



Report of the Auditor General of Canada to the Yukon Legislative Assembly—2017

Independent Auditor's Report

Climate Change in Yukon



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Auditor General
of Canada

Bureau du
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To the Honourable Speaker of the Yukon Legislative Assembly:

I have the honour to submit herewith my report on Climate Change in Yukon to the Yukon Legislative Assembly in accordance with the provisions of section 35 of the *Yukon Act*.

Yours sincerely,

A handwritten signature in black ink, appearing to read "L. Ferguson".

Michael Ferguson, CPA, CA
FCPA, FCA (New Brunswick)

OTTAWA, 5 December 2017

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Introduction

Background

Impacts of climate change on Yukon

1. Research on climate change shows that temperatures in Yukon have risen at a faster rate than in Canada as a whole. In 2016, most of Yukon had average temperatures that were more than 3 degrees Celsius higher than those recorded from 1961 to 1990, according to Environment and Climate Change Canada. The same source states that in Canada, the average temperature rose by 1.7 degrees Celsius from 1948 to 2016.
2. The impacts of rising temperatures and other aspects of climate change are significant and widespread, according to various sources. Exhibit 1 lists some examples of environmental changes in Yukon. Although some of these examples cannot be attributed solely to climate change, it is a major factor.

Exhibit 1 Examples of climate change impacts on Yukon

Type of change	Impact	Examples*
Warming	Permafrost is thawing.	Thawing permafrost damages roads, which are expensive to repair. In Yukon, roads are critical to providing communities with access to health care, food, and other basic goods and services. The Department of Highways and Public Works determined that the cost of rehabilitating permafrost sections of roads and highways was as much as 10 times the cost of rehabilitating non-permafrost sections.
	Forests are more vulnerable to insect infestations.	The spruce bark beetle outbreak, intensified by warmer conditions and drought stress, has killed half of the mature spruce forest in southwest Yukon.
Variation in precipitation	Some areas are drying out, and some are getting wetter.	Increased temperatures, precipitation changes, and the onset of thunderstorms increase the chances of forest fires. Yukon's 2004 fire season doubled the previous record for the extent of area burned.
Extreme weather events	Storms, floods, and other extreme weather events are occurring more often.	Torrential rains forced a mining company to release untreated water into the Yukon River system twice in two years (2008 and 2009). This water may have negatively affected fish and wildlife, and the people who depend on them for subsistence.
<p>*Examples are based on the following sources:</p> <ul style="list-style-type: none">• Pearce, T.D., et al., Climate change and mining in Canada, Mitigation and Adaptation Strategies for Global Change, Volume 16, March 2011• Streicker, J., Yukon Climate Change Indicators and Key Findings 2015, Northern Climate ExChange, Yukon Research Centre, Yukon College, 2016• Yukon's Department of Environment website• Yukon's Department of Highways and Public Works, information provided to the Office of the Auditor General of Canada		

3. According to the Intergovernmental Panel on Climate Change, a leading cause of climate change is the emission into the atmosphere of greenhouse gases, such as carbon dioxide, from fossil fuel combustion and industrial processes. Yukon is a small emitter of greenhouse gases, but like other places in the North, it is disproportionately affected by climate change.
4. Responding to the impacts of climate change is a shared responsibility. It requires partnerships within and across governments, with non-governmental organizations, with industry, and with the public.

Roles and responsibilities

5. The Department of Environment, which includes the Climate Change Secretariat, leads the Government of Yukon's efforts to reduce greenhouse gas emissions and adapt to the impacts of climate change. Its responsibilities include
 - developing climate change policy and strategy, in consultation with other departments, partners, and stakeholders;
 - monitoring climate change impacts and **adaptation**;
 - coordinating climate change activities and participation;
 - forming climate change partnerships with federal government organizations, First Nations, and other stakeholders;
 - coordinating Yukon's government-wide response to climate change;
 - working with colleagues to integrate risk assessments and actions to reduce greenhouse gas emissions into the government's policies, processes, and projects;
 - implementing the Yukon Government Climate Change Action Plan;
 - tracking emissions and reporting on performance;
 - managing and regulating air quality;
 - monitoring and inspecting water use and water quality (everywhere but at major mines);
 - collecting baseline air, fish and wildlife, and water inventories; and
 - reducing greenhouse gas emissions.
6. Other government departments also have key roles in managing climate change—particularly, the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services.

