Performance Report on Environment Canada's 2011–2012 Departmental Sustainable Development Strategy

(Website Component)

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Part 1: Overview of Sustainable Development Policy and Practices

Federal Sustainable Development Act

In June 2008, the *Federal Sustainable Development Act* (FSDA) was proclaimed. The purpose of the Act is to provide the legal framework for developing and implementing a federal sustainable development strategy that will make environmental decision making more transparent and accountable to Parliament. The Act requires the development of a federal sustainable development strategy (FSDS) and a report on progress at least every three years.

Federal Sustainable Development Strategy 2010–2013

The Federal Sustainable Development Strategy (FSDS) 2010–2013, tabled on October 6, 2010, clearly articulates the Government of Canada's long-term goals and targets, including its plans for reducing the federal government's environmental footprint. The FSDS raises the profile of environmental issues in the federal government priority setting and decision making, firmly placing these issues on the same footing as the country's economic and social priorities.

Through the FSDS and the progress reports, Parliamentarians and Canadians will have a clear understanding of planned actions and progress related to environmental sustainability, thus driving change over time through the "plan, do, check, improve" cycle. The FSDS fulfils the requirements of the Act through three key improvements that render environmental decision making more transparent and accountable:

- an integrated, whole-of-government picture of actions and results to achieve environmental sustainability;
- a link between sustainable development planning and reporting and the federal government's core expenditure planning and reporting system; and
- effective measurement, monitoring, and reporting in order to track and report on progress to Canadians.

As required under the Act and in support of the FSDS, annual departmental sustainable development strategies (DSDSs) are prepared to report on those portions of the FSDS that

have specific implications for each respective department. These DSDSs are prepared to ensure proper management and accountability in terms of sustainable development.

Environment Canada

The Minister of Environment Canada has two major responsibilities regarding the FSDA.

First, the Act requires the Minister to

- develop a federal sustainable development strategy on behalf of the Government of Canada and table it in both Houses of Parliament every three years; and
- table a triennial report on the progress of the federal government in implementing the FSDS.

Second, as with all other Ministers of departments and agencies subject to the FSDA, the Minister of the Environment is responsible for developing Environment Canada's own departmental sustainable development strategy. This document is focused on the Minister's second responsibility.

Environment Canada's departmental sustainable development strategy is organized around the three strategic outcomes of the Department's Program Alignment Architecture (PAA):

- Canada's natural environment is conserved and restored for present and future generations;
- Canadians are equipped to make informed decisions on changing weather, water and climate conditions; and
- Threats to Canadians and their environment from pollution are minimized.

Environment Canada is committed to continuous improvement as more experience is gained. The Department will be looking for opportunities to improve both its own strategy and to assist other departments as all gain more experience with this coordinated approach.

Environment Canada's Sustainable Development Vision

Environment Canada's sustainable development vision is to improve Canadians' standard of living by protecting human health, conserving the environment, using resources efficiently, and advancing long-term economic competitiveness.

Progress Report on the Federal Sustainable Development Strategy 2010–2013 and the Departmental Sustainable Development Strategy

The information provided on this website is supported by the Progress Report on the Federal Sustainable Development Strategy (FSDS) 2010–2013. The state of the environment indicators presented in departmental performance reports and FSDS progress reports demonstrate the Government of Canada's progress towards environmental objectives and sustainable development goals and targets as laid out in the FSDS. These indicators track progress on measures of environmental and socio-economic issues at broad outcome levels.

This website outlines departmental FSDS implementation strategies and corresponding performance information applicable over the intermediate and immediate time frames. Generally, progress toward a broad outcome is not always directly attributed to any one factor such as a government program or policy; however, the link between the broad outcome and government actions can be demonstrated, documented and made transparent. Moving from the implementation strategy performance measure to the state of the environment measure (indicator), the direct attribution to any one factor is reduced—nonetheless, the logical links between government programs and policies and broad outcomes remain.

Departmental Decision Making and Sustainable Development Practices

The concept of sustainable development rests at the core of the Department's mandate. A flexible, yet robust decision-making process is, therefore, essential for the Department when considering the social, economic and environmental dimensions of strategic, policy and program issues as they arise. To this end, the Department's decision-making process, within an established corporate governance structure, allows both formal and informal opportunities to consider issues, set priorities and render either decisions or recommendations as necessary.

Sustainable Development Champion

The Assistant Deputy Minister of the Strategic Policy Branch is the Sustainable Development Champion and has overall leadership of the Departmental responsibilities related to sustainable development. In 2011–2012 the Champion

- coordinated the development of the first Federal Sustainable Development Strategy (FSDS) progress report (tabled in June 2011), which included a framework to manage, monitor and report on the FSDS, and, also provided guidance to departments regarding reporting through their annual departmental sustainable development strategies planning and performance reports;
- provided overall leadership and coordination in the implementation of the Federal Sustainable Development Act through effective interdepartmental engagement and the Sustainable Development Office; and
- provided leadership on a new policy for the department on Strategic Environmental Assessment which improves transparency by linking the FSDS to departmental decision-making and reporting.

Strategic Environmental Assessment Highlights

The Department's Policy on Strategic Environmental Assessment (SEA) establishes the key elements of EC's SEA management system. This management system was put in place to assure accountability for the implementation of the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* and to enable the Department to track and monitor the development of its SEAs and impacts on the Federal

Sustainable Development Strategy (FSDS) goals and targets. Updated tools, templates and guidance materials were developed to support departmental assessment and analysis.

During this reporting cycle, Environment Canada improved the quality of its SEAs for policy, plan and program proposals. SEAs for initiatives led by EC contributed to the achievement of most of the FSDS goals and a number of targets. However, for this reporting cycle, these SEAs addressed Goals 1, 2 3 and 5 (Goal 1 – Climate Change – Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change; Goal 2 – Air Pollution – Minimize the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems; Goal 3 – Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems; and Goal 5 – Wildlife Conservation – Maintain or restore populations of wildlife to healthy levels). Descriptions of these initiatives can be found through Environment Canada's Public Statement Web page.

Based on the nature of Environment Canada's work, the majority of initiatives led by EC are expected to result in important positive environmental effects as well as positive contributions to the achievement of the FSDS goals and targets. Risks of possible unanticipated negative environmental impacts have been reduced by identifying and addressing such potential impacts through the SEA process, and by proposing alternative options and appropriate mitigation measures.

Decision-Making Tools

Regulatory Impact Assessment Summaries

Environment Canada uses regulatory impact assessment summaries (RIASs) to determine the expected impact of regulatory initiatives that address each of the requirements of the federal government's regulatory policy, namely the *Cabinet Directive on Streamlining Regulation*. The use of regulatory impact analysis has long been recognized as an international best practice, and RIASs have been used in Canada for over 20 years.

A RIAS provides a cogent, non-technical synthesis of information that allows the various audiences to understand the environmental issue being regulated. It allows audiences to understand the reason the issue is being regulated, the government's objectives, and the costs and benefits of the regulation, including the effectiveness of the regulation from an environmental standpoint. It also addresses who will be affected, who was consulted in developing the regulation, and how the government will evaluate and measure the performance of the regulation against its stated objectives. The RIAS is, in effect, a public accounting of the need for each regulation.

Intergovernmental Collaboration and Stakeholder Consultation

Environment Canada's sustainable development decisions and actions require collaboration, partnership and information exchange with key partners and stakeholders, including other levels of government, Aboriginal peoples, industry, environmental non-governmental organizations and Canadian citizens. Through these exchanges, Environment Canada aims to foster positive, long-term relationships with these key constituencies in all of its activities. For example, relationships with provincial and territorial partners are advanced through bilateral agreements, as well as

through multilateral participation in the Canadian Council of Ministers of the Environment and the Federal/Provincial/Territorial Working Group on International Climate Change. In addition, the Department consults and engages with Aboriginal peoples and stakeholders to deliver on core priorities such as protecting and conserving our air, water, wildlife and natural areas.

Monitoring, Reporting and Policy Improvement

Performance measurement and evaluation are complementary. While performance measurement is ongoing and focuses on the quantification of certain aspects of performance, evaluation is a snapshot in time. Regularly collected performance measurement information is used in periodic evaluation that provides, when analyzed in the context of evaluation specific data collection, a more in-depth and independent assessment of the outcomes achieved.

Ongoing Monitoring and Reporting

Implementation of the departmental sustainable development strategy will be monitored and reported on an ongoing basis in two ways:

- periodic reporting to the Executive Management Committee
- reporting in the departmental reports on plans and priorities and departmental performance reports

Evaluation

Evaluation relies on sound performance measurement as a reliable and credible source of evidence to demonstrate progress toward intended program outcomes. Using performance information and other evidence, evaluations can be helpful in identifying opportunities to improve the manner in which future sustainable development activities are designed and delivered so as to enhance the achievement of intended outcomes. In addition to design and delivery, evaluation can also be used to identify potential improvements to program efficiency, economy and oversight.

The FSDS[1] will be evaluated as part of the evaluation of Environment Canada's Sustainability and Reporting Indicators Program, scheduled for evaluation in 2012–2013. The evaluation will address issues related to relevance and performance (including economy and efficiency), in compliance with the Treasury Board's Policy on Evaluation (2009).

An internal audit of the FSDS will be considered in the context of the departmental risk-based audit plan, as required by the Treasury Board Policy on Internal Audit and the *Directive on Chief Audit Executives, Internal Audit Plans, and Support to the Comptroller General*.

[1] The internal evaluation will include both the secretariat function, which Environment Canada holds, as well as Environment Canada-specific elements within the FSDS.

Policy Improvement

In the follow-up to the 2012–2013 evaluation, the management team leading Environment Canada's contribution to the FSDS will develop a management response with clear and concise management commitments to address evaluation recommendations. This response will allow management and evaluators to better ascertain progress and will facilitate the evaluator's ability to recommend the disposition or closure of evaluation recommendations.

The Evaluation Division regularly monitors and reports on the status of management commitments made in response to evaluation recommendations. Doing so provides Environment Canada's Departmental Evaluation Committee (chaired by the Deputy Minister) with timely information on how well the Department is addressing and resolving risks or deficiencies and acting on identified opportunities that have been raised in evaluations.

Description of SEAs conducted during 2011–2012

The following initiatives underwent the SEA process and produced a public statement. Although EC conducted additional SEAs, the following include initiatives for which a decision was made and were formally announced.

Helping Canadians Adapt to a Changing Climate

Budget 2011 approved funding for programs designed to improve our understanding of climate impacts and to support adaptation planning and decision-making. The programs are aimed at advancing adaptation across targeted communities and sectors and collectively comprise the set of programs under the Adaptation Theme of the federal Clean Air Agenda. Environment Canada leads one of these programs—program A.1: Climate Change Prediction and Scenarios—which is one of a set of programs aimed at enhancing the science foundation to understand and predict climate and assess climate change impacts.

The SEA concluded that Climate Change Adaptation program will have consistently positive and indirect environmental effects by improving the quantity, quality, accessibility, and profile of information on climate change and variability over short and long timescales, and by facilitating improved planning and decision-making.

This initiative positively contributed to the following goals:

Goal 3: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

Goal 5: Wildlife Conservation – Maintain or restore populations of wildlife to healthy levels.

Public Statement Web page

Clean Air Regulatory Agenda (Environment Canada's Contribution)

The SEA concluded that Clean Air Regulatory Agenda (CARA) supports proposed regulations and other measures to address domestic industrial air emissions, including greenhouse gases (GHGs) and air pollutants, and to improve outdoor and indoor air quality. Renewed CARA funding will also support relevant policy, monitoring and reporting, and science activities.

The proposed scientific research, monitoring, modeling as well as policy and economic analysis are expected to have an indirect positive effect on the environment by: providing foundational knowledge necessary to develop and implement regulations; providing assessments and reports on the effectiveness of measures; and, improving knowledge about the current and projected levels of emissions. In addition, the Air Quality Health Index is also expected to have an important indirect positive effect on human health, by providing real-time information to Canadians on air quality. This will facilitate positive behavioural change; enabling Canadian's to reduce their exposure to harmful air pollutants.

This initiative contributed to the following goals and targets:

Goal 1: Climate Change – Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change.

Target 1.1: Climate Change Mitigation – Relative to 2005 emission levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020.

Goal 2: Air Pollution – Minimize the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems.

Target 2.1: Air pollutants – Reduce air pollutants in order to maintain or improve air quality across the country and achieve the emission targets which are currently under development in consultations with provinces and stakeholders.

Target 2.2: Indoor Air Quality – Help protect the health of Canadians by assessing indoor air pollutants and developing guidelines and other tools to better manage indoor air quality.

Public Statement Web page

International Climate Change Strategy 2011: Fast Start Financing

The 15th Conference of the Parties culminated in the Copenhagen Accord (the Accord), a significant breakthrough in the global effort to address climate change. The Accord provides for significant international financing, including a collective commitment by developed countries to provide new and additional resources for the 2010 to 2012 period, with adaptation funding focused on the most vulnerable, especially least developed countries, small island developing states and Africa.

The SEA of the Fast Start Financing concluded that this initiative would result in important positive environmental effects by supporting efforts by developing countries to reduce greenhouse gas emissions and adapt to the adverse impacts of climate change, through financing focused on three priority areas—adaptation, clean energy, and forests and agriculture.

Opportunities for the mitigation of harmful long-term effects due to anthropogenic emissions of greenhouse gases are supported by the strategic use of financing to help developing countries reduce their emissions and adapt to climate change.

This initiative contributed to the achievement of the following goals and targets:

Goal 1: Climate Change – Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change.

Target 1.1: Climate Change Mitigation – Relative to 2005 emission levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020.

Public Statement Web page

International Climate Change Strategy and the Canada–United States Clean Energy Dialogue

The International Climate Change Strategy and the Canada–United States Clean Energy Dialogue will ensure that Canada continues to engage across multilateral fora in strategic international climate change discussions and negotiations and that Canada continues to engage and align with the US on climate change issues. This initiative will enable Canada to participate in international efforts to address the global challenge of climate change.

The SEA of the Clean Energy Dialogue concluded that this initiative would result in important positive environmental effects through Canada's continued participation in international climate change negotiations and engagement and alignment with the US in questions of clean energy and climate change.

This initiative contributed to the following goals and targets:

Goal 1: Climate Change – Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change.

Target 1.1: Climate Change Mitigation – Relative to 2005 emission levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020.

Public Statement Web page

Strengthening the Government of Canada's Weather Monitoring Infrastructure

Investing in the Government of Canada's weather monitoring infrastructure will help ensure its integrity. EC's core federal weather and environmental service capacity relies on this infrastructure to ensure that Canadians are notified and prepared to take appropriate action to protect their lives and property, while at the same time ensuring their long term economic prosperity. It also enables EC to continue to support the mandates and missions of other government departments and agencies. The funding is expected to benefit Canadians by ensuring improvements to Canada's ability to detect significant weather and provide weather forecasts and severe weather warnings. The investments will improve the sustainability and integrity of Canada's weather service ensuring the provision of information that Canadians need to make environmentally sound decisions in their day-to-day activities.

The SEA for this initiative focussed on setting conditions through the environmental assessments that will ensure there are no air and water pollution releases to the environment as a result of the requirement for the siting and construction of new sites for monitoring equipment. The SEA concluded that all investments in the creation of new monitoring sites would have important positive environmental outcomes.

This initiative contributed to the following goals and targets:

Goal 2: Air Pollution – Minimize the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems.

Target 2.1: Air Pollutants – Reduce air pollutants in order to maintain or improve air quality across the country and achieve the emission targets which are currently under development in consultations with provinces and stakeholders.

Goal 3: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

Target 3.8: Marine Water Quality – Reduce the risks to Canadians and impacts on the marine environment posed by pollution from land-based activities.

Public Statement Web page

Supporting Climate Change and Atmospheric Research at Canadian Post-Secondary Institutions

This initiative, "Supporting Climate Change and Atmospheric Research at Canadian Post-Secondary Institutions," supports new funding for climate change and atmospheric research announced in Budget 2011. Funding allocated through the Natural Sciences and Engineering Research Council (NSERC) will be targeted to support research under three themes that will advance a better understanding of, and an ability to predict changes in, the climate and atmospheric system.

Overall, the environmental effects of this new funding initiative will be realized through the transfer of knowledge produced by the research projects to the users of this knowledge as decision-makers in priority areas related to climate change adaptation and mitigation. Given that all environmental impacts of this initiative are positive, no mitigation measures are necessary. Positive effects will be enhanced through the building of strong networks and though effective communication of results to users, which are both key elements of this initiative. Furthermore, the program targets priority areas in the field of climate change and atmospheric research and focuses efforts on developing links between universities and governments, where much of the new knowledge will be used.

This initiative contributed to the following goals and targets:

Goal 1: – Climate change – Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change.

Target 1.1: Climate Change Mitigation – Relative to 2005 emission levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020.

Goal 2: Air Pollution – Minimize the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems.

Target 2.1: Air Pollutants – Reduce air pollutants in order to maintain or improve air quality across the country and achieve the emission targets which are currently under development in consultations with provinces and stakeholders.

Public Statement Web page

Note: It should also be noted that EC contributed to the development of several initiatives led by other departments. Reporting on these initiatives is undertaken by these lead departments.

Part 2: Environment Canada's Performance Achievements for 2011–2012 on FSDS Implementation Strategies

Theme I: Addressing Climate Change and Air Quality

1. Goal: Climate Change – Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change.

1.1Target: Climate Change Mitigation – Relative to 2005 emission levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
1.1.4 Develop and provide information and reports on atmospheric science assessments related to climate change (EC). Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air Program 2.1: Weather and Environmental Services for Canadians	Provision of timely, credible science advice and assessment regarding Canada's rapidly changing climate and how it functions in the North and elsewhere is delivered to support federal decision making on climate change mitigation and adaptation. This includes Canada's contribution to the Intergovernmental Panel on Climate Change (IPCC). Performance Expectations: There will be a qualitative assessment of the satisfaction of government decision-makers with the timeliness, credibility and relevance of atmospheric science advice and assessment related to climate change	New climate change simulations and projections for Canada and for the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report, scheduled for release in 2014, have been completed using the Canadian global climate model. A new regional climate model is being used to downscale global climate change projections for the North American, Arctic and African domains, and serves as a contribution to an international regional downscaling intercomparison project. Environment Canada (EC) has completed its model runs for the Coupled Model Intercomparison Project – Phase 5 (CMIP5). Updated climatic design information has been developed in cooperation with the Canadian Standards Association for the development of new codes and standards for Canadian infrastructure. Greenhouse gas and aerosols monitoring and modelling continued to better characterize and quantify sources and sinks at the regional scale across Canada. Surface- and satellite-based observations of CO_2 were combined in a study that represents the first steps towards combining data sets to improve our understanding of CO_2 sources and sinks in Canadian regions. Process and modelling studies on deforestation and afforestation have generated new information on how land-use change affects climate. EC has collaborated with Statistics Canada and Natural Resources Canada in the publication of a series of climate change

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		indicators for Canada. See also the Clean Air Agenda Program Atmospheric Research, Monitoring and Modelling and Climate Change Prediction and Scenarios in Part 3 for related performance information.
1.1.5 Undertake and deliver scientific research and reporting in support of regulatory and other programs, including data analysis, inventory development, monitoring, modeling and assessment of the effectiveness of efforts as well as research on options, costs and benefits, and technology assessments. (EC, HC, NRCan, TC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	Under the Clean Air Regulatory Agenda, comprehensive inventories of greenhouse gases for both sources and sinks are developed and reported annually as part of Canada's United Nations Framework Convention on Climate Change (UNFCCC) obligations. Data and methods to estimate, model and quantify both emissions and removals of GHGs are developed and implemented and analysed to understand the drivers and trends. The program provides Canadians with information on greenhouse gas emissions at national, provincial and regional scales. There are two main sources of information for GHG emissions available on this website. The National Inventory Report (NIR) provides a primary source for tracking of progress toward FSDS Target 1.1. The second, the Greenhouse Gas Emissions Reporting Program, includes facility reported greenhouse gas emissions of 50 kilotonnes or more annually. Performance Expectations: Meet annual international reporting obligations for the UNFCCC. Meet annual domestic reporting obligations under CEPA 1999. Provision of GHG science (monitoring and modeling) to establish the knowledge base necessary for the development, implementation and evaluation of emission targets, regulations and compliance mechanisms.	The National Inventory Report (NIR) was submitted to the United Nations Framework Convention on Climate Change UNFCCC on April 12, 2012. The Greenhouse Gas Emissions Reporting Program data were published on April 12, 2012. See also the Clean Air Agenda Program Data Collection and Reporting for GHGs in Part 3 for related performance information.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
1.1.6 Develop climate change strategies harmonized with United States as part of Canada's commitment to meet Target 1.1. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	This implementation strategy will be implemented through regulatory development to address GHG emissions on a sector-by-sector basis, aligned with the United States as appropriate. The transportation sector is the first targeted sector for alignment with the United States' approach. This contributes to achieving *Target 1.1: Climate Change Mitigation – Relative to 2005 emission levels, reduce Canada's total greenhouse gas emissions (GHG) 17% by 2020* by ensuring that Canada's target and approach are aligned with the U.S. as appropriate. Climate change strategies that are to be harmonized with the United States also include those aimed at advancing clean energy and clean technologies. This includes Canada's activities under the United States–Canada Clean Energy Dialogue (CED) and activities under the Environmental Technology Verification (ETV) Program, which involves joint clean technology verification initiatives with the United States. Performance Expectations: Implementation of the *Passenger Automobile and Light Truck GHG Emissions Regulations* beginning with the 2011 model year. Development of GHG regulations to reduce emissions from heavy-duty vehicles, aligned with the United States. Finalization of regulations to reduce GHG emissions from the coal-fired thermal electricity sector. Work is also underway to extend GHG regulatory approaches to all major emitting sectors. (Work is also underway to develop an approach to limit GHG emissions from other industrial sources to align with forthcoming GHG regulations under the United States Environmental Protection Agency (U.S. EPA).)	GHG emissions standards are being implemented for new cars and light trucks (2011–2016 model years) and are harmonized with United States national standards. EC has been working with the United States Environmental Protection Agency to develop more stringent standards for the 2017–2025 model years. A consultation document on the development of these regulations was released on November 16, 2011. Proposed GHG regulations for heavy-duty vehicles were published in the *Canada Gazette*, Part I, on April 14, 2012. The regulations will align Canadian standards with those of the United States. Draft regulations to reduce carbon dioxide from coal-fired electricity generation were published in the *Canada Gazette*, Part I, in August 2011. The final regulations are targeted for publication in the *Canada Gazette*, Part II (summer 2012). [2] See also Clean Air Agenda Program Electricity Regulations, Transportation Regulations, Oil and Gas Regulations, Emissions-Intensive Trade-Exposed (EITE) Regulations and Greenhouse Gas Policy in Part 3 for related performance information.
1.1.7 Develop and implement a single window reporting initiative for national emissions reporting. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change	Under the Clean Air Regulatory Agenda, the government committed to developing a single, harmonized system for the regulatory reporting of all air emissions and related information. The Single Window (SW) reporting initiative is one component of the single harmonized system, which sets the stage for a forum to pursue harmonization of reporting methodologies, thereby improving confidence and credibility with results. On March 15, 2010, Environment Canada (EC) launched the Single Window Reporting (SWR) system to support integrated data collection starting with GHG emissions. The	

[2] The final regulations have been posted on the *Canada Gazette*, Part II in September 2012.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
and Clean Air	SWR system also collects Alberta GHG information (Alberta's *Specified Gas Reporting Regulation*), which was previously collected through Statistics Canada. The Single Window Reporting (SWR) initiative is one component of the single harmonized system that sets the stage for a forum to pursue harmonization of reporting methodologies, thereby improving confidence and credibility with results associated with the targeted reduction of Canada's total GHG emissions. Performance Expectations: In 2011–2012, EC will continue discussions with other provinces interested in using the EC SWR. This ongoing work could be expanded to support an inclusive Canadian approach for data collection.	Over the past year, we have worked closely with both Saskatchewan and Newfoundland regarding their interest in collecting GHG data through EC's Single Window. We have also continued to work closely and collaboratively with our existing provincial partners in Alberta, British Columbia and Ontario. See also the Clean Air Agenda Program Cross-cutting Data Collection and Reporting in Part 3 for related performance information.
1.1.8 Develop renewable fuels regulations to mandate a 5% renewable fuel content in gasoline. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	In 2010, the *Renewable Fuels Regulations*, which require a 5% renewable content based on the gasoline pool, were published. In 2011–2012, EC will develop an amendment requiring a 2% renewable content minimum in diesel fuel and heating oil. The *Renewable Fuels Regulations*, along with provincial regulations, are expected to reduce GHG emissions by about 4 megatonnes per year, the equivalent of removing 1 million vehicles from the road. Visit this website for more information. Performance Expectations: Amendments are published in the *Canada Gazette*.	Regulations for renewable fuels, mandating an average 5% renewable fuel content in gasoline, were implemented. The final regulations were published in the *Canada Gazette*, Part II, summer 2011, amending the *Renewable Fuels Regulations* to include the requirement of 2% renewable content in diesel fuel and heating oil.
1.1.9 Develop greenhouse gas (GHG) emission regulations for new cars and light trucks beginning with the 2011 model year. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	In 2010, EC published the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* for new passenger cars and light trucks for the 2011–2016 model years, aligned with United States regulations. Visit this website for more information. As cars and light trucks account for about 12% of Canada's total GHG emissions, this will help Canada reach the 2020 emissions target. Performance Expectations: The vehicles and engines that are covered by the regulations for the period 2011–2016 will be subject to performance reporting, testing and verification.	EC completed the initial development of a compliance reporting system, the Vehicle and Engine Emissions Reporting Registry (VEERR) to enable the auto sector to submit compliance reports as required by the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* for the 2011–2016 model years. Vehicle manufacturers provided EC with their end-of-model-year report for 2011 in May of 2012. Compliance testing and verification will begin in 2012.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
1.1.10 Develop regulations under the *Canadian Environmental Protection Act, 1999* to address greenhouse gas emissions from heavy-duty vehicles, aligned with the United States but taking into consideration the distinct nature of the Canadian fleet. The draft regulations are expected to be available for consultation in the Fall of 2010. (EC, TC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	These proposed regulations will target the 2014 and later model-year new on-road heavy-duty vehicles and will align with United States standards. An initial consultation document was released in October 2010. Visit this website for more information. As heavy-duty vehicles account for 44 Mt (6%) of GHG emissions in Canada in 2005, this will contribute to reaching the 2020 emissions target. Performance Expectations: Draft regulations are targeted to be published in the *Canada Gazette* in 2011.	Proposed GHG regulations for heavy-duty vehicles were published in the *Canada Gazette*, Part I, on April 14, 2012. See also the Clean Air Agenda Program Transportation Regulations in Part 3 for related performance information.
1.1.11 Develop a performance standard for high-emitting coal-fired thermal electricity generation to transition to low- or non-emitting generation such as renewable energy, high-efficiency natural gas, or thermal power with CCS. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	New coal-burning electricity units and those that have reached the end of their economic life will be required to meet a stringent performance standard. Draft regulations will be developed in 2011, to come into effect in 2015. Visit this website for more information. As coal-fired electricity generators account for 13% of GHG emissions in Canada, this will help reach the 2020 target of a 17% reduction. Performance Expectations: Draft and final regulations are expected to be published in the *Canada Gazette* in 2011.	Draft regulations were published in the *Canada Gazette*, Part I, to limit GHG emissions from coal-fired electricity-generating units in August 2011. Final publication is expected in summer of 2012–2013.[3] See also the Clean Air Agenda Program Electricity Regulations in Part 3 for related performance information.
1.1.12 Continue to work with the provinces and territories to develop coherent greenhouse gases approaches. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	The activity will be implemented through continued bilateral and multilateral engagement with provincial and territorial representatives, including through the Federal–Provincial–Territorial Working Group on Domestic Climate Change. This contributes to achieving *Target 1.1: Climate Change Mitigation* by facilitating coordination and cooperation with the provinces and territories in order to develop coherent approaches addressing greenhouse gas emissions. Performance Expectations: Federal–Provincial–Territorial Working Group progress on Domestic Climate Change: 2 to 3 meetings to be held in 2011–2012. Development of additional agreements in principle (AIPs) on climate change cooperation with interested provinces. Signing of 3 Memoranda of Agreement with provinces for data sharing. Continued work under the Canada–Quebec working group on matters related to climate change.	As part of the GHG regulatory development process, there was ongoing engagement with the provinces and territories through the existing federal-provincial-territorial Working Group on Domestic Climate Change. In addition, a Director-General-level federal-provincial-territorial working group was created in November 2011 to discuss sector-specific GHG regulatory development. Meetings have been held on an approximately monthly basis (there were 9 meetings between November 2011 and June 2012). Also, a Deputy-Minister-level federal-provincial-territorial consultative steering committee was created in 2012 to engage with provinces and territories on GHG regulatory development. The steering committee held its first meeting in February 2012. To further the goal of limiting regulatory duplication with

[3] The final regulations have been posted on the *Canada Gazette*, Part II in September 2012.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		provinces, the Government of Canada is working with the provinces, including Saskatchewan and Nova Scotia, to potentially develop equivalency agreements with respect to the proposed regulations to limit GHG emissions from coal-fired electricity generation. The agreements are targeted for publication in the *Canada Gazette*, Part I, directly after the regulations are finalized. Under an equivalency agreement, the federal regulation does not apply in a jurisdiction that has a regime equivalent to the *Canadian Environmental Protection Act, 1999* regulations. Three memoranda of agreement for data sharing were developed and are currently being finalized with Manitoba, British Columbia and Ontario. The federal government is continuing to engage with Quebec with respect to GHG regulatory development, in part through the federal-provincial-territorial mechanisms referred to above. EC and provincial ministries established a new federal-provincial working group on mobile source emissions. See also the Clean Air Agenda Program Greenhouse Gas Policy in Part 3 for related performance information.
1.1.14 Work within the International Maritime Organization (IMO) to support the development of international energy efficiency / GHG standards for marine vessels (TC, EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	EC will work with Transport Canada and the IMO to develop GHG emissions standards for international shipping. These standards will also include options for the use of both technical and market-based mechanisms in order to meet reduction targets. Visit this website for more information. As marine transportation accounted for 6 Mt (0.8%) of GHG emissions in Canada in 2005, this will help reach the 2020 emissions target. Performance Expectations: EC provides expertise and advice to Transport Canada as needed.	EC continued to work with Transport Canada at the International Maritime Organization (IMO) to implement GHG emission reduction strategies for international marine vessels. This included the implementation of the Energy Efficiency Design Index for new ships, and the Shipboard Energy Efficiency Management Plan, which were adopted at the IMO in July 2011. Together, these measures will reduce GHG emissions from new and existing vessels.
1.1.18 Continue to support a Memorandum of Understanding (MOU) with the Railway Association of Canada that ensures the rail industry continues to improve its GHG emissions performance during the period 2006–2010. (EC, TC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	The MOU with the Railway Association of Canada expired in December 2010. Visit this website for more information. Performance Expectations: EC provides expertise and advice to Transport Canada as needed.	EC has also been supporting Transport Canada on the Locomotive Emissions Monitoring report and negotiations on the next Memorandum of Understanding with the Railway Association of Canada.
1.1.20 Develop climate change strategies aligned with the United States including working collaboratively through the Canada–U.S. Clean Energy	Should program funding be renewed, the Clean Energy Dialogue (CED) will remain a key mechanism for engaging with the United States to collaborate more effectively on the development and deployment of clean energy technologies aimed at reducing greenhouse gas emissions and mitigating	

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Dialogue to advance clean energy priorities. (EC, NRCan) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	climate change (Target 1.1). Performance Expectations: Canada will make substantial progress by spring 2011 towards completing all 20 action plan commitments of Phase I of the CED. In addition, Canada will work with the United States to develop a new action plan for Phase II to further promote collaboration on the development and deployment of clean energy technologies	Canada made substantial progress by completing all 20 action plan commitments of Phase I of the Clean Energy Dialogue (CED) by 2012, except for one commitment that remains incomplete because of priority changes in the United States. In addition, Canada worked with the United States to develop a new action plan for Phase II (released in June 2012) to strengthen bilateral collaboration on clean energy technologies and seeks solutions to reduce greenhouse gas emissions and accelerate the transition to a low-carbon economy. See also the Clean Air Agenda Program Engagement and Alignment with U.S. (CED) in Part 3 for related performance information.
1.1.33 Develop and provide information and reports on the environmental footprint of energy technologies. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	The environmental footprint of energy technologies is evaluated, and timely, authoritative technology advice and assessment is delivered to advance clean technologies aimed at reducing greenhouse gas emissions. This includes advice and oversight to programs that advance clean technologies, including Sustainable Development Technology Canada (SDTC), the Canadian Environmental Technology Advancement Centres (CETACs), the Green Municipal Fund (GMF), and Canada's Environmental Technology Verification (ETV) Program. Performance Expectations: Satisfaction of government decision-makers with the timeliness, credibility and relevance of technology advice and assessment as measured through user group evaluation questionnaires and consultations. Performance Measurement Framework (PMF) target: 80% by 2014. Annual reduction of emissions of greenhouse gases (carbon dioxide equivalents) resulting from environmental technologies supported through programs to which EC contributes advice and oversight. This includes Sustainable Development Technology Canada (SDTC), the Canadian Environmental Technology Advancement Centres (CETACs), the Green Municipal Fund (GMF), and ETV. PMF Target: 12.5 Mt by 2015.	In 2011–2012, EC continued to provide analysis and assessment of the environmental performance of technologies. Several technology assessments are underway, but none were delivered in 2011–2012, so user satisfaction has not yet been formally evaluated. The Performance Measurement Framework (PMF) target is 80% by 2014. In 2011, total annual emissions reductions of GHGs reported by SDTC and the Canadian Environmental Technology Advancement Centres (CETACs) were 1.32 Mt. The CETACs also reported reductions of emissions of criteria air contaminants (CACs) of 2,142 t. These are annual reductions for 2011, based on approximately 100 projects across the three CETACs. SDTC reported CAC emissions reductions of 7,549 t, which is a projected cumulative total by 2015. Work is continuing to align data collection methods to enable consistent reporting from SDTC and the CETACs.
1.1.35.2 Programs focused on supplying financial aid and developing capacity to reduce GHGs and air pollutants through adoption of emission-reducing technologies and practices: Implement national Vehicle Scrappage Program to encourage Canadians to retire their old high-polluting vehicles (models 1995 or earlier) and to choose more sustainable transportation options (EC). Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	The Vehicle Scrappage Program offers rewards—such as free transit passes, car-sharing memberships, $300 cash and rebates on the purchase of cleaner vehicles—to Canadians who retire their older, highly polluting personal vehicles. The program is mainly delivered though Summerhill Impact, a not-for-profit organization with a network of local agents that deliver the program in each province and develop partnerships with incentive providers, vehicle recyclers, and call centres. For further information, please visit EC's website. The program also directly contributes to the achievement of *Target 2.1: Air Pollutants.* Performance Expectations: The program ends on March 31, 2011, and will wrap up its activities during the first four months of 2011–2012. It is estimated a total of 140,000 vehicles will have been retired by the end of the program, leading to a reduction 5,000 T of	The National Vehicle Scrappage Program, also known as Retire Your Ride, stopped accepting new participants on March 31, 2011. About 140,000 old high-polluting vehicles of the 1995 model year and earlier were removed from Canadian roads over the life of the program, leading to a

