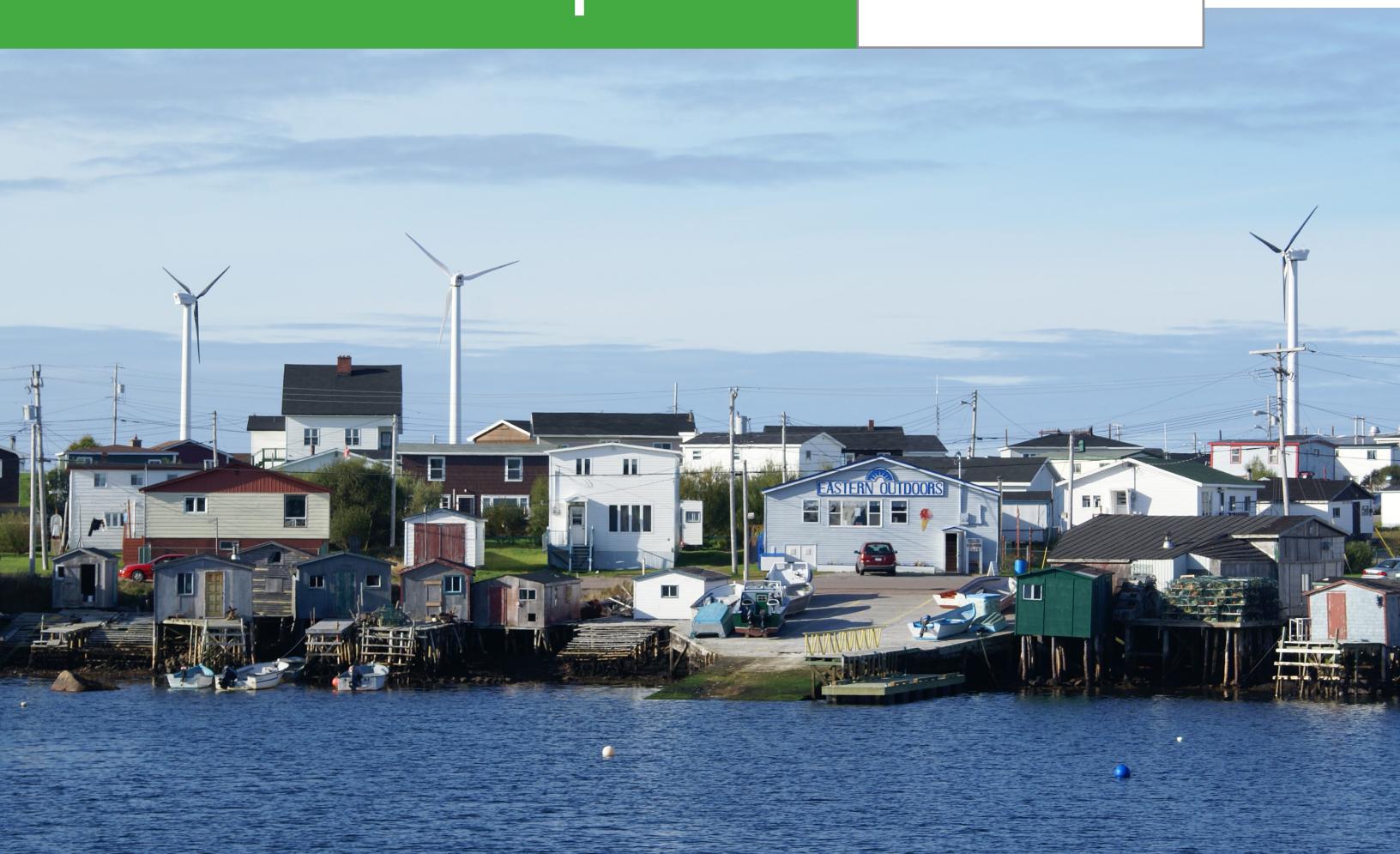


Office of Climate Change

Annual Report

2016-17





MESSAGE FROM THE MINISTER

As Minister of Municipal Affairs and Environment and in accordance with the Government of Newfoundland and Labrador's commitment to accountability, I am pleased to present the 2016-17 Annual Report for the Office of Climate Change (OCC). As a category two Government entity over this time period, this report addresses activities and outputs from April 1, 2016, to March 31, 2017. As Minister, I am accountable for the results that are reported in this document.

Over this reporting period, OCC has advanced action on climate change by raising public awareness and enhancing the province's ability to reduce greenhouse gas emissions and adapt to unavoidable impacts associated with climate change. Aligning with this work, OCC has supported provincial participation in key intergovernmental events including the First Ministers' Meeting and launch of the Pan-Canadian Framework on Clean Growth and Climate Change in December 2016. Further to this, OCC has supported the passage of the Management of Greenhouse Gas Act through the House of Assembly, implemented commitments in the 2011 Climate Change Action Plan, and in line with The Way Forward: A Vision for Sustainability and Growth in Newfoundland and Labrador, has begun engagement to inform the development of a new Climate Change Action Plan.