Adaptation—Actions or activities that prevent or reduce the negative impacts, or build on the positive impacts, of climate change.

7. The responsibilities of the Department of Energy, Mines and Resources include
- developing energy policy and strategy (with all Government of Yukon departments);
 - managing and regulating land use and agriculture;
 - monitoring and inspecting water use and water quality at all major mines;
 - management of forest resources on public land;
 - managing and regulating Yukon's mineral resources and oil and gas resources;
 - conducting geological, forest inventory, and permafrost surveys;
 - conducting local and regional land use planning; and
 - reducing greenhouse gas emissions.
8. The responsibilities of the Department of Highways and Public Works include
- designing, constructing, and maintaining transportation systems and services;
 - constructing, renovating, and maintaining buildings;
 - decreasing energy consumption through retrofits to government buildings and investments in renewable energy for government operations; and
 - reducing greenhouse gas emissions.
9. The responsibilities of the Department of Community Services include coordinating Yukon's preparedness for, response to, and recovery from major emergencies and disasters; ensuring that building safety codes are applied and meet standards; and reducing greenhouse gas emissions.

Focus of the audit

10. This audit focused on whether selected Government of Yukon departments had worked to reduce greenhouse gas emissions and to adapt to the impacts of climate change, taking into account present and future generations. The departments selected for the audit were the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services.
11. This audit is important because Yukon is experiencing significant climatic changes, which can affect its land, wildlife, and people. These changes can be damaging to infrastructure, ecosystems, and traditional ways of life.

12. We examined selected responsibilities related to climate change for each of the four departments. More specifically, we examined the adaptation efforts of the Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services. We also examined the efforts by these departments and by the Department of Highways and Public Works to reduce greenhouse gas emissions.
13. We did not examine the quality of research, monitoring, or forecasting information, nor did we assess the adequacy of the territorial resources spent on responding to climate change. In 2017, we reported on the impact of permafrost on buildings and highways. Therefore, we did not include an examination of climate change impacts on buildings and highways in this audit.
14. In 2016, many legislative audit offices across Canada decided to look at the issue of climate change and developed similar audit approaches and questions to examine climate change action within their governments. As part of this initiative, the Office of the Auditor General of Canada decided to do federal and territorial climate change audits.
15. More details about the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this report (see pages 15–19).

Findings, Recommendations, and Responses

Planning and leading

Overall message



16. Overall, we found that the Government of Yukon created a strategy, an action plan, and two progress reports to respond to climate change. In developing these items, the government took good first steps toward providing leadership and direction for responding to climate change. However, the commitments in the government's action plan and progress reports were weak and not prioritized. In addition, deficiencies in the Climate Change Secretariat's reporting made it difficult to assess progress on the government's climate change actions.
17. These findings matter because the government's development of a strategy and action plan are key to establishing priorities, roles and responsibilities, and actions for its response to climate change. Furthermore, by reporting clearly and consistently on the progress it makes in meeting its climate change commitments, the government helps keep the public informed and strengthens its accountability.

The Government of Yukon developed a climate change strategy, an action plan, and two progress reports, but it made weak commitments

What we found

18. We found that the Government of Yukon had a strategy, an action plan, and two progress reports to respond to climate change, and that these documents took into account present and future generations. However, the commitments in its action plan and progress reports were weak. For example, many of the commitments did not include milestones or completion dates. In addition, the government did not systematically assess the risks associated with climate change before it defined its commitments. Furthermore, it did not prioritize the commitments according to risk.

19. Our analysis supporting this finding presents what we examined and discusses the following topics:

- Climate change strategy
- Action plan, progress reports, and commitments
- Fulfillment of roles and responsibilities

Why this finding matters

20. This finding matters because the impacts of climate change are expected to intensify and the Government of Yukon has limited resources for addressing them. Without a systematic, risk-based approach and well-defined commitments, the government cannot be sure that it is addressing areas of greatest risk or need.