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	smog-forming emissions.	reduction 5,000 tonnes of smog-forming emissions. To help support the widespread implementation of good vehicle-recycling practices, as presented in the code of practice developed for the program, a national forum with participation from industry, stakeholders and provincial and territorial governments on the future of vehicle recycling in Canada was held in November 2011. Since then, a task group was created by the Canadian Council of Ministers of the Environment to consider control measures to support the application of the code of practice industry-wide. The program also supported the design and organization of a website to promote good environmental practices and the dissemination of information to industry and stakeholders. The website, which is now supported by industry, offers an updated version of the code of practice. The program wind-down was completed without major incident and final reports were submitted to EC. EC submitted its final report on the program exit strategy to the Treasury Board Secretariat. The third-party program evaluation was posted on the EC website. See also the Clean Air Agenda Program Vehicle Scrappage in Part 3 for related performance information.
1.1.43 Work with international partners to implement the commitments in the Copenhagen Accord such as mitigation targets and actions; short and long-term financing; mechanisms for technology and reducing emissions from deforestation and forest degradation; adaptation actions; and provisions for transparency and accountability of climate change actions. (EC, NRCan) Alignment with the 2011–2012 PAA: Program 2.1: Weather and Environmental Services for Canadians	Canada will continue to work constructively with international partners through the UNFCCC process and related international fora to implement the Copenhagen Accord and the Cancun Agreement and to complete the negotiations under the UNFCCC for a legally binding post-2012 agreement that is based on the Accord and is fair, effective and comprehensive. Key areas for further work includes developing a new system for measuring, reporting and verifying global greenhouse gas emissions, establishing a global adaptation framework, a new technology mechanism and a new global fund to mobilize both public- and private-sector funds for climate finance. As part of our commitment to provide our fair share of fast-start financing under the Accord, Canada will, subject to approval, contribute new and additional climate change financing for the 2011–2012 fiscal year. This financing will go towards supporting developing countries' efforts to reduce greenhouse gas emissions and adapt to the adverse impacts of climate change, with a focus on three priority areas: adaptation, clean energy, and forests and agriculture. Performance Expectations: For 2011–2012: Implement projects to help the most vulnerable states mitigate and adapt to climate change and to ensure that Canada's results are communicated in a transparent manner. Possible projects for the 2011–2012 fiscal year will be subject to the federal budget and approvals.	Canada is fulfilling its commitment to provide its share of fast-start financing (in line with the standard 4% contribution by Canada to international development finance), namely $1.2 billion in new and additional climate change financing during the fast-start financing period (fiscal years 2010–2011, 2011–2012 and 2012–2013). Of this amount, over $1 billion has already been committed to programs that will support developing countries efforts to address and adapt to climate change. So far, $400 million was issued to delivery partners in fiscal year 2010–2011 and over $394 million in fiscal year 2011–2012. During 2012–2013, Canada will continue to work with its international partners to disburse the remaining funds during the final year of fast-start financing EC's role in fulfilling the fast-start commitment is critical. Not only does the Minister of the Environment lead the government's work in identifying projects to be supported, but EC itself delivers programming in line with its mandate. In 2011–2012, EC provided a total of $3.55 million through 6

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		agreements in support of the implementation of the government's commitment to financing for developing countries under the Copenhagen Accord for • the mitigation of greenhouse gases (GHGs) and short-lived climate pollutants (SLCPs) through bilateral channels and multilateral organizations representing Latin America and African countries • adaptation of public infrastructure in Honduras • capacity building delivered through the UNFCCC Secretariat for GHG measurement and adaptation planning in developing countries, including the most vulnerable The implementation of these projects will continue in fiscal year 2012–2013. Canada has produced transparent reporting on the delivery of financing in support of the Copenhagen Accord, which can be found on www.climatechange.gc.ca. See also the Clean Air Agenda Program International Climate Change Participation / Negotiations in Part 3 for related performance information.
1.1.46 Support the development of recommendations on possible actions to mitigate short-lived climate forcers (SLCFs) including black carbon emissions through participation on the Arctic Council Task Force on Black Carbon, and the UN ECE- Long Range Transboundary Air Pollutants (LRTAP) Ad Hoc Expert Group on Black Carbon. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	The activity will be implemented through Canadian participation in the February 2011 meeting of the Arctic Council Task Force on Short-Lived Climate Forcers to finalize the Task Force Report, and through the provision of input on recommendations on possible actions to mitigate SLCFs, and any additional required input on black carbon emissions in Canada. As a result of the work of the LRTAP Ad Hoc Expert Group, black carbon is to be added to the air pollutants addressed under the Gothenburg Protocol to LRTAP Convention. See the Arctic Council website and the website of the Ad Hoc Expert Group on Black Carbon for more information. Though SLCFs are not GHGs, this activity contributes indirectly to *Target 1.1: Climate Change Mitigation – reduce Canada's national GHG reduction target 17% below 2005 levels by 2020* by contributing to the development of strategies to address climate change. Performance Expectations: Submission of a final Arctic Council Task Force report with recommendations on possible actions to mitigate short-lived climate forcers to Ministers in April 2011.	The Arctic Council Taskforce on Short-Lived Climate Forcers (SLCFs), in which Canada actively participates, published a summary of recommendations for policy-makers, as well as a technical report on possible actions to mitigate black carbon emissions in spring 2011. These were presented to, and endorsed by the Arctic Council Ministers in May 2011. Countries have been urged to implement the measures immediately. Canada constructively participated in negotiations to revise the Gothenburg Protocol under the Convention on Long-Range Transboundary Air Pollution to include black carbon as a component of particulate matter. The revised Protocol was finalized and adopted on May 4, 2012. It is the first international treaty to include black carbon. Under this program, work was also undertaken to support Canada's participation in the new Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants (SLCPs) launched in February 2012, of which Canada was a founding member. A domestic strategy on SLCPs is being developed. The first phase assesses the current state of SLCPs mitigation in Canada and potential barriers to it, and opportunities for

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		further action. See also the Clean Air Agenda Program Greenhouse Gas Policy in Part 3 for related performance information.
1.1.47 Lead Government of Canada participation in international negotiations on climate change, maintain National Registry and coordinate payment of the International Transaction Log dues. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	EC will continue to lead Canada's constructive participation in the international negotiations process under the UN and in various complementary fora outside of the UN, such as the United States-led Major Economies Forum (MEF), as well as continue to manage and maintain the secretariat that supports the Chief Negotiator and Ambassador for Climate Change. Performance Expectations: Canada participates constructively in UN negotiation sessions, as well as in meetings of complementary fora. The secretariat housed in EC effectively manages and coordinates a whole-of-government approach to support the Chief Negotiator and Ambassador for Climate Change.	EC's secretariat managed the whole-of-government approach, including the United Nations Framework Convention on Climate Change (UNFCCC) and Major Economies Forum (MEF), and supported senior officials at the G8,G20, and Climate Change Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC). This approach resulted in Canada's successful influencing of the international climate change negotiation outcomes on a number of key decisions that were consistent with Canada's objectives: • Establishment of the Durban Platform for Enhanced Action – a process to produce a single new comprehensive climate change agreement that will include commitments for all major emitters • Agreement to launch the Green Climate Fund • Establishment of the Adaptation Committee • Agreement to strengthen rules on transparency and accountability • Agreement to establish a program of work on agriculture
1.1.48.4 Develop and submit a complete and compliant annual national GHG Inventory Report and Common Reporting Format tables to the UN Framework Convention on Climate Change (UNFCCC) Secretariat by April 15 to meet UNFCCC and Kyoto Protocol reporting requirements maintain National Registry and coordinate payment of the International Transaction Log dues. (EC, NRCan) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	A rigorous mandatory reporting of GHG emissions and related information is essential to meet international reporting obligations (UNFCCC and Kyoto), to inform development of realistic and enforceable industrial GHG emission regulations, and to ensure that reduction targets are met. Activities included are the development and maintenance of the National System and National Inventory Report, the development and maintenance of the Greenhouse Gas Reporting Program as one component of the Single Window reporting system, the development of IPCC quantification methodologies, ISO verification standards, participation of experts in UNFCCC reviews, preparation of a GHG *Trends Report*, preparation of the GHG Indicator for *CESI*, and provision of support to domestic program groups involved in regulatory development to support the Regulatory Framework for Air Emissions. As a member of the UNFCCC, Canada must contribute to the International Transaction Log (ITL), which is the mechanism through which all member countries record their carbon credits. Canada's National Registry links with the ITL and is used to submit Canada's carbon credit status each year. The NIR provides a primary source for tracking of progress toward FSDS Target 1.1. Performance Expectations:	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	Canada's Greenhouse Gas National Inventory Report is scheduled to be submitted by April 15, 2011.	The submission to UNFCCC occurred April 11, 2012. See also the Clean Air Agenda Program Data Collection and Reporting for GHGs in Part 3 for related performance information.
1.1.49.2 Support Canada's participation in multilateral organizations outside the United Nations, such as Methane to Markets and Renewable Energy and Energy Efficiency Partnership. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	Subject to approval of renewed funding, EC will lead Canada's participation in international clean technology partnerships, including the Global Methane Initiative (formerly known as Methane to Markets) and the Renewable Energy and Energy Efficiency Partnership. Direct relationship with Target 1.1 Performance Expectations: Canada invests in public-private partnership (P3) projects consistent with the mandate of the international partnerships, and participates in the management and decision making of the international clean technology partnerships. P3 projects will deliver environmental benefits, economic benefits for Canadians and advance the development or deployment of clean technologies.	In 2011–2012, Canada participated in the Global Methane Initiative by (1) investing in small public-private methane reduction feasibility studies; and (2) providing medium- to long-term direction and leadership through participation in the partnership's management committees. Canada has also been working in partnership with the United States Environmental Protection Agency to host the Global Methane Initiative Partnership Expo 2013. The event will take place in Vancouver on March 12–15, 2013.
1.1.50 Asia-Pacific Partnership: Manage Canadian Asia Pacific Partnership-funded projects that promote the development, diffusion and deployment of clean technologies. (EC, NRCan, IC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	In August 2010, the United States decided to end its participation in the Asia-Pacific Partnership (APP). In the meeting held at that time, all Partner countries agreed that, while the APP had achieved considerable success, it would be wound down in early 2011. During 2007–2011, Canada invested in public-private partnership projects in APP partner countries that have delivered environmental benefits, economic benefits for Canadians and advanced the development or deployment of clean technologies. Performance Expectations; As the APP concludes in March 2011, Canada will report on how Canada's APP projects 1) delivered environmental benefits, in particular greenhouse gas emissions reductions; 2) delivered economic benefits to Canadians; and 3) advanced clean technology development and deployment.	Canada's participation in the Asia-Pacific Partnership (APP) on Clean Development and Climate delivered three major outcomes: 1 – Delivery of global environmental benefits The funded demonstration projects generated sustainable global environmental benefits, including GHG and criteria air contaminant (CAC) emissions reductions over the long term, and/or enhanced capacity of recipient countries to mitigate emissions through the transfer of clean technologies. 2 – Delivery of economic benefits to Canadians Canada's participation fostered the development of the Canadian clean technology sector by opening additional markets for Canadian technologies and by developing new trading partnerships with other APP partners. 3 – Acceleration of Clean Technology Research Canada invested in joint development and knowledge-sharing initiatives, which contributed to the acceleration of clean technology uptake in Canada and abroad. For a description and results of each project, please see this website.
1.1.51.1 Work within International Civil Aviation Organization to continue to advance emissions limitations and reductions from	EC provides support to Transport Canada as it formulates Canada's position and participation at the International Civil Aviation Organization (ICAO). As aviation accounted for 8 Mt (1.1%) of GHG emissions in	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
international aviation, including the implementation of the ICAO Programme of Action on International Aviation and Climate Change, while maintaining a high level of safety. (TC, EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	Canada in 2005, this will contribute to reaching the 2020 emissions target. Performance Expectations; EC provides expertise and advice to Transport Canada as needed.	

Theme I: Addressing Climate Change and Air Quality

2. Goal: Air Pollution – Minimize the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems.

2.1 Target: Air Pollutants – Reduce air pollutants in order to maintain or improve air quality across the country and achieve the emission targets which are currently under development in consultations with provinces and stakeholders.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
2.1.1 National Pollutant Release Inventory (NPRI) tracking through the *Canadian Environmental Protection Act, 1999* (CEPA 1999). (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	National Pollutant Release Inventory (NPRI) information will be collected from industrial and other facilities on releases, disposals and transfers for recycling of pollutants of concern by June 1. This information will be used to support the development and status reporting for FSDS indicators on releases of substances of concern. In particular, NPRI data will be used in the development and tracking of any emissions targets developed in consultations with provinces and territories. Performance Expectations: NPRI information will be collected by June 1 and will be published based on the timelines shown below. Preliminary facility-reported information will be published on the NPRI website within 2 months of June 1. Reviewed (quality-controlled) facility-reported information will be published within 6 months of June 1 (December). Comprehensive emissions data (which include facility-reported data and additional area source calculations) will be published within 10 months of June 1 (April). Drawn from existing Performance Measurement Framework (PMF) indicator: Percentage of facilities that report emissions to the National Pollutant Release Inventory and that provide fully compliant reports in their initial response within mandated time frames.	The preliminary facility-reported data were published on September 29, 2012. The reviewed facility-reported data were published on March 28, 2012. The comprehensive emissions data were published on February 15, 2012. Extensions to the reporting deadline were granted to facilities up until end of August 2011 due to technical difficulties encountered with the on-line reporting system. This resulted in delays for releasing data.A total of 96.5% of facilities reported emissions to the National Pollutant Release Inventory (NPRI) and provided compliant reports in their initial responses within mandated time frames.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
2.1.2 Undertake scientific research and reporting in support of regulatory and other programs delivered, including data analysis, inventory development, monitoring, modeling and assessment of the effectiveness of efforts as well as research on options, costs and benefits including economic and social and technology assessments. (EC, NRCan, HC, TC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	Comprehensive air emissions data on sources of key air pollutants in Canada will be published as part of the NPRI by April. Furthermore, data inputs for air quality models will be prepared to support research on options, costs and benefits, including economic, social and technology assessments. This information will be used by decision-makers to develop targets for regulatory action on air pollution. This information will be used to support the development and status reporting for FSDS indicators on releases of substances of concern. Timely, authoritative atmospheric science, science advice and assessment, including science, advice and assessment of the effectiveness of measures aimed at addressing air pollution, is delivered to support federal air pollutant regulatory decision making and program delivery. Performance Expectations: Publication of comprehensive air emissions data on sources of key air pollutants in Canada, as part of NPRI, by April 2011. Satisfaction of government decision-makers with the timeliness, credibility and relevance of technology advice and assessment as measured through user group evaluation questionnaires and consultations. PMF Target: 80% by 2014.	Comprehensive air emissions data were published on November 28, 2011. Delays for releasing data were due to technical system difficulties in June 2011. EC researchers were part of the team of international scientists who provided the first scientific observations that chemical ozone loss over the Arctic in spring 2011 far exceeded any previously observed, resulting in below-normal ozone levels in the upper atmosphere in the summer of 2011 and higher UV levels. Scientific testing was undertaken in collaboration with the United States Environmental Protection Agency to inform the development and verification of a computer model for the development of new GHG regulations for on-road heavy-duty vehicles. Air quality national monitoring data, analyses, maps and modelling expertise contributed to the setting of the 2015 interim threshold levels and the 2020 Canadian Ambient Air Quality Standards for ozone and $PM_{2.5}$ in support of the Air Quality Management System. The Department developed standard methodology to be used by industry to quantify fine particulate matter emitted from a variety of stationary sources. This sampling methodology is being considered to form part of the Base-level Industrial Emissions Requirements (BLIERs). Continued measurements on Canada's west coast have improved our understanding of the effect on regional air quality of trans-Pacific transport of pollutants from Asia, Europe and elsewhere, specifically in the springtime. Results also show the important influence of North American forest fires during the summer. The information from these measurements is informing air quality and climate models to increase their predictive capacity. In February 2012, the Government of Canada and the Government of Alberta announced the Joint Canada–Alberta Implementation Plan for Oil Sands Monitoring that reflects the Integrated Oil Sands Environment Monitoring Plan released by EC in July 2011. The air quality component of the integrated water, air and biodiversity monitoring plan for the oil sands region is focused on the monitoring needs required to understand air pollutant emissions, their chemical transformation in the atmosphere, long-range transport and subsequent deposition to the local and regional environment. See also the Clean Air Agenda Program Oil Sands Science in

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		Part 3 for related performance information.
2.1.3 Communicate outdoor air pollution health risks to Canadians through the Air Quality Health Index: Continue development of the Air Quality Health Index (AQHI) and support implementation into additional census metropolitan areas (CMAs). The AQHI provides current and forecast air quality information and advice on health risks in order to assist Canadians in making decisions on how to reduce their level of exposure. (HC, EC) Alignment with the 2011–2012 PAA: Program 2.1: Weather and Environmental Services for Canadians	The Air Quality Health Index (AQHI) is available through EC's Weatheroffice website, AQHI website and media partners such as the Weather Network. The strategy to focus on CMAs remains, as does the flexibility to accommodate requirements of those provinces (and CMAs) that have not implemented the AQHI. Performance Expectations: Drawn from existing PMF indicator: Percentages of • the targeted sensitive population within selected regions receiving information on the Air Quality Health Index (AQHI) who report that they recall seeing or hearing AQHI information.; and • the general population within selected regions receiving information on the Air Quality Health Index (AQHI) who report that they recall seeing or hearing AQHI information.	The AQHI is now available in all 10 provinces in 64 locations, including 9 communities in Alberta. Approximately 60% of Canadians now have access to the Air Quality Health Index (AQHI) on a daily basis. Plans for expanding AQHI implementation into Yukon and the Northwest Territories are in progress. Effective integration of the AQHI into the Meteorological Service of Canada (MSC) dissemination systems and federal and partner social media technologies continues to improve the reach of the AQHI to Canadians. Forecasting capacity was improved by delivering a new version of the air quality forecast model with improved resolution (10 km). See also the Clean Air Agenda Program Data Collection and Reporting for Atmospheric Pollutants in Part 3 for related performance information.
2.1.4 Develop and provide atmospheric science assessments related to air quality. (EC) Alignment with the 2011–2012 PAA: Program 3.2: Climate Change and Clean Air	Timely, authoritative atmospheric science advice and assessment is delivered to support federal air pollutant regulatory decision making and program delivery. Performance Expectations: There will be a qualitative assessment of the satisfaction of government decision-makers with the timeliness, credibility and relevance of atmospheric science advice and assessment related to air quality.	
2.1.5 Continue to implement air pollutant emission regulations for various classes of on-road and off-road compression-ignition engines and small spark-ignition engines and fuels. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	Implementation involves an ongoing program to ensure compliance with the various vehicle and engine air pollutant emission regulations, including the administration of reporting requirements established under the regulations (e.g. end of model-year reporting for certain classes of on-road vehicles, defect reporting); an emissions-testing verification program; and provision of technical guidance to Canadian companies regarding compliance requirements. Visit this website for more information. Performance Expectations: The various classes of vehicles and engines that are covered by current regulations are tested for compliance with emissions standards: at a minimum, 6 light-duty on-road vehicles (e.g. cars and light trucks), 8 in-use vehicles, 7 motorcycles and scooters, and 35 small spark-ignition engines (e.g. lawnmowers, chainsaws).	Performance expectations for compliance testing of vehicles and engines were met. A total of 122 vehicles and engines across all classes were tested. See also the Clean Air Agenda Program Transportation Regulations and Compliance Promotion and Enforcement in Part 3 for related performance information.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
2.1.6 Target regulations on volatile organic compounds (VOC) in some consumer and commercial products, and air pollutants for most transportation (on-road vehicles and engines, off-road compression ignition engines and off-road small-spark ignition engines), including implementation of the regulatory and control measures. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	Information on the implementation and compliance promotion of *Volatile Organic Compound (VOC) Concentration Limits for Automotive Refinishing Products Regulations* and *Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations*, which were published in the *Canada Gazette*, Part II, in 2009, is available on the CEPA Environmental Registry. For regulation of air pollutants from most land transportation (excluding locomotives), see 2.1.5 above. EC regulates benzene, a VOC, in gasoline, limiting the concentration to 1.5% per volume (for more information, visit this website. Performance Expectations: For regulation of air pollutants from most land transportation (excluding locomotives), see 2.1.5 above. Conduct compliance promotion activities to increase stakeholder awareness of both the *Volatile Organic Compound (VOC) Concentration Limits for Automotive Refinishing Products Regulations* and the *Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations.*	EC published draft regulations in the *Canada Gazette*, Part I, in October 2011 amending the *On-Road Vehicle and Engine Emissions Regulations* (On-Board Diagnostic Systems for Heavy-Duty Engines) in alignment with current U.S EPA regulations. EC published the final *Regulations Amending the Off-Road Compression-Ignition Engine Emissions Regulations* in the *Canada Gazette*, Part II, in December 2011. These amendments brought our regulation into alignment with the United States Tier 4 regulations. EC published minor technical amendments to the *Off-Road Small Spark-Ignition Engine Emission Regulations*. EC continued to administer the full suite of existing vehicle, engine and fuels regulations. In 2011–2012, compliance promotion activities focused on delivering information on both regulations through booths at trade shows, presentations, mailouts and use of the Web. See also the Clean Air Agenda Program Transportation Regulations and Compliance Promotion and Enforcement in Part 3 for related performance information.
2.1.7 Continue cooperation with the United States on sustainable transportation and fuel quality. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	Canada and the United States have agreed to work together under the Canada–United States Air Quality Agreement to reduce transportation emissions by • harmonizing national vehicle and engine standards for emissions of smog-forming pollutants; • optimizing vehicle and engine emissions-testing activities, taking advantage of unique testing capabilities, and sharing emissions test data where appropriate to facilitate regulatory administration activities in both countries; and • sharing information and discussing strategies and approaches on greenhouse gas emissions standards for motor vehicles. Performance Expectations: Canada will continue aligning its regulations with those of the U.S. for vehicle, engines and fuels. For 2011–12, the following regulations will be aligned with U.S. EPA regulations: Off-road compression-ignition engine emission regulations; On-road vehicle and engine emissions regulations, requirement for an on-board diagnostics system for heavy-duty engines; Implementation of marine spark-ignition engine and off-road	EC published the final *Regulations Amending the Off-Road Compression-Ignition Engine Emissions Regulations* in the *Canada Gazette*, Part II, inDecember 2011. These amendments brought our regulation into alignment with the U.S Tier 4 regulations. EC published draft regulations in the *Canada Gazette*, Part I, in October, 2011 amending the *On-Road Vehicle and Engine Emissions Regulations* (On-Board Diagnostic Systems for

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	recreational vehicles (MERV) emissions regulations; Renewable fuels regulations, requiring 2% renewable content in diesel and heating oil; and Joint compliance testing of vehicles and engines with the U.S. EPA, such as testing under cold weather conditions.	Heavy-Duty Engines) in alignment with current U.S EPA regulations. Implementation of the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations* has commenced. These regulations come into force for the 2012 model years. Regulations for renewable fuels, mandating an average 5% renewable fuel content in gasoline, were implemented and final regulations were published in the *Canada Gazette*, Part II (summer 2011) amending the *Renewable Fuels Regulations* to include the requirement of 2% renewable content in diesel fuel and heating oil. EC has developed a work plan with the United States Environmental Protection Agency for the purpose of coordinating compliance testing. See also Clean Air Agenda Program Transportation Regulations in Part 3 for related performance information.
2.1.8 Continue to work collaboratively with provinces and territories to develop and implement a coherent approach to managing air quality, including national ambient air quality standards and national industrial emissions requirements for key pollutants. (EC, HC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	The activity will be implemented through the development and implementation of a new air quality management system in collaboration with the provinces, territories and Health Canada. The system will require air pollutant emission reductions from industrial sources and include the development of Canadian ambient air quality standards for particulate matter and ozone. Air quality management and reporting will be done through the establishment of local air zones and regional airsheds. This activity contributes to achieving Target 2.1 by establishing industrial emission requirements that will set a base level of environmental performance for the major industrial sectors and by setting Canadian ambient air quality standards for particulate matter and ozone. The status and the improvements of the air quality will be monitored through regular reporting for the local air zones and the regional airsheds in the future. Performance Expectations: Finalization of industrial emission requirements for up to 13 industrial sectors and 3 cross-sectoral equipment types. Finalization of ambient air quality standards for particulate matter and ozone and associated triggers. Delineation of 6 regional airsheds. Development of a guidance document for local air zones delineation.	EC worked intensively with other federal departments, provinces, industry and non-governmental organizations to develop and finalize key elements of a national air quality management system that includes the Canadian Ambient Air Quality Standards (CAAQS) for ground-level ozone and $PM_{2.5}$ to guide air quality improvements; the delineation of regional air sheds to address transboundary air pollution; monitoring and reporting requirements to report on progress; and national industrial emissions requirements for key air pollutants. The complete system is expected to be approved by the Canadian Council of Ministers of the Environment in fall 2012. The national industrial emissions requirements for key air pollutants for 13 sectors and 4 equipment types were developed and the majority finalized. The new Canadian Ambient Air Quality Standards (CAAQS) (also referred to as management levels) for particulate matter ($PM_{2.5}$) and ozone and associated triggers were finalized. Six regional air sheds that cross provincial-territorial and international boundaries were delineated. Guidance documents on achievement determination of the CAAQS, air zone management, and air zone delineation were developed and finalized. See also Clean Air Agenda Program Atmospheric Pollutants

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		Policy in Part 3 for related performance information.
2.1.9 Work through the World Forum for the Harmonization of Vehicle Regulation to develop harmonized global technical regulations for vehicles and engines to ensure that stringent emission standards will be applied around the world. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	EC will coordinate with Transport Canada and brief other participants. EC will participate in related working groups such as the Working Party on Pollution and Energy (GRPE). For more information, visit this website. As light- and heavy-duty vehicles accounted for 3940 KT of carbon monoxide in Canada in 2008, this will significantly contribute to the reduction of air pollutants. Performance Expectations: EC will participate in meetings of the World Forum for the Harmonization of Vehicle Regulations as appropriate in order to assist in the development of stringent emission standards worldwide. Global Technical Regulations (GTRs) have been adopted, such as emissions limits and test procedures for some classes of vehicles and engines. EC will work to implement its international regulatory obligations as part of our regulatory agenda.	Continued to actively participate in the development of the global technical regulations under the World Forum for Harmonization of Vehicle Regulations (WP.29). As part of our contribution, we are an active member of a working group that is developing a globally harmonized test procedure to test hybrid heavy-duty vehicles.
2.1.10 Develop new regulations to reduce emissions of air pollutants from marine engines and recreational vehicles, on- and off-road diesel engines and off-road large spark ignition engines. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	New regulations for emissions from marine engines and recreational vehicles (MERV), off-road diesel engines, and off-road large-spark engines was released in 2010 and is aligned with United States standards. Regulations covering on-road diesel engines were published in 2003 (visit this website for more information). As transportation sources are responsible for 56% of air contaminant emissions excluding particulates, this will help improve air quality across the country. Performance Expectations: Final MERV regulations will be published in the *Canada Gazette* in 2011. Final on-road diesel engines regulations will be published in the *Canada Gazette* in 2012. EC will begin developing large spark-ignition engines regulations.	Implementation of the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations* has commenced. These regulations will come into force for the 2012 model years. Published draft regulations in the *Canada Gazette*, Part 1, in October 2011 amending the *On-Road Vehicle and Engine Emissions Regulations (On-Board Diagnostic Systems for Heavy-Duty Engines)* in alignment with current U.S EPA regulations. Preliminary development of regulations for large spark-ignition engines was initiated. Minor amendments to the *Small Spark Ignition Engine Regulations* were published in Part I of the *Canada Gazette* in April 2011. See also Clean Air Agenda Program Transportation Regulations in Part 3 for related performance information.
2.1.13 Continue to work with the United States and France to implement a designated Emission Control Area for North American coastal areas, under the auspices of the IMO, by 2012. (TC, EC) Alignment with the 2011–2012	Within the North American Emission Control Area (ECA), which covers the majority of waters surrounding Canada and the United States and the French islands of Saint Pierre and Miquelon, ships must significantly reduce their air pollutant emissions of sulphur oxides (SO_x), particulate matter (PM), and nitrogen oxides (NO_x). Canada's health and environment will greatly benefit from the emissions reductions the ECA standards will provide. EC with Transport Canada (TC) is developing regulations to implement Canada's portion of the ECA. EC will revise its sulphur standards in the Sulphur *in Diesel Fuel Regulations* under the *Canadian Environmental Protection Act, 1999* to	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
PAA Program 3.2: Climate Change and Clean Air	implement the ECA in accordance with the IMO requirement and in alignment with U.S. regulatory actions. For more information, visit this website. As marine transportation accounted for 81 KT of SO_x in Canada in 2008, this will significantly contribute to the reduction of air pollutants. Performance Expectations: The ECA standards will enter into effect on August 1, 2012.	EC supported Transport Canada's work to implement the North American Emission Control Area. EC published draft CEPA 1999 regulations in the *Canada Gazette*, Part I, in December 2011 amending the *Sulphur in Diesel Fuel Regulations* in order to comply with Transport Canada's planned regulations to implement the North American Emission Control Area. See also the Clean Air Agenda Program Marine Sector Regulatory Initiative in Part 3 for related performance information.
2.1.15 Continue to support a Memorandum of Understanding (MOU) with the Railway Association of Canada that ensures the rail industry continues to improve emission performance during the 2006–2010 period. (EC, TC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	The MOU with the Railway Association of Canada expires in December 2010. Air pollutant regulations being developed under the *Railway Safety Act* by Transport Canada are expected to take effect in 2011. Visit this website for more information. In 2008, rail transportation accounted for 9% of transportation nitrogen oxide air pollutant emissions. Transport Canada's and EC's activities in this area will contribute to the reduction of air pollutants. Performance Expectations: Transport Canada is the lead regulator for rail emissions. EC will support Transport Canada as appropriate.	EC supported Transport Canada on the Locomotive Emissions Monitoring Report and on negotiations on the next Memorandum of Understanding with the Railway Association of Canada.
2.1.22.2 Programs focused on supplying financial aid and developing capacity to reduce GHGs and smog-forming pollutants through adoption of emission-reducing technologies and practices: Implement a national Vehicle Scrappage Program to encourage Canadians to retire their old high-polluting vehicles (models 1995 or earlier) and to choose more sustainable transportation options. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	The National Vehicle Scrappage Program offers rewards—such as free transit passes, car-sharing memberships, $300 cash and rebates on the purchase of cleaner vehicles—to Canadians who retire their older, highly polluting personal vehicles. The program is mainly delivered though Summerhill Impact, a not-for-profit organization with a network of local agents that deliver the program in each province and develop partnerships with incentive providers, vehicle recyclers, and call centres. For further information, please visit this website. The National Vehicle Scrappage Program primarily aims to reduce air pollutants by removing older vehicles from the road. Its secondary goals are to reduce greenhouse gas emissions by promoting sustainable transportation alternatives, and to prevent the release of harmful substances to the environment by ensuring responsible vehicle recycling. The program directly contributes to the achievement of *Target 2.1: Air Pollutants*. Performance Expectations: The program ends on March 31, 2011, and will wrap up its activities during the first four months of 2011–2012. A total of around 140,000 vehicles will have been retired by the end of the program, leading to a reduction 5,000 tonnes of smog-forming emissions.	The National Vehicle Scrappage Program, also known as Retire Your Ride, stopped accepting new participants on March 31, 2011. About 140,000 old high-polluting vehicles of the 1995 model year and earlier were removed from Canadian roads over the life of the program, leading to a

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		reduction 5,000 tonnes of smog-forming emissions. To help support the widespread implementation of good vehicle-recycling practices, as presented in the code of practice developed for the program, a national forum with participation from industry, stakeholders and provincial and territorial governments on the future of vehicle-recycling in Canada was held in November 2011. Since then, a task group has been created by the Canadian Council of Ministers of the Environment to consider control measures to support the application of the code of practice industry-wide. The program also supported the design and organization of a website to promote good environmental practices and the dissemination of information to industry and stakeholders. The website, which is now supported by industry, offers an updated version of the code of practice. The program wind-down was completed without major incident and final reports were submitted to EC. EC submitted its final report on the program exit strategy to the Treasury Board Secretariat. The third-party program evaluation was posted on the EC website. For program evaluation, see this website. For third-party vehicle recycling, see the Canadian Auto Recyclers Environmental Code website. See also the Clean Air Agenda Program Vehicle Scrappage in Part 3 for related performance information.
2.1.31 Work with the U.S to reduce transboundary emissions under the Canada–U.S. Air Quality Agreement. (EC, HC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	This activity will be implemented through continued work under the Canada–United States Air Quality Agreement (1991) and its three Annexes committing to work on 1) acid rain; 2) scientific and technical activities and economic research; and 3) ozone. Consideration is being given to adding a fourth annex covering particulate matter (PM). The Canada–United States Air Quality Committee is responsible for administering work under the Agreement. It publishes a joint progress report every two years. In addition, EC will continue to conduct coordinated science activities under Sub-committee 2 of the Canada–United States Air Quality Agreement. This activity contributes to achieving *Target 2.1: Reducing Air Pollutants* by contributing to the reduction of transboundary air pollution. Performance Expectations: Meeting regular commitments under the Canada–United States Air Quality Agreement that focus on reducing emissions of acid rain and smog forming pollutants. Participating in the annual meetings of the Canada–U.S. Air Quality Committee, and making progress in advancing discussions on a particulate matter annex to the Air Quality Agreement. Participating in annual meetings of the Air Quality Committee and in further discussions or negotiations, where appropriate, to support ongoing bilateral collaboration on the reduction of transboundary air pollution. Conducting a qualitative assessment of the satisfaction of government decision-makers with the timeliness, credibility and relevance of atmospheric science advice and assessment related to air quality.	Canada continues to cooperate with the United States to address transboundary air pollution through the Canada–United States Air Quality Agreement (1991). The Agreement addresses the transboundary movement of air pollutants that cause acid rain and smog. Both countries are in full compliance with their respective commitments and emissions of these pollutants have decreased dramatically on both sides of the border. After more than 20 years of cooperation, emissions that cause acid rain have been reduced by more than 50% and emissions causing smog by 40% in the area covered under this agreement. Canada participated in the annual meeting of the Canada–United States Air quality Committee in November 2011 to discuss routine items of compliance under the Agreement and air quality actions in both countries that affect transboundary air pollution. Under the newly formed Canada–United States Regulatory Cooperation Council, Canada and the United States have agreed to consider the expansion of the Canada–United States

