 8: Events in Canada's Response to Climate Change

Prepared by the Office of the Auditor General of Ontario

Date	Event	Notes
1988	Toronto Conference	Federal government (with United Nations Environment Programme and World Meteorological Organization) hold conference. Immediate action by governments, the UN, non-governmental organizations, industry and individuals is called for to "counter the ongoing deterioration of the atmosphere."
1990	Canada's Green Plan	Canada unveils plan for a healthy environment, expressing its commitment to stabilize greenhouse gas emissions at 1990 levels by the year 2000.
1992	United Nations Framework Convention on Climate Change	Canada signs United Nations Framework Convention on Climate Change (UNFCCC) at Earth Summit in Rio de Janeiro.
1995	National Action Program on Climate Change	Federal-provincial-territorial program is adopted with the goal of setting a strategic direction for pursuing the nation's objective of meeting the emission-reduction target outlined in the Green Plan.
1998	Kyoto Protocol	Canada signs the Kyoto Protocol.
2000	Action Plan 2000	Plan commits to reducing emissions by 65 Mt per year for the period 2008-2012 to achieve the Kyoto target.
2002	Kyoto Protocol ratified	Canada formally ratifies Protocol and submits a second, more elaborate plan to achieve the Kyoto target (the Climate Change Plan for Canada).
2005	Kyoto Protocol enters into force	Commits Canada to an emissions target of 563 Mt during the period 2008 to 2012 (6% below 1990 levels). In 2012, Canada's total emissions were 711 Mt. Canada submits a third plan to achieve the Kyoto target, entitled <i>Moving Forward on Climate Change: A Plan for Honouring Our Kyoto Commitment</i> , which included the creation of a nationwide cap-and-trade program with an intensity-based emission-reduction target for major emitters.
2007	<i>Kyoto Protocol Implementation Act</i>	Act passes. Canada announces a new climate plan, which includes intensity-based reduction targets for major emitters and a national target of an absolute emission-reduction target of 20% from 2006 levels by 2020.
2010	New commitment under Copenhagen Accord	Under the Accord, Canada commits to a new emissions target of 607 Mt in 2020 (17% below 2005 levels).
2011	Withdrawal from Kyoto Protocol	Canada withdraws to avoid paying penalties.
2016	Paris Agreement ratified Pan-Canadian Framework on Clean Growth and Climate Change (PCF) Developed	Canada ratifies Agreement and submits first Nationally Determined Contribution, which commits Canada to reducing emissions by 30% below 2005 levels by 2030. Develops PCF with provinces and territories. Federal government, provinces and territories adopt Vancouver Declaration on Clean Growth and Climate Change, which indicates Canada's international mitigation pledge is to be achieved through the PCF and a carbon pricing system.
2017	Canada and UK launch global alliance	Alliance launched to phase out coal-fired electricity generation. Canada commits to a new target to reduce greenhouse gas emissions 80% below 2005 levels by 2050. Canada signs the Kigali Amendment to the Montreal Protocol, proposing new regulations to substantially lower emissions of hydrofluorocarbons (a greenhouse gas).
2018	Electricity regulations announced <i>Greenhouse Gas Pollution Pricing Act</i> is passed	Canada announces regulations to phase out coal-fired electricity generation by 2030, and regulations limiting CO ₂ emissions from natural gas-fired electricity.
2019	Federal carbon pricing system introduced	System introduced in provinces that either request it, or do not have a system that meets the federal requirements. Both of these were introduced in Ontario. There are two components: a charge on fossil fuels and a pricing system for industrial facilities based on their production levels. Both are in effect in Ontario.