Recommendations

21. Our recommendations in these areas of examination appear at paragraphs 30 and 31.

Analysis to support this finding

22. **What we examined.** We examined whether the Government of Yukon

- had developed a strategy to address climate change;
- had developed an action plan that included commitments, an assessment of risks, and prioritization of the commitments; and
- had defined and met departmental roles and responsibilities for the action plan.

23. **Climate change strategy.** We found that the Department of Environment worked with other departments to develop the Government of Yukon Climate Change Strategy in 2006. The strategy contained four goals:

- enhancing knowledge and understanding of climate change,
- adapting to climate change,
- reducing greenhouse gas emissions, and
- leading Yukon's actions in response to climate change.

24. In its climate change strategy, the government committed to developing a detailed action plan that would outline specific actions and initiatives for the strategy's implementation.

25. **Action plan, progress reports, and commitments.** In 2009, the Department of Environment created the Yukon Government Climate Change Action Plan. In 2012 and 2015, the government produced two progress reports related to the plan. These three documents identified actions and targets and took into account present and future generations. The actions and targets were the government's commitments to help it meet the four climate change goals stated in its 2006 strategy. The government formally identified a total of 70 commitments to respond to climate change.

26. Governments must assess the risks related to climate change so that they can determine priorities for addressing them. We found that the Government of Yukon did not complete a comprehensive, territory-wide risk assessment before it developed any of its commitments. We also found that the government set no relative priority for the commitments beyond stating in the 2009 action plan that it would carry out the commitments before carrying out other actions.

27. Officials at the Department of Environment told us that when the Department developed the action plan in 2009, it identified potential commitments by conducting research and analysis. The Department then worked with other government departments and organizations to identify actual commitments they could make. We were told that although some high-risk areas were specifically identified through the research and analysis, the commitments were based on whether they could be done.

28. In creating its strategy and action plan, the government took good first steps toward providing leadership and direction for responding to climate change. However, we found the following weaknesses in the 2009 action plan and the 2012 and 2015 action plan progress reports:

- Milestones or completion dates were missing from 56 of the 70 commitments (80 percent). In our opinion, this absence of timelines would make it more difficult to measure when progress should occur.

- Many of the targets related to reducing greenhouse gas emissions did not include estimates of reductions in greenhouse gas emission levels. Therefore, the government would be unable to measure whether actions taken to reduce these emissions were sufficient.
- The action plan and two action plan progress reports had no cost estimates for meeting the commitments or the plan overall. Including such information is important to demonstrate the level of resources needed for implementation.

29. We also found that from 2009 to 2016, the government developed three policies and two energy strategies related to climate change:

- The Energy Strategy for Yukon (2009) provides guidance for producing, conserving, and using energy in Yukon.
- The Green Procurement Policy (2010) incorporates climate change considerations into the government's decisions on procuring goods, construction, and services.
- The Micro-Generation Policy (2013) allows individuals and businesses to install electrical generation systems and connect them to Yukon's electrical grid.
- The Independent Power Production Policy (2015) allows independent, non-utility electricity producers to sell electricity to Yukon's two public utilities through renewable energy technologies.
- The Yukon Biomass Energy Strategy (2016) identifies actions for developing biomass energy in Yukon to reduce the use of fossil fuels.

30. **Recommendation.** The Climate Change Secretariat, working with departments and other stakeholders, should prepare a comprehensive, territory-wide risk assessment to help prioritize commitments to manage the impacts of climate change.

***The Secretariat's response.** Agreed. The Government of Yukon is already planning a climate risk-management approach for its own operations. In 2016, the Department of Environment was directed to work with government departments to integrate risk assessments and mitigation actions related to climate change in government policies, procedures, and projects. A climate risk assessment contract is under way, and this information will support high-risk departments to develop "climate risk reduction plans," including an implementation and monitoring plan. It is anticipated that this work will be completed in 2019. Portions of this work will inform government commitments in a new climate change, energy, and green economy strategy planned to be released in 2019.*

The Government of Yukon will work to complete a Yukon-wide climate risk assessment to help Yukoners prioritize actions that will address the most significant current and expected impacts of climate change. The climate risk assessment would explore specific areas of vulnerability to climate hazards and recommend priority areas for risk reduction.