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		Air Quality Agreement to address transboundary particulate matter. See also the Clean Air Agenda Program Atmospheric Pollutants Policy in Part 3 for related performance information.
2.1.32 Submit air pollutant inventories to meet international reporting requirements using National Pollutant Release Inventory (NPRI) to the UN Economic Commission for Europe to meet the reporting obligations of the Protocols ratified under the Convention on Long Range Transboundary Air Pollution). (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	Canada's domestic and international obligations (UNECE, Canada–United States Air Quality Agreement, etc.) will be met via the collection and submission of data on emissions on key air pollutants from industrial facilities and/or comprehensive emissions data (which includes facility-reported data and additional area source calculations). The NPRI data is a key mechanism for allowing Canada to track progress against the various reporting obligations and demonstrate compliance with stated obligations. Performance Expectations: The timelines for submission of data to meet the various reporting obligations varies. A key deadline is the annual deadline of February 15 for submitting emissions data for key pollutants to the UNECE. The collection of this data is done through the NPRI process.	Emissions data on key pollutants were submitted to the United Nations Economic Commission for Europe (UNECE) on February 15, 2012. See also the Clean Air Agenda Program Data Collection and Reporting for Atmospheric Pollutants in Part 3 for related performance information.
2.1.35 Participate in negotiations for revisions of the Gothenburg Protocol to Reduce Ozone, Acidification and Eutrophication under the UNECE Convention on Long-range Transboundary Air Pollution. (EC, HC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	This activity will be implemented through participation in the negotiations to amend the multi-pollutant, multi-effect Gothenburg Protocol under LRTAP. This includes attending the negotiating sessions, consulting with other governmental departments and other stakeholders on Canada's positions, and developing Canada's positions and commitments under the amended Protocol. See this website for more information. This activity contributes to achieving *Target 2.1: Reducing Air Pollutants* by setting emission limits for four pollutants: sulphur oxides (SO_x), nitrogen oxides (NO_x), volatile organic compounds (VOC) and ammonia. Furthermore, negotiations have been launched to revise and update the Protocol and establish new 2020 commitments. Performance Expectations: Advancing Canada's positions on amendments to the Gothenburg Protocol under UNECE–CLRTAP by participating on the 48th and 49th Working Group on Strategies and Review, the 29th meeting of the Executive Body, and any other necessary expert or working groups, while preserving the flexibility to permit Canada to ratify the Protocol in the future.	Canada participated constructively in negotiations to revise the Gothenburg Protocol under the United Nations Convention on Long-Range Transboundary Air Pollution (CLRTAP). The revised Protocol was adopted May 4, 2012. The negotiation to include black carbon as a component of particulate matter was entirely consistent with Canada's interests and Canadian positions were well captured. See also the Clean Air Agenda Program Atmospheric Pollutants Policy and Greenhouse Gas Policy in Part 3 for related performance information.
2.1.36 Develop Extended Producer Responsibility Regulations for managing end-of-life ozone depleting substances and their halocarbon alternatives. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change	The proposed extended producer responsibility regulations would establish stewardship programs, including collection, storage, recycling and destruction measures for end-of-life ozone-depleting substances and HFCs used in refrigeration and cooling sectors. Consultations will further inform the development of the proposed regulations. Performance Expectations: Proposed regulations are expected to be published in the	An industry-wide consultation meeting was held in October 2011 to discuss moving forward with a Pollution Prevention

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
and Clean Air	*Canada Gazette*, Part I, in 2011.	Planning Notice rather than a regulation, as it would provide more flexibility to industry.
2.1.37 Continue development of a North American proposal to phase-down HFCs under the Montreal Protocol and develop complimentary domestic regulations. (EC) Alignment with the 2011–2012 PAA Program 3.2: Climate Change and Clean Air	HFCs are very potent greenhouses gases (GHG), which were initially introduced as a replacement for certain ozone-depleting substances. In collaboration with the United States and Mexico, Canada introduced a revised North American Proposal in April 2010 to add HFCs to the Montreal Protocol. The proposal would establish targets to reduce HFC consumption and production for both developing and developed countries. This is an approach that has a track record of success in eliminating similar substances used in the same sectors as HFCs. It is expected that this approach would contribute to preventing significant emissions, thus minimizing negative impacts on the climate. This proposal was considered at the meeting of the Open-ended Working Group to the Parties to the Montreal Protocol in June 2010 and at the Meeting of the Parties (MOP) in November 2010. It is estimated that the cumulative benefits of the HFC phasedown amounts to reductions of 3100 million metric tonnes of carbon dioxide (MMT of CO_2 equivalent) through 2020, and around 88,000 MMT of CO_2 equivalent through 2050. Performance Expectations: Canada, in collaboration with the United States and Mexico, will further refine their proposal in 2011. Canada will continue to participate in negotiation meetings with our partners, the United States and Mexico. EC will participate in outreach activities to promote the amendment to the Montreal Protocol. Decision(s) and/or declarations adopted at relevant international fora contribute to advancing the objectives of the proposed amendment.	In 2011–2012, Canada worked with the United States and Mexico to build further support for the North American proposal to phase-down hydrofluorocarbons (HFCs) under the Montreal Protocol, in line with its objective to pursue an aligned climate change approach. The North American proposal will be further discussed under the Montreal Protocol in 2012.
2.1.38 Deliver compliance promotion activities for key regulatory initiatives. (EC) Alignment with the 2011–2012 PAA Program 3.3: Compliance Promotion and Enforcement – Pollution	Compliance promotion relates to activities that are undertaken to increase the awareness and the understanding of new risk management instruments developed under the *Canadian Environmental Protection Act, 1999* (CEPA 1999). Through these activities, information is provided regarding compliance requirements, the benefits of complying with the law, and the consequences of non-compliance. The approach to compliance promotion is collaborative and coordinated across the Department's programs and regions and with the Enforcement Branch of EC. It is achieved using various tools and approaches such as website postings, letters and emails, brochures, site visits, responses to inquiries and information sessions. Performance Expectations: In collaboration with enforcement and risk management, an overarching compliance strategy for risk management instruments related to air pollutants will be developed prior to publication in the *Canada Gazette*, Part II, of the first instrument. At the same time, compliance promotion plan(s), for sectors affected by the instruments related to air pollutants will be initiated.	Two overarching compliance promotion strategies were developed: one for all fuel regulations and one for vehicles and engines regulations. Individual strategies were initiated for other air pollutant regulations, including the following proposed regulations: • Reduction of Carbon Dioxide Emissions from Coal-Fired Generation of Electricity Regulations • Heavy-duty Vehicle and Engine Greenhouse Gas

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		Emission Regulations • Regulations Amending the On-Road Vehicle and Engine Emission Regulations (On-Board Diagnostic Systems for Heavy-Duty Engines and Other Amendments) (part of the overarching strategy for vehicle and engine) Compliance promotion activities were conducted for the following regulations: • the Renewable Fuels Regulations • the Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations • the Off-Road Compression-Ignition Engine Emission Regulations. See also the Clean Air Agenda Program Compliance Promotion and Enforcement in Part 3 for related performance information.

Theme I: Addressing Climate Change and Air Quality

2. Goal: Air Pollution – Minimize the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems.

2.3 Target: Chemicals Management – Reduce risks to Canadians and impacts on the environment posed by harmful substances as a result of decreased environmental concentrations and human exposure to such substances.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
2.3.1 Federal custodians plan and undertake assessment and remediation/risk management activities at contaminated sites for which they are responsible in order to reduce human health and ecological risks at higher priority sites. (EC) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	The Federal Contaminated Sites Action Plan (FCSAP) is a cost-shared program that helps federal custodians address contaminated sites for which they are responsible. The primary objective of this program is to address the risks that these sites pose to human health and the environment and to reduce the associated financial liability. The program has the complementary objectives of supporting other socio-economic outcomes, such as training and employment of Canadians and promotion of innovative technologies. EC's responsibilities include providing expert advice to other federal custodians on the issue of ecological risk reduction. After a site is assessed and the need to address the contamination confirmed, a remediation or risk management plan is used to explore the various alternatives and identify the preferred option to reduce the risk to human health and the environment. The chosen remediation or risk management method is designed to address the unique conditions of the site. Common remediation activities involve reducing exposure to contaminants by removing, destroying or containing them. By assessing sites suspected of being contaminated, the federal government is able to more accurately estimate	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	human health and environmental risk. Remediation of contaminated sites is designed to reduce human health and ecological risks due to contaminants through the cleanup and risk management of sites. Performance Expectations: Performance indicators are being developed for this implementation strategy and will be available following the finalization of the Performance Management Strategy for the renewed program. Targets will be set following the 2011 federal budget and reporting will begin in 2011–2012.	Input toward this implementation strategy under Goal 2 – Air Pollution, will not continue and EC will only provide input under Goal 3 – Water Quality, because there is a more direct link to contaminated sites activities. For example, in 2008–2009, the type of contaminated media assessed as needing remediating or risk managing at sites was only 3% for air, but 37% for groundwater and 20% for surface water.
2.3.2 Guidance and program policies developed by the program secretariat and the expert support departments are used by federal custodians in the program implementation activities. (EC) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	EC will sustain the capability to review site classification to ensure funding is directed to the highest-risk sites, and to manage sites with a focus on reducing the risk to human health and the environment. Expert advice ensures that custodians adopt a scientifically credible and consistent approach to the assessment of human health and ecological risk across the program. A sustainability framework is currently being developed to help custodians integrate sustainable decision making into the management of contaminated sites. Performance Expectations: Performance indicators are being developed for this implementation strategy and will be available following the finalization of the Performance Management Strategy for the renewed program. Targets will be set following the 2011 Federal Budget and reporting will begin in 2011–2012.	Input toward this implementation strategy under Goal 2 – Air Pollution will not continue and EC will only provide input under Goal 3 – Water Quality because there is a more direct link to contaminated sites activities. For example, in 2008–2009, the type of contaminated media assessed as needing remediating or risk managing at sites was only 3% for air, but 37% for groundwater and 20% for surface water.
2.3.3 In 2010–11, site assessments will be undertaken on an estimated 1500 projects by 15 federal custodians in total while an estimated 500 remediation/risk management projects will be implemented - by 17 custodians in total. (EC) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	This implementation strategy has been completed and will be reported in the 2010–2011 Departmental Performance Report. All future work with federal contaminated sites is outlined in the Federal Contaminated Sites Action Plan.	The implementation strategy has been completed.
2.3.4 Assess 100% of existing commercial substances as identified under the Chemicals Management Plan for risks to human health and/or the environment (100% of total of 4300 by 2020). (EC, HC) Alignment with the 2011–2012 PAA Program 3.1: Substances and	The Government of Canada is committed to addressing all of the substances that have been identified as being of priority Under CEPA 1999, EC and Health Canada have identified priorities though the categorization of all substances in commerce, as included on the Domestic Substances List. The assessment and management of substances is addressed through a range of activities best suited to the level of priority, nature and use of the substances, and types of risks they may pose to Canadians or their environment. For example, substances of highest priority have been addressed through the Challenge initiative, leading to rapid action on substances of greatest concern. Substances of likely low risk have been subject to a rapid screening process to provide for regulatory certainty and appropriate channeling of	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Waste Management	government and stakeholder resources. Sectoral-based approaches are used for substances relevant to specific industry sectors such as the Petroleum Sector Stream Approach. New initiatives are now underway to concurrently address large groups of similar substances. To support assessment and management activities, the strategy further involves research and monitoring activities, including updating information on the commercial status of these substances. There is also international collaboration relating to data sharing and shared development of assessment and management approaches. Depending on the use, release and physical nature of the substance, there could atmospheric considerations that are relevant to air quality. Priority setting, assessment, and related research and monitoring identifies substances of concern and the nature of risks that they pose to Canadians and their environment, allowing risk management to focus on implementing appropriate measures for the reduction of those risks. As part of this priority-setting process, issues related to air quality can be identified. Performance Expectations: 28% (close to 1200 substances) of existing commercial substances under the Chemicals Management Plan assessed for risk to human health and/or the environment. Implementation of risk management measures for those substances identified as being of concern to human health or the environment. Identification of the next round of assessment and associated timelines, and initiation of assessments.	By the end of 2011–2012, 1,092 (approximately 25% of all substances under the CMP) of the 1200 substances had been addressed. Substances were considered to be addressed once a formal decision was made that, pending new information, no further assessment work was required on a substance of concern. Of the 1,092 substances addressed: • 144 were determined or proposed to require risk management actions • 283 were determined or proposed to not currently pose a risk but would be subject to the significant new activity provisions • 665 were determined or proposed to not pose a risk and require no further action
2.3.5 Assess 100% of new substances, for which EC has been notified by industry of their intended manufacture or import, to determine if they are suspected of being toxic within the timelines in the regulation or established services standards. (EC, HC) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	Any person who intends to import or manufacture a new substance in Canada must submit a notification to EC prior to importing or manufacturing the substance. Once the notification is received, EC and Health Canada are responsible for assessingthe substance within the prescribed regulatory timeline to determine whether the proposed uses of the substance could lead to its posing any risk to human health or the environment. One of the considerations when doing risk assessments can be the impacts on air quality. Actions taken under the New Substances program ensure that new substances are not allowed onto the market if this would result in risks to the environment or human health. Approximately 500 new substance notifications are processed on an annual basis. Of these 500 assessments, approximately 25 Significant New Activity notices and 10 Ministerial Conditions are issued annually to restrict use of these substances for other activities, or to mitigate potential risks. Performance Expectations: 100% of new substances, intended for manufacture and/or import into Canada, which have been notified by industry to	100% of new substances were addressed within the

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	EC have been assessed within the prescribed regulatory timeline, to determine whether the substance is toxic or capable of becoming "toxic" within the meaning of section 64 of CEPA 1999.	prescribed legislative timeline.
2.3.6 Apply life-cycle thinking, sustainable materials management and environmentally sound management of hazardous wastes to promote sustainable consumption and minimize the impacts of products and wastes on the environment and human health. (EC, NRCan) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	The notice on pollution prevention plans for switches in vehicles was published in the *Canada Gazette*, Part I, on December 29, 2007. It required both vehicle manufacturers and steel mills, as part of their pollution prevention plans, to consider participating in a national mercury switch management program that requires the collection and recycling of mercury switches. The goal of the Notice is to achieve an annual capture rate of 90% of mercury switches within the first four years of the program. Performance Expectations: The performance expectations are for the releases from dental facilities in Canada, not the dentists targeted by the notice (i.e. the ones with best management practices (BMPs) not in place who had to submit declarations). EC expects that 95% of dental facilities in Canada (using or removing dental amalgams) would have BMPs in place for December 2010 (at the end of the implementation of the pollution prevention (P2) Notice). This target will be evaluated in the next months, based on the declarations received from dental facilities. A national survey will be conducted if required. Adoption of P2 concepts by targeted users will be measured by the number of schedules reported and waste disposal statistics of collection and disposal of mercury from dental offices to appropriate waste management facilities.	A survey of dentists was performed in spring 2012. The survey indicated that almost all dental clinics (97%) have a dental amalgam separator, which represents the main best management practice (BMP) for dental clinics to achieve. Compared to 2007, this represents an increase of 27% (from 70% to 97%). As a result, from the estimated annual use of 4,144 kg (2012) of mercury removed from patients' teeth, 75 kg is discharged into the wastewater stream, a reduction of 83% from the estimated 452 kg released in 2007. However, regarding the other important BMPs, a small number of dentists (13%) reported some improper disposal of dental amalgam, which will require further follow-up from EC.
2.3.8 Ensure at least one risk management measure is in place within the legally mandated timeframes for 100% of substances added to the List of Toxic Substances within. (EC, HC) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	For the substances that are found to be "toxic" under CEPA 1999 and are added to the Schedule 1, a proposed instrument to establish or control actions for managing the substance must be published in the *Canada Gazette*, Part I, within two years of the recommendation that the substance be added to Schedule I. Within 18 months of the publication, the final instrument must be published in the *Canada Gazette*, Part II. Information on the above is available on the Chemical Substances website and the CEPA Environmental Registry. Under the Chemicals Management Plan, the Challenge to industry and other stakeholders was developed to address approximately 200 chemicals identified as high priorities for action due to their potential to cause harm to human health and/or the environment. The Challenge divides these chemicals into 12 batches. Approximately every three months a new batch of chemicals is released for comment and information gathering. The information gathered is used to feed into evidence-based decisions when assessing risks to human health and the environment, and developing measures to reduce these risks. Performance Expectations: All substances added to the List of Toxic Substances will have at least one risk management measure in place within the legally mandated time frames.	In 2011–2012, proposed risk management instruments were published for 10 of 11 substances listed on Schedule 1 within the required timelines. Final risk management instruments were published for 8 of 8 substances listed on Schedule 1 within the required timelines.
2.3.9 Deliver compliance promotion activities for key regulatory	Compliance promotion relates to activities that are undertaken to increase the awareness and the understanding of environmental legislation and their related risk management instruments. Through these activities,	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
initiatives. (EC) Alignment with the 2011–2012 PAA Program 3.3 Compliance Promotion and Enforcement	information is provided on what is required to comply, the benefits of complying with the law as well as the consequences of non-compliance. The approach to compliance promotion is collaborative and coordinated across the department's programs and regions and with Enforcement. It is achieved using various tools and approaches such as website postings, letters and emails, brochures, site visits, responses to inquiries and information sessions. Performance Expectations: Conduct compliance promotion activities to increase stakeholder awareness for new regulations for substances newly added as of 2010 to the List of Toxic Substances of CEPA 1999.	In 2011–2012, no new regulations were developed to control substances added in 2010 to the List of Toxic Substances. However, compliance activities were delivered for instruments intended to manage the risk of substances that were added to the List of Toxic Substances before 2010, such as VOC, tetrachloroethylene, PCBs, fuel containing toxic substances, mercury, PFOS and its salts, etc.
2.3.10 Work with OECD and with the U.S. and Mexico under the auspices of the Commission for Environmental Cooperation to foster green growth collaborative initiatives. (EC) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	Canada actively participates in the OECD work on sustainable materials management (SMM) through its participation in the Working Party on Resource Productivity and Waste. SMM is a new concept that shifts from the policy focus from waste management to materials management in support of sustainable development. Canada is also working with the Commission for Environmental Cooperation (CEC) of North America to better understand the international movements of North American electronic waste and to share information and raise awareness on the environmentally sound management (ESM) of electrical waste with small refurbishers and recyclers. In addition, Canada also works collaboratively with the United States and Mexico to support enforcement activity specific to trans-boundary movements of electronic wastes. See this website for more information. Performance Expectations: Canada's participation in OECD meetings or workshops in the near future following the first meeting of the OECD Working Party on Resource Productivity and Waste (WPRPW) in June 2010. Other work items and reports under the OECD are to be prepared and finalized in 2011–2012, notably a report on greenhouse gas mitigation scenarios from material management in OECD countries, a synthesis report on SMM, concluding the work on SMM since 2005 and a workshop and report on the policy aspects of nanowaste.	Canada participated actively in meetings of the Organisation for Economic Cooperation and Development (OECD) Working Party on Resource Productivity and Waste (WPRPW), contributing expertise on sustainable materials management (SMM) and advancing other work aligned with Canada's interests. The report "Sustainable Materials Management – A Synthesis" was finalized and approved by the Working Party; the WPRPW will explore publishing options in the following year. In the area of OECD Accession, a Canadian expert on waste diversion programs participated in a workshop held in Moscow, Russia. Canada also contributed to the positive outcome of a nanotechnology workshop co-hosted by the OECD and Germany; the Canadian delegation included a subject matter expert from the National Institute for Nanotechnology.
2.3.11 Work with provincial and territorial authorities to promote waste minimization and diversion, such as the implementation of the Canada-wide Action Plan on Extended	In October 2009, the Council of Ministers approved the Canada-wide Action Plan for Extended Producer Responsibility (EPR) and the Canada-wide Strategy for Sustainable Packaging. The Canada-wide Action Plan for Extended Producer Responsibility commits jurisdictions to work towards managing a list of product categories included in the plan,	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Producer Responsibility. (EC) Alignment with the 2011–2012 PAA Program 3.1: Substances and Waste Management	such as electronic waste, packaging and household hazardous wastes, through extended producer responsibility (EPR) programs by 2015 (phase one) and 2017 (phase 2). EPR programs assign the responsibility of managing a product or packaging at the end-of-life to manufacturers, importers and/or first sellers, thereby shifting responsibility for waste management from municipalities to industry, and away from taxpayers. For its part, the Sustainable Packaging Strategy commits jurisdictions to work towards managing packaging waste through EPR programs. The strategy also sets out supporting measures for jurisdictions to encourage the production and consumption of sustainable packaging. See this website for more information. Performance Expectations: EC will continue to work within the Canadian Council of Ministers of the Environment (CCME) on reporting commitments related to the Canada-wide Action Plan for Extended Producer Responsibility, including a reporting template and the preparation of a progress report. The Department will also release its updated web database of extended producer responsibility, stewardship and take-back programs in Canada	EC supported and encouraged the CCME to report on the commitments related to the Canada-wide Action Plan for Extended Producer Responsibility. Jurisdictions have not yet reached consensus on the timing and form this reporting should take. EC's Web database of extended producer responsibility, stewardship and take-back programs in Canada has been updated, with input from industry and stakeholders. This tool supports individual and municipal efforts in diverting waste from landfill by providing up-to-date information on available programs in their area.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.1 Target: Fresh Water Quality – Complete federal actions to restore beneficial uses in Canadian Areas of Concern in the Great Lakes by 2020.

3.2 Target: Contribute to the restoration and protection of the Great Lakes by developing and gaining binational acceptance of objectives and strategies for the management of nutrients in the Great Lakes by 2015.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.1.1 Fund external work through Grants and Contribution Agreements to coordinate Remedial Action Plans related to the remediation and restoration of beneficial uses in Areas of Concern (AOCs) in the Great Lakes Basin and through the Great Lakes Sustainability Fund (GLSF) which provides technical and financial support to projects to clean up and restore Areas of Concern. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	Each Area of Concern has developed a remedial action plan (RAP) that guides restoration and protection efforts. Remedial action plans proceed through three stages. • Stage 1 determines the severity and underlying causes of the environmental degradation that makes the location an AOC. • Stage 2 identifies the goals and recommends actions to restore and protect the ecosystem. • Stage 3 implements the recommended actions and measures progress to ensure the local goals have been met. It is through these stage reports that the determination will be made as to whether the established indicator under the FSDS for Target 3.1 has been met: *for Areas of Concern in the Great Lakes, the change in beneficial use (BU) status from "impaired" or "requires further assessment" to "not impaired" or "restored".* For further information, please visit the Great Lakes Areas of Concern website and the Great Lakes Sustainability Fund. Performance Expectations: Remedial Action Plan (RAP) stage reports are issued as critical stages in the RAP are reached. Under the Great Lakes Action Plan, actions to continue and complete the restoration of beneficial use impairments in Canadian Areas of Concern in the Great Lakes are undertaken.	The following remedial action plan (RAP) stage reports were issued: • Jackfish Bay Area in Recovery Report • Detroit River (Canadian side) Stage 2 Report • Niagara River (Canadian side) Stage 2 Update Report RAP stage reports are specified in the current Great Lakes Water Quality Agreement (GLWQA) and provide an effective means of guiding restoration and protection work in the Area of Concern. The Stage 1 report describes the severity and underlying causes of environmental degradation. The Stage 2 report identifies goals and actions to restore and protect the ecosystem. The Stage 3 report documents the implementation remedial measures, the results of environmental monitoring and assessment and confirmation of the restoration of the beneficial use impairments. An Area in Recovery report, while not a requirement of the current

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		GLWQA, is issued when the Area of Concern has been identified as an Area of Concern in Recovery, which means that all reasonable restoration actions have been undertaken and additional time is needed for the ecosystem to recover and meet restoration objectives. Actions continued in 2011–2012 to restore beneficial use impairments in Great Lakes Areas of Concern. A report providing the current status of beneficial use impairments in each Canadian AOC was issued in May 2011.
3.1.2 Fund external work through Grants and Contribution Agreements to implement Lakewide Management Plans related to the restoration and protection of the Great Lakes. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	A lakewide management plan is an action plan for cooperatively restoring and protecting the ecosystem of one of the Great Lakes. Lakewide management plans are in place for Lake Superior, Lake Michigan, Lake Erie and Lake Ontario. A similar binational partnership plan is in place for Lake Huron. One area of focus for lakewide management plans is the management of nutrients. Reports on the activities and status of each lakewide management plan and binational partnership are issued annually. It is through these reports, and State of the Great Lakes reporting, that the determination will be made as to whether the established indicator under the FSDS for Target 3.2 has been met. For further information, please visit the Great Lakes Lakewide Management Plan website. Performance Expectations: 100% of EC's commitments under Annex 3 (Lake and Basin Sustainability) in the Canada–Ontario Agreement are assessed as being on track for completion by March 31, 2012.	Only one of the 82 Annex 3 commitments was not met by March 31, 2012: the development of a Canadian framework to assess and protect the Great Lakes nearshore. While work on the framework was initiated in 2011–2012, it was not completed. Federal and provincial officials are continuing to develop options for the framework using stakeholder input from a variety of sources. 99% of the commitments in Annex 3 had been met by March 31, 2012. The 2011 annual Lakewide Management Plan reports were published for each of the Great Lakes in 2011–2012.
3.1.3 Establish important cooperative partnerships between the federal and provincial governments and engage appropriate private, public (including local governments and agencies), Aboriginal communities and stakeholder participation in order to achieve the vision of a healthy, prosperous and sustainable Great Lakes ecosystem. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	Partnerships have been established on an overall Great Lakes-basin scale through the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem, on an individual lake-basin scale through the lakewide management plans and a binational partnership, and on a local scale through geographic and issue-specific programs and activities. The provision of funding, technical and scientific expertise, coordination and communication activities assist other levels of government, organizations and communities in working together to resolve issues and protect Great Lakes ecosystems. For example, Lake Huron's Southeast Shore Working Group, Aboriginal Elders workshops and Lake Erie's Nutrient Management Strategy have assisted many partners in addressing nutrients and other ecosystem issues. Performance Expectations: All four of the binational Great Lakes will have established cooperative partnerships.	Cooperative partnerships are in place for each of the binational Great Lakes. Each Lakewide Management Plan/Binational Partnership reports annually on work being carried out to protect and restore the lake. The most recent reports were issued in May 2011.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.1.4 Promote voluntary approaches where appropriate to achieve results beyond compliance to attain Great Lakes water quality targets with respect to toxics, critical pollutant reduction, municipal wastewater sources, etc. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems Program 1.2 Water Resources Program 2.1 Weather and Environmental Services for Canadians Program 3.1 Substances and Waste Management Program 3.2 Climate Change & Clean Air Program 3.3 Compliance Promotion and Enforcement – Pollution	In partnership with municipalities in the Great Lakes Basin, research and development will be undertaken to evaluate and enhance wastewater process technologies. In addition, existing anaerobic technologies will be adapted and optimized using membrane processes for the efficient treatment of raw municipal wastewater to serve as a sustainable treatment technology for use in the Great Lakes Basin. The Great Lakes Binational Toxics Strategy (GLBTS) sets forth a collaborative, beyond-compliance binational process through which EC and the U.S. Environmental Protection Agency, along with provinces, states, First Nations, tribes, industry, environmental groups and individual citizens come together in substance-specific work groups to execute reduction challenges for all of the GLBTS-targeted level one substances. Another mechanism that supports voluntary approaches is the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA). The Harmful Pollutants Annex to the COA sets out goals to achieve progress towards the virtual elimination of persistent bioaccumulative toxic substances and significant reductions of other harmful pollutants. Performance Expectations: In partnership with municipalities in the Great Lakes Basin, research and development will be undertaken to evaluate and enhance wastewater process technologies. Existing anaerobic technologies will be adapted and optimized using membrane processes for efficient treatment of raw municipal wastewater, to serve as a sustainable treatment technology for use in the Great Lakes Basin.	In partnership with Ontario's Ministry of the Environment, Region of Peel and City of Toronto, EC conducted comparison studies of various advanced wastewater treatment technologies, including integrated fixed-film activated sludge, moving-bed bioreactor activated sludge, and conventional activated sludge and membrane technologies. Data reports are in preparation. These technologies have the potential to improve performance and reduce footprints over conventional treatment processes.
3.1.6 Release reports regularly on: State of the Great Lakes environmental indicators, the Great Lakes Binational Toxics Strategy, the status of Remedial Action Plans for AOCs in the Great Lakes, and updates for Lakewide Management Plans. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	A Canada–U.S. State of the Lakes Ecosystem Conference (SOLEC) is held every three years to report on the state of the Great Lakes, to facilitate information sharing amongst Great Lakes decision-makers, and to provide information to government, corporate, and not-for-profit sectors that make decisions that affect the lakes. A public-friendly state of the Great Lakes highlights report and a more detailed technical report are issued every three years, containing an overall assessment of the status of the Great Lakes ecosystem based on environmental and human health indicators. State of the Great Lakes Reporting Web page. A Great Lakes Binational Toxics Strategy (BTS) Progress Report is issued every two years, with a public-friendly newsletter being issued in the intervening years. The GLBTS provides a binational framework for actions to reduce or eliminate persistent toxic substances in the Great Lakes, and establishes reduction challenges for persistent toxic substances targeted for virtual elimination. Great Lakes Binational Toxics Strategy Web page. Performance Expectations: RAP stage reports are issued as critical phases in the RAP are reached. State of the Great Lakes highlights reports and a detailed	The following remedial action plan (RAP) stage reports were issued: • Jackfish Bay Area in Recovery Report • Detroit River (Canadian side) Stage 2 Report