Through strengthening evidence, advice and collaboration, OCC has improved capacity to address challenges and advance opportunities associated with climate change. As the Minister of Municipal Affairs and Environment, I am pleased to report on the accomplishments of OCC and anticipate further success going forward.

A handwritten signature in black ink that reads "Eddie Joyce". The signature is fluid and cursive, with a distinct "E" and "J" at the beginning.

Honourable Eddie Joyce
Minister of Municipal Affairs and Environment
Minister Responsible for the Office of Climate Change

Departmental Overview

For the period covered by this report, the Office of Climate Change (OCC) was located within Executive Council. It has lead responsibility for policy and strategy development on issues relating to climate change adaptation and mitigation, and energy efficiency within the Government of Newfoundland and Labrador. Given the complex, cross-cutting nature of climate change, OCC works collaboratively across the Provincial Government to integrate climate change considerations into the work of all departments and agencies. OCC regularly engages with stakeholders and other government agencies to strengthen the evidence base on climate change and energy efficiency and to demonstrate the Provincial Government's commitment to action in these important areas. It also represents the Provincial Government at intergovernmental meetings on climate change and works to raise public awareness about climate change. For a complete listing of our mandate and lines of business please visit:

<http://www.exec.gov.nl.ca/exec/occ/index.html>

Staff and Budget

Division	# of Employees	Budget
Office of Climate Change	6	\$952,000

Highlights and Partnerships

OCC recognizes that in order to effectively reduce greenhouse gas (GHG) emissions, build resilience to climate change, and stimulate sustainable economic growth, an integrated and collaborative approach is required. In this spirit, OCC regularly engages and works in partnership with provincial departments and agencies, federal, provincial and territorial governments, municipalities, Indigenous governments and organizations, as well as industry, community organizations, and academia.

GHG Emission Reduction and Clean Growth

On a national level, OCC represented the province on four Federal-Provincial-Territorial Working Groups that developed options to inform the Pan-Canadian Framework on Clean Growth and Climate Change (PCF), which was adopted by First Ministers in December 2016. This work included co-chairing the working group on Clean Technology, Innovation and Jobs that provided a path forward for increasing innovation and growth in the green economy. OCC has also established partnerships to advance implementation of the PCF, including developing an approach to pricing carbon pollution that is tailored to local circumstances. To support emissions reductions in the province, OCC collaborated with provincial departments and agencies to develop the Management of Greenhouse Gas Act (the Act), which establishes a legislative framework to reduce greenhouse gas (GHG) emissions from large industrial facilities. The Act received Royal assent in June 2016, and the underpinning Reporting Regulations took effect on March 7, 2017.

Climate Resilience

In line with commitments set out in the PCF and The Way Forward document, OCC is tasked with developing a new Climate Change Action Plan. OCC undertook province-wide public consultations to inform the plan's development in summer 2016, and released a What We Heard document, synthesizing findings in January, 2017. With respect to adaptation and building climate resilience, OCC worked with Engineers

Canada, Professional Engineers and Geoscientists Newfoundland and Labrador and members of Memorial University's Engineering Faculty to better integrate climate change into professional development. OCC also continued work with Municipalities Newfoundland and Labrador to improve uptake of current adaptation tools and resources and led a provincial Adaptation Network that consisted of Government officials and external experts and practitioners.

Planning and Decision Making

OCC continues to integrate climate change considerations into the Provincial Government's planning and decision-making processes by working closely with other departments and agencies. As part of its role reviewing development and land-use proposals, OCC reviewed and provided input on 45 environmental assessments and 60 land-use applications as a member of the Interdepartmental Land Use Committee in 2016-17. Through feeding into these processes, OCC ensured that climate projections, GHG reduction and energy efficiency are being considered in plans for community and economic development.

Education and Awareness

Through the [Turn Back the Tide](#) website, OCC continues to raise awareness on climate change, including by posting topical articles on the What's New page. In 2016-17, 49 articles were posted on a range of topics. All articles are linked to the Turn Back the Tide Facebook page. In addition, social media contests were developed and rolled out to increase engagement and understanding of climate change.

As is presented in this report, 2016-17 was a significant year for demonstrating leadership on climate change and energy efficiency. In addition to supporting work on the Pan-Canadian Framework on Clean Growth and Climate Change, OCC supported over 22 departments in developing and reporting on actions to green their activities through the implementation of the Greening Government Action Plan. Over 200 actions were undertaken in 2016-17.

The above examples highlight how OCC has worked horizontally across government and collaborated with a multitude of entities to support progress on climate change and energy efficiency in Newfoundland and Labrador.