31. **Recommendation.** The Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services should develop climate change commitments that are time-bound and costed. Commitments to reduce greenhouse gas emissions should indicate the intended levels of reductions.

The departments' response. Agreed. It is anticipated that commitments and targets in the new 2019 Yukon strategy for climate change, energy, and green economy will be supported by clear milestones, completion dates, and associated costs. More rigorous monitoring and reporting for Yukon actions would work to support the actions and outcomes in the Pan-Canadian Framework on Clean Growth and Climate Change.

The Government of Yukon will work to include levels of greenhouse gas emission reductions anticipated to be achieved in future commitments.

32. **Fulfillment of roles and responsibilities.** We found that the 2009 action plan set out the overall roles and responsibilities of departments and corporations for matters related to climate change. The action plan also included a commitment to create the Climate Change Secretariat.

33. The Secretariat's role was to provide leadership and coordination on climate change issues. Although we found weaknesses in its reporting on progress (see paragraph 43), we found that the Secretariat fulfilled its role by

- leading some greenhouse gas emission reduction and adaptation efforts;
- identifying sources of funding for some projects;
- representing the Government of Yukon at climate change forums outside the territory, and within the territory as part of the Yukon Climate Change Consortium, which included the Council of Yukon First Nations and the Northern Climate ExChange; and
- monitoring progress on the government's commitments by regularly obtaining information from departments.

34. Officials from the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services told us that the process for working with the Climate Change Secretariat to update the climate change action plan and progress reports worked well. The Council of Yukon First Nations told us that the Secretariat consulted with it on many projects, committees, and reports.

Reporting on progress was not clear or consistent

What we found

35. We found that the Climate Change Secretariat adequately monitored progress on the Government of Yukon's commitments to respond to climate change and regularly reported on progress made on the commitments. However, the reporting was not clear or consistent.

36. Our analysis supporting this finding presents what we examined and discusses the following topics:

- Monitoring and reporting
- Meeting commitments

Why this finding matters

37. This finding matters because monitoring provides a way to measure progress and determine the need for adjustments. In addition, reporting on progress demonstrates accountability and informs the public of the government's efforts.

Recommendation

38. Our recommendation in this area of examination appears at paragraph 44.

Analysis to support this finding

39. **What we examined.** We examined whether the Climate Change Secretariat monitored progress on the commitments made in the climate change action plan and progress reports. We also looked to see whether the Secretariat reported on the results of progress made on the commitments.

40. **Monitoring and reporting.** We found that the Climate Change Secretariat monitored and documented progress on the government's outstanding commitments every 6 to 12 months. In our opinion, this monitoring was adequate.

41. In 2006, the Government of Yukon had committed in its climate change strategy to fully reviewing and revising its climate change action plan within two years of its release, and at least every five years thereafter. In the 2009 action plan, the government changed this commitment to say that it would report on progress regularly. However, we found that "regularly" was not defined. In our opinion, specifying the frequency of regular public reporting and meeting reporting commitments within those time frames would help to hold government accountable. The government produced its first progress report in 2012 and a second one in 2015.

42. **Meeting commitments.** Information gathered by the Climate Change Secretariat showed that as of July 2017, of the 70 commitments,
- 29 commitments had been met,
 - 32 commitments were ongoing,
 - 5 commitments could not yet be measured, and
 - 4 commitments had not been met. (Of these, 3 commitments had been identified in 2015.)
43. We found weaknesses in the Climate Change Secretariat's reporting on the government's progress on its climate change commitments:
- The action plan and progress reports used inconsistent terminology. For example, one report referred to the same commitment as both an initiative and an action.
 - A reader could not easily distinguish the reporting on commitments from the reporting on other projects.
 - The 2015 action plan progress report did not clearly show the status of progress made on individual commitments, as was done in the 2012 action plan progress report.
 - The commitments did not include the actual costs of carrying them out.
44. **Recommendation.** The Climate Change Secretariat should publicly report in a consistent manner on progress made on all commitments, and on the expenditures associated with meeting the commitments.