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	technical report are issued triennially. A Great Lakes BTS progress report is issued biennially, with a newsletter issued in the intervening years. As previously noted under 3.1.2, Lakewide management plans update reports will be issued annually.	• Niagara River (Canadian side) Stage 2 Update Report RAP stage reports are specified in the current Great Lakes Water Quality Agreement (GLWQA) and provide an effective means of guiding restoration and protection work in the Area of Concern. The Stage 1 report describes the severity and underlying causes of environmental degradation. The Stage 2 report identifies goals and actions to restore and protect the ecosystem. The Stage 3 report documents the implementation remedial measures, the results of environmental monitoring and assessment, and the confirmation of the restoration of the beneficial use impairments. An Area in Recovery report, while not a requirement of the current GLWQA, is issued when the Area of Concern has been identified as an Area of Concern in Recovery, which means that all reasonable restoration actions have been undertaken and additional time is needed for the ecosystem to recover and meet restoration objectives. State of the Great Lakes reports are issued every three years. The last reports were released in 2009–2010 and so the next reports are anticipated in 2012–2013. Reports were not issued as per the triennial schedule in 2011–2012. The final Great Lakes Binational Toxics Strategy newsletter was released in October 2011. It highlighted progress achieved in reductions of toxics released to the Great Lakes over the course of the 10-year strategy. Future binational chemicals management will take place under the amended Great Lakes Water Quality Agreement.
3.1.7 Coordinate with the United States scientific research and monitoring activities in the Great Lakes through the binational Cooperative Science and Monitoring Initiative. (EC) Alignment with the 2011–2012 PAA Program 1.2 Water Resources	In 2003, the Great Lakes Binational Executive Committee endorsed the Cooperative Science and Monitoring Initiative (CSMI) to improve the coordination of monitoring in the Great Lakes. A five-year rotational cycle was adopted to focus on one lake per year. The complete cycle for each lake involves two years of planning, one year of field activity and two years for analysis, synthesis and reporting. Starting with Lake Huron, the connecting channels will be included with the downstream lakes to the extent that they impact the downstream lakes. <u>Lake Ontario (Field Year 2008)</u> The focus of the Lake Ontario program includes understanding nearshore-offshore nutrient transport, assessing the status of the offshore lower foodweb, conducting a lakewide fishery assessment, and understanding food web changes using biomarkers. <u>Lake Erie (Field Year 2009)</u> Programs include a central and eastern basin nearshore-offshore nutrient study, a bioavailable phosphorus study, a western basin algal bloom project, a farm demonstration practice and a tillage study. <u>Lake Michigan (Field Year 2010)</u> Priorities being addressed include understanding nearshore issues and food web issues, and determining the status of contaminants in Lake Michigan waters, tributaries and sediment. In 2011–2012, lab analyses will be undertaken on samples taken from Lake Michigan in 2010. <u>Lake Superior (Field Year 2011)</u> Programs to be undertaken in 2011 include determining the status of Lake Superior chemicals of concern and chemicals of immediate concern to the ecosystem; and determining the status of the lower food web, the aquatic invasive species,	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	and the native fish species in Lake Superior. Lake Huron (Field Year 2012) A prioritized list of issues is currently being identified for the Lake Huron field year. Performance Expectations: Publication of the findings regarding Lake Erie: CSMI field work will be carried out in Lake Superior, lab analysis will be undertaken on samples taken from Lake Michigan in 2010, and reporting of findings on Lake Erie will be issued.	Indicator reports were prepared in collaboration with binational partners for nutrients, toxic chemicals and contaminants in fish for the Great Lakes (Lake Erie). A major binational collaborative report on mercury in the Great Lakes (Lake Erie) was produced, indicating progress in controlling mercury emissions, which are expected to show benefits in the food chain. Planned binational field work was carried out under the Cooperative Science and Monitoring Initiative (CSMI) on Lake Superior in 2011, and planning started for the Lake Huron field year in 2012. A reporting and synthesis workshop was held to complete the 2008 cycle for Lake Ontario and start the planning for the 2013 Lake Ontario intensive year.
3.1.8 Manage/deliver Great Lakes results internally, within the Department, through the Great Lakes Basin Ecosystem Initiative. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	The Great Lakes Basin initiative will deliver the following programs, thereby supporting the development of federal actions to improve the quality of water in the Great Lakes. • Provide the results of applied scientific research, monitoring and assessment. • Coordinate community delivery of actions, public involvement and reporting progress. Publish contaminated sediment assessments and development of sediment management plans. • Promote dissemination of research results on stormwater management, combined sewer overflow control and treatment, and innovative wastewater management through the existing mechanisms (e.g. Science Alert) as well as through new methods (e.g. direct contact with Remedial Action Plan teams). Performance Expectations: By October 2012, compile a list of the remaining research needs in Area of Concerns with significant wet-weather flow pollution and municipal wastewater treatment issues, and suggest solutions. Goals as set out in the Canada–Ontario Agreement are fully met.	A remedial action plan workshop was held in February 2012 with participants from Canadian federal and provincial governments, conservation authorities and the United States to analyze the current status of all remaining beneficial use impairments in each Area of Concern (AOC) and from that to determine the work required in each. This includes any wet-weather flow and municipal wastewater issues. The workshop determined what work was needed in the AOCs for monitoring and analysis, habitat restoration and protection, contaminated sediment assessment, sewage treatment plants requiring upgrades to be done by the municipality, etc. 12 of the 13 goals in the 2007–2012 Canada–Ontario Agreement (COA) were met as of March 31, 2012. The goal to complete priority actions for delisting four Areas of Concern (Nipigon Bay, Jackfish Bay, Wheatley Harbour, St. Lawrence River (Cornwall)) was not met. Meeting the goal requires upgrading the wastewater treatment plants in the Nipigon and St. Lawrence River (Cornwall) AOCs, the funding for which is outside EC's mandate. The goal is expected to be achieved by 2013–2014.
3.1.9 Manage/deliver Great Lakes results federally-provincially, between the	Each year, federal–provincial agencies signatory to the Canada–Ontario Agreement (COA) Respecting the Great Lakes Basin Ecosystem take part in a comprehensive update	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Government of Canada and the Province of Ontario. (EC – RDG ON, NRCan) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	of their work plans to deliver their agency's COA commitments. Work plans are assessed each year to determine whether they will meet the goals, results and commitments contained in the COA, the results of which work are presented to the COA Management Committee in the fall for direction and decision. Progress reports for the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem are issued, setting out the current status in meeting the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem COA commitments. A final progress report is issued at the end of each Canada–Ontario Agreement to provide a conclusive report card on implementation of the Agreement. Performance Expectations: The results of the annual assessment of progress against work plans are to be completed by the fall of each year. Canada–Ontario Agreement progress reports are issued regularly during the life of, and upon completion of each Canada–Ontario Agreement.	The annual assessment was reported to the Canada–Ontario Agreement Management Committee in March 2012, indicating that 94% of the commitments in the COA had been met. The remaining commitments were not met due to a variety of internal and external reasons. For instance, within EC, there was a refocusing of work on delivery of the Chemicals Management Plan, resulting in a reduced focus on a few COA commitments. Also, there are issues beyond the federal government's mandate, such as the necessity of upgrading sewage treatment plants by municipalities to reduce effluent loadings. The interim COA Progress Report and public-friendly newsletter was issued in March 2011. The current Canada–Ontario Agreement expires on June 24, 2012, and a final COA Progress Report is anticipated to be released in 2012–2013.
3.1.10 Manage/deliver Great Lakes results binationally, between Canada and the United States through the Great Lakes Water Quality Agreement. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	Management and delivery of the binational Great Lakes program is coordinated through the Great Lakes Binational Executive Committee (BEC). The BEC is a forum composed of senior representatives of Canadian and American federal, state and provincial agencies accountable for delivering programs and activities that respond to the terms of the Great Lakes Water Quality Agreement (GLWQA). The BEC sets priorities and strategic direction for binational programming in the basin; coordinates binational programs and activities; responds to new and emerging issues in the Great Lakes; and provides advice, comment or other input for the preparation of various binational reports and presentations. The BEC is also responsible for overseeing mandatory reviews of the GLWQA. The BEC meets twice a year, each spring and fall, alternating between locations in Canada and the United States. Performance Expectations: Binational issues in the Great Lakes are managed, strategic direction provided and decisions made by senior representatives of Canadian and American federal, state and provincial agencies that are accountable for delivering programs and activities that respond to the terms of the Great Lakes Water Quality Agreement (GLWQA).	Work in 2011–2012 focused on negotiations and drafting of an amended Canada–United States Great Lakes Water Quality Agreement, with two formal Canada–United States negotiating sessions, three meetings with targeted Great Lakes stakeholders, targeted sessions with First Nations and Métis organizations, and broader public engagement sessions taking place.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.3 Target: Fresh Water Quality – Complete federal actions to reduce pollutants and restore beneficial uses in hot spots in the St. Lawrence River by 2016.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.3.1 Fund external work through Grants and Contribution Agreements so that communities can restore beneficial uses and improve environmental quality in their locality along the St. Lawrence. (EC) Alignment with the 2011–2012 PAA Program 1.2 Water Resources or/and Program 1.3 Sustainable Ecosystems	The Priority Intervention Zones (ZIP) Program will fund 14 groups to support local and regional collaboration among various stakeholders involved in the governance of the St. Lawrence and to engage them in improving its environmental quality. Community action projects will be funded through contribution agreements with sector organizations under the Community Interaction Program (CIP). Funding will encourage the realization of community projects related to issues surrounding the Canada–Quebec Agreement Pertaining to the St. Lawrence: biodiversity conservation, sustainable use and water quality improvement. Performance Expectations: Annual number of projects completed (Community Interaction Program indicator). 14 contribution accords reached with the organizations in 2011–2012 (ZIP Program indicator).	Thirteen projects were completed in 2011–2012. Fourteen new agreements were signed, which will remain valid until 2015–2016.
3.3.2 Establish important cooperative partnerships between the federal and provincial governments and engage the appropriate public and stakeholder participation in order to achieve the vision of a healthy, prosperous and sustainable St. Lawrence River ecosystem. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	The Canada–Quebec Agreement Pertaining to the St. Lawrence is currently being negotiated. Under this Agreement, the governments hope to implement projects on priority issues surrounding the St. Lawrence and implement cooperative and collaborative mechanisms to engage stakeholders in the river's governance. Performance Expectations: Number of organizations (government departments / agencies and non-governmental organizations) participating in the implementation of the St. Lawrence Action Plan.	On November 29, 2011, the St. Lawrence Action Plan 2011–2026, which renews the Canada–Quebec collaboration on the St. Lawrence for 15 years, was signed by Minister Kent and Minister Arcand from the Quebec government. More information can be found at the following website: http://planstlaurent.qc.ca/ 18 federal and provincial departments and agencies are participating in the Agreement. Information is available on this website.
3.3.3 Release reports regularly on the State of the St. Lawrence and factsheets on environmental indicators. (EC)	The Canada–Quebec Agreement Pertaining to the St. Lawrence is currently being negotiated. Implementation and monitoring of the Agreement will be based on results identified in the 2011–2016 Action Plan for the three priority issues: biodiversity conservation, sustainable use and water quality improvement.	The Canada–Quebec Agreement on the St. Lawrence was announced in 2011. More information can be found at the

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Alignment with the 2011–2012 PAA Program 1.2 Water Resources	Under this Agreement, the intergovernmental Monitoring the State of the St. Lawrence River Program will be renewed. This program will give an overview of the state of the St. Lawrence by monitoring environmental indicators. The Overview of the State of the St. Lawrence River and factsheets on environmental indicators are published on a regular basis by partners of the Monitoring the State of the St. Lawrence River Program. Performance Expectations: The Canada–Quebec Agreement Pertaining to the St. Lawrence will be announced in 2011 and information could be found later on this website. Next edition of the Overview of the State of the St. Lawrence River to be published in 2014. 3 factsheets on environmental indicators published in 2011–2012 (by all federal partners in the Monitoring the State of the St. Lawrence Program) / Eight factsheets on various environmental indicators will be published in 2011 (by all federal partners in the Monitoring the State of the St. Lawrence River Program).	following website. Six factsheets were developed and three of them are ready to be published.
3.3.4 Conduct and coordinate research, prediction and monitoring activities in the St. Lawrence with other federal and provincial Departments and with local communities. (EC) Alignment with the 2011–2012 PAA Program1.2 Water Resources	The Canada–Quebec Agreement Pertaining to the St. Lawrence is currently being negotiated. An intergovernmental environmental prediction program for the river will be implemented under the Canada–Quebec Agreement Pertaining to the St. Lawrence. The Agreement will contain an appendix specifically regarding this program. Implementation and monitoring of the Agreement will be based on results identified in the 2011–2016 Action Plan for the three priority issues: biodiversity conservation, sustainable use and water quality improvement. The implementation of the Monitoring the State of the St. Lawrence River Program involves various partners from federal and provincial governments and non-governmental organizations (NGOs), including Fisheries and Oceans Canada, Parks Canada, the Canadian Space Agency and Quebec's Ministère du Développement durable, de l'Environnement et des Parcs and Ministère des Ressources Naturelles et de la Faune. Together these efforts produce information on environmental indicators as well as editions of the Overview of the State of the St. Laurence River. For more information, see the St. Lawrence Action Plan website and the website of the State of the St.Lawrence Monitoring Program. Performance Expectations: The indicators for the Monitoring of the State of the St. Lawrence River Program involve the production of 21 factsheets on those indicators as well as the release of the Overview of the State of the St. Lawrence River, as indicated in point 3.3.3.	Six factsheets were developed and three of them are ready to be published.
3.3.5 Manage/deliver St. Lawrence results internally, within the Department, through the St. Lawrence Ecosystem Initiative. (EC) Alignment with the 2011–2012	The Canada–Quebec Agreement Pertaining to the St. Lawrence is currently being negotiated. Implementation and monitoring of the Agreement will be based on results identified in the 2011–2016 Action Plan for the three priority issues: biodiversity conservation, sustainable use and water quality improvement. A number of EC programs and activities will contribute to the implementation of the Canada–Quebec Agreement	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
PAA Program 1.3 Sustainable Ecosystems	Pertaining to the St. Lawrence. EC's entire contribution will be monitored under the Department's St. Lawrence Ecosystem Initiative. Performance Expectations: Indicators will include a status update on 2011–2016 Action Plan projects and the Department's financial contribution in terms of projects carried out in said Action Plan.	Following the signing of the new agreement, the process of implementing the Agreement's projects was initiated. These projects are monitored by the issue committees on biodiversity, water uses and water quality, as well as the Monitoring of the State of the St. Lawrence River working group and the brand-new working group on environmental prediction, which has become an integral part of the agreement. For 2011–2012, it was reported to the Agreement Steering Committee that • of the 48 joint Canada–Quebec projects announced, 16 are proceeding very well; in fact, some achieved their expected deliverables during 2011–2012 • however, 7 projects are experiencing major issues and 25 projects are having minor issues Various EC branches are involved in 33 of the 48 projects.
3.3.6 Manage/deliver St. Lawrence results federally-provincially, between the Government of Canada and the Province of Quebec. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	The Canada–Quebec Agreement Pertaining to the St. Lawrence is currently being negotiated. Implementation and monitoring of the Agreement will be based on results identified in the 2011–2016 Action Plan for the three priority issues: biodiversity conservation, sustainable use and water quality improvement. An intergovernmental steering committee will be formed in the summer of 2011 to ensure annual monitoring of the results targeted in the Agreement. Performance Expectations: Indicators will include a status update on 2011–2016 Action Plan projects and the Department's financial contribution in terms of projects carried out in said Action Plan.	Following the signing of the new agreement, the process of implementing the Agreement's projects was initiated. These projects are monitored by the issue committees on biodiversity, water uses and water quality, as well as the Monitoring of the State of the St. Lawrence River working group and the brand-new Environmental Prediction working group, which has become an integral part of the agreement. For 2011–2012, it was reported to the Agreement Steering Committee that • of the 48 joint Canada–Quebec projects announced, 16 are proceeding very well, some of which have already achieved their expected deliverables during 2011–2012, • however, 7 projects are experiencing major issues and 25 projects are having minor issues. Various EC Branches are involved in 33 of the 48 projects.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.4 Target: Fresh Water Quality – Reduce nutrient inputs into Lake Simcoe by 2012.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.4.1 Manage/deliver Great Lakes results binationally, between Canada and the United States through the Great Lakes Water Quality Agreement (GLWQA). (EC)[4] Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	Lake Simcoe is not one of the Great Lakes and is not included in Great Lakes Water Quality Agreement; therefore, this implementation strategy would not apply to Lake Simcoe. Please note that this implementation strategy (3.4.1) is a duplicate of implementation strategy 3.1.10.	n/a
3.4.2 Provide financial and technical support through the Lake Simcoe Clean-Up Fund (LSCUF) to implement priority projects aimed at reducing phosphorus inputs, restoring fish and wildlife populations, and enhancing research and monitoring capacity that are essential to making progress in relation to the restoration of the Lake Simcoe Basin watershed. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	The Lake Simcoe Clean-Up Fund continues to support projects through contribution agreements in partnership with other stakeholders. The Lake Simcoe Clean-up Fund provides funding for priority clean-up projects at the community, lake-wide and watershed-wide levels. Projects are led by community organizations, landowners, environmental non-governmental organizations, community groups, educational institutions, small- and medium-sized businesses, the provincial and municipal governments and the Lake Simcoe Region Conservation Authority. The Fund provides financial and technical support to implement high-impact priority projects to reduce phosphorus inputs, rehabilitate habitats to achieve nutrient reductions, restore the coldwater fishery in Lake Simcoe, and enhance the research and monitoring capacity deemed essential for the restoration of Lake Simcoe and its watershed. Two funding rounds occur each year and the Fund is in place until March 31, 2012. Examples of funded projects include • nearshore monitoring to better understand, evaluate, manage and potentially predict impacts to Lake Simcoe's nearshore zone; • research to improve methods for estimating the amount of phosphorous being deposited into the atmosphere; • data collection on phosphorous inputs from rural and urban sources; and	

[4] This implementation strategy does not contribute to the FSDS Target 3.4 as Lake Simcoe is not one of the Great Lakes and is not included in the Great Lakes Water Quality Agreement.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	• projects aimed at rehabilitating priority habitats in order to restore the health of the aquatic ecosystem and the coldwater fishery. EC administers the fund in consultation with Fisheries and Oceans Canada, Agriculture and Agri-Food Canada, the Province of Ontario, the Lake Simcoe Conservation Authority and other key stakeholders. For more information, please visit the Cleaning Up Lake Simcoe website at Performance Expectations: Progress is being tracked through estimated phosphorus reductions, leveraged funding from other partners and accelerated adoption of best management practices.	EC coordinated and leveraged efforts to secure $28.5 million, including $6 million in cash and in-kind investments from individual property owners. EC accelerated the adoption of best management practices (BMPs), which was accomplished through 91 habitat and non-point source improvement projects supporting implementation of over 350 agricultural and urban BMPs, which included third-party agreements completing over 600 additional restoration projects. Overall, the initial estimates of the total phosphorus reduction achieved are 2.2 tonnes/year. Some specific accomplishments of the projects were supported by the Clean-up Fund: • over 20,000 m of fencing were installed to restrict 1,296 livestock from watercourses • ten manure storage facilities were constructed to manage waste from 718 livestock • over 72,000 native trees, shrubs and grasses were planted in the watershed to stabilize shorelines and reduce phosphorus runoff • 110 septic systems were improved or upgraded • a sewage treatment plant optimization manual was developed that will be used across Ontario. Stormwater pond retrofits using wetlands and innovative technologies were implemented in several municipalities The Lake Simcoe Clean-Up Fund ended on March 31, 2012. Budget 2012 announced that “the Government is working together with partners to protect and restore Canada’s water resources for the benefit of all Canadians. Going forward, the Government will continue to pursue water quality and ecosystem health improvements in lakes and other bodies of water, such as Lake Winnipeg and Lake Simcoe.”
3.4.3 Ongoing action to limit phosphates in laundry and dishwasher detergents. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	Too many phosphates in our water can lead to an overabundance of blue-green algae. Though blue-green algae occur naturally, in large quantities they can emit a harmful level of toxins. This can lead to poor water quality and force the closure of beaches in warm weather. Restricting the level of phosphates in laundry and dishwasher detergent can have a positive impact on reducing the growth of blue-green algae in our rivers, lakes and streams. These reductions are key to improving water quality and protecting the health of Canadians. The new phosphorus concentration limitations on household cleaning products came into force on July 1, 2010, and they reduce the phosphorus content in products manufactured or imported on or after that date. Information on the concentration limitations is available on the CEPA Environmental Registry.	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	Performance Expectations: Develop compliance promotion products to increase awareness of the amended *Phosphorus Concentration Regulations*, which came into force in July 2010.	Compliance Promotion products were developed and delivered to regulatees in fiscal year 2011–2012. Compliance Promotion activities will be conducted if needed, upon the results of the 2012–2013 Enforcement verifications.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.5 Target: Fresh Water Quality – By 2020, through strategic collaborations and by increasing scientific knowledge, contribute to the establishment of targets to reduce nutrients in Lake Winnipeg and its basin to support the sustainability of the lake.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.5.1 Provide financial and technical support, through the Lake Winnipeg Basin Stewardship Fund, to projects having concrete, demonstrable results to reduce pollutants and, in particular, nutrient loads, throughout the Lake Winnipeg Basin. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	The Lake Winnipeg Basin Stewardship Fund provides funding support for cost-shared projects to reduce nutrients across the Lake Winnipeg watershed. Projects are based throughout Manitoba, Ontario, Saskatchewan and Alberta, and encompass agricultural beneficial management practices, wetland and riparian restoration, and demonstration projects related to nutrient abatement. Performance Expectations: Seven or more contribution agreements developed for the Lake Winnipeg Basin Stewardship Fund in 2011–2012, for a total of 40 or more agreements implemented over the four-year lifespan of the Fund.	In 2011–2012, under the Lake Winnipeg Basin Stewardship Fund, nine new projects were funded in support of wetlands restoration, riparian enhancements, livestock beneficial management practices, and research into phosphorus recovery from wastewater sludge and the effective use of riparian zones. Funding for a sensitive habitat inventory and mapping of foreshore areas culminated in the development of recommended shoreline management guidelines in the southern basin of Lake Winnipeg. A total of 41 agreements were signed over the four-year lifespan of the fund.
3.5.2 Conduct science activities required to understand the relationship between the ecology and nutrient cycling within Lake Winnipeg, and the sources and transport mechanisms for nutrients, in order to help inform the development of nutrient objectives and performance indicators for Lake	The Lake Winnipeg Basin Initiative (LWBI) is focused primarily on science, in order to understand the gaps related to ecology and nutrient cycling and the sources and transport mechanisms for nutrients. The purpose of the science program is to provide the data and information needed to inform the development of nutrient objectives for the lake, as well as performance indicators to assess the health of the lake and watershed. Science projects and activities are currently underway on Lake Winnipeg and major sub-basins, including the Red-	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Winnipeg. (EC) Alignment with the 2011–2012 PAA Program 1.2 Water Resources	Assiniboine and Winnipeg rivers, and Lake of the Woods, through the Lake Winnipeg Basin Initiative Science Plan. Activities include studies to characterize the physical, chemical and biological nature of Lake Winnipeg, including nutrient dynamics; sediment surveys; dissolved oxygen studies; stable isotope analyses to fingerprint nutrients; food web analyses; remote sensing; water quality, climate and hydrodynamic modeling; socio-economic analyses and case studies of ecological goods and services; and assessment of agricultural beneficial management practices for nutrient reduction. Performance Expectations: Information and research data will continue to be gathered and finalized throughout the 2011–2012 field season on Lake Winnipeg and in the watershed. An LWBI science synthesis and final report documenting science activities and findings will be compiled and published at the conclusion of the LWBI in March 2012. Information and data gathered through the LWBI science program will be provided to Manitoba and other decision-makers following the conclusion of the LWBI in March 2012, to inform the development of appropriate nutrient objectives and performance indicators for Lake Winnipeg.	The final report for Lake Winnipeg Basin Initiative (2008–2012) was prepared. The TB submission for Phase 2 is in preparation. The framework for establishing nutrient quality objectives was prepared with the government of Manitoba. Eighteen water quality indicators were established to report on the water quality of the lake and monitor changes. A special Lake Winnipeg issue of the Journal of Great *Lakes* Research was published. The results of these science activities have been made available to Manitoba and other partners via the Lake Winnipeg Web portal.
3.5.3 Conduct monitoring activities for Lake Winnipeg and its sub-watersheds in order to help inform the development of nutrient objectives and performance indicators for Lake Winnipeg. (EC) Alignment with the 2011–2012 PAA Program 1.2 Water Resources	A key component to the Lake Winnipeg Basin Initiative science program is the monitoring program. Water quality and biological monitoring occurs throughout the Lake and the watershed, including a review of monitoring networks (location, timing and sampling protocols amongst agencies) and reservoir nutrient sequestration studies. Monitoring contributes to the scientific knowledge needed by all levels of government to make sound decisions on Lake Winnipeg's health. Performance Expectations: Finalize recommendations to optimize water quality networks in the Lake Winnipeg Basin to maximize efficiencies for federal and provincial networks and share this information with partner agencies. Monitoring information and data from Lake Winnipeg and the watershed will continue to be gathered and finalized throughout the 2011–2012 field season and included in the LWBI science synthesis and final report to be completed and published at the end of the LWBI in March 2012.	A draft report was produced for an in-lake monitoring network, and a national risk-based approach was initiated to assess all river monitoring sites at the scale of the broader Lake Winnipeg watershed, including major rivers such as the Saskatchewan River (including North and South sections), the Red River and the Assiniboine River. Risk-based approach (RBA) documentation was completed, and a statistical tool (power analysis) was used to assess monitoring optimal sampling frequency looking for long-term water quality trends. A presentation to the Prairie Provinces Water Board (PPWB) members (including Alberta, Saskatchewan and Manitoba) was made on March 2012, to be followed by a scientific discussion on the findings. Monitoring information and data from Lake Winnipeg was collected during the 2011–2012 field season. The State of Lake Winnipeg Report was completed and published with Manitoba in summer 2011, and a science progress report had been drafted by March 2012.
3.5.4 Develop a single window web information portal to promote and enable data sharing and analysis with partners and other networks, in order to support research on Lake Winnipeg. (EC)	EC is working with partners to develop and obtain data, provide guidance on modeling standards, build online modeling capacity, and further refine the prototype portal to meet the needs of stakeholders and users. Performance Expectations:	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Alignment with the 2011–2012 PAA Program 1.2 Water Resources	Continue to work with partners during 2011–2012 to develop and obtain data to populate the Web portal and further refine modeling capacity. Long-term external portal hosting opportunities will be finalized in order to maintain the portal after the conclusion of the LWBI in March 2012.	The Lake Winnipeg Web portal was developed under the Lake Winnipeg Basin Initiative (LWBI) and transferred for ongoing management to the University of Manitoba. The portal continues to be populated by program partners and stakeholders.
3.5.5 The Lake Winnipeg Basin Management Office will coordinate and manage the activities of the Lake Winnipeg initiative, work with existing water governance bodies, explore the need for an overarching basin mechanism to cooperatively develop a basin-wide strategy, and provide a forum for communication. (EC) Alignment with the 2011–2012 PAA Program 1.2 Water Resources	The Lake Winnipeg Basin Office was established to coordinate and oversee the three focus areas of the LWBI (science, stewardship and facilitating governance). The office works with existing water governance bodies, and is engaged in exploring opportunities to cooperatively develop a basin-wide strategy or otherwise facilitate governance and coordinate activities amongst partners throughout the transboundary. Performance Expectations: The Lake Winnipeg Basin office will continue to oversee and manage the three focus areas of the LWBI (governance, stewardship and science) during the final 2011–2012 year of the LWBI. EC will continue to participate on a number of other interprovincial and international water, science and governance mechanisms to facilitate coordination of government and stakeholder efforts across the watershed. Evaluation of existing governance mechanisms will be completed and options for alternative models to facilitate integrated transboundary watershed management will be potentially explored.	The Lake Winnipeg Program Office continued to be the focus for management action with respect to governance, stewardship and science, and to provide a visible point of contact for partners. EC continued to participate in the Prairie Provinces Water Board (PPWB), the International Red River Board (IRRB) of the International Joint Commission and its committees, the International Multi-Agency Work Group for the Lake of the Woods, the Canada–Manitoba MOU Steering Committee and its Science Sub-Committee. EC's role is to facilitate coordination of government and stakeholder efforts in the watershed. Existing governance mechanisms were evaluated and considered to be an appropriate model to support the development of more integrated transboundary watershed management in the Lake Winnipeg basin.
3.5.6 Work with the Province of Manitoba to establish a Canada-Manitoba Agreement to provide for a long-term collaborative and coordinated approach between the two governments to ensure the sustainability and health of the Lake Winnipeg Basin. (EC) Alignment with the 2011–2012 PAA Program 1.2 Water Resources Program 1.3 Sustainable Ecosystems	A five-year Canada–Manitoba Memorandum of Understanding (MOU) Respecting Lake Winnipeg and the Lake Winnipeg Basin, developed under section 4 of the *Canada Water Act*, was signed in September 2010. The MOU formalizes the commitment of both governments to a long-term, collaborative and coordinated approach to support the sustainability and health of the Lake Winnipeg Basin. Performance Expectations EC will continue to co-chair the MOU steering committee, to oversee implementation of the MOU and provide oversight for the development of subsidiary arrangements in support of the MOU, including finalization of a science subsidiary arrangement in 2011–2012. For further information about the LWBI, please visit EC's website at Cleaning Up Lake Winnipeg.	EC continued to co-chair the Canada–Manitoba MOU Steering Committee and the Science Subsidiary Arrangement under the MOU.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.6 Target: Fresh Water Quality – Achieve a value between 81–100 on each of the Water Quality and Soil Quality Agri-Environmental Performance Indices by March 21, 2030.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.6.6 Identify opportunities to work within the Canadian Council of Ministers of the Environment (CCME) to develop nutrient management approaches from non-point agricultural sources. (EC) Alignment with the 2011–2012 PAA Program 1.2 Water Resources	By 2012 an assessment of the opportunities to exchange policy ideas and to develop options for collaboration will be completed and considered by the CCME Water Agenda Development Committee (WADC). Based on the outcomes of this scoping exercise, further collaborative work on nutrients may be undertaken. Intergovernmental collaboration contributes to developing a harmonized approach to managing agricultural nutrients and improving the water quality agri-environmental performance index. Performance Expectations: By 2012, the assessment will be completed and the CCME WADC will recommend future intergovernmental collaboration opportunities to the Environmental Planning and Protection Committee.	Work with the CCME Water Management Committee (renamed from WADC) on nutrient management is ongoing. A number of webinars were held in 2012 to share information and enhance progress on nutrient management.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.7 Target: Reduce Risks associated with wastewater effluent by 2020 in collaboration with provinces and territories.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.7.1 Work collaboratively with provinces to conduct and disseminate research on wastewater effluent. (EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	The Canadian Council of Ministers of the Environment's (CCME's) Canada-wide Strategy for the Management of Municipal Wastewater Effluent identified the need to improve science and research coordination. The CCME is proposing to establish a science and research coordination body for wastewater effluent and biosolids to track research; identify priorities for future study; and disseminate information on research results to prevent duplication and promote collaboration among researchers. Coordinated science and research would provide a sound basis for risk management decisions and thereby contribute to *Target 3.7, Fresh Water Quality – Reduce risks associated with wastewater effluent by 2020*. Performance Expectations: Establishment of the Science and Research Coordination Body. Development of the Canada-wide research agenda. Completion of the review of the federal, provincial, territorial, municipal governments and other stakeholders' existing research agendas related to biosolids and wastewater. Initiation of consultations on best mechanisms to help meet the national scientific research and information dissemination needs that are identified.	The Science and Research Coordination Body was established with a steering committee with representatives from EC, the Canadian Water Network, CCME, Canadian Water and Wastewater Association and Ontario's Ministry of the Environment. The National Wastewater Research Agenda was completed in March 2012 and was promoted through various meetings and workshops. The Canadian Water Network is taking the lead to identify the top one or two research needs from the agenda and to explore funding opportunities to establish a consortium of interested users to carry out the research.
3.7.2 Implement the federal aspects of the CCME strategy for the management of municipal wastewater effluent in Canada through effluent regulations under the Fisheries Act and through agreements with provinces and territories by 2012. Work with the Northwest Territories, Nunavut, Quebec, and Newfoundland and Labrador to complete policy analysis and research for minimum performance standards for	The proposed Wastewater Systems Effluent Regulations (WSER) were developed under the *Fisheries Act* and published in the *Canada Gazette*, Part I, for public comment in 2010. When finalized, the WSER will be the federal government's primary instrument to implement the Canadian Council of Ministers of the Environment's (CCME's) Canada-wide Strategy (endorsed February 2009). The federal regulations will contribute to harmonizing the regulatory framework and would include a regulatory baseline with effluent quality limits equivalent to secondary wastewater treatment. As part of implementing the CCME Strategy, bilateral agreements are to be negotiated with the provinces and Yukon to establish roles and responsibilities for the	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
wastewater effluent for the far north. (EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	administration of the wastewater regulations. The agreements would clarify roles and responsibilities with respect to authorization officers, regulatory reporting, data exchange, compliance promotion, and inspections and enforcement activities. The Wastewater Systems Effluent Regulations are aimed at reducing, in collaboration with the provinces, risks from the deposit of wastewater and as such contribute to Target 3.7. Performance Expectations; Conduct field surveys of the selected Far North sewage treatment facilities with respect to their treatment performance and opportunities for optimization. Most of this work will focus on sewage lagoons and effluent polishing wetlands. Prepare a report on the performance of monitored sewage treatment facilities, in the context of the Canadian Council of the Ministers of the Environment (CCME) strategy, and assess the feasibility of computer modeling of such facilities. Publish the final regulations in the *Canada Gazette*, Part II, targeted by the end of spring 2011. Establish bilateral administrative agreements with each province and Yukon by the end of 2012. Engage stakeholders on the standards for the North by April 2012.	EC conducted field surveys of wastewater lagoons in the Far North with respect to their treatment performance. The research was completed in 2011–2012. EC is preparing a report on the performance of the monitored facilities; the report is expected to be completed in 2012–2013. Following the publication of the proposed Wastewater Systems Effluent Regulations (WSER), EC extensively engaged provincial, municipal and other stakeholders in 2011–2012. The regulations have been adjusted accordingly and the final regulations are expected to be published in *Canada Gazette*, Part II, in 2012. [5] EC initiated formal negotiations with the provinces and Yukon on agreements to streamline administration of regulations for wastewater effluent. Stakeholders were engaged on standards and a regulatory regime for the North at a workshop in March 2012.
3.7.3 Ensure compliance with performance standards for higher risk wastewater effluents by 2020. (EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	The proposed Wastewater Systems Effluent Regulations were developed under the *Fisheries Act* and published in the *Canada Gazette*, Part I, for public comment in 2010. When finalized, the Wastewater Systems Effluent Regulations will be the federal government's primary instrument to implement the CCME's Canada-wide Strategy (endorsed February 2009). The federal regulations will contribute to harmonizing the regulatory framework and would include a regulatory baseline with effluent quality limits equivalent to secondary wastewater treatment. For wastewater systems required to upgrade existing, or build new, infrastructure to meet the effluent quality standards, those situations posing the highest risk would be required to come into compliance by 2020. The Wastewater Systems Effluent Regulations are aimed at reducing, in collaboration with the provinces, risks from the deposit of wastewater and as such contribute to Target 3.7. Performance Expectations: Publication of final regulations in the *Canada Gazette*, Part II, targeted for spring 2011. This will create performance measures that are applicable after 2020.	Following the publication of the proposed Wastewater Systems Effluent Regulations (WSER), EC extensively engaged provincial, municipal and other stakeholders in 2011–2012. The regulations have been adjusted accordingly and the final regulations are expected to be published in *Canada Gazette*, Part II, in 2012.