Report on Performance

March 31, 2017, marked the end of the third and final year of the OCC's three-year business plan. The plan identified two strategic issues to guide OCC's work over the 2014-17 business plan period: 1) understanding and taking appropriate action concerning the risks and opportunities associated with climate change impacts, and 2) transitioning to a low-carbon and energy-efficient province. The plan identified a corresponding goal for each of the two strategic issues, reflecting the expected results over the three year timeframe. This section reports on OCC's performance for the 2016-17 strategic issues and the 2014-17 goals.

Reporting on Issues

OCC's Business Plan for 2014-17 identifies two strategic issues to guide work over the three year period: 1) risks and opportunities associated with climate change impacts, and 2) transitioning to a low-carbon and energy-efficient province. This section reports on OCC's performance under the 2016-17 objectives for each of the strategic issues.

Reporting on Issue 1: Risks and opportunities associated with climate change impacts

Climates around the world are changing as a result of rising global temperatures, and the effects are being felt in Newfoundland and Labrador. Temperatures in the province are already 1.5°C warmer than historical averages and are expected to rise by more than 3°C in some parts of the province by mid-century. In this province, climate change is expected to result in weather that is warmer and stormier, with more intense precipitation.

Climate change presents multiple environmental, social and economic risks for Newfoundland and Labrador. For example:

- Extreme weather brought on by more frequent and intense storms can damage personal property and infrastructure which can impact public safety;
- The arrival of new pests and invasive species may affect human health and various economic sectors; and
- Changing winter patterns and sea ice may impact traditional transportation routes, particularly for Indigenous communities in northern Labrador.

While there are risks associated with climate change, the impacts may also present new opportunities. Changing weather patterns could result in longer agricultural growing seasons and increased summer tourism opportunities. Innovation in climate change adaptation can also lead to new economic opportunities, skill development, as well as technologies and processes which can support job growth.

By building capacity in this area, Newfoundland and Labrador will be better positioned to plan for the realities of a changing climate, while minimizing potential risks and maximizing opportunities.

Goal 1: By 2017, the Office of Climate Change will have advanced initiatives to increase awareness and capacity to manage risks and seize opportunities associated with climate change impacts

Reporting on Objective 1.3

The following table provides an overview of initiatives undertaken by OCC during 2016-17 to fulfill its objective of assessing progress on the 2011 Climate Change Action Plan and the development of a new approach to build on the strategic framework.

The two indicators OCC is reporting on under this objective are:

- Engaged departments and agencies in implementing and assessing progress on Government commitments to minimize risks and maximize opportunities associated with climate change.
- Engaged stakeholders in initiatives to improve understanding of the risks and opportunities associated with climate change and to solicit input on a renewed strategic approach.

Objective 1.3 By March 31, 2017, the Office of Climate Change will have assessed progress on the 2011 Climate Change Action Plan and developed an approach to build on the strategic framework.

2016-17 Indicator: Engaged departments and agencies in implementing and assessing progress on Government commitments to minimize risks and maximize opportunities associated with climate change

In 2016-17, OCC engaged with departments and agencies to implement and assess progress on the Provincial Government's climate change adaptation commitments. This includes:

Supporting Intergovernmental Engagement on Climate Change

In collaboration with other departments, OCC both participated in and provided policy analysis to enhance the Provincial Government's participation at key intergovernmental meetings. This includes the First Ministers' Meetings and development of the Pan Canadian Framework on Clean Growth and Climate Change (PCF); the Climate Summit of the Americas, where Newfoundland and Labrador signed onto a joint statement promoting sub-national actions on climate change mitigation and adaptation; the Conference of New England Governors and Eastern Canadian Premiers, where premiers and governors passed a resolution to establish strengthened planning processes for climate change, biodiversity and ecological connectivity and agreed a regional GHG reduction marker for 2030; the Council of the Federation meeting, where provincial priorities were discussed within the context of the ongoing development of the PCF; and, the Federal Adaptation Plenary.

Developing Report on Climate Considerations Associated with Peat Mining

OCC completed research on climate change considerations that would need to be taken into account for a commercial policy on peat mining, in consultation with the departments of Natural Resources and Fisheries and Lands Resources. This was a commitment in the 2011 Climate Change Action Plan.

Engaging on Climate Change Action Plan Commitments

OCC engaged with all departments who have commitments in the Climate Change Action Plan, tracked progress, provided a mid-term [update on progress](#) in 2014.

Throughout this reporting period, OCC continued engaging with departments to support the implementation of commitments and track progress in preparation for the final report to be released.

2016-17 Indicator: Engaged stakeholders in initiatives to improve understanding of the risks and opportunities associated with climate change and to solicit input on a renewed strategic approach

OCC routinely engages with stakeholders on the risks and opportunities associated with climate change, as part of OCC's day-to-day business, and in 2016-17 OCC increased engagement to solicit input into the development of a new Climate Change Action Plan. This includes:

Launching Climate Change Impacts Tool

OCC developed an interactive climate change tool to inform users on the impacts of climate change and how these impacts are anticipated to affect the province, including increasing air and sea surface temperatures, sea level rise and increases in extreme weather. The tool aligns with curriculum outcomes for the high school course Environmental Science 3205, and can be found [online](#).