***The Secretariat's response.** Agreed. It is envisioned that reporting systems, including frequency, reporting language, cost, and established metrics for each commitment or target, will be part of the new Yukon strategy for climate change, energy, and green economy.*

Taking action

Departments did not take sufficient concrete action to respond to climate change

Overall message



45. Overall, we found that although the Department of Environment, the Department of Energy, Mines and Resources, and the Department of Community Services had begun to lay the groundwork for adapting to climate change by gathering information, they took limited concrete action. In our opinion, the benefits of gathering information are fully realized only when the information is used to take action in a timely manner.

46. These findings matter because to respond effectively to climate change, the government must take concrete and timely action, given the severity of climate change impacts and the speed with which they are expected to occur.

47. Our analysis supporting this finding presents what we examined and discusses the following topics:

- Adaptation projects
- Greenhouse gas emission levels and targets

Context

48. In the Yukon Government Climate Change Action Plan and progress reports, the government identified not only its 70 formal commitments, but also 59 additional activities, for a total of 129 projects. Although they were not formal commitments, the 59 activities were intended to help the territory respond to climate change. The Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services were responsible for 112 of these 129 projects.

Recommendation

49. Our recommendation in this area of examination appears at paragraph 55.

Analysis to support this finding

50. **What we examined.** We examined 18 adaptation projects carried out by the Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services. Specifically, we looked at the information produced by the projects to see whether the departments used it to take concrete action to adapt to climate change. Taking concrete action might mean, for example, implementing recommendations made in reports or providing publicly accessible information for people to use in making decisions.

51. We also examined whether the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services had met 12 commitments related to reducing greenhouse gas emissions.

52. **Adaptation projects.** We found that the Department of Environment and the Department of Energy, Mines and Resources used the information they had gathered to take sufficient concrete action for 7 of the 18 adaptation projects we examined. For example, the Department of Energy, Mines and Resources produced a report that included an assessment of the health of Yukon's forests and a risk-based monitoring program, which it has reported on annually since 2009.

53. However, we also found that although the Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services had taken some concrete action for 11 of the 18 projects, more action was required. Our findings included the following:

- The Department of Environment developed a bioclimatic ecosystem classification system and a field guide for one of nine bioclimatic ecosystem zones in Yukon in 2016. However, the Department had not developed field guides for the other eight zones. Department officials told us that the work required to develop these field guides was extensive.
- The Department of Energy, Mines and Resources conducted an assessment in 2009 of the vulnerability and adaptive capacity of Yukon tree species to climate change. However, it had not implemented three of the four recommendations made in the assessment.
- The Department of Community Services produced detailed community hazard, risk, and vulnerability assessments between 2011 and 2016, aimed at helping Yukon communities develop emergency preparedness plans for potential threats. However, the Department had produced these assessments for only eight communities in Yukon. Department officials told us that they provide these assessments to communities only on request.

54. The Government of Yukon developed its climate change strategy more than a decade ago, and the Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services have since gathered information related to climate change. However, we found that these departments had taken limited concrete action. In our opinion, although gathering information is an important step, it is not enough. The information is not fully beneficial until it is used to take concrete action in a timely manner.

55. **Recommendation.** The Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services should complete their work to carry out concrete actions in a timely manner to adapt to the impacts of climate change. This work could include, but is not limited to, implementing recommendations from reports, making information available to decision makers, and explicitly incorporating climate change into directives, processes, and policies so that they are integrated into decision making.

The departments' response. Agreed. The Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services will carry out concrete actions in a timely manner. It is envisioned that the new 2019 Yukon strategy for climate change,

energy, and green economy will include milestones and target completion dates to support decision making. Where appropriate, recommendations from reports will be included in directives, processes, and policies.

56. **Greenhouse gas emission levels and targets.** The reduction of greenhouse gas emissions requires estimation of emission levels, tracking of these levels over time, forecasting of future levels, and setting and achieving targets.