[5] The Wastewater Systems Effluent Regulations are published in *Canada Gazette*, Part II in July 2012.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.8 Target: Marine Water Quality – Reduce risks to Canadians and impacts on the marine environment posed by pollution form land-based activities.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.8.1 Fund external work through Grants and Contribution Agreements so that communities can restore beneficial uses and improve environmental quality in their locality along the St. Lawrence. (EC) Alignment with the 2011–2012 PAA Program 1.3 Sustainable Ecosystems	Six of 14 ZIP Program groups and Strategies Saint-Laurent have marine zone activities to encourage local and regional collaboration among the various stakeholders involved in the St. Lawrence Plan and involve them in improving the quality of its environment. Community action projects will be funded through contribution agreements with sector organizations under the Community Interaction Program (CIP). The funding will support community projects associated with the issues surrounding the Canada–Quebec Agreement Pertaining to the St. Lawrence: biodiversity conservation, sustainable use and water quality improvement. Performance Expectations: Annual number of projects completed (Community Interaction Program indicator). 6 contribution agreements with organizations in 2011–2012 (ZIP Program indicator).	Thirteen projects were completed. Fourteen agreements were signed, and are valid until 2015–2016.
3.8.3 Provide advice on garbage, ballast water, sewage and other marine pollution to support Canadian positions in international commitments. (TC, EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	EC provides advice to TC on issues that involve both disposal at sea and marine pollution from ships, preventing gaps in regulation and providing consistent environmental protection. By participating in the development and implementation of best practices or global regulation, EC's support of Transport Canada has an impact on ocean sustainability with respect to marine pollution from ships. Performance Expectations: Provide support towards the development of Canadian positions on the issue and management of ship-based garbage (Garbage Annex of MARPOL), and support the advance of these positions at the Marine Environmental Protection Committee of the International Maritime Organization and with Transport Canada domestically.	EC provided advice to Transport Canada through input to the review of Annex V (Garbage) of the International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (MARPOL). EC also provided advice to the Canadian Delegation to the Marine Environmental Protection Committee (TC Lead).
3.8.4 Collect required data to support International Maritime Organization, the United Nations Environmental Programme and other domestic and international organizations.	EC and Fisheries and Oceans Canada work collaboratively to coordinate the development of Canada's national report in support of its commitment to the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA-Marine). The report is submitted to the United Nations Environment Program once every five years prior to an international meeting of GPA	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
(TC, EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	signatories. The next meeting is expected to occur in fall 2011. The development of Canada's national report on the Global Program of Action provides an opportunity to take stock of how effectively federal, provincial and territorial policies and programs are helping to reduce the risk to Canadians and impacts on the marine environment posed by pollution from land-based activities. It is, however, only one example of how data is being collected and used to support domestic and international organizations. Performance Expectations: Coordinate the development of Canada's national report on the Global Program of Action. Submit Canada's national report prior to the 3rd Intergovernmental Review of the Global Program of Action in fall 2011.	The Third Intergovernmental Review (IGR-3) of the Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities took place in Manila, Philippines from 25–27 January 2012. EC coordinated the development of all materials for the IGR meeting, including Canada's national report on the GPA. The Canadian delegation delivered Canada's statement during the high-level segment of the meeting, highlighting achievements in implementing the GPA over the past five years since IGR-2.
3.8.9 Advance positions that can influence global rules and practices on dumping waste at sea and other marine pollution matters. (EC, TC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	Canada is a Party to the London Protocol, a global treaty on disposal at sea. The treaty sets assessment and monitoring goals globally. EC leads on this treaty for Canada. Canada's participation internationally has an impact on the domestic and global ocean sustainability with respect to disposal at sea by influencing best practices or global regulation. Performance Expectations: Develop Canadian positions and advance them at the London Protocol. Canada expects to achieve at least 50% of its positions.	In 2011–2012, Canada was successful in advancing its positions at both the Meeting of the Parties of the London Protocol and at the Scientific Groups meeting of the London Protocol and Convention. Canada met its objectives for 50% of issues and partially achieved the other 50%, with the work ongoing. Canada set positions on 4 main issues: compliance, ocean fertilization regulation, spoilt cargo management, and rules for exporting CO_2 to sub-seabed geological formations for storage.
3.8.13 Ensure that 90% of CEPA 1999 disposal at sea permits are issued within 120 days. (EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	The *Canadian Environmental Protection Act, 1999* requires an application for disposal at sea and the Minister of the Environment is required to monitor representative disposal sites where material is permitted for disposal. Each permit is granted following a detailed assessment, and the permit sets conditions to protect the marine environment and human health. This service requirement for permit assessment supports the larger sustainability in Target 3.9 by ensuring that the assessment is consistent, conducted in a timely manner, and thus provides a sound basis for monitoring. Please visit the Disposal at Sea website for more information. Performance Expectations: Service standard of 90% of permits issued within 120 days will be met on an ongoing basis.	85% of permits were issued within 120 days of receipt of the application. The Disposal at Sea (DAS) Permit program did not meet the service standard in 2011–2012, due largely to

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		delays in the Pacific and Yukon Region s a result of sensitive killer whale habitat. EC has been working with Fisheries and Oceans Canada (DFO) to develop standard joint operating procedures to facilitate DAS permitting. These procedures are in use on an interim basis and improvements have been made in the delivery of DAS permits.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.10 Target: Drinking Water Quality – Increase the percentage of First Nation communities with acceptable water and wastewater facility risk ratings by 2013[6].

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.10.9 Develop and continuously update technical guidance protocols, such as the Protocol for Safe Drinking Water in First Nations Communities and the Protocol for Wastewater Treatment and Disposal in First Nations Communities. (INAC, EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	This will be reported by INAC.	n/a

[6] Drinking water on reserve remains a primary focus of AANDC's current Key Performance Indicators mapping pilot, and targets will be revised based on the pilot's recommendations.

Theme II: Maintaining Water Quality and Availability

3. Goal: Water Quality – Protect and enhance the quality of water so that it is clean, safe and secure for all Canadians and supports healthy ecosystems.

3.12 Target: Chemicals Management – Reduce risks to Canadians and impacts on the environment posed by harmful substances as a result of decreased environmental concentrations and human exposure to such substances.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
3.12.1 Federal custodians plan and undertake assessment and remediation/risk management activities at contaminated sites for which they are responsible in order to reduce human health and ecological risks at higher priority sites. (EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	The Federal Contaminated Sites Action Plan (FCSAP) is a cost-shared program that helps federal custodians address contaminated sites for which they are responsible. The primary objective of this program is to address the risks that these sites pose to human health and the environment and to reduce the associated financial liability. The program has the complementary objectives of supporting other socio-economic outcomes, such as the training and employment of Canadians and promotion of innovative technologies. EC's responsibilities include providing expert advice to other federal custodians on the issue of ecological risk reduction. After a site is assessed and the need to address the contamination confirmed, a remediation or risk management plan is used to explore the various alternatives and identify the preferred option to reduce the risk to human health and the environment. The chosen remediation or risk management method is designed to address the unique conditions of the site. Common remediation activities involve reducing exposure to contaminants by removing, destroying or containing them. By assessing sites suspected of being contaminated, the federal government is able to more accurately estimate human health and environmental risks. Remediation of contaminated sites is designed to reduce risks to human health and the environment from contaminants through the clean-up and risk management of sites. Performance Expectations: Performance indicators are being developed for this implementation strategy and will be available following the finalization of the Performance Management Strategy for the renewed program. Targets will be set following the 2011 federal budget and reporting will begin in 2011–2012.	Performance indicator for the FCSAP program overall: Remediation or risk management plans will be implemented at the 368 highest-priority federal sites by 2015–2016, with annual assessment of progress. Performance achieved: Remediation or risk management plans were implemented at 32 sites in 2011–2012 under the FCSAP, which represents 9% of the five-year target. Performance will be monitored annually to determine whether the target is likely to be met. Performance indicator specific to EC: Implementation of remediation or risk management plans will be completed at 2 of the Department's highest-risk sites by

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		2015–2016, with annual assessment of progress. Performance achieved: To date, EC has completed assessment work at 7 of its 16 highest-risk sites where risk reduction plans were expected to be completed by 2015–2016. Results of the assessment work concluded that no further action was required at these 7 sites. EC plans to complete assessment and remediation work (where required) at the remaining 9 sites by the end of 2015–2016 fiscal year.
3.12.2 Guidance and program policies developed by the program secretariat and the expert support departments are used by federal custodians in the program implementation activities. (EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	EC will sustain the capability to review site classification to ensure funding is directed to highest-risk sites and to manage sites with a focus on reducing the risk to human health and the environment. Expert advice ensures that custodians adopt a scientifically credible and consistent approach to the assessment of human health and ecological risks across the program. A sustainability framework is currently being developed to help custodians integrate sustainable decision making into the management of contaminated sites. Performance Expectations: Performance indicators are being developed for this implementation strategy and will be available following the finalization of the Performance Management Strategy for the renewed program. Targets will be set following the 2011 federal budget and reporting will begin in 2011–2012.	FCSAP Secretariat and EC's Expert Support produced or delivered 18 guidance, tools or training items in 2011–2012. Two of these items are described below. A scoping study for a FCSAP sustainability strategy and plan was drafted with the implementation of activities for the first year of the strategy to occur in 2012–2013. Sustainable approaches to remediation consider future environmental and socio-economic effects of a remediation strategy, and how to maintain the benefits of remediation long-term.[7] Public Works and Government Services Canada and EC completed the Sustainable Development Analysis Tool to assist federal custodians in choosing the most sustainable remediation or risk management solution for their contaminated sites.
3.12.3 In 2010–2011, site assessments will be undertaken on an estimated 1500 projects by 15 federal custodians in total while an estimated 500 remediation/risk management projects will be implemented by 17 custodians in total. (EC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	This implementation strategy has been completed and will be reported in the 2010–2011 Departmental Performance Report. All future work with federal contaminated sites is outlined in the Federal Contaminated Sites Action Plan.	In 2010–2011 (as stated in the implementation strategy), site assessments were undertaken at 2,700 sites while remediation or risk management occurred at 630 sites belonging to 14 federal custodians.
3.12.4 Assess 100% of existing commercial substances as identified under the Chemicals	The Government of Canada is committed to addressing all of the substances that have been identified as being a priority. Under CEPA 1999, EC and Health Canada have identified these priorities though the categorization of all substances in	

[7] In the context of FCSAP, sustainable approaches to remediation consider the environmental and socio-economic effects of a remediation strategy, resulting in an optimization of benefits.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Management Plan for risks to human health and/or the environment (100% of total of 4300 by 2020). (EC, HC) Alignment with the 2011–2012 PAA Program 3.1 Substances and Waste Management	commerce , as included on the Domestic Substances List. The assessment and management of substances is addressed through a range of activities best suited to the level of priority, nature and use of the substances, and the types of risks they may pose to Canadians or their environment. To support assessment and management activities, the strategy further involves research and monitoring activities, including updating information on the commercial status of these substances. There is also international collaboration relating to data sharing and the shared development of assessment and management approaches. This includes priority setting, assessment and related research and monitoring, which identifies substances of concern and the nature of risks that they pose to Canadians and their environment, allowing risk management to focus on implementing appropriate measures for reduction of those risks. Performance Expectations: Close to 1,200 (28%) of the existing commercial substances under the Chemicals Management Plan will be assessed for risk to human health and/or the environment. Risk management measures will be implemented for those substances identified as being of concern to human health or the environment. Identification of the next round of assessment and associated timelines, and initiation of assessments.	By the end of 2011–2012, 1,092 (25%) of the 1200 substances had been addressed Substances were considered to be addressed once a formal decision was made that, pending new information, no further assessment work was required on a substance of concern.Of the 1092 substances: • 144 were determined or proposed to require risk management actions • 283 were determined or proposed to not currently pose a risk but would be subject to the significant new activity provisions • 665 were determined or proposed to not pose a risk and require no further action The cumulative total number of substances addressed to the end of 2011–2012 (including previous years) is 1,092, which represents approximately 25% of all substances under the CMP. In 2011–2012, a total of 655 substances were considered to have been addressed, including 22 substances in the Challenge, 28 substances from the petroleum stream sector approach, 545 substances using the rapid screening approach, and 60 in other initiatives under the Chemicals Management Plan. Of the substances addressed, 10 were found or proposed to be found to meet the definition of “toxic” under CEPA 1999.
3.12.5 Assess 100% of new substances, for which EC has been notified by industry of their intended manufacture or import, to determine if they are suspected of being toxic within the timelines in the regulation or established services standards. (EC, HC) Alignment with the 2011–2012 PAA: Program 3.1 Substances and Waste Management	Any person who intends to import or manufacture a new substance in Canada must submit a notification to EC prior to importing or manufacturing the substance. Once the notification is received, EC and Health Canada are responsible for assessing the substance assessing the substance within the prescribed regulatory timeline to determine whether the proposed uses of the substance could lead to its posing any risk to human health or the environment. Actions taken under the New Substances program ensure that new substances are not allowed onto the market if their introduction would result in risks to the environment or human health. Approximately 500 new substance notifications are processed on an annual basis. Of these 500 assessments, approximately 25 Significant New Activity notices and 10 Ministerial Conditions are issued annually to restrict the use of these substances for other activities, or to mitigate	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	potential risks. Performance Expectations: 100% of new substances, intended for manufacture and/or import into Canada, for which notification by industry has been received by EC in 2011–2012, will be assessed within the prescribed regulatory timeline, to determine whether the substance is toxic or capable of becoming "toxic" within the meaning of section 64 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999).	100% of new substances were addressed with the prescribed legislative timeline.
3.12.7 Ensure at least one risk management measure is in place within the legally mandated timeframes for 100% of substances added to the List of Toxic Substances within. (EC,HC) Alignment with the 2011–2012 PAA: Program 3.1 Substances and Waste Management	Substances found to be "toxic" under the *Canadian Environmental Protection Act, 1999* (CEPA 1999) and added to the Schedule 1 must have a proposed instrument to establish or control actions for managing the substance published in the *Canada Gazette*, Part I, within two years of the recommendation that the substance be added to Schedule I. Within 18 months of the publication of the proposed instrument in the *Canada Gazette*, Part I, the final instrument must be published in the *Canada Gazette*, Part II. Information regarding the risk management measures in place for the substances on the List of Toxic Substances can be found on the Chemical Substances website and EC's CEPA Environmental Registry. Under the Chemicals Management Plan, the Challenge initiative to industries and other stakeholders was developed to address approximately 200 chemicals identified as high priorities for action due to their potential to cause harm to human health and/or the environment. The Challenge divides these chemicals into 12 batches. Approximately every 3 months, a new batch of chemicals is released for comment and information gathering. The information gathered is used to feed into evidence-based decisions when assessing risks to human health and the environment, and developing measures to reduce these risks. Performance Expectations: All substances added to the List of Toxic Substances will have at least one risk management measure in place within the legally mandated time frames.	In 2011–2012, proposed risk management instruments were published for 10 of 11 substances listed on Schedule 1 within the required timelines. Final risk management instruments were published for 8 of 8 substances listed on Schedule 1 within the required timelines.
3.12.8 Deliver compliance promotion activities for new instruments developed under CEPA 1999. (EC) Alignment with the 2011–2012 PAA: Program 3.3 Compliance Promotion and Enforcement – Pollution	Compliance promotion relates to activities that are undertaken to increase the awareness and the understanding of new risk management instruments developed under Canadian Environmental Protection Act, 1999 (CEPA 1999). Through these activities, information is provided regarding the compliance requirements, the benefits of complying with the law, as well as, the consequences of non-compliance. The approach to compliance promotion is collaborative and coordinated across the department's programs and regions and with the Enforcement Branch of EC. It is achieved using various tools and approaches such as website postings, letters and emails, brochures, site visits, responses to inquiries and information sessions. Performance Expectations: Conduct compliance promotion activities to increase Stakeholder awareness for new regulations related to substances added after 2009 to the CEPA 1999 List of Toxic	Compliance promotion activities have been delivered for instruments managing the risk of toxic substances added to the List of Toxic Substances prior to 2003 such as VOC, tetrachloroethylene, PCBs, fuel-containing toxic substances,

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	Substances.	mercury, PFOS and its salts, etc. No new instruments controlling substances added to the CEPA 1999 List of Toxic Substances after 2009 were developed and promoted in 2011–2012.

Theme II: Maintaining Water Quality and Availability

4. Goal: Water Availability – Enhance information to ensure that Canadians can manage and use water resources in a manner consistent with the sustainability of the resources.

4.1 Target: Water Resource Management and Use – Promote the conservation and wise use of water to affect a 30% reduction or increased efficiency in water use in various sectors by 2025 (based on 2009 water use levels).

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
4.1.1 Provide non-financial support for a partnership consortium that will implement a water labeling and certification program to Canadians. (EC) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	WaterSense-labelled products and fixtures will be promoted to Canadians in general and to federal facilities, other levels of government, industry and the retail sector in particular, so that consumers and managers can make responsible decisions relating to efficient water use. Performance Expectations: Starting in 2012–2013, the performance of the program will be documented by EC in its annual reports of partner activities, successes, challenges and other feedback including data, such as retail sales of WaterSense products.	Data on the type of promotional activities conducted by EC in 2011 was reported to the U.S. EPA. This data helped the U.S. EPA track progress and program achievements, identified potential case studies, and improved the WaterSense program.
4.1.2 Enhance and expand effective partnerships that enable the voluntary and regulatory means of managing the demand for water towards its sustainability. (EC) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	EC collaborates with federal colleagues, research institutions, other jurisdictions, and environmental non-governmental organizations to promote sustainable water management tools and mechanisms, including information on water pricing, modeling and incentive programs. Performance Expectations: Metrics are under development and would include the number and variety of partners and the number and reach of promotional material developed to inform Canadians.	EC collaborated with a variety of partners to promote sustainable water management. For instance, other members of the Canadian WaterSense Consortium represent other federal government departments, 4 provincial ministries, 3 municipal governments, 4 ENGOs, 4 trade/industry associations, 3 technical consultants and an academic organization. The Water pages of EC's website were visited 457,375 times during 2011–2012—an average of 1,250 times per day. Of the visitors, 60% were in Canada and the remaining 40% were international (primarily in the United States, France and India). Discussions were held with EC federal facilities to promote water efficiency in buildings and integrate the WaterSense labelling and certification program into the new building and retrofits. The WaterSense labelling and certification program was integrated in the retrofit of Place Vincent Massey which houses many Environment Canada employees and the construction of the Place Vincent Massey Annex.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
4.1.4 Improve knowledge of water, its nature, extent, availability, sector use and best management practices such as Integrated Watershed Management to Canadians (EC, NRCan) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	A variety of Web- and print-based information is available to Canadians regarding water science, extent, availability, sector use and best management practices. The following is a list of some of the websites: • The Water website is the most comprehensive site regarding EC's role in water management. • The Canadian Environmental Sustainability Indicators (CESI) initiative reports on environmental indicators that track the long-term trends for issues of key concern to Canadians, including national, regional and local changes in water levels. • Historical water level and streamflow data is available from Canada's national HYDAT (Hydroclimatological Data Retrieval Program) archives. • Real-time and historical (archived) water levels and streamflow is publicly available from the Water Survey of Canada Real-Time Data. Performance Expectations: Analyse the Web metrics of the Water section of EC's website to indicate reach and use of comprehensive and timely information on water-related issues designed to improve knowledge of water.	The Water pages of EC's website were visited 457,375 times during 2011–2012—an average of 1,250 times per day. Of the visitors, 60% were in Canada and the remaining 40% were international (primarily in the United States, France and India).
4.1.5 Provide web and print based information on the science and knowledge of water to Canadians in a comprehensive and timely manner to enable responsible decision. (EC, NRCan) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	A variety of Web- and print-based information is available to Canadians regarding water science, extent, availability, sector use and best management practices. The following is a list of some of the websites: • The Water website is the most comprehensive site regarding EC's role in water management. • The Water S&T website provides access to information on water research (Research), water science expertise (Water S&T Experts), Key Water S&T Reports, and the S&T Into Action series documenting the benefits of EC's water research programs and projects to Canadians. • The Water Science News is e-published and disseminated externally every two months and provides updates on current water research and new journal articles published by EC scientists. • The Canadian Environmental Sustainability Indicators (CESI) initiative reports on environmental indicators that track the long-term trends for issues of key concern to Canadians, including national, regional and local changes in water levels. • Historical water level and streamflow data is available from Canada's national HYDAT (Hydro-climatological Data Retrieval Program) archive. • Real-time and historical (archived) water levels and streamflow is publicly available from the Water Survey of Canada Real-Time Data website. Performance Expectations: Analyse the Web metrics of the Water section of EC's website to indicate the reach and use of comprehensive and timely information on water-related issues designed to improve knowledge of water.	The Water website was visited 457,375 times during 2011–2012—an average of 1,250 times per day. Of the visitors, 60% were in Canada and the remaining 40% were international, primarily in the United States, France and India.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	Number of site visits to the Freshwater Web pages of the EC website. Number of site visits to the S&T Water pages of EC. Growth in requests for a subscription to Water Science News.	
4.1.6 Continue work on collection of hydrometric data through the Water Survey of Canada. (EC, HC) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	The Water Survey of Canada is the national authority responsible for the collection, interpretation and dissemination of standardized water resource data and information in Canada. In partnership with the provinces, territories and other agencies, the Water Survey of Canada operates over 2,500 active hydrometric gauges across the country. For further information, please visit EC's water survey website. Performance Expectations: 100% availability of preliminary water level and discharge data available via the Internet for real-time hydrometric stations within 24 hours of occurrence.	Operationalization of the Hydrometric Workstation has afforded access to preliminary water-level and discharge data available via the Internet for 95% of real-time hydrometric stations within 24 hours of occurrence.
4.1.7 Conduct research and modeling with respect to water use and management particularly in the design and implementation of integrated decision systems such as Integrated Watershed Management. (EC) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	Use of coupled and ensemble modelling approaches for water cycle and environmental prediction to better inform water resource management decision making—this is being conducted by MSC and S&T (e.g. operationalizing the model for the Upper Great Lakes will be completed next year). We also develop and test a numerical water analysis model for the integrated assessment of water use and availability at the watershed level, and apply the water analysis model to areas of federal interest. In addition, a numerical model (RIVICE) for the analysis of flooding due to river ice jams will be developed and tested and also applied to areas of federal interest. The development of water models will provide a tool for developing solutions for wise water management and support the decision system for assessing impacts of changes in water use. Performance Expectations: Testing and documentation of a new version of the Water Analysis Model. Initial Water Analysis Model applications completed and documented for the Okanagan River Basin and South Saskatchewan River Basin. First version of RIVICE tested by provincial and private sector collaborators.	Testing and documentation of the updated version of the Water Availability Model is complete. A comprehensive reference manual for the model will be completed by March 29, 2013. The application of the Water Availability Model to the entire Okanagan basin was completed and the results were presented to the Okanagan Water Use and Supply Study. Testing of the Numerical River Ice Model (RIVICE model) was completed in conjunction with Manitoba Water Stewardship. Model documentation is nearing completion, which is targeted for March 29, 2013. Two papers on model application were also published.
4.1.8 Conduct surveys on water use such as the Municipal Water and Wastewater Survey (EC) and the CESI Industrial Water Use Survey, Survey of Drinking Water Plants and Agriculture Water Use Survey. (Stats Can, EC) Alignment with the 2011–2012	The four surveys assist in establishing 2009 sectoral water use baseline data. The 2009 Municipal Water and Wastewater Survey data has been collected and is currently undergoing quality control and analysis. The CESI surveys are conducted by StatsCan and managed by EC. However, to be verified with StatsCan, the 2009 industrial water survey collection period is finished and publication is scheduled for early 2012. The 2010 Agriculture water survey collected information for the 2010 growing season and data will become available this spring 2011. The next survey of drinking water plants is scheduled	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
PAA: Program 1.2 Water Resources	for launch in early 2012 and will collect 2011 information. The Municipal Water and Wastewater Survey assists in tracking progress of the FSDS Target 4.1 and Goal 4. Performance Expectations: Quality control and analysis of 2009 Municipal Water and Wastewater Survey; data will be publically available by end of year 2011.	The Municipal Water and Wastewater data was released in August 2011. Water use and pricing reports have been published.
4.1.9 Continue the development and implementation of Water Availability Indicators. (HC, EC, NRCan) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	To ensure continued sustainability of freshwater for human use and ecosystem support, water availability status in Canada must be tracked. "Water availability" refers to the volume of water in our rivers compared with the amount of water we are using. A water availability indicator (WAI) is currently under development. Performance Expectations: Publication of the water availability indicator for all sub-drainage areas in Canada. Water demand and availability ratio for the Mixed Grassland Case Study will be reported in the *Clean Water Act* annual report to be released in 2011.	The water availability indicator by sub-drainage areas in Canada for 2005 and 2007 was published in the 2010–2011 *Canada Water Act* Annual Report. Water demand and availability ratio for the Mixed Grassland Case Study was reported in the 2009–2010 *Canada Water Act* Annual Report.
4.1.11 Conduct hydrological and hydraulic studies in support of key environmental projects/programs of federal interest (e.g. oil sands). (EC) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	Hydrological and hydratic studies support the assessment of surface water quantity issues related to the wise use of water in specific watersheds and international river improvements and environmental assessment of the Major Projects Management Office infrastructure projects in areas of federal interest (e.g. oil sands). Performance Expectations: Completion of the *International River Improvements Act* (IRIA) licensing process for the Long Lake Hydro project in British Columbia. Publication of five Major Projects Management Office project assessments.	Licensing of the Long Lake Hydro project in British Columbia was expected in 2012–2013. Reviewed hydro technical assessments and contributed input to support the departmental position on environmental assessments for 6 major resource projects.
4.1.12 Develop appropriate tools to ensure federal leadership in water efficiency in the Federal House. (EC) Alignment with the 2011–2012 PAA: Program 1.2 Water Resources	Develop, with federal colleagues, a federal specification for retrofitting or building new facilities, including a water efficiency objective and specifications. Promote with administrators of federal infrastructure funding programs (Federation of Canadian Municipalities and Industry Canada) the need to include water efficiency requirements as criteria for funding allocations. Performance Expectations: EC will provide annual reports to EC's senior management on activities, successes and challenges.	Discussions were held with EC federal facilities to promote water efficiency in buildings and to integrate the WaterSense labelling and certification program into other new building and retrofit projects. The WaterSense labelling and certification program was integrated into the retrofit of Place Vincent Massey (PVM) and the construction of the PVM Annex.

Theme III: Protecting Nature

5. Goal: Wildlife Conservation – Maintain or restore populations of wildlife to healthy levels.

5.1. Target: Terrestrial and Aquatic Wildlife Conservation – Population trend (when available) at the time of reassessment is consistent with the recovery strategy for 100% of listed species at risk (for which recovery has been deemed feasible) by 2020.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
5.1.1 Fulfill Canada's obligations under the Species at Risk Act by listing and protecting those species in critical need of conservation action. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	SARA was proclaimed in June 2003 and came into force in stages during 2003 and 2004. The purposes of the Act are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened. EC responds to Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessments by developing recommendations for the Minister on listing of terrestrial species at risk on Schedule 1 of SARA. In cooperation with Fisheries and Oceans Canada, the Department prepares the Minister's response statements for all species, including aquatic species. The 2010–2011 response statements can be found at this website. Performance Expectations: Percentage of listed SARs with a recovery strategy, action plan or management plan in place within the timelines required by the Act. The target is to be determined. Percentage of threatened and endangered species with a posted recovery strategy for which critical habitat was either fully identified in the recovery strategy, or for which a schedule of studies is underway or completed. The target is to be determined.	EC published 81 response statements acknowledging that the Minister had received COSEWIC assessments of species at risk. Of these assessments, 21 involved terrestrial species that were the subject of pre-regulatory listing consultations. Another 3 species were the subject of ongoing extended consultations. One terrestrial species, the Polar Bear, was added to Schedule 1 as a species of special concern during the April 1, 2011 to March 31, 2012 period. Listing a species as of special concern requires that a management plan be developed within 3 years to set out measures for the conservation of the species. The 2011–2012 response statements can be found at this website.
5.1.2 Fulfill Canada's obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) by helping to ensure that the status of no species is threatened by international trade. (EC) Alignment with the 2011–2012	The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) aims to ensure that international trade in wildlife is sustainable such that this trade does not pose a risk to species. For further information, please visit the CITES website. As a signatory to the Convention, Canada can use this tool to ensure species at risk in Canada are not further threatened by trade. In this manner, for those species in trade and regulated by the Convention, the CITES program contributes to Targets 5.1 and 5.2 under Goal 5 of the Strategy.	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
PAA: Program 1.1: Biodiversity – Wildlife and Habitat	Performance Expectations: Implementation of the decisions taken at the 15th Conference of Parties to CITES through the regulatory update of Canada's *Wild Animal and Plant Trade Regulations* of the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) by mid-2011. These amendments will reflect additions, deletions and reclassifications of species for which trade is controlled in Canada under WAPPRIITA.	The *Wild Animal and Plant Trade Regulations* under the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) were amended to take into account the decisions from the 15th Conference of the Parties. With these changes, trade of species to or from Canada is managed in accordance with the internationally accepted convention.
5.1.3 Maintain the Species at Risk Public Registry which fulfills the requirement under the Species at Risk Act (SARA). (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC leads the maintenance of the Species at Risk (SAR) Public Registry with the collaboration of Fisheries and Oceans Canada and Parks Canada. The Registry was developed as a key tool to support public participation in SARA-related decision making. Performance Expectations: Documents required by SARA are available from the SAR Public Registry within statutory deadlines. Request for content updates are sent out quarterly. Maintenance of the website is performed regularly.	Documents required by SARA are available from the SAR Public Registry within one to two business days after they are received from the responsible jurisdictions. Content is updated on an ongoing basis, from a variety of applications and databases. As part of the maintenance that is performed regularly on the website, updates are requested from responsible jurisdictions on a quarterly basis. Underlying data on the Schedule 1 status of species at risk was kept current and accurate.
5.1.4 Continue to support the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessments and reassessments to understand and communicate progress in species survival and recovery. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	The species assessment process is conducted by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which operates at arm's length from the core departments. COSEWIC uses available biological information on species deemed to be in some danger of disappearing from Canada to assess the risk status. It reviews information on population and habitat status, trends and threats from commissioned status reports and from unsolicited status reports received with an application from the public; uses community and Aboriginal traditional knowledge (ATK); and applies assessment criteria based on international standards. EC provides a Secretariat, which supports the activities of the Committee on the Status of Endangered Wildlife in Canada. The Department ensures the Committee has the resources necessary to undertake species status assessments, including the preparation of species status reports, the inclusion of Aboriginal Traditional Knowledge, and support to twice-annual Wildlife Species Assessment Meetings. Performance Expectations: The status of 100% of species at risk will be reassessed by COSEWIC within 10 years of the most recent assessment.	Approximately 400 of the 650 species assessed by COSEWIC were listed on SARA when the Act came into force, requiring 10-year updates in 2013 and 2014. As of 2011, 87% of the 650 species assessed had been reassessed within 10 years.
5.1.5 Continue to lead and cooperate under the National Recovery Program (RENEW) with provinces and territories	RENEW (REcovery of Nationally Endangered Wildlife), the national recovery program for species at risk, was launched in 1988. The program now involves three federal departments (EC, Fisheries and Oceans Canada, and Parks Canada Agency) provincial and territorial government	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
consistent with the Accord for the Protection of Species at Risk. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	agencies, wildlife management boards authorized by a land claim agreement, aboriginal organizations other organizations and interested individuals. RENEW has a new Terms of Reference, and now functions as a formal Working Group under the federal-provincial-territorial Canadian Wildlife Directors Committee (CWDC). This has significantly clarified the governance of RENEW, which had been an issue in the past. Performance Expectations: EC will coordinate all RENEW activities. RENEW will continue to exchange information among the FPT SAR Recovery programs.	EC continues to coordinate all RENEW activities. RENEW continues to exchange information and develop products for use by federal-provincial-territorial SAR recovery programs.
5.1.6 Enhance the implementation of SARA within DFO and EC to protect and recover species at risk relative to their respective mandates. (DFO, EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	The Minister of the Environment is responsible for the overall coordination of the federal species at risk strategy, including the implementation of federal activities in support of the Accord for the Protection of Species at Risk in Canada (the Accord), the administration of the Habitat Stewardship Program (HSP) for Species at Risk, and the Interdepartmental Recovery Fund. The Minister of the Environment is also responsible for the protection and recovery of migratory birds and species at risk on federal lands other than those under the responsibility of the Minister of the Fisheries and Oceans or those individuals under the responsibility of Parks Canada. Under the Accord, it is understood that the provinces and territories will undertake actions and enforce prohibitions for the conservation of species at risk under their jurisdictions. In addition, the Minister of the Environment is responsible for the initiation and facilitation of multi-jurisdictional recovery teams, and for coordinating the development of recovery strategies for species requiring the involvement of more than one jurisdiction. The Minister of the Environment will attempt to enter into agreements with provinces and territories for them to develop recovery strategies for species under their management responsibility. Performance Expectations: Publication of the SARA Policies in 2011. SARA policies will provide the overarching policy framework and, together with other guidelines and departmental operational procedures, enable the effective implementation of SARA.	Revisions have been made to the SARA draft policies. A final version has not yet been published.

Theme III: Protecting Nature

5. Goal: Wildlife Conservation – Maintain or restore populations of wildlife to healthy levels.

5.2. Target: Terrestrial and Aquatic Wildlife Conservation – Target for proportion of migratory bird species whose population varies within acceptable bounds of the population goals will be established in 2011 once the Birds Status Database is complete.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
5.2.1 Fulfill Canada's obligations under the Migratory Bird Convention of 1916 between Canada and the United States as implemented in Canada under the Migratory Birds Convention Act, 1994 by ensuring that Migratory Bird populations are managed and conserved. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	The goal of the Migratory Birds (MB) Program is to ensure that migratory bird populations are maintained at healthy levels. To meet this goal, activities focus on the protection and conservation of populations to meet our national and international obligations, and support sustainable socio-economic benefits for Canadians. The program has several pillars, from managing legislation and regulations, to protecting and conserving habitat, identifying and mitigating threats and influencing those whose actions on the landscape affect migratory birds. Because of the migratory nature of birds, the MB Program is heavily dependent on partnerships with other countries and other governments. Performance Expectations; Evaluations of the status of all Canadian bird species are underway and baseline values and targets will be established in 2011.	The status of approximately 400 species of migratory birds in Canada (all land birds, shorebirds, water birds, and seabirds) was assessed within the Status of Birds in Canada website and publicly posted as of June 2012. Waterfowl was assessed through a separate process for migratory game birds. An overview of the state of Canada's birds was published as part of The State of Canada's Birds report. Progress was made on identifying criteria for setting population goals for individual species.
5.2.2 Fulfill Canada's obligations under the Species at Risk Act by listing and protecting those species in critical need of conservation action. (EC, DFO)[8] Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	This implementation strategy contributes to FSDS Target 5.1, not Target 5.2. Please refer to Implementation Strategy 5.1.1 for further information.	This implementation strategy contributes to the FSDS Target 5.1, not Target 5.2. Please refer to Implementation Strategy 5.1.1 for further information.

[8] This implementation strategy on the *Species at Risk Act* contributes to the achievement of FSDS Target 5.1 (Species at Risk) and not Target 5.2 (Migratory Bird Species).