Presenting on Climate Change Adaptation

OCC delivered a range of presentations to stakeholder groups about the impacts of climate change in Newfoundland and Labrador in 2016-17. This is a key part of OCC's day-to-day business. Examples include: providing an overview of adaptation initiatives for the Coastal and Ocean Information Network (COIN) Atlantic conference; delivering a presentation on flood risk mapping and wellhead protection areas for the Stephenville Town Council; and presenting on results from the stakeholder consultation process to the provincial Adaptation Network.

External Engagement

OCC met with over 20 stakeholder groups, including businesses, not-for-profits groups and Indigenous organizations, to solicit their ideas and perspectives on the direction that the Provincial Government should take on climate change. These meetings, along with broader public consultations, will inform the development of a new climate change action plan.

Reporting on Issue 2: Transitioning to a Lower-Carbon and Energy-Efficient Province

The Provincial Government has committed to achieve targets for reducing GHG emissions to 10 per cent below 1990 levels by 2020, and 75-85 per cent below 2001 levels by 2050.

Improving energy efficiency can reduce dependency on carbon-based fuels. It can also provide added benefits such as lower utility bills for households and lower operating costs and improved competitiveness for businesses. Improving the province's ability to transition to a lower-carbon and more energy-efficient province is consistent with the mandate and mission of OCC.

Goal 2:

By 2017, the Office of Climate Change will have advanced initiatives to increase understanding and capacity to transition to a lower-carbon and energy-efficient province.

Reporting on Objective 2.3

The table below provides an overview of initiatives undertaken by OCC during 2016-17 to fulfill its objective of advancing work to deepen the awareness and understanding within the Provincial Government and amongst stakeholders of the issues pertaining to the transition to a lower-carbon and energy-efficient province.

The two indicators for which OCC are reporting on under this objective are:

- Engaged departments and agencies in implementing and assessing progress on Government's commitments on transitioning to a lower-carbon and more energy-efficient economy.
- Engaged stakeholders in initiatives aimed at supporting the transition to a lower-carbon and energy-efficient economy and in the development of a renewed strategic approach.

Objective 2.3 By March 31, 2017, the Office of Climate Change will have assessed progress on the 2011 Climate Change and Energy Efficiency Action Plans and developed an approach to build on these strategic frameworks.

Indicator 2016-17: Engaged departments and agencies in implementing and assessing progress on Government's commitments on transitioning to a lower-carbon and more energy-efficient economy

In 2016-17, OCC collaborated with departments and agencies to implement and assess progress on reducing provincial GHG emissions. Examples of this work are listed below.

Developing Management of Greenhouse Gas Act and Reporting Regulations

OCC engaged with departments and agencies to develop the Management of Greenhouse Gas Act, which received Royal Assent in June, 2016, and the

underpinning Reporting Regulations took effect on March 7, 2017. The Act will reduce emissions and create economic opportunities for clean technology by establishing a legislative framework to reduce GHG emissions from large industrial facilities. This is in line with the Provincial Government's commitment to reduce GHG emissions.

Supporting Implementation of the Greening Government Action Plan

OCC has worked with relevant departments to help advance commitments in the Greening Government Action Plan (GGAP). This includes:

- Working with the Government Purchasing Agency (GPA) to advance green procurement. In 2016-17, four tenders were issued that included green considerations (office supplies, lamps and ballasts, microcomputer desktops and monitors), and green alternatives have been strategically positioned on standing offer lists to provide more prominence. Further to this, OCC developed material on green leases for the [Turn Back the Tide](#) website, and in collaboration with the Centre for Learning and Development and the GPA, developed an e-learning course on Green Procurement.
- Working with the Department of Transportation and Works and GPA to advance right-sizing of the Provincial Government vehicle fleet. This includes reviewing the existing standing offer list to determine lifecycle costs and incorporate fuel economy into procurement considerations; developing a right-sizing questionnaire for government entities that are seeking to procure a light-duty vehicle; and exploring ways to incorporate fuel efficiency into new vehicle tender specifications.
- Developing a Greening Events Planning Guide to encourage government entities to reduce the environmental impact of meetings and conferences.

Reviewing Build Better Buildings Policy

The Market Transformation Framework committed to review the Building Better Buildings Policy, and in line with this commitment, OCC conducted a cost-benefit analysis of seven LEED-registered buildings in the province; a jurisdictional scan, summarizing leading sustainable building approaches used in Canada; and internal interviews with members of the Build Better Buildings committee to gain insight on its use and achievements.