57. The National Inventory Report, produced by Environment and Climate Change Canada, contains Canada's annual estimates of greenhouse gas emissions dating back to 1990. Officials at the Climate Change Secretariat told us that the Government of Yukon determined, on the basis of analysis, that the National Inventory Report underestimated Yukon's emission levels. Consequently, the Government of Yukon calculated its own estimates of greenhouse gas emissions, primarily from fuel consumption for transportation, heating, and electricity generation between 2009 and 2015. These estimates differed from those in the National Inventory Report.

58. We found that the Government of Yukon tracked territory-wide emission levels over time. According to these estimates, overall greenhouse gas emissions decreased by about 0.7 percent between 2009 and 2015. We did not audit this information.

59. Setting and achieving targets is essential to the reduction of greenhouse gas emission levels. We found that the Government of Yukon forecasted greenhouse gas emissions for 2010 to 2027. However, because it could not accurately predict population, level of industrial activity, and economic growth, the Government of Yukon determined that it could not set a territory-wide target to reduce greenhouse gas emission levels.

60. Officials from the Climate Change Secretariat told us that in 2012, the Government of Yukon identified sector-specific targets to take the place of a territory-wide target. However, we found that these sector-specific targets covered different time frames and measured greenhouse gas emissions in different ways (for example, using emission intensity versus emission levels). In our opinion, these sector-specific targets could not be combined to serve as a proxy for the territory-wide target.

61. We found that according to information provided by the Climate Change Secretariat, of the 12 targets to reduce greenhouse gas emissions,

- 2 of 4 targets had been met ahead of their 2020 completion dates;
- 4 targets had not been met, and of these, 1 was not measurable; and
- 4 targets could not be measured because data was not yet available.

For 1 of the 4 targets that could not be measured because of unavailable data, the 2010 baseline information was still not available. In our opinion, this situation was not acceptable.

Conclusion

62. We concluded that the Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services had not worked sufficiently to adapt to the impacts of climate change. We also concluded that the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services had not worked sufficiently to reduce greenhouse gas emissions. However, the Government of Yukon had created a climate change strategy, an action plan, and two progress reports that took present and future generations into account.

About the Audit

This independent assurance report was prepared by the Office of the Auditor General of Canada on the response to climate change in Yukon by the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services. Our responsibility was to provide objective information, advice, and assurance to assist the Legislative Assembly in its scrutiny of the government's management of resources and programs, and to conclude on whether the selected departments' implementation of climate change measures complied in all significant respects with the applicable criteria.

All work in this audit was performed to a reasonable level of assurance in accordance with the Canadian Standard for Assurance Engagements (CSAE) 3001—Direct Engagements set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook—Assurance.

The Office applies Canadian Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

In conducting the audit work, we have complied with the independence and other ethical requirements of the Rules of Professional Conduct of Chartered Professional Accountants of Ontario and the Code of Values, Ethics and Professional Conduct of the Office of the Auditor General of Canada. Both the Rules of Professional Conduct and the Code are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

In accordance with our regular audit process, we obtained the following from management:

- confirmation of management's responsibility for the subject under audit;
- acknowledgement of the suitability of the criteria used in the audit;
- confirmation that all known information that has been requested, or that could affect the findings or audit conclusion, has been provided; and
- confirmation that the audit report is factually accurate.

Audit objective

The objective of this audit was to determine whether the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services of the Government of Yukon had worked to reduce greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the effects on present and future generations.

Scope and approach

In 2016, many legislative audit offices across Canada decided to look at the issue of climate change and developed similar audit approaches and questions to examine climate change action within their governments. As part of this initiative, the Office of the Auditor General of Canada decided to do federal and territorial climate change audits.

We examined the efforts of the following Government of Yukon departments to reduce greenhouse gas emissions and adapt to the impacts of climate change:

- Department of Environment (for greenhouse gas emission reductions and adaptation);
- Department of Energy, Mines and Resources (for greenhouse gas emission reductions and adaptation);
- Department of Highways and Public Works (for greenhouse gas emission reductions); and
- Department of Community Services (for greenhouse gas emission reductions and adaptation).