Appendix 9: Examples of Emission-Reduction Ideas Submitted but Not Included in the Plan

Prepared by the Office of the Auditor General of Ontario

Sector	Regulations	Investments	Information
Transportation	Remove provincial sales tax on renewable fuels. Zero emission vehicle mandate.	Investments in municipal public transit systems (Ministry of Transportation).	Efficient driving campaign (Ministry of the Environment, Conservation and Parks).
Buildings	Reduce regulatory barriers to increase adoption of geothermal systems.	Social housing capital repair program (Ministry of Municipal Affairs and Housing). Hospital energy efficiency program (Ministry of Health and Long-Term Care/Ministry of Energy, Northern Development and Mines).	n/a
Industry	n/a	n/a	Low carbon transition office for industry (Ministry of the Environment, Conservation and Parks).
Waste	Improve landfill gas collection requirements (Ministry of the Environment, Conservation and Parks).	n/a	Incorporate food waste reduction in schools.
Agriculture/Forestry	Create carbon offset market to allow farmers to receive payment for reducing emissions.	Cost-share funding for agriculture efficiency and waste reduction projects (Ministry of Agriculture, Food and Rural Affairs).	n/a
Electricity	Net metering to support greenhouse gas reductions and net-zero buildings and communities (Ministry of Energy, Northern Development and Mines).	n/a	n/a

Appendix 10: OAGO Comment on Ministry Assumptions Associated with the Plan's Emissions Reductions

Prepared by the Office of the Auditor General of Ontario

Ministry Estimate of Emissions (or Reductions) (Mt in 2030)		Key Ministry Assumptions	OAGO Issues Noted*
Action Area “Business as usual” Emissions Forecast	Description in Plan		
	Where we expect Ontario's emissions to be if we take no action	160.9	Overlaps with emissions reductions also attributed to Future Innovation (Section 4.4.11).
		Technological improvements without new government initiatives	Federal carbon pricing for fuel and industry has already been implemented (Section 4.3.1).
		Federal carbon pricing for fuel and industry not implemented	Overlaps with emissions reductions also attributed to Low Carbon Vehicles Uptake (Section 4.4.1).
		Federal vehicle emissions standards become more stringent	Renewable energy contracts and cap-and-trade program have since been cancelled (Section 4.3.2).
Low Carbon Vehicles Uptake		Electricity sector reflects 2017 Long-Term Energy Plan	Estimate is based on electric vehicle incentives that have since been cancelled. There are no actions in Plan to achieve the emission-reduction estimate (Section 4.4.1).
	Electric vehicle adoption in Ontario	Electric vehicles on road increase to 1.3 million in 2030	Emissions reductions overlap with those from vehicle emission standards (Section 4.4.1).
		Reductions are above and beyond those achieved by federal vehicle emission standards.	Estimate is from document that describes the numbers as “assumed.” There are no actions in Plan to achieve the emission-reduction estimate (Section 4.4.2).
	Expansion of compressed natural gas in trucking	Compressed natural gas in trucking increases from 0 to 55 petajoules by 2030	Scientific studies have shown compressed natural gas can result in higher emissions than diesel (Section 4.4.2).
		Compressed natural gas emissions 24% lower than diesel	No issue noted.
Clean Fuels		Renewable content requirement in gasoline increases from 5% to 15% as early as 2025	No issue noted.
	Increasing the ethanol content of gasoline	Renewable content has 45% less carbon than gasoline	Estimate is from document that describes the numbers as “illustrative.” There are no actions in Plan to achieve the emission-reduction estimate (Section 4.4.3).
		Renewable content in natural gas increases from 0 to 47 petajoules in 2030	Ministry staff estimate purchases will be “negligible” due to high costs. (Section 4.4.3).
	Encouraging uptake of renewable natural gas	Customers will voluntarily purchase renewable content for \$18/gigajoule, instead of conventional natural gas for less than \$3/gigajoule	Emissions reductions depend on proposed federal standard (Section 4.4.4).
	Proposed federal Fuel Standard standards	Federal government implements proposed regulation	