Indicator 2016-17: Engaged stakeholders in initiatives aimed at supporting the transition to a lower-carbon and energy-efficient economy and in the development of a renewed strategic approach

Developing Greenhouse Gas Offsets System

OCC advanced work on carbon offsets, which will support the operationalization of the Management of Greenhouse Gas Act and lower costs to regulated industrial facilities. A jurisdictional review was completed to understand best practices in managing a carbon offsets system and in establishing the regulatory framework to enable an offsets system to be implemented. Secondly, Newfoundland and Labrador's first carbon offsets protocol was developed which focused on-fuel switching; and this included a process to engage and receive feedback from stakeholders.

Developing Energy Efficiency Programs

OCC developed two new energy efficiency programs in partnership with Newfoundland and Labrador Housing Corporation and Take CHARGE. The Home Energy Savings Program (HESP) is a provincial initiative designed to assist low-income households benefit from energy efficiency upgrades. The Home Energy Efficiency Loan Program (EELP) will provide low-interest financing towards the purchase and installation of heat pumps and insulation. These initiatives received funding under Budget 2017.

Engaging with Stakeholders on New Climate Change Action Plan

OCC hosted province-wide stakeholder consultations in summer 2016 to solicit feedback on ways to tackle climate change and support growth in the green economy. Following the stakeholder consultation process, OCC released a What We Heard document, synthesizing feedback from the consultations. Further to this, all raw, unedited feedback was provided on the corporate website.

Reporting on Goals

Reporting on Goal 1 (2014-17)

The following table provides an overview of some of the initiatives undertaken by OCC during 2014-17 to fulfill its goal of advancing initiatives to increase awareness and capacity to manage risks and seize opportunities associated with climate change impacts.

Indicator: Supported departments and agencies in the implementation of the Climate Change Action Plan

The 2011 Climate Change Action Plan was developed to guide provincial action on climate change. The five-year plan includes 75 commitments, led by 13 departments and agencies, including 18 commitments that fell to OCC. OCC supported implementation of the Climate Change Action Plan, and reported on progress to the public. Examples of this work include:

Road Weather Information System Data

OCC collaborated with the Department of Transportation and Works to establish a mechanism to ensure the Provincial Government received aggregated historical and future data generated from the Road Weather Information System, including daily temperatures and wind, and made this information publicly available. Public availability of comprehensive historical and projected climate data is key for ensuring sound

decision-making by governments, stakeholders and communities (e.g. for land-use planning and infrastructure design). Data is updated on an annual basis.

Atlantic Climate Adaptation Solutions

OCC collaborated with the Department Municipal Affairs and Environment on a range of projects through Atlantic Climate Adaptation Solutions (ACASA), a partnership among provincial governments of the Atlantic Provinces as well as regional stakeholders. This includes supporting the development of the following:

- A Report on [Using Cost-Benefit Analysis to Evaluate Climate Change Adaptation Options in Atlantic Canada](#) which included two case study sites in Marystow and Witless Bay
- A Decision Tree Tool for municipalities to identify risks related to coastal erosion and flooding and detailed adaptation options
- A Community Vulnerability Assessment Toolkit to help communities identify their risks to climate change and opportunities to adapt

Flood Risk and Coastal Erosion Monitoring

OCC collaborated with the Water Resources Management Division on ensuring that flood risk maps integrate the latest climate change projections. Further to this, OCC also collaborated with the Department of Natural Resources to disseminate information on coastal erosion at existing and new locations in the province. The Department of Natural Resources currently monitors 116 locations.

Indicator: Widened and deepened the evidence base to better understand the impacts of climate change and disseminated the information to stakeholders

Developing a deeper understanding of climate change impacts is essential for managing potential risk and opportunities. OCC has done extensive work in this area, including:

Developing Climate Tools for Infrastructure Design

OCC updated, expanded and disseminated the province's [Intensity-Duration-Frequency](#) (IDF) curves, which predict future extreme rainfall events and which are critical for ensuring that infrastructure designs (e.g. transportation, municipal, marine, industrial, etc.) are able to withstand increases in precipitation.

Launching Climate Information Portal

OCC collaborated with the Newfoundland and Labrador Statistics Agency to create the [Climate Information Portal](#) on the Community Accounts website, providing a single point of entry for climate data. The online portal includes climate data (temperature, wind, precipitation) at the community, regional and provincial level, as well as updated IDF curves.

Supporting Development of Climate Change Risk Assessment Tools

OCC supported Memorial University's Department of Geography with the development and piloting of a [user guide](#) to assist heritage managers and other decision-makers in using a first-of-its-kind Geographic Information System (GIS)-based tool, to perform assessments of coastal archaeological resources, particularly related to risks associated with climate change-related sea-level rise and storm surge.

Indicator: Worked to raise awareness and understanding of the risks and opportunities of climate change impacts through activities such as webinars, presentations and information sessions

In 2014-17, OCC worked to raise awareness and understanding of the need for climate change adaptation. Activities included:

Convening the Provincial Adaptation Network

OCC led the Provincial Adaptation Network, a group of internal and external adaptation experts and practitioners that collaborate and share best practices related to climate change adaptation. The Network met periodically, and OCC routinely circulated information and resources to the Network.