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
5.2.3 Ensure that all Conservation Plans for the 22 Bird Conservation Regions (BCR) are publicly available. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC's Canadian Wildlife Service is leading the development of bird conservation plans in 25 ecoregion-based planning units. The plans identify priority species, their population objectives, threats and conservation objectives, as well as recommended actions, both within Canada and abroad. The plans will be an important tool in guiding EC's Migratory Birds Program and in informing the actions of conservation partners. The Bird Conservation Region (BCR) plans contribute to targets 5.2, 6.1 and 6.3. Performance Expectations: 100% of the 25 Bird Conservation Regions (BCRs) will have up-to-date BCR plans posted on the EC website by spring 2012.	60% of the Bird Conservation Regions (BCRs) strategies were completed in draft form. Current timelines of the project: • completion of 100% of final strategies by the end of fiscal year 2012–2013 • posting of 50% by end of 2012–2013 • posting of the remainder by mid-fiscal year 2013–2014
5.2.4 Complete hiring of management cadre within Enforcement Operations by Fall 2010. Recruit and train new officers for the Compliance and Enforcement Program by mid 2010–2011. (EC)[9] Alignment with the 2011–2012 PAA: Program 1.4: Compliance Promotion and Enforcement - Wildlife	Wildlife enforcement officers enforce Canadian wildlife legislation, which protects plant and animal species in Canada, including migratory birds. Canadian wildlife protection legislation is also aimed at conserving threatened or potentially threatened species nationally and internationally. These laws regulate human interventions, such as hunting or trade, that could adversely affect long-term wildlife conservation. Wildlife enforcement officers enforce these laws throughout Canada in collaboration with other federal departments, provincial and territorial governments, and national and international agencies and organizations. In order to more effectively and efficiently fulfill the wildlife protection law enforcement function, a commitment was made in Budget 2007 to increase the complement of enforcement officers in the Department. Performance Expectations; Hiring of management cadre within Wildlife Enforcement was completed in summer or fall 2010. Implementation of the commitment to increase enforcement capacity by 50% is complete.	Completed in 2010–2011.
5.2.5 Develop and implement a regulation for the management of the incidental takes of migratory birds in accordance with the purpose of the Migratory Birds Convention Act, 1994. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity –	While the *Migratory Birds Regulations*, under the *Migratory Birds Convention Act, 1994*, strictly prohibit the harming of migratory birds and the disturbance or destruction of their nests and eggs, many are inadvertently destroyed by activities such as mining, forestry and agriculture, electrical generation and transmission, fishing, management of infrastructure, and urban development. This inadvertent destruction is called "incidental take" and is illegal. After conducting preliminary consultations, EC is now focusing efforts on the provision of general avoidance guidelines to help stakeholders assess their risk of affecting migratory birds and enable them to develop operational strategies to avoid the incidental take of migratory birds. EC	

[9] Efforts to deliver on this implementation strategy were completed in 2010–2011 and results will be included in the Departmental Performance Report 2010–2011.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Wildlife and Habitat	is also preparing policies that help the development by sectors of best management practices in support of the conservation of migratory birds. The provision of information regarding the risk of affecting migratory birds and guidance on the development of best management practices (BMPs) will help industries plan their activities in order to meet their obligations towards the environment, including migratory bird conservation. This will contribute to maintaining populations of migratory bird species within acceptable bounds. Performance Expectations: Pilot project for avoidance advice will be undertaken in one region by fall 2011. Guidance for industry groups on how to develop beneficial management practices that support migratory bird conservation will be available in draft form by winter 2011.	EC's website was updated in fall 2011, providing general guidance on how to avoid incidental take of nests and eggs of migratory birds. Draft guidance for industry groups on how to develop beneficial management practices that support migratory bird conservation was shared in 2011 with interested stakeholders and input was solicited.
5.2.6 Implement recommendations of the review of migratory bird monitoring programs. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	Monitoring and reporting are essential to our understanding of the health of migratory bird populations. Bird banding is a basic monitoring tool, informing studies that assess the effects of environmental contaminants, protect endangered species and set hunting regulations. EC administers the North American Bird Banding Program in Canada. EC also coordinates two key surveys. Volunteers across Canada have been collecting data for the North American Breeding Bird Survey since 1966. For the National Harvest Survey, the CWS engages hunters to establish annual harvesting and hunting estimates. This information determines the amount of hunting each species can sustain. EC's Avian Monitoring Review Steering Committee has prepared summary recommendations for all surveys, and is in the process of completing detailed recommendations for any surveys that require substantial change. Performance Expectations: Specific timelines are to be identified for implementing changes to monitoring programs; the first changes are being incorporated into 2011–2012 work planning. Changes include shifting resources so as to reduce efforts in areas where adequate information is now available to effectively manage populations and intensify efforts in areas where significant gaps have been identified. A permanent Avian Monitoring Committee will be created to ensure that all monitoring programs are reviewed regularly and that the results are analyzed appropriately and provided to decision makers in a timely manner.	EC continued to deliver the North American Bird Banding Program in Canada, and a key Memorandum of Understanding was signed with the United States clarifying shared roles and responsibilities. EC continued to deliver many key bird-monitoring programs, including the North American Breeding Bird Survey in Canada, the National Harvest Survey and various regional bird survey programs. EC also provided support to non-governmental partners to deliver various other volunteer-based surveys in Canada. The Avian Monitoring Review (AMR) report incorporating recommendations on various key surveys, was finalized and published (in May 2012) by a team involving both Environmental Stewardship Branch (ESB) and Science and Technology (S&T) staff. An Avian Monitoring Committee (AMC) was established in September 2011 and is overseeing the implementation of recommendations from the AMC. The AMC has developed a work plan for ongoing review of monitoring programs and tracking and implementation of recommendations from the AMR. Changes were made to several monitoring programs during the fiscal year.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
5.2.7 Recruit and train new officers for the Compliance and Enforcement Program. (EC) Alignment with the 2011–2012 PAA: Program 1.4: Compliance Promotion and Enforcement – Wildlife	Wildlife enforcement officers enforce Canadian wildlife legislation that protects plant and animal species, including migratory birds, in Canada. Canadian wildlife protection legislation is also aimed at conserving threatened or potentially threatened species nationally and internationally. These laws regulate human interventions, such as hunting or trade, that could adversely affect long-term wildlife conservation. Wildlife enforcement officers enforce these laws throughout Canada in collaboration with other federal departments, provincial and territorial governments, and national and international agencies and organizations. In order to more effectively and efficiently fulfill the wildlife protection law enforcement function, a commitment was made in Budget 2007 to increase the complement of enforcement officers in the Department. Performance Expectations: Implementation of the commitment to increase enforcement capacity by 50% is complete. Training for new officers is complete and ongoing to handle regular turnover.	Completed in 2010–2011.
5.2.8 Carry out actions for priority migratory bird species as indicated by Bird Conservation Regions Plans. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	Working with partners in the North American Bird Conservation Initiative (NABCI), EC coordinates, tracks and implements actions that support conservation objectives for birds. EC also leads the development of an integrated land-use management strategy. The Bird Conservation Region plans contribute to FSDS targets 5.2, 6.1 and 6.3. Performance Expectations; Between 2012–2017, focus on broadening conservation activity by Joint Ventures to continue to extend into non-wetland habitats. Implement, in partnership with others, priority conservation actions articulated in BCR plans. Put in place a system to track partner activities for adaptive management purposes by the end of 2012–2013.	Participated in the North American Grasslands conservation project of the Commission for Environmental Cooperation, bringing together North American Bird Conservation Initiative (NABCI) partners and joint ventures. In Canada, this project is implementing some priority conservation actions for BCR 11 grassland birds. Developed expertise in the Open Standards for the Practice of Conservation to inform potential future effectiveness monitoring of the implementation of BCR activities.

Theme III: Protecting Nature

6. Goal: Ecosystem/Habitat Conservation and Protection – Maintain productive and resilient ecosystems with the capacity to recover and adapt; and protect areas in ways that leave them unimpaired for present and future generations.

6.1. Target: Terrestrial Ecosystems and Habitat – Non-Park Protected Habitat – Habitat target to support conservation of priority migratory birds.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
6.1.1 Implement integrated activities and programs with other levels of government and external stakeholders that lead to the improvement of the state (environmental quality) of priority ecosystems across the country. (EC) Alignment with the 2011–2012 PAA: Program 1.3: Sustainable Ecosystems	EC aims to sustain Canada's ecosystems over the long term by working with Canadians, their governments and the private sector on ecosystem initiatives and providing them with the environmental information and tools required to incorporate social, economic and environmental considerations into their decision making and action. Performance Expectations: The Department will continue to advance the implementation of an ecosystem approach by aligning priorities among program initiatives at different geographical scales, strengthening and integrating ecosystem knowledge to inform risk analysis and policy development, and coordinating action in priority ecosystems and hotspots.	Departmental work to integrate an ecosystem approach into program planning continued. Ecosystem-level analysis was deepened, with a focus on potential development pressures, and work on landscape-level assessment to support priority species and habitat was advanced. In addition, coordination continued in selected priority ecosystems and hotspots. In the Okanagan, 1) EC influenced the Okanagan Basin Water Board (OBWB) through participation in the Okanagan Water Stewardship Council 2) EC worked to provide data on the lake evaporation study—an integral piece to the OBWB's Okanagan Water Supply and Demand Project work 3) EC helped influence science outcomes at the Osoyoos Lake Science Forum 4) an intra-departmental committee was struck that discussed activities in the Okanagan that various EC branches were undertaking In the Georgia Basin, 1) EC co-chaired the Salish Sea Ecosystem Conference in Vancouver with the United States Environmental Protection Agency / Puget Sound Partnership 2) EC participated and supported, along with the U.S. EPA, the Coast Salish Gathering Continued transition of the Atlantic Ecosystem Initiatives to implement the Department's ecosystem approach in Atlantic Canada. EC worked with Fisheries and Oceans Canada, other government departments (Canadian and American), the Atlantic provinces, New England states and other stakeholders in collaborative development and implementation of the ecosystem approach in three

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
		vulnerable Atlantic ecosystems: the Bay of Fundy and Gulf of Maine, the Northumberland Strait, and the Halifax coastal zone. EC supported initiatives through contribution funding to achieve tangible results on the issues of nearshore water quality, habitat and biodiversity loss, and the impacts of climate change.
6.1.2 Ensure the protection and conservation of important habitats for wildlife by facilitating an integrated landscape management approach. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	The concept of landscape management is arising more frequently as governments deal with the trade-offs of sustainable development. Landscape management involves land, water and resource use decisions that are integrated across sectors, and considers planned and potential human activities in a defined area, such that the results are ecologically sustainable. This requires user interests, including conservation, to be at the table, supported by a sound scientific understanding of ecological functions and thresholds of sustainability. EC's work includes the formation of strategic partnerships for integrated management of Canada's natural capital, including stewardship and the sustainable management of landscapes. Performance Expectations: Complete a review of habitat monitoring in EC by the end of 2012–2013. Complete three pilots to evaluate the proposed ecosystem, multi-species approach (identification of priority habitats through landscape planning) by the end of 2011–2012.	The habitat components of BCR plans have been converted into map form. Key steps have been completed for the creation of a spatial database of critical habitat and range maps: • Data standards: Standard data attributes/metadata for critical habitat spatial data. • Map layout standards: Standard annotation of critical habitat in recovery documents. • 206 range maps have been extracted and digitalized from various sources. • Work to complete identification of national hotspots (priority habitats) for habitat conservation is in progress. • Identification of priority habitats through landscape planning in regions is in progress. EC is implementing a collaborative research and development project with AAFC to develop land-use scenario assessment tools to inform integrated landscape management.
6.1.3 Manage National Wildlife Areas (NWAs), Migratory Bird Sanctuaries (MBSs) and Marine Wildlife Areas to protect wildlife habitat, and unique and productive ecosystems either directly and/or through partnership arrangements. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC identifies nationally important wildlife habitat whose loss would have a direct impact on the Canadian population of one or more wild species. EC works closely with other federal agencies, provincial and territorial governments, Aboriginal peoples, private organizations, and individuals to ensure that nationally important areas are protected as National Wildlife Areas (NWAs), Migratory Bird Sanctuaries (MBSs) or Marine Wildlife Areas (MWAs). Performance Expectations: Continued investment in recapitalization of federal infrastructure and visitor facilities over the next 10 years. Completion of contaminated sites assessment within protected areas and remediation of sites where required within 3 years.	EC is on track with regards to the recapitalization of our protected areas assets. The depreciated value and cost to upgrade capital assets in protected areas prior to the current reinvestment program was estimated to be $10.7 million. Subsequently, EC invested approximately $4.2 million and is planning to invest another $4.6 million over the next three fiscal years for a total capital investment of $8.8 million. 40% of CWS properties had been completely assessed, 21% had been partly assessed and 34% have not yet been assessed. Planning for assessments is ongoing.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
6.1.4 Implement the Northwest Territories (NWT) Protected Areas Strategy and the Inuit Impact and Benefits Agreement to implement up to six new NWAs in the NWT and three in Nunavut. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC works closely with other federal agencies, territorial governments, Aboriginal peoples, private organizations and individuals to ensure that nationally important areas are protected in Canada's North through the Northwest Territories (NWT) Protected Areas Strategy (PAS) and the Inuit Impact and Benefits Agreement. Performance Expectations: Designation of Edéhzhíe NWA as the first NWA under the NWT PAS by March 2012. Initiate the regulatory process for designation of two additional NWA sites under the NWT PAS in 2011–2012; Put in place Area Co-Management Committees for each designated NWA within 6 months of designation. Identify priority sites in the Nunavut Land Use Plan and determine the conditions needed to protect those sites (NWA or MBS establishment or establishment of terms and conditions under the Plan) by the end of 2011–2012.	EC is waiting for a final recommendation report from the regional working group for one additional site in fiscal year 2012–2013 (Ramparts) and expects to begin the regulatory process in the spring of 2013. Five out of nine area co-management committees have been established under the Inuit Impact and Benefit Agreement (IIBA). Negotiations for the IIBA are expected to begin in fiscal year 2012–2013. A Year 5 Review was recently completed. Key habitat sites have been identified for Nunavut and terms and conditions for these key habitat sites have been developed. EC is now working with the Nunavut Planning Council to incorporate these terms and conditions in the land use plan.
6.1.6 Determine resilience of National Protected Areas network in the face of climate change and other anthropogenic stressors. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC scientists develop the science needed to understand the impacts of climate change and other stressors on Canada's national protected areas (PAs) network. Performance Expectations; Complete the assessment of projected climate change-induced species shifts within protected areas by the end of 2011–2012. Complete a risk assessment for priority sites including PAs in the Nunavut Land Use Plan by the end of 2011–2012.	Assessment of projected climate change- induced species shifts within protected areas completed and report produced. No further research anticipated in 2012-2013 due to lack of resources.
6.1.7 Develop and apply models for economic valuation of ecosystem services to support sustainable development decision making. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat Program 5.1: Internal Services	The development of valuation models and frameworks for the economic analysis of policy decisions having environmental impacts is a key component for the integration of environmental, economic and social priorities into policies and programs. To that effect, we have developed an Ecological Goods and Services (EG&S) Analytical Framework that allows the integration called for by the FSDS. The application of the framework, will include valuation of EG&S, including wildlife species, water, carbon etc. to make decisions related to protected areas, species at risk and other EC issues. Performance Expectations: No performance expectations can be established due to unavailability of resources for 2011–2012.	EC has been co-leading the ongoing Measuring Ecosystem Goods and Services (MEGS) project with Statistics Canada to develop a framework for national environmental statistics and undertake a pilot project on wetlands valuation. EC has been exploring the expansion of the Air Quality Valuation Model (AQVM II) to include the value of the impact of ozone on livestock mortality and the impact of air pollution on urban trees.
6.1.8 Establish frameworks for identifying indicators and developing appropriate	Performance Expectations: EC will update the 1995 Ecological Framework as part of work planned in 2011–2012, contingent upon allocation of	

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
monitoring activities for EC habitat programs. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	available resources.	
6.1.9 Maintain the Conservation Areas Reporting and Tracking System. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	The Conservation Areas Reporting and Tracking System (CARTS) project tracks and reports on the status of Canada's protected areas in a consistent, standardized and authoritative manner. For more information, please visit this website. Performance Expectations: Web-enabled analysis and visualization tools for EC-protected areas data will be developed by March 2012 with a view to making this applicable to CARTS data in the future.	Departmental standards and Web mapping requirements are under study to develop a suitable Web visualization application.
6.1.10 Complete the development of the protected areas strategy including the development of permitting standards and updating management plans. (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC's protected areas strategy envisions a network of areas to protect important, rare or unique habitats for Canada's migratory birds, species at risk and other wildlife that is planned to adapt to ecological change, and managed, in conjunction with others. Performance Expectations: Develop management plans for 10 National Wildlife Area (NWA) and MBS sites by March 2012.	The Environment Canada Protected Areas Strategy and permitting policy are complete and are posted online. Twelve management plans have been drafted and they are expected to be posted for consultation in fiscal year 2012–2013.
6.1.11 Enhance enforcement in EC Protected Areas (MBSs and NWAs). (EC) Alignment with the 2011–2012 PAA: Program 1.4: Compliance Promotion and Enforcement – Wildlife	Enforcement and Compliance Promotion activities uphold EC-administered laws and regulations that support the conservation of migratory birds and species at risk, such as the *Migratory Birds Convention Act, 1994*, and the *Species at Risk Act*. In mid-2010–2011, the implementation of a commitment to increase enforcement capacity by 50% was completed. The hiring and training of new officers bolstered enforcement efforts in EC-protected areas. Performance Expectations: Maintain a proactive response to enforcement in Migratory Bird Sanctuaries and National Wildlife Areas (NWAs) based on risk-based enforcement patrols. Use strategic targeting of high-priority NWAs during peak usage periods and of areas with previous non-compliance history. Continue to monitor the number of inspections and detected violations in EC-protected areas.	Strategic targeting of high-risk protected areas remained an integral part of regional operational planning. In addition, EC initiated preparations for plans to cross-designate Parks Canada wardens to enable them to enforce EC legislation in protected areas close to parks. To be implemented in 2012–2013, this will help to alleviate some of the travel times associated with reaching some of those areas and improve response times to incidents. In 2011–2012, Wildlife Enforcement conducted a total of 471 inspections in EC-protected areas and detected 91 violations.

Theme III: Protecting Nature

6. Goal: Ecosystem/Habitat Conservation and Protection – Maintain productive and resilient ecosystems with the capacity to recover and adapt; and protect areas in ways that leave them unimpaired for present and future generations.

6.3. Target: Marine Ecosystems – Improve the conservation of ocean areas and marine ecosystem by 2012.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
6.3.4 Undertake research to improve understanding of marine ecosystems and support initiatives to identify and characterize vulnerable marine ecosystems. (DFO, EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	The responsibility for establishing and managing the national system of Marine Protected Areas is shared among Fisheries and Oceans Canada (Marine Protected Areas), Parks Canada (National Marine Conservation Areas), and EC (National Wildlife Areas, Migratory Bird Sanctuaries and Marine Wildlife Areas). Identification of vulnerable and priority marine ecosystems is being conducted through Federal Marine Protected Areas Strategy partners (PC and DFO). Performance Expectations: Efforts to identify key marine habitats for migratory birds in Northern Canada will be initiated in 2011–2012.	Key habitat sites for migratory birds have been identified for Nunavut and terms and conditions for access and use have been drafted. EC is working with the Nunavut Planning Council to incorporate these terms and conditions into the Nunavut Land Use Plan.
6.3.5 Provide advice to decision-makers on potential impacts on migratory birds and species at risk and ecological risks associated with specific high-priority ocean activities. (DFO, EC, NRCan) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC continues to provide advice to federal decision-makers through the Federal Marine Protected Areas Strategy and participation in interdepartmental mineral and non-renewable resource assessment policy groups. This initiative crosswalks to CARTS (6.1.9), which is providing marine information and data in support to this multi-partner initiative. Performance Expectations: Work with DFO on the issue of fisheries bycatch and marine aquaculture to minimize adverse effects on marine birds, by developing best operating procedures for use by commercial fisheries and aquaculture operators. Work with the U.S. Fish and Wildlife Service, state and provincial governments to identify threats and mitigating actions related to conservation of marine waterfowl (e.g. a study to locate, identify and describe important habitat for sea ducks in the marine near shore environment on the east coast of North America will be completed by 2013. This will inform advice on location of offshore wind farms, shipping oil spills, and other similar threats).	In December 2011, the Conservation Areas Reporting and Tracking System (CARTS) was updated to reflect marine as well as terrestrial protected areas. Work continues with partners to improve the information.

Theme III: Protecting Nature

6. Goal: Ecosystem/Habitat Conservation and Protection – Maintain productive and resilient ecosystems with the capacity to recover and adapt; and protect areas in ways that leave them unimpaired for present and future generations.

6.4. Target: Marine Threats to Ecosystems – Threats of new alien invasive species entering Canada are understood and reduce by 2015.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
6.4.1 Fulfill federal responsibilities related to prevention, detection, rapid response and management of invasive alien species. Key activities are related to governance (including international cooperation legislation/regulation, science and technology, risk analysis, information management and sharing, performance promotion, management, and mitigation). (EC, NRCan) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity – Wildlife and Habitat	EC continues to coordinate *An Invasive Alien Species Strategy for Canada* (IASSC) (2004) especially at the federal level, where EC chairs the Interdepartmental DG Committee on Invasive Alien Species (IAS). EC manages the Invasive Alien Species Partnership Program (see 6.4.2) and also has the lead for terrestrial alien invasive wildlife. The responsibility for implementing measures related to IAS is shared among many federal departments, including AAFC, CBSA, CFIA, DFO, NRCan and TC. The IASSC aims to reduce the introduction and spread of IAS in Canada, thereby protecting ecosystems and biodiversity from the threats posed by IAS. As such, the implementation of the IASSC directly contributes to the achievement of Target 6.4: Managing Threats to Ecosystems. Performance Expectations: Develop a national IAS logic model. Maintain a national secretariat for coordination of an invasive alien species strategy for Canada.	EC led two Interdepartmental DG Committee meetings on invasive alien species (IAS). EC supported the organization of the National Invasive Alien Species Forum (Ottawa, February 28, 29 and March 1, 2012) and the development of the multi-stakeholder national invasive species council. In collaboration with the other federal departments and agencies, EC led the development of an indicator for the Federal Sustainable Development Strategy target related to invasive alien species: “Threats of new invasive alien species (IAS) entering Canada are understood and reduced by 2015.”
6.4.2 Implement the Invasive Alien Species Partnership Program, which provides funding to provinces, municipalities, educational institutions and non-government organizations, as well as to other groups who are working in support of the goals of the National Strategy – An Invasive Alien Species Strategy for Canada (2004). (EC) Alignment with the 2011–2012 PAA: Program 1.1: Biodiversity –	The Invasive Alien Species Partnership Program (IASPP) is a partnership-based funding program with an annual contribution budget of $1 million per year. For further information on the IASPP, please visit this website. The IASPP provides funding for initiatives that reduce the introduction and spread of IAS, preventing serious threats to Canadian ecosystems and biodiversity. As such, the IASPP directly contributes to the achievement of Target 6.4: Managing Threats to Ecosystems. Performance Expectations; The Invasive Alien Species Partnership Program (IASPP) is a partnership-based funding program with an annual contribution budget of $1 million per year. For further information on the IASPP, please visit this website.	In 2011–2012, the IASPP funded 29 projects, for a total contribution of $1 million. The ratio of the federal contribution to the partners’ contributions was 1:2. Six contributions were provided in

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
Wildlife and Habitat	The IASPP provides funding for initiatives that reduce the introduction and spread of IAS, preventing serious threats to Canadian ecosystems and biodiversity. As such, the IASPP directly contributes to the achievement of Target 6.4: Managing Threats to Ecosystems.	2011–2012. 2,167 volunteers participated in 2011–2012 funded projects. The IASPP ended on March 31, 2012.
6.4.4 Coordinate both national and regional environmental emergency preparedness capabilities. (EC)[10] Alignment with the 2011–2012 PAA: Program 3.1 – Substances & Waste Management	To effectively manage natural and human threats to Canada's ecosystems, EC works with Public Safety Canada to identify potential risks, develop contingency plans that outline how to deal with emergencies; train personnel to apply the plans; and review and exercise these plans to strengthen their effectiveness and ensure continuous improvement. Being prepared for an emergency is critical to mounting a quick and effective response that will help minimize impacts on the health of people and the environment. Performance Expectations: Complete EC's Strategic Emergency Management Plan by December 2011, in collaboration with Public Safety Canada. Revise its national and regional contingency plans by the end of March 2012. Complete regional annexes to the Canada–United States Joint Inland Pollution Contingency Plan by fall 2012.	EC's Strategic Emergency Management Plan was approved in principle on April 8, 2011, and was submitted to Public Safety Canada (PS) shortly thereafter. PS provided the evaluation results, which were discussed with EC. The National Environmental Emergencies Contingency Plan is undergoing revisions. The regional annexes of the Canada–United States Joint Inland Pollution Contingency Plan were updated for the East (CANUSEAST) and the Pacific (CANUSPAC) in fiscal year 2011–2012. The regional annexes for the other areas are not yet complete.
6.4.5 Develop spill models, analysis methods, fate and behaviour algorithms, measurement and remote sensing capabilities, decontamination protocols, and countermeasures used during incidents. (EC) Alignment with the 2011–2012 PAA: Program 3.1 – Substances & Waste Management	EC (EC) manages environmental emergencies by taking measures to reduce the frequency and consequences that affect Canada. To effectively manage the threats to ecosystems resulting from incidents, the Department uses the most effective technologies, tools and approaches developed for application under Canadian conditions. EC also provides operational support during major spill incidents and scientific advice and technology solutions to mitigate the effects of spilled hazardous materials on the environment. The Department aims at making progress to develop and advance scientific knowledge, technologies, tools and approaches associated with environmental emergency prevention, preparedness, response and recovery. An example would be the information that EC provided to the Government of Canada and to the United States government during the Deepwater Horizon oil spill incident in 2010. EC's R&D activities allowed Canada to provide information on the spilled oil chemical and physical properties, fate and behaviour predictions, advice on spill countermeasures such as dispersant application and in-situ burning. EC is implementing a new performance measurement strategy beginning April 1, 2011. Baseline data will be collected for the first fiscal year, and targets set for the next. Performance Expectations: Following are some of the key expectations for 2011–2012: Provide response or restoration advice or support to	EC provided advice or support to more than 44 environmental emergency incidents in fiscal year 2011–2012. EC published a minimum of 42 scientific journal papers and

[10] Implementation strategies 6.4.4, 6.4.5, 6.4.6, and 6.4.9 relate to environmental emergencies and should be aligned with *Target 6.5 related to Environmental Emergencies*.

FSDS Implementation Strategies	Description of the Implementation Strategy and Relationship to FSDS Goals and Targets and Performance Expectations	Performance Achieved
	environmental emergency incidents. Publish scientific journal papers and peer-reviewed conference proceedings. Prepare the annual AMOP Technical Seminar on Environmental Contamination and Response.	peer-reviewed conference proceedings. The 35th AMOP Technical Seminar on Environmental Contamination and Response was successfully delivered June 5–7, 2012. Planning for the 36th AMOP seminar in 2013 is in progress.
6.4.6 Provide scientific and technical advice on weather and sea state and the behaviour and effects of chemicals, sampling and analysis, countermeasures, sensitivity mapping, trajectory, modeling, and operation of the 24/7 National Environmental Emergencies Centre in Ottawa. (EC) Alignment with the 2011–2012 PAA: Program 3.1 – Substances & Waste Management	In identifying potential risks, it is important to know about the environment where a spill might occur. For example, EC prepares sensitivity maps with up-to-date information on environmentally sensitive areas, and on seasonal considerations affecting key physical, biological and cultural resources. EC fulfills its commitment to provide scientific and technical advice, specifically on the operation of the National Environmental Emergencies Centre (NEEC). Environmental emergency management benefits from the availability of the most effective technologies, tools and approaches developed for application under Canadian conditions. Improved knowledge of new and innovative technologies, tools and approaches by stakeholders will help reduce the consequences of environmental emergencies that affect Canada. Performance Expectations: Provide monthly NEEC summary reports to senior management. Provide accurate and timely advisories or alerts to senior managers for pollution incidents from across Canada on a 24/7, 365 days a year basis.	Monthly summaries by the National Environmental Emergencies Centre (NEEC) were prepared for senior managers. The NEEC issued 41 advisories in 2011–2012. Conduct oil and chemical spill research and development targeting the priorities and needs of the Environmental Emergencies Program and other clients.
6.4.9 Promote compliance, track and report number of environmental emergency plans in place as required by s.200 Environmental Emergency Planning Regulation under CEPA 1999. (EC) Alignment with the 2011–2012 PAA: Program 3.1 – Substances & Waste Management	Environmental Emergency (E2) plans help industry identify risks, and prevent, prepare for and respond to accidental releases. Tracking the number and quality of E2 plans will provide EC with information about the level of compliance with the *Environmental Emergency Regulations*. Hence, this implementation strategy contributes to the reduction in frequency and the consequences of environmental emergencies at fixed facilities in Canada. Performance Expectations: Tracking and reporting of the number of emergency plans is in place and will continue to be consistently executed at the regional and national levels. Reports on plans will be provided through CEPA 1999 annual reports. A baseline for quality of plans has been established, and improvements to the baseline will be tracked as compliance promotion visits are made to selected facilities. The numbers of facility submissions to the E2 regulation will be tracked using the E2 regulation website and associated database.	Currently, over 4,700 schedules have been submitted by facilities with one or more substances regulated under the *Environmental Emergency Regulations*. Some 2,000 E2 plans are required and around 1,600 E2 plans have been prepared. Reports on plans were provided in the CEPA 1999 2011–2012 annual report. The numbers of facility submissions to the *Environmental Emergency Regulations* are tracked using the website and associated database. The quality of facilities' environmental emergency plans was evaluated during site visits in cooperation with Enforcement in four of the five regions.

Part 3: Environment Canada's Clean Air Agenda Programs: Performance Achievements for 2011–2012

Theme: Clean Air Regulatory Agenda

Atmospheric Research, Monitoring and Modelling

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

Greenhouse Gas Monitoring and Modelling

Greenhouse gas (GHG) research will improve understanding of regulated and non-regulated sources and provide insights as to the effectiveness of regulatory actions taken (both domestically and internationally). This should lead to the improved characterization of current and past concentrations of greenhouse gases, their sources and sinks, and the climate response (including carbon-cycle feedbacks). Improved characterization based on an expanded atmospheric GHG measurement network, combined with climate and GHG modelling approaches to determine baselines from which environmental impacts can be established, will be used to determine progress on the implementation of regulations.

GHG observations and climate modelling studies focused on the Arctic will support the Northern Strategy and federal initiatives to support climate mitigation measures.

Expected achievements for the GHG Monitoring and Modelling component include the following:

(1) Delivery of GHG science, monitoring and modelling to improve the characterization of Canadian GHG emissions and to contribute to the verification of domestic and international mitigation commitments as well as to support the development and evaluation of emission targets, inventories and regulations. Science activities are focused on atmospheric emissions from both the industrial sector as well as the non-industrial sector.
(2) Enhanced GHG monitoring network and climate modelling to develop methodologies for independent estimation of GHG emissions (carbon sources and sinks) based on observations and the Canadian Earth System Model (CanESM). New monitoring sites will be established and maintained in the northwest Arctic (in 2011–2012) and western Canada (in 2012–2013) to achieve regional-scale information and supplement the existing network.
(3) Continued development and improvement of climate modelling capacity to ensure that Canada has the capability and scientific expertise to support the development of GHG emission regulations, and to quantify the climate influences of regulations and mitigation processes.

Aerosols / Black Carbon Monitoring and Modelling

Aerosols science in support of regulatory activities and accountability will characterize black carbon levels in the atmosphere and their attribution to anthropogenic and natural sources. It will help improve the understanding of the impacts of aerosols (including black carbon) on regional scales as short-lived climate pollutants (SLCPs). This work also supports improved climate models to assess long-range transport and the role of these aerosols in climate change. Expected achievements for the aerosols / black carbon monitoring and modelling component include the following:

(1) Improved characterization of current and past concentrations, and their attribution to anthropogenic and natural sources;
(2) Improved models to assess long-range transport and the role of these aerosols in climate change. This information is used to establish baselines from which environmental impacts can be established and used to determine progress on the implementation of regulations related to emissions of black carbon, organic carbon, and sulphur (SO_2); and
(3) An enhanced aerosol observational network in order to establish baselines and improve our modelling capabilities. This will allow us to provide robust quantitative estimates of the impact of aerosols on climate and associated feedbacks from snow and ice, including the effects of changing albedo.

Air Quality Monitoring and Modelling

EC will undertake research, monitoring and modelling activities on air pollutants in order to contribute to the understanding of the impacts of emissions on human health and the environment. This will enhance knowledge and information associated with the long-range transport, transformation and deposition of pollutants; improve tools to predict and describe benefits resulting from policy and regulatory actions and compliance mechanisms; and enhance the understanding of source contributions and trends.

Emphasis will be placed on informing the Air Quality Management System (AQMS), as this system relies heavily on effective air quality monitoring and research results, on understanding transboundary movement of air pollutants, and on modelling and reporting. Atmospheric science activities will also inform Canadian commitments related to the Canada–United States Air Quality Agreement.

A number of the proposed scientific initiatives for 2011–2012 to 2015–2016 are an extension of the previous Clean Air Regulatory Agenda (CARA) activities that will continue to inform regulatory actions and accountability. These activities include integrating and adapting the management of current monitoring efforts, enhancing spatial measurements (including remote sensing), augmenting emission-to-effect predictive modelling capacity, quantifying transboundary contributions, understanding atmospheric processes (e.g. processes governing smog formation), working collaboratively with Health Canada to assess the effects of specific air pollutants sources on human health (e.g. fine particulate air pollution as a cause of cardiovascular disease), and understanding atmospheric contribution to ecosystems (e.g. determination of critical loads).

Clean Air Agenda Program Achievements / Performance Summary

Greenhouse Gas Monitoring and Modelling

A new GHG monitoring station was established in the western Canadian Arctic (near Inuvik, Northwest Territories) in fiscal year 2011–2012, and the logistical groundwork was laid for another new site in western Canada (Abbottsford, British Columbia). Development and analysis of the Canadian Earth System Model (CanESM) supported the analysis of planned emissions scenarios (including SLCPs) and application of the Global Environmental Multiscale weather forecast model to inverse approaches integrating satellite and surface-based observations to estimate source strengths from managed and unmanaged sources.

Aerosols / Black Carbon Monitoring and Modelling

The focus was on understanding direct and indirect radiative (warming/cooling) impacts and improved climate predictions. Funds supported aerosols / black carbon baseline monitoring and trend analysis for four regional sites (including the Arctic) and development of modelling tools to estimate regional-scale influences on climate, in the context of Canadian and international source influences. Specifically, the work supported atmospheric monitoring of aerosols (physical, chemical and optical characteristics) to provide baseline information to support climate model evaluation studies and to enhance the current Canadian Earth System Model.

Air Quality Monitoring and Modelling

Progress has been made on implementing an integrated and adaptive management approach for national measurements of air pollutants. Air quality national monitoring data, analyses, maps and modelling expertise contributed to the setting of 2015 interim threshold levels and 2020 Canadian Ambient Air Quality Standards (CAAQS) for ozone and particulate matter ($PM_{2.5}$) in support of the proposed Air Quality Management System.