Action Area	Description in Plan	Ministry Estimate of Emissions (or Reductions) (Mt in 2030)	Key Ministry Assumptions	OAGO Issues Noted*
Natural Gas Conservation	Gradual expansion of programs delivered by utilities	(3.2)	"Unconstrained" budget that "can fund up to 100% of capital cost" of cost-effective consumer programs	Potential emissions reductions overlap with other Plan initiatives (Section 4.4.5).
Industry Performance Standards	Proposed approach to regulate large emitters	(2.7)	Carbon price increases \$10/t annually until 2022	No issue noted.
			Emissions exempt from price decrease by 1% to 5% annually until 2030	Finalized program has weaker requirements and Ministry staff estimate will only reduce 1.0 Mt (Section 4.4.6).
			Reductions are above and beyond those achieved by natural gas conservation programs for industry Reductions are above and beyond those achieved by Clean Fuel Standard	Emissions reductions from Industry Performance Standards overlap with those from Natural Gas Conservation and the federal Clean Fuel Standard (Section 4.4.6).
Emission Reduction Fund	Use public funds to leverage private investment	(0.5)	\$350 million committed to loans with 4:1 private to public funding leverage ratio	Plan already assumes "up to 100% of capital cost" will be funded for cost-effective natural gas conservation projects, thus overlapping with potential reductions from Emission Reduction Fund. (Section 4.4.7).
			\$113/t emission-reduction cost for natural gas, oil and propane home retrofits	
			Reductions above and beyond Natural Gas Conservation	
Other Policies	Reverse auction	(0.1)	\$50 million committed to emission-reduction projects	Emissions reductions from lowest cost bids are likely to occur anyway (Section 4.4.8).
			\$15/t emission-reduction cost paid to lowest cost bids	
		(1.0)	1.3 Mt of additional organic waste diverted from landfills in 2030, with estimated net operational costs of \$118 million per year. Program being designed to target institutional, commercial, industrial, and residential organic waste	
	Investments in public transit	(0.1)	\$5 billion committed to transit expansion	Emissions reductions with investments in GO Transit likely to be minimal (Section 4.5).