Engaging with Stakeholder Groups

Delivering presentations to stakeholder groups about the impacts of climate change in Newfoundland and Labrador and options for minimizing risks and maximizing opportunities is a key part of OCC's day-to-day business. Examples include: presentations at Municipalities Newfoundland and Labrador's regional meetings of municipalities; presenting to the Museum Association Conference on preparing for climate impacts; and presenting to the Town of Stephenville on flood risk mapping and wellhead protection areas.

Updating Turn Back the Tide

OCC is responsible for maintaining and updating [Turn Back the Tide](#), a website that provides user friendly information and resources on climate change and energy efficiency. A new interactive tool was developed on how the province is being impacted by climate change; it was designed to support the delivery of curriculum outcomes in schools. This includes content on infrastructure, land use planning, and emergency management.

Indicator: Worked with internal and external stakeholders to continue integrating climate change considerations into policy development and decision-making

OCC regularly engages with internal and external stakeholders to integrate climate change considerations into policy-making. Examples include:

Developing Report on Climate Change Considerations for Peat Mining

OCC completed research regarding climate change considerations that would need to be considered in a commercial policy on peat mining, in consultation with the Department of Natural Resources and the Department of Fisheries and Lands Resources.

Training on Incorporating Climate Change Data into Risk Assessments

OCC collaborated with the Department of Municipal Affairs and Environment and the Department of Transportation and Works to develop customized training on how to incorporate climate change considerations into risk assessments for infrastructure. Workshops demonstrated how to use Engineers Canada's Public Infrastructure Engineering Vulnerability Committee (PIEVC) Assessment tool with integrated localized climate data for the province. Two full-day workshops were hosted for professional engineers, field staff and consultants. As well, an additional half-day workshop was hosted for deputy and assistant deputy ministers, directors, senior engineers and policy staff.

Supporting Intergovernmental Engagement on Climate Change

OCC provided policy analyses to enhance the Provincial Government's participation at key intergovernmental meetings that focused on climate change, including the Quebec Climate Change Summit in April 2015, Council of Federation meetings, annual meetings of the Conference of the Parties to the United Nations Framework Convention of Climate Change, First Ministers' meetings, the Conference of New England Governors and Eastern Canadian Premiers, the Council of Atlantic Premiers and Canadian Council of Ministers of the Environment. OCC represented the Provincial Government on four Federal-Provincial-Territorial Working Groups that developed the options that informed Pan-Canadian Framework on Clean Growth and Climate Change that was adopted by First Ministers in December 2016.

Indicator: Assessed progress on the Climate Change Action Plan and developed an approach to build on the strategic framework

In 2014-17, OCC assessed progress on the 2011 Climate Change Action Plan and built on the strategic framework, including:

Engaging on 2011 Climate Change Action Plan Commitments

OCC engaged with all departments who have adaptation commitments in the Climate Change Action Plan, tracked progress, released a mid-term progress report in 2014, developed annual ministerial statements on progress for the House of Assembly, and engaged with departments to support implementation of commitments and track progress in preparation for the final report to be released in 2017.

Engaging on New Climate Change Action Plan

OCC began work on the development of a new Climate Change Action Plan. To inform the development of the Plan, OCC led province-wide public consultations that solicited feedback on adaptation, including ways to minimize risk associated with climate change, and additional tools and resources that would help take account of climate change in planning and decision-making.

Evaluating the Effectiveness of Climate Change Adaptation Tools and Resources

OCC undertook extensive stakeholder engagement to evaluate the effectiveness of current adaptation tools and resources to identify ways in which the Provincial Government can increase resilience to climate impacts through influencing decision-making, including through increasing uptake and training of information products and tools. Findings can be found on OCC's [website](#) and will be used to inform future adaptation work.

Reporting on Goal 2 (2014-17)

The following table provides an overview of initiatives undertaken by OCC during 2014-17 to fulfill its goal of advancing initiatives to increase understanding and capacity to transition to a lower-carbon and energy efficient province.

Indicator: Supported departments and agencies in the implementation of the Climate Change and Energy Efficiency Action Plans

OCC has supported implementation of commitments to reduce greenhouse gas emissions and increase energy efficiency under the Climate Change Action Plan, including:

Completing Waste Audits in Government Buildings

OCC partnered with Multi-Materials Stewardship Board to conduct waste audits for a sample of government buildings to understand the volume and composition of waste being generated. The audits were conducted on six government buildings, and a [report](#) was developed with key findings to support the implementation of the Greening Government Action Plan.

Promoting Green Procurement

OCC collaborated with the Government Purchasing Agency to develop and deliver a green procurement workshop to build on the release of the Buying Green Guide; discuss the successes, challenges and benefits of green procurement; and provide practical advice on green procurement. The workshop informed the development of a green procurement e-learning module, which has been deployed and is available on the Public Service Access Learning Management System.