Efforts have been focused on method development, validation and quantification for fine particulate matter (filterable and condensable) from industrial sources. The developed sampling methodology is being considered for inclusion in the Base-level Industrial Emissions Requirements (BLIERs).

A predictive mercury model and mercury research and measurements have been used to quantify the contribution of mercury emissions from other countries to Canada's mercury burden, and to support domestic decision making and international negotiations. This scientific knowledge and data will also inform the development of the first Canadian Mercury Science Assessment (2013), which will provide a comprehensive description of mercury in the Canadian environment.

Continued measurements on Canada's west coast have advanced the understanding of the influences on regional air quality of trans-Pacific transport of pollutants from Asia, Europe and elsewhere. These measurements provide a baseline against which to demonstrate changing contributions. Although the trans-Pacific transported events are significant in springtime, results also show the important influence of North American forest fires during the summer. The information from these measurements is being incorporated into air quality and climate models to increase their predictive capacity.

Environment Canada undertook a number of key atmospheric and emissions research studies to bring new insights into particulate matter emissions and formation in ambient air, to improve Environment Canada's predictive modelling capabilities for air quality, to understand the interrelationships between climate change and air quality, to validate emissions rates/estimates of particulate matter and black carbon from various mobile sources, and to collaborate with Health Canada to link long-term exposure to fine particulate matter to cardiovascular mortality in Canada.

A compilation of 19 peer-reviewed scientific papers on the Border Air Quality and Meteorology Study (BAQS-Met) have been published in a special issue of the journal *Atmospheric Chemistry and Physics*. The intensive field study was conducted in the summer of 2007, followed by comprehensive data analyses. The work provides a better understanding of the role of local and transboundary sources in the observed fine particulate matter and ground-level ozone levels in southwestern Ontario.

Environment Canada continued to deliver air quality monitoring measurements and modelling, and provide expertise to inform the proposed Air Quality Management System and the development of the Canadian Ambient Air Quality Standards.

Environment Canada provided the air quality modelling support for cost-benefit assessment of the proposed Base-level Industrial Emission Requirements.

The Department continued to perform various modelling studies at national and regional scales, and extended the ability of air quality models and transboundary measurements.

Clean Air Agenda Program Lessons Learned

Environment Canada has established new collaborations with the Canadian Space Agency and the academic community to advance the integration of surface- and space-based observations of carbon dioxide. These collaborations will enhance EC's capacity to model carbon dioxide sources and sinks in Canada.

Clean Air Agenda Program Spending Information[11]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
90.45	17.48	10.41

Health and Environmental Impacts of Air Pollutants

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

[11] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes Public Works and Government Services Canada (PWGSC) accommodation costs, consistent with Treasury Board of Canada Secretariat (TBS) guidance on departmental reporting on expenditures.

Clean Air Agenda Program Description and Expected Achievements

This program will provide scientific evaluations of the biological impacts of acid deposition and mercury on aquatic biodiversity and will assess the health of wildlife species and their ecosystems in select Canadian environments through the use of various indicators. This will be achieved by monitoring chemical and biological trends in aquatic ecosystems in eastern Canada to assess the effectiveness of reductions in acidic deposition; refining the use of biomonitoring indicators, survey design and research priorities to improve the assessment of the biological impacts of acid deposition and ecosystem recovery; conducting intensive field research on the effects of mercury on fish-eating wildlife; and conducting complementary laboratory studies on mercury toxicity in wildlife.

Environment Canada will also produce wildlife effects and risk assessment components of national and international assessments of the impacts of mercury and acid deposition. This will be achieved by integrating information on mercury from the Canadian Arctic Contaminants Assessment Report into the Canadian Mercury Science Assessment; synthesizing existing fish and wildlife data into the Canadian Mercury Science Assessment; and publishing the results from acid rain biomonitoring in the scientific literature, in preparation for the Canadian Acid Deposition Science Assessment.

This program will also contribute to the understanding of the effectiveness of air pollutant regulation in protecting and/or improving the health of Canadian ecosystems. This will include assessing the status and trends of biological communities; evaluating the ecological benefits of air emissions reductions; and monitoring temporal and spatial trends of atmospheric deposition of mercury, heavy metals and acidifying pollutants, and their related effects. Additional activities include improving the assessment of trends, and analyzing samples for other toxic air pollutants such as heavy metals.

Clean Air Agenda Program Achievements / Performance Summary

The integration of information on mercury from the Canadian Arctic Contaminants Assessment Report into the Canadian Mercury Science Assessment was completed as planned. The synthesizing of existing fish and wildlife data was partially completed, with mercury information synthesized nationally for terrestrial wildlife, freshwater fish and marine ecosystems for inclusion in the Canadian Mercury Science Assessment. Two review papers on mercury toxicity in fish and wildlife were submitted for publication in 2011–2012. A draft manuscript on acid rain biomonitoring was completed under contract in 2011–2012 and will be published in 2012–2013.

The mercury deposition trends project was initiated, and substantial progress was made on a new field survey of lakes in the Estevan, Saskatchewan, area. Progress was also made on writing up previous work on mercury deposition studies in northern key Canadian environments. The Freshwater Inventory and Surveillance of Mercury (FISHg) monitoring program indicates that mercury continues to be an environmental contaminant of concern in most aquatic ecosystems selected for monitoring across Canada.

The acid lakes component of the Integrated Oil Sands Environment Monitoring Plan was developed and put into action by planning an autumn 2012 lake survey for north-eastern Alberta and beyond (i.e., Level 1 monitoring) that will define regional acidification

sensitivity and status and sampling lakes in western Saskatchewan that may be included in a long-term temporal (i.e., Level 2) monitoring network to detect changes in status.

Clean Air Agenda Program Lessons Learned

Some activities under the scientific evaluations of the biological impacts of acid deposition and mercury on aquatic biodiversity and the health of wildlife indicators and their ecosystems in select Canadian environments were delayed in 2010-11 due to realignment of staff time to address time-sensitive work plans. Laboratory work was focused on completing the mercury analyses from samples collected under previous CARA funding. Delayed results from 2011–2012 are expected to be completed in 2012–2013. Laboratory capacity issues have been addressed.

Clean Air Agenda Program Spending Information[12]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
15.52	3.06	3.04

Science Integration, Accountability and Benefits of Action

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

Atmospheric science assessments integrate the knowledge and understanding of the past, present and projected future state of the environment with respect to air pollution and climate change, and provide the scientific underpinning for measures to reduce the risks to Canadians and their environment associated with air emissions.

Expected achievements comprise the delivery of scientific assessment of substances (e.g. mercury)or atmospheric issues (e.g. smog) that describe emissions sources and trends, ambient concentrations and trends, impacts on Canadians' health and environment, and forecasted health, environmental and economic benefits of regulatory actions and other measures to reduce emissions in Canada or from other countries.

Clean Air Agenda Program Achievements / Performance Summary

The activities focused on the delivery of science assessments necessary for regulatory development and participation in international treaties to ensure that the Government can demonstrate the benefits of its air emissions policies, decisions and investments. For example, completion and delivery of the Canadian Smog Science Assessment (in publication) provides the scientific foundation for implementing the new Air Quality

[12] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; and Grants and Contributions, Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Management System for Canada, including an expanded role for air quality standards for particulate matter and ozone, and an emerging interest in examining the linkages between air pollution and climate change.

In addition to domestic decision making, international negotiations (i.e. the United Nations Environment Programme to develop a global legally binding instrument on reducing emissions of mercury) are supported by assessments of the most current scientific information, such as preparation and delivery of the first Canadian Mercury Science Assessment. This report, currently being finalized, is a comprehensive description of the most state-of-the-art science on mercury in the Canadian environment.

Clean Air Agenda Program Lessons Learned

Not applicable

Clean Air Agenda Program Spending Information[13]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011-–202	Program Actual Spending in 2011–2012
3.73	0.6	0.53

Oil Sands Science

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

The Government of Canada is expected to deliver the monitoring and scientific information and advice required to determine the impact of air emissions from the oil sands sector on the ecosystem and on the air that Canadians breathe. This includes working collaboratively with the Government of Alberta and other stakeholders to measure priority air contaminants and metals in order to set the baseline and establish trends, to understand the contribution of the atmospheric deposition and transport of these contaminants, and to utilize air quality models (i.e. GEM-MACH) to predict the impacts of oil sands development.

Environment Canada will provide support to environmental assessments and other activities related to the oil sands cumulative effects program.

Clean Air Agenda Program Achievements / Performance Summary

Progress has been made in a number of areas. Specifically, Environment Canada performed the first-ever analysis of nitrogen dioxide (NO_2) and sulphur dioxide (SO_2)

[13] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

over the Alberta oil sands area based on satellite remote sensing data, revealing distinct above-background levels of both NO_2 and SO_2 over an area of intensive surface mining. The air quality network continued its expansion to western Canada with progress made towards the establishment of three new long-term monitoring sites, which will contribute to determining atmospheric transport to and from the oil sands region. Implementation of these sites will continue into 2012–2013 and will be supported by short-term measurement campaigns that will improve understanding of the sources, levels and types of air contaminants. Both active and passive monitoring of polycylic aromatic compounds and active sampling of metals are ongoing, including at remote sites. Test simulations with GEM-MACH, an air pollution model, established that the new model configuration will be able to deliver information at a spatial resolution of 2.5 kilometres (km) over a larger domain in northern Alberta, Saskatchewan, British Columbia and northern territories, in a time frame sufficient to advise decision making.

In 2011–2012, Environment Canada provided technical reviews for three planned oil sands mining projects, mainly on air emissions issues. See also FSDS Implementation Strategy 2.1.2 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

The measurement and analysis program in the oil sands region required a quick start and leveraged existing expertise, demonstrating the ability to respond to a new priority. Expansion of the measurement program on land-based sites was slowed by the process needed to obtain permission to use the required sites. As well, the importance of regular consultation and engagement with all stakeholders at both the working and management levels was highlighted, particularly with respect to working with industry and aboriginal stakeholders, and various levels of government.

Clean Air Agenda Program Spending Information[14]

($) millions

Total CAAProgram Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
14.21	2.84	2.38

Data Collection and Reporting for Greenhouse Gases

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

[14] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Clean Air Agenda Program Description and Expected Achievements

Funding supports the continuation and development of the annual national GHG emissions inventory and trends, produced as part of Canada's requirement to track domestic emissions and meet key international reporting obligations under the United Nations Framework Convention on Climate Change (UNFCCC). This includes the maintenance of the mandatory national system—a UNFCCC obligation that encompasses the institutional, legislative and procedural arrangements in place to produce an accurate, comprehensive and timely national inventory. Environment Canada has overall responsibility for compiling and reporting on Canada's GHG inventory and has been designated by the UNFCCC as the Inventory Agency and the National Inventory Focal Point.

Activities also include maintenance of the Greenhouse Gas Emissions Reporting Program, which applies only to the largest industrial GHG emitters in Canada. All facilities that emit the equivalent of 50,000 tonnes (50 kilotonnes) or more of GHGs in carbon dioxide equivalent units (CO_2 eq) per year are required to submit a report.

Activities also include providing analysis, technical advice and guidance for the development of GHG regulations; participating in UN Expert Review Teams; supporting domestic policy development; and participating in Canadian delegations on international climate change negotiations.

Additional activities include work such as evaluating and improving methods, models and documentation; developing quantification and reporting protocols; implementing internal and external verification procedures; and developing research methods and guidance documents.

Environment Canada's objectives with respect to GHG monitoring and reporting include the following:

- maintaining existing institutional capacity to deliver an enhanced monitoring, accounting and reporting system to produce an annual UN-compliant national GHG inventory system and National Inventory Report
- maintaining the Greenhouse Gas Reporting Program to ensure compliance with the *Canadian Environmental Protection Act, 1999* (CEPA 1999) and regulatory reporting requirements, including section 46 *Canada Gazette* notices
- supporting domestic policy and regulatory development
- ensuring enhanced capability to provide applied information to the public and corporate users, including provinces and territories, stakeholders and the academic community
- providing accurate and up-to-date scientific information, analysis and advice to support Canadian objectives in the UNFCCC post-Durban, Cancun and Copenhagen processes

There are three performance indicators:

- submission of an annual compliant National Inventory Report, within accepted UN time frames (April 15 of each year)
- publication and provision of facility-level GHG reporting data collected under section 46 of CEPA 1999 (April 15 of each year)

- frequency of requested engagement from intra and interdepartmental sources (International Affairs Branch, Natural Resources Canada, Transport Canada, Statstics Canada, Strategic Policy Branch, Environmental Stewardship Branch) to support international or domestic policy requirements

CAA Program Achievements / Performance Summary

The National Inventory Report: Canada's Greenhouse Gas Sources and Sinks 1990–2009 was submitted to the UN in May 2011, meeting Canada's international reporting obligations under the UNFCCC. The National Inventory Report: Canada's Greenhouse Gas Sources and Sinks 1990–2010 was submitted in April 2012. Work continues on the next annual National Inventory Report submission, due in April 2013.

The Canada Gazette notice for the 2011 Greenhouse Gas Emissions Reporting Program data collection was published in September 2011. The Greenhouse Gas Emissions Reporting Program data for 2010 were published in April 2012.

Achievements also include the first harmonized release of National Inventory Report data and Greenhouse Gas Emissions Reporting Program data in April 2012.

See also FSDS Implementation Strategies 1.1.5 and 1.1.48.4 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

Every year, Environment Canada initiates a lessons-learned process where the past year is evaluated and summarized with the goal to make improvements for future reporting. This lessons-learned process takes place shortly after the National Greenhouse Gas Inventory, the program aligned economic sector GHG estimates to Intergovernmental Panel on Climate Change sectors as well as coordinate a harmonized release of Departmental GHG products. Lessons learned included improved planning and early engagement with internal policy and communications groups which reduced the risk of unanticipated delays that impact Canada's ability to meet UN reporting deadlines.

Clean Air Agenda Program Spending Information[15]

($) millions

Total CAA Program Approved Spending 2011–2016	ProgramPlanned Spending in 2011–2012	Program Actual Spending in 2011–2012
41.61	10.76	4.50

Data Collection and Reporting for Atmospheric Pollutants

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Health-related Meteorological Information

[15] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Clean Air Agenda Program Description and Expected Achievements

Data collection and reporting on air pollutants supports the Government's commitments to deliver on the Air Quality Health Index (AQHI) and domestic and international reporting obligations.

Canada is an international leader; it is the first country to have developed an air quality index to communicate the health risks associated with a mixture of air pollutants and to provide air quality forecasts with protective health advice to reduce those risks. Health-based communication tools such as the AQHI are vital given that regulatory action alone cannot completely eliminate the health risks from air pollution. The AQHI is now available to 17 million Canadians. With renewed funding, Health Canada and Environment Canada will expand the AQHI to additional communities, promote the index widely in order to make it better accepted and understood, and ensure that the science underpinning the index is kept up to date. The objectives are to implement a national health-based communications tool for current and forecast local air quality and to increase Canadians' knowledge of actions they can take to protect their health and reduce pollution.

Environment Canada expects to achieve several goals under the AQHI: to develop, in partnership with Health Canada, effective strategies and supporting activities for facilitating the implementation of the AQHI in New Brunswick, Ontario and Quebec; to improve modelling tools and data access in order to increase accuracy of AQHI forecasting; and to harness dissemination and social media technologies in order to increase the reach of the AQHI.

As for reporting on our obligations, Environment Canada is responsible for the annual development and publication of Canada's Air Pollution Emissions Inventory and for submitting emissions data to the United Nations Economic Commission for Europe as well as to the United States to meet commitments under the Ozone Annex. The Air Pollution Emissions Inventory provides technical and analytic support essential for developing and implementing Canadian Ambient Air Quality Standards and Base-level Industrial Emissions Requirements as part of the Air Quality Management System.

Expected achievements include the annual submission of the 2010 Air Pollution Emissions Inventory to the United Nations Economic Commission for Europe—due by February 2012; and the continued development and publication of comprehensive and accurate air pollutant emissions information for industrial and non-industrial sources (including the transportation sector), which supports the development, implementation and tracking of the progress of regulations and air quality management strategies.

Clean Air Agenda Program Achievements / Performance Summary

With this year's launch of AQHI in nine communities in Alberta, conducted in collaboration with the provincial government, Canadians in all 10 provinces now have access to this useful, science-based health protection tool. Approximately 60% of Canadians now have access to the AQHI on a daily basis. Seven of ten provinces have chosen to adopt the AQHI as the information tool of choice, while New Brunswick, Ontario and Quebec are piloting the index with the intent of adopting it. Strategies have been developed for those provinces, and demonstration activities to support their decision

to adopt the AQHI are planned. Plans for expanding the AQHI implementation into Yukon and the Northwest Territories are in progress.

Effective integration of the AQHI into Meteorological Service of Canada dissemination systems continues to improve the reach of the AQHI to Canadians—a redesign of the Weatheroffice website contributed to a doubling of visits to AQHI pages. The integration of the AQHI into federal and partner social media technologies has also enhanced public visibility of the AQHI and, more importantly, has helped reach those most vulnerable to air pollution.

The 2010 Air Pollution Emissions Inventory, containing comprehensive estimates for air emissions from all sources of key air pollutants, heavy metals and persistent organic pollutants, was submitted to the United Nations Economic Commission for Europe and published in February 2012.

Ongoing analyses and scenario development to support the development and monitoring of various regulations continues, in particular for the transportation and industrial sectors. Work also continues on the development of specialized data sets to support dialogue among the federal, provincial, and territorial governments, and evaluation of the Canadian Ambient Air Quality Standards. Emissions inventory and trends were provided for the development of the "business-as-usual" projection, as well as ongoing technical support on inventories and trends. Analysis and support for regulatory impact assessments on mobile sources is ongoing.

See also FSDS Implementation Strategies 2.1.3 and 2.1.32 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

Successful AQHI implementation is highly dependent on the collaboration of provincial and local governments and non-governmental organizations that may have regional interests to consider. Collaboration was enhanced by employing flexible mechanisms to address regional differences and issues. For instance, in collaboration with Health Canada, Alberta Environment and Alberta Health and Wellness, Environment Canada was able to enhance the AQHI to support provincial health management goals which paved the way for province-wide implementation of the AQHI.

For reporting, lessons learned include improved planning and early engagement with internal policy and communication groups to avoid unanticipated issues. Despite a challenging year, program achievements were ultimately a success.

CAA Program Spending Information[16]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
41.52	8.20	7.30

[16] Spending includes the following: Salary; Employee Benefit Plan; Operations And Maintenance; Capital; Grants And Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Cross-cutting Data Collection and Reporting

Link to 2012–2013 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

Under the Clean Air Regulatory Agenda, the Government committed to developing a single harmonized system for the regulatory reporting of all air emissions and related information. Environment Canada's Single Window Reporting (SWR) Initiative is one component of the single harmonized system that sets the stage for a forum to pursue harmonization of reporting methodologies, thereby improving confidence in, and credibility of results. Creating one place where industry can report emissions data allows for a more efficient and effective reporting process, which supports the shared interest across jurisdictions in tracking and reporting progress on the reduction of GHG emissions and pollutant releases. This represents an important first step in reducing the reporting burden and cost to industry and governments.

Guiding principles regarding the use of an integrated single-window reporting system were developed and adopted by the Canadian Council of Ministers of the Environment (CCME) in January 2010. Environment Canada's Single Window system was launched in March 2010 to facilitate the secure collection, storage and exchange of information on multiple programs in an effective manner. Since 2010, Environment Canada has been engaged in discussions with provinces and territories interested in partnering with Environment Canada's SW system to support their mandatory reporting requirements. Agreements have been signed with British Columbia, Alberta and Ontario.

In addition, funding supports the software platform developed for GHG data collection (federal and provincial partners) through Environment Canada's National Pollutant Release Inventory (NPRI) and Ontario's *Toxic's Reduction Act* (ON TRA).

The expected results are as follows:

- reduced duplication and administrative burden on industry for reporting data to support the implementation of the Clean Air Regulatory Agenda (CARA) regulations, program and policy development; and reduced cost to Canadians
- improved consistency and efficiency of common/tombstone data reported to EC through a single-window reporting portal to support CARA decision making and implementation
- expansion of Environment Canada's Single Window Reporting (SWR) system, taking into account the needs and requirements of CARA programs, systems, partners and users

Clean Air Agenda Program Achievements / Performance Summary

The continued implementation of Environment Canada's Single Window system in itself reduces the duplication and administrative burden on industry. Various activities were undertaken by EC to ensure an efficient implementation of the Single Window system in 2011-12. At the beginning of the fiscal year, Environment Canada developed and launched the applications for the following partners: EC greenhouse gases, Alberta greenhouse gases, Ontario's *Toxics Reduction Act* (ON TRA), *Ontario Regulation 127*,

the National Pollutant Release Inventory (NPRI) and partners. Environment Canada also provided users with access to EC's front office tools and guidance during the reporting cycle.

Later in the year, in order to achieve improved consistency and efficiency within Environment Canada's Single Window system, EC gathered the details for change requests of its partners and started implementing these changes for the 2012 reporting cycle. Updated applications were then tested and readied for their scheduled 2012-13 launch. A feasibility analysis for a multi-year Single Window data warehousing project was also initiated in 2011-12. With regard to the expansion of the system, outreach activities were organized and discussions with key potential external and internal partners progressed. These discussions are expected to result in new partnership agreements in 2012-13.

See also FSDS Implementation Strategy 1.1.7 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

The Single Window Reporting system is updated every year to reflect the needs and requirements of its users. In order to help the reporting community familiarize itself with the changes and improvements made to the reporting system in 2011–2012, Environment Canada conducted information sessions with industry users to provide guidance and training to users prior to the beginning of the reporting cycle. This activity was well received by the reporting community and should be repeated in the future.

Clean Air Agenda Program Spending Information[17]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
15.32	3.10	1.34

Greenhouse Gas Policy

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

The overall objective is to support the logic model's final thematic outcome "Reduced emissions of GHGs and air pollutants from regulated sectors while maintaining competitiveness in these sectors."

[17] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; and Grants and Contributions, Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

With respect to GHG policy, expected achievements for 2011–2012 were linked to advancing the Government's climate change priorities, including through the development and implementation of the Government's sector-by-sector regulatory approach to reduce GHG emissions in Canada, aligned with the United States as appropriate, to contribute towards achieving Canada's national GHG reduction target of 17% below 2005 levels by 2020.

Specifically, these included the following achievements:

- Supporting the Government's climate change agenda through the provision of strategic policy and economic analysis, advice, and coordination for the development of GHG regulations for major emitting industrial sectors. The Government's climate change agenda was also supported through ongoing monitoring and analysis of existing and emerging provincial, regional and United States climate change initiatives and their implications for the development of federal climate policy; and through ongoing engagement with the provinces, territories and other stakeholders to inform GHG regulatory development and to minimize regulatory duplication where possible.
- The provision of strategic policy analysis and coordination of federal work on short-lived climate pollutants (SLCPs), to support Canada's engagement in various international fora on this issue and inform the development of domestic measures, was also part of this program.
- The maintenance of Canada's Kyoto Protocol National Registry in compliance with United Nations requirements, as well as the completion of offsetting GHG emissions resulting from the Government of Canada's participation in the 2010 Winter Olympic Games, were also expected outcomes.

Clean Air Agenda Program Achievements / Performance Summary

Overall, the expected achievements with respect to the GHG policy program were realized, supported by a number of activities related to the development and implementation of new climate change policies. These activities included strategic policy analysis and advice, economic and regulatory analysis, intra- and interdepartmental coordination of climate change policy, external engagement and communications.

These activities supported the development of draft regulations to address carbon dioxide (CO_2) emissions from coal-fired electricity and the publication of these regulations in the *Canada Gazette*, Part I, in August 2011. [18]

The development of regulatory approaches to address GHG emissions in other major emitting industrial sectors, including the oil and gas and other emissions-intensive trade-exposed (EITE) industrial sectors was also initiated, as part of the Government's sector-by-sector regulatory approach. As part of the regulatory development process, there was ongoing engagement with provinces, territories and other key stakeholders through an existing federal-provincial-territorial working group on domestic climate change, but also through sector-specific technical working groups and a new joint deputy minister-level federal, provincial and territorial consultative steering committee. In addition, in an effort to limit duplication between federal and provincial regulation, the Government of Canada

[18] The final regulations have since then been posted on the *Canada Gazette*, Part II in September 2012.

and the Government of Nova Scotia developed a draft equivalency agreement with respect to the regulation to limit CO_2 emissions from coal-fired electricity generation. Discussions were also initiated with other interested provinces.

Coordination of federal departmental efforts on climate change mitigation is also ongoing through federal deputy-minister-level discussions at the DMs' Committee on Climate Change, Energy and the Environment, co-led by Environment Canada. Within Environment Canada, intra-departmental climate change working groups were created to ensure collaboration across the Department and to ensure the integration of climate policy development, research and analysis.

In addition, Canada's Kyoto Protocol National Registry, including the submission of Canada's 2011 report to the United Nations on Registry holdings and transactions, met United Nation requirements. Environment Canada also undertook an analysis of the Land use, Land-use Change and Forestry (LULUCF) sector's mitigation potential to contribute towards Canada's 2020 target. The Government successfully completed offsetting GHG emissions resulting from its participation in the 2010 Vancouver Winter Olympic and Paralympics Games.

Canada actively participated in the Arctic Council Task Force (ACTF) on Short-Lived Climate Pollutants (SLCPs), which published recommendations on the mitigation of black carbon emissions in May 2011. Canada also participated constructively in negotiations to revise the Gothenburg Protocol (under the United Nations Convention on Long-range Transboundary Air Pollution (CLRTAP) to include black carbon as a component of particulate matter. Work undertaken as part of this program also supported Canada's participation, in February 2012, in the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants, of which Canada was a founding member, as well as Canada's participation in the Arctic Council.

See also FSDS Implementation Strategy 1.1.6, 1.1.12, 1.1.46 and 2.1.35 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

All of the key program elements were met for GHG policy. A key lesson learned was with respect to the importance of ongoing, multi-level collaboration with key stakeholders, including industry and provinces and territories, in the development of GHG regulatory approaches. Effective mechanisms for technical engagement with industry and provinces were established at the working level, as well as broader provincial and territorial consultation mechanisms. Going forward, it will be important to maintain effective multi-level engagement as we continue to develop and implement the federal GHG regulatory approach.

Clean Air Agenda Program Spending Information[19]

($) millions

Total CAA Program Approved Spending	Program Planned Spending in	Program Actual Spending in

[19] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

2011–2016	2011–2012	2011–2012
31.21	12.83	6.31

Atmospheric Pollutants Policy

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program
Climate Change and Clean Air Partnerships

Clean Air Agenda Program Description and Expected Achievements

The overall objective is to support the logic model's final thematic outcome "Reduced emissions of GHGs and air pollutants from regulated and targeted sectors while maintaining economic competitiveness in these sectors."

Expected achievements for 2011–2012 were linked to finalizing the Government's domestic air quality policy under development through a collaborative multi-stakeholder process (AQMS – the Air Quality Management System) and our associated international obligations to manage air quality at a national level.

Our expected achievements were as follows:

- to develop an air quality management system including requirements to reduce air pollution from industrial sources
- to finalize Canadian ambient air quality standards
- to finalize a framework to address transboundary issues and for coordination of overall system monitoring and reporting through the creation of air zones and air sheds
- to address North American transboundary air pollution through the management of Canada's participation in the negotiation of an annex to the Air Quality Agreement to address particulate matter (PM), including the development of a strong Canadian position on transboundary PM;
- to participate in air quality activities with the United States and Mexico under the North American Commission for Environmental Cooperation (CEC).

Clean Air Agenda Program Achievements / Performance Summary

Achievements for 2011-12 include:

- Environment Canada coordinated work with other federal departments, provinces, industry and non-governmental organizations to develop and finalize key elements of a national air quality management system (AQMS).
- National industrial emissions requirements were developed for key air pollutants for 13 sectors and 4 equipment types.
- The new Canadian Ambient Air Quality Standards (CAAQS) for ground-level ozone and fine particulate matter ($PM_{2.5}$) were developed under the AQMS to improve air quality.
- Regional airsheds were delinated to address transboundary air pollution.

- The development of monitoring and reporting requirements to report on progress under the AQMS has been initiated.
- Canada continued to cooperate with the United States to address transboundary air pollution through the Canada–United States Air Quality Agreement. The agreement addresses the transboundary movement of air pollutants that cause acid rain and smog. Both countries are in full compliance with their respective commitments, and emissions of these pollutants have decreased dramatically on both sides of the border. After more than 20 years of cooperation, emissions that cause acid rain have been reduced by more than 50% and emissions causing smog by 40% in the area covered under this agreement.
- Under the newly formed Canada–United States Regulatory Cooperation Council, Canada and the United States agreed to consider the expansion of the Canada–United States Air Quality Agreement to address transboundary particulate matter. Canada and the United States have begun work toward the completion of the necessary scientific, technical and regulatory foundations required to inform and support the consideration of a particulate matter annex to the Canada–United States Air Quality Agreement.
- Environment Canada led Canada's constructive participation in the renegotiation of the Gothenburg Protocol under the Convention on Long-range Transboundary Air Pollution. This protocol addresses nitrogen oxides (NO_x), sulphur dioxide (SO_2), volatile organic compounds (VOC), and particulate matter (PM)—and black carbon as part of PM—in the UN Economic Commission for Europe region, which includes all of Europe (Western, Eastern and Central) as well as Canada and the United States.
- Under the North American Commission on Environmental Cooperation (CEC), the North American Air Working Group (NAAWG) has completed its work, and the new strategic plan is focused on climate change.
- Environment Canada co-led the Air Management Committee under the Canadian Council of the Ministers of the Environment (CCME) to ensure effective coordination of approaches for managing air quality (including priority setting) and the production and publication of national air quality reports.
- Environment Canada provided support and coordination on the development, improvement, and reporting of air quality indicators in Canada.

See also FSDS Implementation Strategy 2.1.8, 2.1.31 and 2.1.35 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

All of the key program elements were met for air pollutant emissions. The collaborative process produced results and generated the collective support needed from stakeholders. This buy-in was crucial to finalizing key elements of the national Air Quality Management System, however, the collaborative nature of the development process led to timelines being extended.

Clean Air Agenda Program Spending Information[20]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
17.96	6.24	2.35

Cross-cutting Analysis

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

Environment Canada will undertake economic modelling, analysis and research in order to support informed federal decision making on policy approaches to reduce greenhouse gas (GHG) and air pollutant emissions and to analyze the competitiveness impacts of these approaches.

Environment Canada, on behalf of Clean Air Agenda (CAA) departments and agencies, will consolidate CAA planning and performance reports of federal investments to enable transparency respecting the federal management of clean air Parliament and the public.

Environment Canada will identify opportunities for streamlining reporting processes and generating efficiencies by integrating with other related government-wide initiatives—such as the Federal Sustainable Development Strategy (FSDS).

Clean Air Agenda Program Achievements / Performance Summary

A long-term GHG and air pollutant projection was developed. This long-term projection served as a reference point for analyzing the Government's climate change and clean air agenda. This projection was used to assess the emissions and economic impacts of several proposed regulations (i.e. coal-fired electricity generation units, heavy-duty vehicles, natural gas, light-duty vehicles (2017–2025), and Base-level Industrial Emission Requirements (BLIERs)).

Assessment of the progress toward meeting the Kyoto Protocol targets, as stipulated by the *Kyoto Protocol Implementation Act* (KPIA) passed by Parliament in June 2007, was undertaken.

Modelling projection of air pollutants was refined and this projection is being used to support the development of the federal-provincial-territorial Air Quality Management System (AQMS) and proposed BLIERs.

Economic impact and competitiveness analysis was undertaken to support the development of policy and regulations with respect to GHG emissions and air pollutants.

[20] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

A research network was established to explore issues related to innovation, competitiveness and behavioural response in relation to environmental policy.

On behalf of the CAA departments and agencies, EC produced the 2010–2011 Clean Air Agenda Horizontal Performance Report and the 2012–2013 Clean Air Agenda Horizontal Report on Plans and Priorities.

With the support of CAA departments and agencies, EC developed opportunities and guidance for integrating CAA reporting into FSDS reporting since the FSDS provides a legislated and permanent framework for reporting on clean air and climate change.

Guidance was provided in support of Clean Air Regulatory Agenda (CARA) regulation development, consistent with the requirements of the *Cabinet Directive on Streamlining Regulation* (CDSR). More specifically, the Strategic Policy Branch at Environment Canada developed, delivered and coordinated regulatory departmental training and advised Environment Canada's regulatory community on the regulatory development and approval processes.

Clean Air Agenda Program Lessons Learned

n/a

Clean Air Agenda Program Spending Information[21]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011-2012
15.74	3.22	2.60

Electricity Regulations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

Proposed greenhouse gas (GHG) regulations will apply a stringent performance standard to new coal-fired electricity generation units and to those that have reached the end of their economic life. Final regulations were published in the Canada Gazette, Part II, in 2012. It is expected that GHG regulations for natural gas-fired thermal generation will subsequently be developed.

Air pollutant emission standards based on the Base-level Industrial Emission Requirements (BLIERs) process would be developed for electricity generation in 2011 and regulations could be implemented as early as 2013.

[21] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Clean Air Agenda Program Achievements / Performance Summary

In August 2011, proposed regulations to reduce GHG emissions from coal-fired electricity generation were published in the *Canada Gazette*, Part I.

The Department has conducted extensive consultations since announcing its intention to regulate this sector. Environment Canada officials met with stakeholders, affected provinces, and held numerous larger consultation sessions. In addition, over 5,000 submissions were received during the *Canada Gazette*, Part I comment period. Of these, 43 came from provincial governments, industry stakeholders and associations, and non-government organizations. The remainder of comments came from the general public, primarily through the use of form letters available on various Internet sites. The Department has worked to address the comments received and finalized the regulations for publication in the *Canada Gazette*, Part 2.

See also FSDS Implementation Strategies 1.1.6 and 1.1.11 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

A key lesson for Environment Canada has been the importance of maintaining flexibility with respect to anticipated timelines in order to analyze, incorporate and address the significant comments provided by provinces, industry and other stakeholders during the consultation and policy development phases. Environment Canada has benefited from high levels of engagement from provinces and stakeholders and, as a result, has had to be flexible in terms of timing in order to give these comments and suggestions their due attention.

Clean Air Agenda Program Spending Information[22]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
7.93	3.11	1.89

Transportation Regulations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

In recognition of the integrated nature of the North American market, Canada will continue to develop and implement regulations to reduce emissions from vehicles and engines in alignment with the United States. The expected outcome is reduced emissions

[22] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

of both air pollutant and greenhouse gas (GHG) emissions from a broad range of on-road and off-road vehicles and engines, which will improve the health and environment of Canadians.