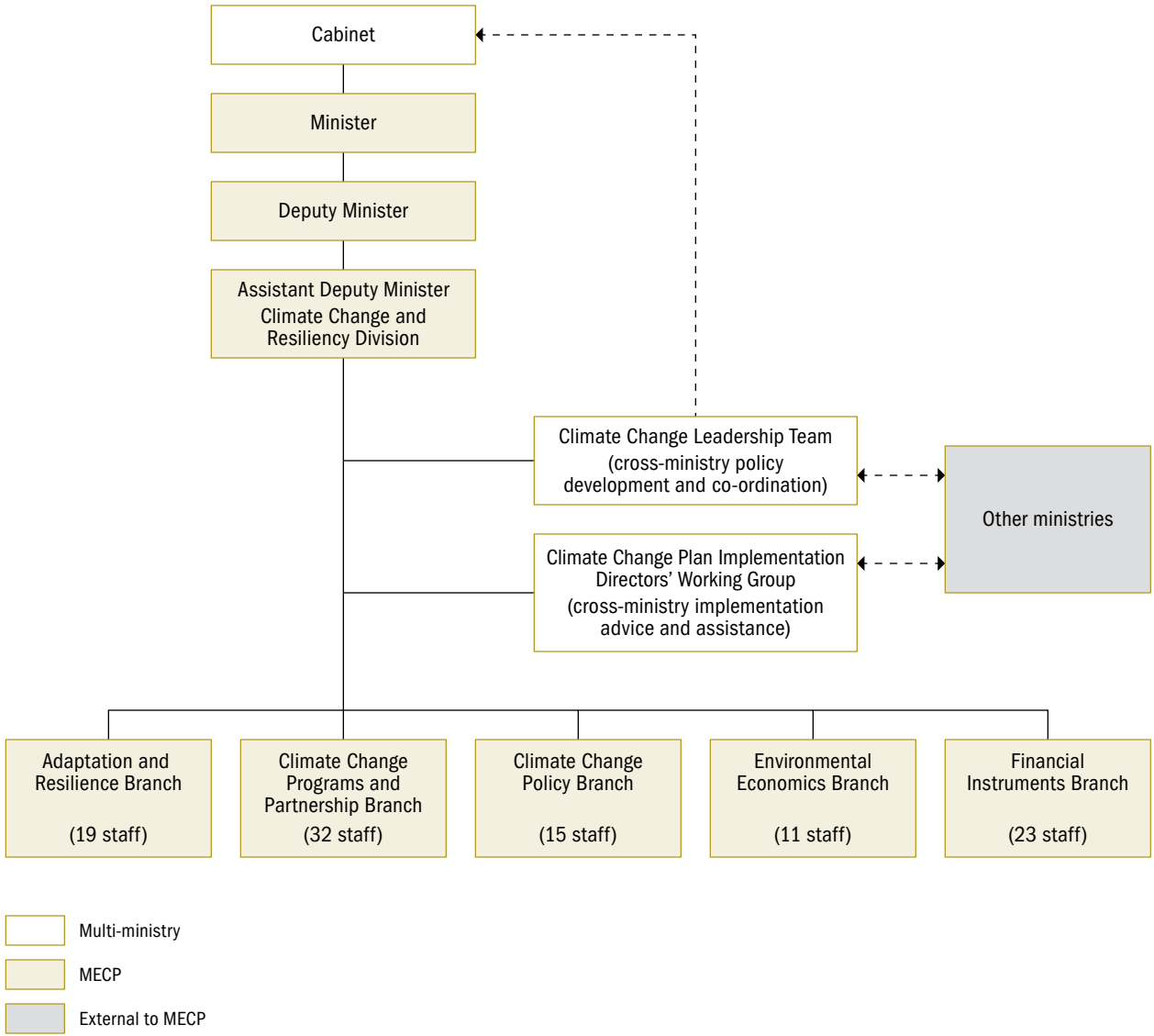
Ministry Estimate of Emissions (or Reductions) (Mt in 2030)		Key Ministry Assumptions	OAGO Issues Noted*
Action Area	Description in Plan		
Innovation	Advancements in energy storage	(0.3) 750 MW of zero-emission electricity storage capacity in 2030	Estimate is from document that describes the numbers as “illustrative,” and there are no actions in Plan to achieve estimate (Section 4.4.10).
	Cost-effective fuel switching	(0.2) 29 petajoules of oil or propane heating switches to electricity by 2030	Ministry staff estimate the cost to achieve these reductions to be \$78 million. However, there are no actions in the Plan to achieve the emission-reduction estimate (Section 4.4.10).
	Future innovation (not described in Plan)	(2.2) Achieves all remaining emissions reductions to reach 2030 target	Estimate is not based on any evidence and there are no planned government initiatives to support the estimate. Emissions reductions from technological improvements and price reductions that will occur without government initiatives are also already incorporated in the business-as-usual emissions forecast (Section 4.4.11).
Net emissions reductions		(17.6)	
Net emissions (i.e., 2030 target)		143.3	

Note: Numbers may not add due to rounding.

* The section numbers refer to the section of this report that describe issues noted.

Appendix 11: Simplified Organizational Chart of the Ministry of the Environment, Conservation and Parks (MECP) and Key Climate Change Responsibilities

Prepared by the Office of the Auditor General of Ontario



Note: Branch descriptions can be found in the text of the report (Section 2.3).

Appendix 12: Audit Criteria

Prepared by the Office of the Auditor General of Ontario

1. The Ministry's initiatives to reduce greenhouse gas emissions in the province are:
 - based on sound evidence and are in line with best practices;
 - planned with sufficient detail; and
 - supported by a sound feasibility analysis.
2. The Ministry has sufficient authority to lead a co-ordinated approach across provincial ministries and agencies in their implementation of climate change mitigation initiatives.
3. The Ministry regularly monitors, evaluates and reports to the public on the effectiveness of its greenhouse gas reduction initiatives and progress towards meeting emission-reduction goals.



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