Developing and Releasing a Market Transformation Framework

OCC worked in partnership with other government departments to release a Market Transformation Framework (MTF) that aims to transform the market for goods and services that help address climate change and energy efficiency. The MTF includes 19 action items targeted at buildings, the transportation sector, and products and services.

Indicator: Widened and deepened the evidence base to better understand the opportunities available to transition to a lower-carbon and energy efficient economy and disseminated the information to stakeholders

OCC has worked to enhance the evidence base to improve understanding of opportunities available to transition to a lower-carbon economy. This includes:

Completing and Evaluating the Energy Conservation in Homes Pilot

In partnership with Newfoundland and Labrador Hydro, OCC completed a study to determine whether households would reduce their consumption of electricity when provided with real-time information about their electricity use. Real-time electricity monitors were provided to 500 homeowners and behavior was tracked over a year. The study revealed that, on average, homes heated solely by electricity did not achieve savings, whereas homes with two or more sources for heating saved 4.0 per cent off of their electricity use.

Examining the Case for Adopting the National Energy Code for Buildings

Technical analysis and stakeholder consultations were conducted to assess the costs and benefits of meeting the National Energy Code for Buildings (NECB) requirements, and an archetype approach was used to compare current construction practices for five building types to the NECB 2011 and ASHRAE 90.1 (2010).

Releasing Report on Electric Vehicle

OCC released an [Electric Vehicles Report](#) which provided a comprehensive assessment of the state of electric vehicle technology, infrastructure requirements and market developments.

Indicator: Worked to raise awareness and understanding of the benefits of reducing GHG emissions and becoming more energy efficient through such activities as webinars, presentations and information/training

OCC engaged in a range of projects and initiatives to raise awareness on the benefits of reducing GHG emissions and increased energy efficiency. This includes:

Developing, Implementing and Evaluating HotShots

OCC developed HotShots, in collaboration with the Department of Education and Early Childhood Development and takeCHARGE, an initiative aimed to raise awareness among students and teachers of the importance of energy efficiency and conservation. The project was honoured with a Pinnacle Award of Merit for a Government Communication Program, and an evaluation found that HotShots met or exceeded all established targets. Notable achievements include: distributing 1,044 resource packs to all schools in the province; delivering 191 presentations to 5,500 students; delivering an in-classroom contest for grades 7-12; and launching a new website for teachers.

Supporting Greening Government 8-10 Lists

OCC launched the 2015 Greening Government Action Plan (GGAP). As part of the GGAP, and to support efforts to create a culture of environmental sustainability, each core department and agency was required to develop a list of eight to ten actions that will improve the environmental sustainability of their operations. These “8-10 Lists” are developed and reported on annually. In 2016-17, over 245 actions were submitted by 22 departments and agencies. OCC reviews and provides feedback on all 8-10 Lists and reports.

Engaging Public via Website and Social Media

OCC revamped and updated the Turn Back the Tide website, adding new sections designed to help schools and municipalities, including energy efficiency resources. To increase traffic to the new website, a Facebook social media campaign was developed

using contests as a tool to drive engagement, raise awareness, and increase understanding about climate change. Further to this, OCC regularly posts articles on the website with information related to energy efficiency and reducing GHG emissions.

Indicator: Worked with internal and external stakeholders to continue integrating energy efficiency considerations into policy development and decision-making

OCC regularly works with internal and external stakeholders to integrate climate change considerations into policy and decision making processes. Between 2014-17, initiatives have included:

Developed Tools to Support Energy Efficiency in Buildings

OCC worked with ThermalWise to design and deliver new tools and resources to assist building designers, architects, engineers, contractors and inspectors in incorporating energy efficiency into the construction of buildings. This included:

- Developing two technical guides on (1) incorporating energy efficiency into the construction of homes and small buildings ([Guide to Building Energy Efficient Homes and Small Buildings 2016](#)), and (2) incorporating energy efficiency into building envelopes for larger commercial and multi-unit buildings ([Guide to Building Better Envelopes for Large Buildings 2016](#)).
- Developing in-person and online training sessions, attended by over 230 construction industry professionals, to provide information on the guides.

Supported Efforts to Green Government

OCC launched the 2015 Greening Government Action Plan with the goal of creating a culture of environmental sustainability within the Provincial Government. In consultation with all core departments and agencies, OCC led the development of the plan which contains 46 commitments across five strategic objectives (waste diversion, government buildings, transportation, procurement, and employee engagement). OCC provided regular advice and support to departments and agencies in efforts to green their operations in support of the GGAP.

Delivered Presentations to Stakeholder Groups

OCC delivered presentations at major conferences and events such as the NL Environmental Industry Association's NewLeef conference, the provincial chapter of the Canadian Homebuilders' Association's Conference on Net Zero Homes, and the Newfoundland and Labrador Construction Association's Evocation Forum.