The expected achievements for 2011–2012 include administration of the six vehicle and engine emission regulations, for both air pollutants and GHGs; initiating the development of GHG regulations for passenger automobiles and light trucks, the development of GHG regulations for heavy-duty vehicles; and the development of air pollutant regulations for heavy-duty trucks and off-road compression-ignition diesel engines such those used for farming, construction and mining machines.

Clean Air Agenda Program Achievements / Performance Summary

In 2011–2012, Environment Canada led the development of vehicle and engine regulations, including:

- proposed regulations amending the *On-Road Vehicle and Engine Emission Regulations* (on-board diagnostic systems for heavy-duty engines and other amendments), published in the *Canada Gazette*, Part I in October 2011
- final *Off-Road Compression-Ignition Engine Regulations*, introducing Tier 4 emission standards for off-road diesel engines, published in the *Canada Gazette*, Part II in December 2011
- minor amendments to the *Off-Road Small Spark-Ignition Engine Emissions Regulations* were published in the *Canada Gazette*, Part I in April 2011, as part of a broader omnibus package.

In November 2011, Environment Canada released a consultation document on the development of GHG emission regulations for passenger automobiles and light trucks for model years 2017 and beyond. The Department also finalized, for publication, GHG emission regulations for heavy-duty vehicles for model years 2014–2018.

Along with the development of regulations, Environment Canada continued to administer six vehicle and engine emission regulations, including those on vehicle and engine testing to support enforcement actions.

The Department also successfully worked with provinces and territories to establish the federal-provincial-territorial Working Group on Mobile Source Emissions.

See also FSDS Implementation Strategies 1.1.6, 1.1.10, 2.1.5, 2.1.6, 2.1.7 and 2.1.10 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

The key challenges facing Environment Canada in developing regulations to reduce air pollutant and GHG emissions from vehicle and engines while maintaining alignment with American standards, are the need to remain flexible enough to respond to changing priorities, and the need to keep abreast of American policy and regulatory developments. A key lesson learned was that a growing number of regulations in the transportation sector require increased coordination with provinces, stakeholders and the United States.

Clean Air Agenda Program Spending Information[23]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
45.14	11.54	8.96

Emissions-Intensive Trade-Exposed (EITE) Regulations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

The program includes the development of measures to limit releases of air pollutants and greenhouse gases (GHGs) from the emissions-intensive trade-exposed (EITE) sectors by working collaboratively with provinces, territories and industries. The key achievements expected over the length of the program are the development of regulations and other control instruments for EITE sectors.

In 2011–2012, specific activities included developing emission limits (Base-level Industrial Emission Requirements (BLIERs)) for key air pollutants for the pulp and paper, mining and processing, and chemicals and fertilizer sectors; and initiating discussions with the nitrogen fertilizer industry on a regulatory approach for addressing GHGs. Between 2012 and 2014, regulatory measures covering GHGs and air pollutant emissions will be published.

Clean Air Agenda Program Achievements / Performance Summary

BLIERs for the pulp and paper sector were finalized in 2011–2012 and implementation options were explored. To improve data collection and information sources in order to better understand and quantify releases from the forest products sector, Environment Canada supported method development for particulate matter ($PM_{2.5}$) emission sampling. Environment Canada also completed a data collection and regulatory benchmarking exercise for the wood products sector.

BLIERs were developed for the aluminium, base metal smelting, cement, iron and steel, iron ore pellets, and potash sectors to limit emissions of key air pollutants. Recommendations were also developed on risk management instruments for implementing these sector-based BLIERs. An analysis was undertaken related to the development of potential regulatory approaches to address GHG emissions from the EITE sectors. Information and data gathering was undertaken in support of the development of regulatory measures for the potash fertilizer sector, and engagement was initiated with the aluminium sector. Input was provided on cross-cutting GHG issues. Seven BLIERs have also been developed to limit emissions of criteria air contaminants in

[23] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

the chemicals and fertilizer sectors. The BLIERs cover nitrogen oxides (NO_x) from steam methane reforming, ethylene production and Carbon Black; VOC from ethanol production, synthetic rubber production and ethylene-based polymer production; and ammonia from fertilizer production. For GHGs, information gathering and data updates began to support the development of regulatory measures for the nitrogen fertilizer sector. Environment Canada held an initial meeting with the industry to launch discussions on a regulatory approach for the sector. Additional economic analysis has been completed, including corporate profiles for all major chemical companies in Canada, and potential costs of new abatement technologies.

See also FSDS Implementation Strategy 1.1.6 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

The development of sector BLIERs concurrently with other sectors—involving health and environmental organizations, industries and other levels of government—is complex and requires strong coordination, time and willingness from all parties. The resources invested in coordination and collaboration were useful in obtaining a deeper and more thorough knowledge of the sector.

Clean Air Agenda Program Spending Information[24]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
21.34	8.66	4.74

Oil and Gas Regulations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

Industrial sector sources contribute about half of Canada's air pollutant and greenhouse gas (GHG) emissions and represent the largest unaddressed sources. The oil and gas sectors include upstream oil and gas, pipelines, petroleum refineries and unconventional oil. The oil and gas sectors released over half the nitrogen oxides (NO_x) from industrial sources, over three quarters of the volatile organic compounds (VOC), almost one quarter of the sulphur dioxides (SO_2), and just over 10% of particulate matter (PM) from industrial sources. Oil and gas activities contribute the largest share of industrial GHG emissions. To reduce emission levels, air pollutant and GHG emission requirements will be established, and regulations will be developed and promulgated.

[24] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Clean Air Agenda Program Achievements / Performance Summary

Environment Canada continues to make progress toward developing GHG regulations for the oil and gas sector. Industry and provinces and territories have been engaged in discussions on options that will define the regulatory design. Regular meetings were held with industry, provinces and territories, and work continues to progress toward the development of a regulatory approach for the sector.

See also FSDS Implementation Strategy 1.1.6 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

With regulatory development proceeding for GHG emissions in several industrial sectors, it was a challenge keeping provincial and territorial counterparts up to date on developments. The creation of a deputy minister-level consultation steering committee has provided a mechanism and forum for discussion.

The BLIER development process included the development of recommendations for quantitative and qualitative BLIERs for air pollutants in 2011, and examination of costs and other impacts as part of regulatory development in 2012. Considerable work was needed to develop a robust cost-benefit and regulatory impact analyses and to gain consensus among stakeholders.

Environment Canada collaborated closely with provincial authorities in order to better understand the scope of the current provincial regulatory framework and to ensure a mutual understanding of current and future oil sands activities. This facilitated the elaboration of national standards for an industrial activity like the oil sands.

Clean Air Agenda Program Spending Information[25]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
17.80	6.60	3.30

Consumer and Commercial Products Regulations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

Clean Air Agenda Program Description and Expected Achievements

This program seeks to reduce the emissions of VOC from consumer and commercial products. VOC have been identified as a contributor to smog, which is harmful to health

[25] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

and the environment. VOC are being addressed by an evolving suite of control instruments.

Clean Air Agenda Program Achievements / Performance Summary

The Department developed risk management strategies or instruments in the following sectors.

Aerosol coating products: A discussion paper as well as questions and answers were prepared for posting on the VOC website. Consultations were held in March 2012 in Toronto on possible options for achieving further VOC reductions.

Asphalt cutback and emulsified asphalt: A discussion paper on possible options for achieving further VOC reductions was prepared and consultations were held in March 2012 in Toronto. Web content has been developed for posting on the VOC website.

Portable fuel containers: Environment Canada collaborated with Ontario's Ministry of the Environment, and a not-for-profit partner on an initial pilot-scale project that helped to expand the Fuel Can Flip–Fuel Can Retirement program. The program encourages the replacement of old, high-emission fuel containers with cleaner, lower-emission alternatives in an effort to reduce VOC releases.

Finalizing proposed VOC in certain consumer products regulations: Following stakeholder comments, the proposed Volatile Organic Compound (VOC) Concentration Limits for Certain Products Regulations will be revised to include an alternative control plan, which is an emission averaging and trading regime, and to align the regulations with California's most recent limits and product categories. This will require renewing consultations with stakeholders and republishing the proposed regulations in the *Canada Gazette*, Part I, by summer 2014.

Compliance promotion was undertaken for two regulations: the *VOC Concentration Limits for Architectural Coatings Regulations* and the *VOC Concentration Limits for Automotive Refinishing Products Regulations*. Other program delivery activities included addressing inquiries and reviewing permit applications.

Clean Air Agenda Program Lessons Learned

In 2011–2012, there was reinforcement in this program element of the need to be both operationally flexible and responsive in determining the focus of program resources. For example, in the aerosol coatings sector, there may be future opportunities for possible alignment with evolving California Air Resources Board (CARB) VOC reactivity limits. Hence, in the interim, resources were instead refocused on opportunities to achieve VOC emission reductions that are significantly larger in another sector than presently achievable by the aerosol coating sector.

Clean Air Agenda Program Spending Information[26]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
5.68	1.86	1.48

Compliance Promotion and Enforcement

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Compliance Promotion and Enforcement – Pollution

Clean Air Agenda Program Description and Expected Achievements

Compliance promotion and enforcement contributes to minimizing damages and threats to the natural environment and biodiversity, through the promotion and enforcement of legislation administered by Environment Canada (EC). The program is intended to ensure that the regulated community is aware of and understands its legal obligations, as well as the impacts of non-compliance, and to ensure that regulatory measures achieve their desired results as set forth under the Clean Air Regulatory Agenda (CARA). Program actions focus on pollution, including toxic substances, greenhouse gases and air pollutants, and the import and export of hazardous waste presenting a risk to the environment or human health.

The program maintains a contingent of compliance promotion and enforcement officers.

Compliance promotion is critical to maximizing regulatory compliance and achieving the risk management objectives of any regulations for greenhouse gases (GHGs) and air pollutants. The activities are in line with the Government's commitment to being a world-class environmental regulator and to meeting its obligations to provide due diligence in communicating to regulatees their obligations under the regulations and risk management activities being implemented by the Government. Compliance promotion officers provide information to regulatees on legislative requirements, the benefits of compliance and the potential penalties of non-compliance.

Enforcement ensures compliance with CARA regulations that have come into force under CEPA 1999. This involves providing advice during the regulatory development phase necessary to ensure regulations are enforceable in the field. Enforcement activities include gathering intelligence, conducting inspections to verify compliance with laws and regulations, and pursuing investigations to take appropriate enforcement measures against offenders. Compliance analysis in order to provide continuous feedback on program planning and results is also performed.

The expected achievements over the length of the Clean Air Agenda (CAA) include greater industry compliance and enforcement of the regulations implemented under the

[26] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Clean Air Regulatory Agenda (CARA). More specifically, the key expected achievements in 2011–2012 were as follows:

- Development of compliance strategies and compliance promotion plans for 5 new or amended CARA instruments;
- Development of compliance promotion material and regional delivery of compliance promotion activities for 12 CARA instruments;
- Delivery of compliance promotion training to compliance promotion officers on new CARA requirements;
- Delivery of sound knowledge and expertise informed on technical sector processes to support the development and implementation of CARA instruments;
- Coordination of compliance promotion and enforcement activities to ensure complementary activities; and
- Measures to ensure the effective use of information management tools for reporting on activities and results concerning CARA instruments.

Science and technical support for compliance promotion and enforcement activities will be imperative to fulfill the monitoring, reporting and verification requirements related to industrial, transportation and consumer products regulations. The majority of these activities will need to be informed by sound leading-edge science, accredited to an international technical standard. These scientific activities will build upon EC's existing expertise and unique infrastructure.

Clean Air Agenda Program Achievements / Performance Summary

In 2011–2012, the compliance promotion program increased awareness, understanding and compliance on the part of regulatees with nine CARA instruments through the delivery of compliance promotion activities for the following existing CARA instruments:

- *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations* (SOR/2011-10)
- *Renewable Fuels Regulations* (SOR/2010-189)
- Benzene in Gasoline Regulations (SOR/97-493)
- Gasoline and Gasoline Blend Dispensing Flow Rate Regulations (SOR/2000-43)
- *Contaminated Fuel Regulations* (SOR/91-486)
- *Gasoline Regulations* (SOR/90-247)
- Fuels Information Regulations, No. 1 (SOR/C.R.C., c. 407)
- Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations (SOR/2009-264)
- Volatile Organic Compound (VOC) Concentration Limits for Automotive Refinishing Products Regulations (SOR/2009-197)

Additionally, compliance strategies and compliance promotion plans were developed for requirements under the following three proposed Clean Air Regulatory Agenda (CARA) instruments:

- Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations
- Reduction of Carbon Dioxide Emissions from Coal-Fired Generation of Electricity Regulations

- Volatile Organic Compound (VOC) Concentration Limits for Certain Products Regulations

The compliance promotion for the above instruments had scientific support via the development of guidelines to measure the amount of volatile organic compounds in specific commercial products related to the *Volatile Organic Compound (VOC) Concentration Limits for Automotive Refinishing Regulations*, the *Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations* and the proposed Volatile Organic Compound (VOC) Concentration Limits for Certain Products Regulations. The guidelines will be used to communicate to industry the Department's approach to compliance and the enforcement of these new regulations.

Compliance promotion officers received compliance promotion training on new requirements for new vehicles and engines regulations such as the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*.

Investment for the improvement of the Compliance Promotion Customer Relationship Management (CPCRM) database has increased EC's ability to track, analyze and report on compliance promotion activities.

Regional technical sector support for the development and implementation of CARA instruments was provided. Activities were delivered in the areas of natural resources, energy (coal fire regulations) and transportation (marine spark-ignition engine and off-road recreational vehicles (MERV), fuels). The Department advanced the development and modification of scientific methodology to support CARA enforcement and compliance promotion activities related to the industrial, transportation and consumer products sectors.

Enforcement is also putting in place a system to track both classroom and learning activities, so that we can respond to queries from managers and other stakeholders. This system is currently in the implementation phase.

A Regulatory Enforcement Plan was developed for the *On-Road Vehicle and Engine Emission Regulations* to ensure consistency of enforcement activities at a national level.

In 2011–2012, enforcement officers across the country were actively involved in both on- and off-site inspections for vehicle and engine regulations and fuels regulations, with some of these inspections resulting in enforcement measures. The Enforcement Branch has been successfully working with the Canada Border Services Agency (CBSA) at the border to help identify suspected non-compliant engines. Enforcement has also been active on the VOC regulations conducting on-site inspections at various facilities.

See also FSDS Implementation Strategy 2.1.5, 2.1.6 and 2.1.38 in Part 2 for related performance information.

Clean Air Agenda Program Lessons Learned

The delivery of compliance promotion and enforcement activities is in its first stage of implementation. Some compliance promotion activities were delayed until 2012–2013 due to staffing adjustment in the regions in fall 2011.

Due to the international nature of some of the CARA regulations, working in collaboration with the CBSA will be crucial for their enforcement.

Clean Air Agenda Program Spending Information[27]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
33.63	6.89	5.06

Analysis in Support of Regulations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Ecosystem Assessment and Approaches

Climate Change and Clean Air Regulatory Program

Environmental Technology

Governance and Management Support

CAA Program Description and Expected Achievements

This year's focus has been to complete several economic analyses in support of regulations as well as on understanding the current gaps in providing technical expertise on air issues for environmental assessments and working to fill these gaps in a way that will support the implementation of the Clean Air regulatory Agenda (CARA).

CAA Program Achievements / Performance Summary

An integrated energy, emissions and economic projection was developed that serves as a foundation for the economic analysis. Economic analysis of several proposed regulations were initiated or completed, including coal-fired electricity generation units, heavy-duty vehicles, natural gas, light-duty vehicles (2017–2025), Base-level Industrial Emission Requirements (BLIERs) being considered under the Air Quality Management System (AQMS) and marine sulphur in diesel.

Environment Canada (EC) has produced regulatory impact assessment statements, including cost-benefit analyses, in support of the *Renewable Fuels Regulations*, the proposed Marine Sulphur in Diesel Fuel Regulations, and the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* for the 2011–2016 model years, aligned with the United States, as well as the *Off-Road Compression-Ignition Engine Emission Regulations* and the *On-Road Vehicle and Engine Emission Regulations* On-Road Vehicles and Engine Emission Regulations (On-Board Diagnostic Systems).

[27] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Economic research was conducted on cost-effectiveness analysis, the social cost of carbon, the social cost of methane and nitrous oxide, competitiveness considerations in the oil and gas sector, air quality impacts on livestock, the potential for environmental regulation to spur innovation, the relationship between environmental regulation and productivity growth, the green growth concept within the Canadian context, behavioural economics considerations in environmental policy development, and considerations of opportunities for Land Use and Land Use Change to contribute to Canada's greenhouse gas emission reduction goals.

In the fall of 2011, air experts and EA practitioners participated in a workshop to identify current EA program requirements and how best to work together to meet the needs. This was supplemented by the creation of a reference document on air quality environmental assessment, which provided the basis for additional training for EC staff on conducting technical air reviews.

CAA Program Lessons Learned

A formalized Air Network within EC, dedicated to air-related issues, has shown to be valuable in supporting ongoing and upcoming air issues in EA projects and other core programs. Environmental assessment provides an opportunity for EC to advise proponents of upcoming federal requirements (e.g. the Air Quality Management System) and to promote compliance with existing federal instruments related to air issues. By sharing information and the development of an air specialist inventory, the group was able to identify the gaps and needs to improve consistency in EA reviews, to better support core programs and CARA implementation.

CAA Program Spending Information[28]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending In 2011–1202	Program Actual Spending In 2011–2012
25.96	3.42	2.76

Theme: Adaptation

Climate Change Prediction and Scenarios Program

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Information, Predictions and Tools

CAA Program Description and Expected Achievements

The aim of the Climate Change Prediction and Scenarios Program is to ensure that

[28] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

- Environment Canada's global and regional climate models are enhanced, such that they are better able to simulate climate events, including climate extremes, and are used to produce updated climate change projections and scenarios
- Environment Canada actively contributes to the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report and participates in the international science community to influence priorities and work programs to support federal adaptation information needs and ensure that Canada's adaptation programs and activities are based on the best available science
- National infrastructure codes and standards are informed by relevant climate science (including climate extremes), climate impacts and new and improved climatic design information
- Policy support in the form of analysis and intra- and interdepartmental coordination is provided for issues associated with climate change adaptation

Expected Achievements:

Environment Canada's Climate Change Prediction and Scenarios Program ensures that Canada's national climate modelling activities are maintained through enhancements to and operation of global and regional climate models and the development of improved climate change scenarios (including climate extremes). It also provides policy analysis and research for issues associated with climate change adaptation, including the advancement of the Federal Adaptation Policy Framework. The program aims to deliver Environment Canada's contribution of climate model runs to the IPCC 5th Assessment Report. The development and improvement of EC's global and regional climate models will continue and the resulting climate information will be accessible on the internet and via peer-reviewed publications. The program also ensures that specialized information on climate extremes for infrastructure design, codes and standards are developed or updated.

CAA Program Achievements / Performance Summary

In 2011–2012, Environment Canada completed its climate model runs for the Coupled Model Intercomparison Project – Phase 5 (CMIP5). This project provides the framework for coordinated climate change experiments, establishing a multi-model ensemble of simulations for assessment in the IPCC 5th Assessment Report (to be released in 2013–2014). A new regional climate model was used to downscale global climate change projections for the North American, Arctic, and African domains, and served as a contribution to an international regional downscaling intercomparison project (CORDEX – Coordinated Regional Climate Downscaling Experiment). Additional global climate simulations continue to be run in support of targeted international studies focused on climate predictability and modes of climate variability. Global and regional climate model outputs were made available to users via the Canadian Centre for Climate Modelling and Analysis (CCCma) website. Research results were widely disseminated through peer-reviewed publications. Climate change scenarios based on Canadian and other climate models were delivered via the Canadian Climate Change Scenarios Network website, which was integrated on a centralized server in 2011–2012. Furthermore, the program developed updated climatic design information in cooperation with the Canadian Standards Association for the development of new codes and standards for Canadian infrastructure. The models and scenarios developed under this Program continued to provide updated climate change information, which contributed to the

awareness and understanding of the risks of climate change as well as aided in the development of adaptation strategies and climate policy at the global and regional levels.

See also FSDS Implementation Strategy 1.1.4 in Part 2 for related performance information.

CAA Program Lessons Learned

Environment Canada streamlined the management and delivery of the Canadian Climate Change Scenarios Network website by amalgamating the network to a centralized server housed at the Canadian Centre for Climate Modelling and Analysis.

CAA Program Spending Information[29]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
28.82	5.74	3.28

Theme: International Actions

International Climate Change Obligations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

International Climate Change and Clean Air Partnerships

CAA Program Description and Expected Achievements

The purpose of this program is to provide the annual Government of Canada contributions to the Intergovernmental Panel for Climate Change (IPCC) and the Inter-American Institute for Global Change Research (IAI), as expected as part of Canada's membership to these organizations.

In 2011–2012, the expected achievement is the provision of the Government of Canada's contribution to the IPCC for the IPCC's 2012 fiscal year and the provision of the Government of Canada's contribution to the IAI for its 2011-2012 fiscal year.

The expected overall achievement of this program over 2011-2012 to 2015-2016 is for the Government of Canada to contribute to the overall functioning of the IPCC and the IAI and their ongoing work to produce policy-relevant scientific information on climate change.

[29] Total CAA Program Approved Spending 2011–2016 and Program Planned Spending in 2011–2012 include the following: Salary; Employee Benefit Plan; Operations And Maintenance; Capital; Grants and Contributions; and Corporate Support, but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures. Program Actual Spending in 2011–2012 includes the following: Salary; Operations And Maintenance; Capital; and Grants and Contributions, but excludes Employee Benefit Plan; Corporate Support; and PWGSC accommodation costs.

CAA Program Achievements / Performance Summary

The contributions of $150,000 CAD and $159,000 USD to the IPCC and IAI, respectively, fulfilled the contribution expected from Canada in 2011–2012 as part of its membership to these organizations.

As directed in the contribution agreement between EC and the IPCC, funds were used by the IPCC to support travel of representatives from developing countries and economies in transition to IPCC meetings. These meetings helped to advance the work of the IPCC to develop scientific assessment reports on climate change, particularly the IPCC 5th Assessment Report and the IPCC methodology report on wetlands.

As directed in the contribution agreement between EC and the IAI, funds were used by the IAI to support the administration of the IAI's scientific activities, capacity-building activities, and data, outreach and communication activities. Significant achievements of the IAI in 2011–2012 included the wind-down and reporting on the IAI's Collaborative Network II program, which led to more than 270 peer-reviewed publications related to global change in the Americas. The IAI also initiated a call for proposals for the new Collaborative Network III program. Several scientific capacity-building workshops and a side event at the 17th Conference of the Parties of the United Nations Framework Convention on Climate Change were also held by the IAI.

CAA Program Lessons Learned

There are no lessons learned related to the delivery of this program. No events occurred that adversely affected the achievements and performance expected from this funding.

CAA Program Spending Information[30]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
1.69	0.34	0.32

International Climate Change Participation / Negotiations

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

International Climate Change and Clean Air Partnerships

CAA Program Description and Expected Achievements

- Canada will continue its strategic participation in a range of international climate fora within and outside the United Nations Framework Convention on Climate Change process, including multilateral and bilateral meetings.
- These achievements are expected over the 2011–2016 time frame:

[30] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

- Outcomes of international negotiations and initiatives will be consistent with Canada's interests and priorities
- Canadian interests are protected and advanced in both existing and new agreements, and through participation in key bilateral and multilateral partnerships

CAA Program Achievements / Performance Summary

A significant step in advancing international climate change efforts was achieved with the launch of the Durban Platform, a process to develop a single new comprehensive climate change agreement by 2015 that would include commitments by all major emitters beginning in 2020. The acceptance of the Durban Platform shows acknowledgment that all countries need to take action if we are to succeed in effectively addressing climate change, and it builds upon the success of the Cancun Agreements of 2010 and the Copenhagen Accord of 2009 and is consistent with Canada's interests and priorities.

In February 2012 Environment Canada (EC) protected and advanced Canada's interests by working with key partners to launch the new Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants, recognizing that to achieve the Copenhagen goal of limiting global warming to less than 2 degrees C will require action on both long-lived greenhouse gases and short-lived climate pollutants.

Through collaboration and partnerships with other governments and organizations under the Copenhagen Accord and through the United Nations Framework Convention on Climate Change (UNFCCC), EC supported the implementation of Canada's financing commitment for developing countries for mitigation of greenhouse gases and short-lived climate pollutants, adaptation of public infrastructure and capacity building. EC also supported developing countries in attending workshops, regional adaptation strategies and increased capacity in UNFCCC processes.

See also FSDS Implementation Strategies 1.1.43 and 1.1.46 in Part 2 for related performance information.

CAA Program Lessons Learned

It continues to be challenging to work within the multilateral UNFCCC process, relying on the cooperation of 195 countries to achieve an agreement. While it is critical to continue to participate in this process, experience has shown that participation in more focused multilateral forums with key countries, such as the Climate and Clean Air Coalition to Reduce Short-lived Climate Pollutants and Canada's bilateral technical cooperation with key countries, are an effective and practical means of addressing climate change.

CAA Program Spending Information

($)

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–12	Program Actual Spending in 2011–2012
22.92	4.80	5.52

Engagement and Alignment with the United States

United States–Canada Clean Energy Dialogue

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Partnerships

International Climate Change and Clean Air Partnerships

CAA Program Description and Expected Achievements

The overall objective of the Clean Energy Dialogue, initiated in 2009, is to enhance bilateral collaboration with the United States on the development and deployment of clean energy technologies in order to reduce greenhouse gas emissions and address climate change.

Environment Canada and Natural Resources Canada (NRCan) actively participate in the implementation of the U.S.–Canada Clean Energy Dialogue (CED). The Secretariat for the CED is housed within Environment Canada's International Affairs Branch, and the Department's Science and Technology Branch leads on the implementation of work carried out by the binational Research and Development and Energy Efficiency (R&DEE) Working Group. This Working Group also includes officials from NRCan. Natural Resources Canada leads the implementation of work carried out by the Carbon Capture and Storage Working Group and the Electricity Working Group.

Expected achievements for 2011–2016:

- Collaborate with the United States on shared clean energy priorities to reduce greenhouse gas emissions, address climate change, and contribute to the advancement of Canada's domestic clean energy agenda. Engagement with the United States is key to program delivery and is expected to be met over the length of the Clean Air Agenda (CAA).
- Develop and implement a CED Action Plan II to identify new and ongoing opportunities for dialogue, joint research and collaboration within the three bilateral Working Groups. The development of a second action plan is a key aspect of program delivery.
- Prepare and deliver progress reports and post appropriate achievements on the CED website; expected to be met over the length of the CAA.

CAA Program Achievements / Performance Summary

The following summarizes Environment Canada's performance achievements against this CAA program:

Secretariat

- Developed Action Plan II with Natural Resources Canada and the U.S. Department of Energy;
- Collaborated with the United States in specific areas of shared clean energy priorities to reduce greenhouse gas emissions and address climate change by engaging with key officials within the U.S. Department of Energy as well as

officials at NRCan to identify ways to facilitate and advance CED projects and initiatives;
- Monitored and analyzed relevant initiatives aimed at advancing Canada's goal of reduced greenhouse gas emissions (domestically, continentally and globally), and reinforcing Canada's domestic regulatory approach to climate change;
- Monitored possible policy and regulatory alignment with the United States to reduce greenhouse gas emissions (domestically, continentally and globally).

- Strengthened existing network of Canadian and American scientists working in biofuels and bioenergy.
- Canadian and American biofuels and bioenergy scientific communities demonstrated considerable interest in advancing CED R&DEE priorities (e.g. pyrolysis of biomass, algal-based biofuels, and environmental sustainability research).
- In 2011-12, the following six activities were conducted under the CED research, development and demonstration banner:
    - Completedthe Canada–United States algae resources co-location model
    - Hosted a workshop on on research and development collaboration for advanced biofuels
    - Hosted a workshop onUnited States–Canada collaboration in pyrolysis biofuels
    - Delivered an inventory of Canada–United States collaboration in nextgen biofuels
    - Delivered a report titled “Better information on the Conversion of Agricultural Biomass to energy”
    - Developed an inventory of federal activities relating to the assessment of biofuel sustainability and environmental performance

CAA Program Lessons Learned

Clean energy interests within the Government of Canada are diverse and relevant to both the mandates of Natural Resources Canada and Environment Canada, requiring clearly defined roles and expectations. Strengthened governance over the spring of 2012 has improved coordination, clarified expectations and improved implementation of the CED.

The opportunities to support bilateral work significantly exceed available funding requiring both partners to explore additional government resources and programs.

Consultation with key stakeholders is central to the work of the CED.

Clean energy development thrives on innovation which, by its very nature, is always changing. Action Plan II was well received by interested parties, including bioenergy industry associations on both sides of the border, and future work will benefit from continued consultation with clean energy stakeholders. With this in mind, the CED Secretariat intends to host an event in fall 2012 to elevate the dialogue on clean energy collaboration among interested parties, including the public sector, provinces, academia, ENGOs and the private sector. Working Groups will also continue to strengthen networks in their thematic areas including among bioenergy scientists.

The window of opportunity for confirmation and funding of collaborative research must be given careful consideration to facilitate project delivery in a manner that aligns with the U.S. and Canadian fiscal years.

CAA Program Spending Information

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
4.23	0.85	0.69

Theme: Clean Transportation

Marine Sector Regulatory Initiative

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Regulatory Program

CAA Program Description and Expected Achievements

The marine transportation sector is a highly competitive global industry governed by international conventions. These conventions, made by member states of the International Maritime Organization (IMO), are critical for predictable regulations to facilitate world trade and provide a level playing field. Once agreed to at the IMO, new rules or standards are adopted by the member states through domestic regulation or other action. The Marine Sector Regulatory Initiative will support the development of new international standards and recommended practices addressing air pollution and GHG emissions from marine shipping. It will support domestic emission reductions through the development and implementation of new Canadian regulations and through targeted research and development.

Environment Canada will develop new marine fuel standards under the current *Sulphur in Diesel Fuel Regulations* of the *Canadian Environmental Protection Act, 1999* (CEPA 1999). In addition, Environment Canada will continue to support Transport Canada's participation in the development of global standards at the IMO to limit air pollutant and GHG emissions from marine shipping, carry out research to assess the emission reduction potential of new technologies for ships, and determine whether additional regulations should be made under CEPA 1999 to limit emissions from ships in the Arctic.

CAA Program Achievements / Performance Summary

In 2011–2012, Environment Canada:

- Published proposed marine fuel standards under the current *Sulphur in Diesel Fuel Regulations* of the *Canadian Environmental Protection Act, 1999* (CEPA 1999) in the *Canada Gazette*, Part I on December 3, 2011

- Finalized the 2010 marine emissions inventory and forecast, as well as a forecast of Arctic shipping emissions;
- Developed a scientific work plan, to be implemented over the next three years, to assess the impact of shipping emissions on the Arctic;
- Contributed to analysis and negotiation of new air pollutant standards for international shipping at the IMO, including emissions of black carbon from shipping in Arctic waters and emissions of NO_x;
- Contributed to analysis and development of the Energy Efficiency Design Index, a carbon standard at the IMO, for new ships;
- Supported Transport Canada in the implementation of aspects of the implementation North American Emission Control Area, such as analysis of compliant fuel availability and equivalent compliance options
- Conducted analysis associated with the use, manufacturing and importation of small marine diesel engines by the marine sector in Canada

See also FSDS Implementation Strategy 2.1.13 in Part 2 for related performance information.

CAA Program Lessons Learned

The key challenges facing EC in developing regulations to reduce air pollutant and GHG emissions from the marine sector is the need to remain flexible enough to respond to changing priorities, and maintaining alignment with United States policy and regulations.

To keep on schedule for the development of marine-related regulations efforts are required to address:

- timing considerations for new administrative requirements
- actively engaging the U.S. EPA on future regulatory changes in order to maintain Canada's alignment with Unites States regulations and standards
- coordination with other federal partners.

CAA Program Spending Information[31]

($) millions

Total CAA Program Approved Spending 2011–2016	Program Planned Spending in 2011–2012	Program Actual Spending in 2011–2012
10.17	1.83	0.46

Vehicle Scrappage (CAA 2007–-2011)

Link to 2011–2012 Departmental Program Activity Architecture (PAA)

Climate Change and Clean Air Partnerships

[31] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

CAA Program Description and Expected Achievements

The National Vehicle Scrappage Program, also known as Retire Your Ride, stopped accepting new participants on March 31, 2011 after retiring about 140,000 old high-polluting vehicles of model 1995 and earlier, over the life of the program.

Program wind-down was planned for 2011–2012 to complete the processing of all applications received up to March 31, 2011 and to prepare final activity and financial reports.

CAA Program Achievements / Performance Summary

To help support the widespread implementation of good vehicle recycling practices, as presented in the code of practice developed for the program, a national forum with participation from industry, stakeholders and governments on the future of vehicle recycling in Canada was held in November 2011. Since then, a task group was started by the Canadian Council of Ministers of the Environment to consider control measures to support the implementation of the code of practice industry-wide.

The program also supported the design and organization of a website to promote good environmental practices and the dissemination of information to industry and stakeholders. The website, which is now supported by industry, offers an updated version of the code of practice.

The program wind-down was completed without major incident and final reports were submitted including the final report on the program exit strategy to the Treasury Board Secretariat. The third-party program evaluation was posted on the EC website.

See also FSDS Implementation Strategy 1.1.35.2 and 2.1.22.2 in Part 2 for related performance information.

CAA Program Lessons Learned

According to the program exit strategy, all program activities and reporting should have been completed by July 30, 2011. There was a risk that third parties delivering the program would fail to meet this deadline; however, this risk was mitigated by consulting extensively during the elaboration of the exit strategy and by closely monitoring its implementation.

CAA Program Spending Information[32]

($) millions

Total CAA program approved spending 2011–2016	Program planned spending in 2011–2012	Program actual spending in 2011–2012
91.71	1.20	1.05

[32] Spending includes the following: Salary; Employee Benefit Plan; Operations and Maintenance; Capital; Grants and Contributions, and Corporate Support; but excludes PWGSC accommodation costs, consistent with TBS guidance on departmental reporting on expenditures.

Additional Information

Greening Government Operations website

FSDS website