Indicator: Assessed progress on the Climate Change and Energy Efficiency Action Plan and developed an approach to build on the strategic framework

In 2014-17, OCC assessed progress on the 2011 Climate Change Action Plan and built on the strategic framework, including:

Engage on 2011 Climate Change Action Plan Commitments

OCC engaged with all departments which have mitigation commitments in the Climate Change Action Plan, tracked progress, released a mid-term progress report in 2014, developed annual ministerial statements on progress for the House of Assembly, and continued engaging with departments to support implementation of commitments and track progress in preparation for the final report to be released in 2017.

Stakeholder Engagement on New Climate Change Action Plan

As listed earlier, OCC began work on the development of a new Climate Change Action Plan. To inform the development of the plan, OCC led province-wide public consultations that solicited feedback on mitigation, included collecting input on measures to increase support for a low carbon economy and reduce provincial GHG emissions. Four in-person and three online public consultation sessions were hosted. In addition, four further in-person sessions were hosted at the request of other organizations. Forty-three written submissions were received through the online web form and email, and OCC participated in over 20 bilateral meetings with a range of stakeholder groups.

Joining the Compact of States and Regions

The provincial government joined the Compact of States and Regions (CSR), which provides an annual global accounting framework for GHG reduction targets made by state and regional governments. CSR provides a forum for members to share information on targets and policy measures and provides a framework to allow for improved GHG emissions measurement and management. OCC compiled and submitted the Province's annual reports on progress to the CSR.

Opportunities and Challenges

It has been widely recognized that climate change is a complex challenge that requires action from all jurisdictions. Climate change has received increased attention and has been featured prominently on the agenda of numerous high-level intergovernmental meetings and conferences throughout 2016-17, leading up to and following the development and adoption of the PCF in December 2016. Newfoundland and Labrador is committed to taking action against climate change, has adopted the PCF, and as outlined in *The Way Forward*, is developing a new Climate Change Action Plan to chart a provincial approach to taking further action on climate change.

Action against climate change requires a two-fold approach. The impacts of climate change are already being felt and pose substantial risk to our communities, economy and natural environment. Communities in this province are experiencing more frequent and intense storms, flooding, coastal erosion, permafrost melt, changing sea ice conditions, invasive species, and weather damage to properties and infrastructure. Adaptation is required to help build resilience, which includes supporting vulnerable populations and regions, building climate resilient infrastructure, and reducing potential hazards. Reducing GHG emissions is equally important to limit the potential impacts of climate change in the future. Newfoundland and Labrador has committed to reducing its emissions by 10 per cent below 1990 levels by 2020 and 75-85 per cent below 2001 levels by 2050.

In June, 2017, the Auditor General released an audit on the 2011 Climate Change Action Plan. The audit examined actions related to adaptation and mitigation and determined that the majority of action items have been implemented by the government department or agency responsible and that government had reported publicly on progress. The report also concluded that the mitigation items outlined in the Climate Change Action Plan were not sufficient to allow the Provincial Government to achieve the 2020 greenhouse gas reduction target of 10 per cent below 1990 levels. This is due to a number of factors, including: industrial growth; changes in the federal accounting methodology that significantly increased the transportation GHG emissions attributed to the province; and, looking ahead, a later date for the closure of Holyrood than anticipated in 2011. Government is committed to doing more to close the gap to the set target. Achieving improvements in energy efficiency and developing a provincial approach to carbon pricing, as committed to in the PCF, will be a priority in maintaining the provincial commitments to reduce local GHG emissions.

Provincial action against climate change will create new opportunities, particularly related to clean technology and growth. Jurisdictions across the globe are increasingly seeking low-carbon and energy efficient solutions to address climate change. As noted in the PCF, there is currently a global market for low-carbon goods and services worth \$5.8 trillion, which is projected to grow by three per cent per year. Provincially, this presents opportunities for businesses that develop and provide these goods and services, in both domestic and export markets. This will foster innovation and present new opportunities for green economic growth.

Action on climate change must balance environmental, social and economic considerations. The new Climate Change Action Plan will include both adaptation and mitigation measures to address climate change in the province and will seek to strengthen opportunities for clean economic growth, including a made-in-Newfoundland and Labrador approach to carbon pricing.

Financial Information

Expenditure and revenue figures included in this document are un-audited and based on public information provided in the Report on the Program Expenditures and Revenues of the Consolidated Revenue Fund for the year ending March 31, 2017.

Item	2016-17 Budget	2016-17 Revised	2016-17 Actual
Salaries	753,500	701,200	689,139
Employee Benefits	2,200	2,200	2,170
Transportation and Communications	32,100	36,000	32,617
Supplies	5,300	4,000	3,275
Professional Services	150,000	133,500	132,881
Purchased Services	8,000	7,000	5,690
Property, Furnishings and Equipment	900	900	0
Total	952,000	884,800	865,772