Our audit approach included a review of documentation and an analysis of actions taken by the departments. We also conducted site visits and had discussions with department officials. To determine whether relevant parties clearly defined and met selected roles and responsibilities for responding to climate change, we looked to see whether mechanisms were in place to effectively coordinate climate change activities within and among government organizations and stakeholders.

We also examined whether the Government of Yukon developed a strategy and an action plan to respond to climate change, whether it monitored progress on commitments made in the action plan, and whether it reported on the results. Finally, we assessed what progress the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services had made on selected commitments reported in the 2009 Yukon Government Climate Change Action Plan and 2012 and 2015 progress reports, as well as what progress departments had made on other work they had carried out in relation to climate change. We did this by examining 30 of 129 climate change projects—18 of 59 adaptation-related projects and 12 of 70 projects related to greenhouse gas emission reduction—that the Climate Change Secretariat reported on in the action plan and progress reports. The 30 climate change projects were selected to balance coverage across departments. We examined the 18 adaptation-related projects to determine whether the government used the information it had gathered to take concrete action in responding to climate change. We examined the 12 projects related to greenhouse gas emission reduction to determine whether the related commitments had been met.

We did not examine the quality of research, monitoring, or forecasting information, nor did we assess the adequacy of the territorial resources spent on responding to climate change. In 2017, we reported on the impact of permafrost on buildings and highways. Therefore, we did not include an examination of climate change impacts on buildings and highways in this audit.

Criteria

Criteria	Sources
<p>To determine whether the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services of the Government of Yukon had worked to reduce greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the effects on present and future generations, we used the following criteria:</p>	
<p>The Government of Yukon clearly defines key roles and responsibilities for managing climate change, and it meets those responsibilities.</p>	<ul style="list-style-type: none"> • Government of Yukon Climate Change Strategy, 2006 • Yukon Government Climate Change Action Plan, 2009 • Yukon Government Climate Change Action Plan Progress Report, 2012 • Yukon Government Climate Change Action Plan Progress Report, 2015 • Energy Strategy for Yukon, Department of Energy, Mines and Resources, 2009 • Pan-Territorial Adaptation Strategy: Moving Forward on Climate Change Adaptation in Canada's North, Governments of Northwest Territories, Nunavut, and Yukon, 2011 • Guidance on control, Criteria of Control Board, Canadian Institute of Chartered Accountants, 1995
<p>The Government of Yukon has a strategy and an action plan to address climate change.</p>	<ul style="list-style-type: none"> • Government of Yukon Climate Change Strategy, 2006 • Yukon Government Climate Change Action Plan, 2009 • Yukon Government Climate Change Action Plan Progress Report, 2012 • Yukon Government Climate Change Action Plan Progress Report, 2015 • <i>Environment Act</i> • Pan-Territorial Adaptation Strategy: Moving Forward on Climate Change Adaptation in Canada's North, Governments of Northwest Territories, Nunavut, and Yukon, 2011
<p>The Government of Yukon assesses risks and key vulnerabilities related to climate change so that it can determine priorities for addressing climate change.</p>	<ul style="list-style-type: none"> • Policy 2.25: Enterprise Risk Management Policy (2014), General Administration Manual • Yukon Government Climate Change Action Plan, 2009 • Yukon Government Climate Change Action Plan Progress Report, 2012 • Yukon Government Climate Change Action Plan Progress Report, 2015

Criteria	Sources
<p>To determine whether the Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services of the Government of Yukon had worked to reduce greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the effects on present and future generations, we used the following criteria: (Continued)</p>	
	<ul style="list-style-type: none"> • Environment Yukon Strategic Plan, 2013 • Pan-Territorial Adaptation Strategy: Moving Forward on Climate Change Adaptation in Canada's North, Governments of Northwest Territories, Nunavut, and Yukon, 2011 • Guidance on control, Criteria of Control Board, Canadian Institute of Chartered Accountants, 1995
<p>The Government of Yukon monitors the actions, targets, and initiatives identified in its climate change action plan and reports on results.</p>	<ul style="list-style-type: none"> • Policy 2.23: Green Procurement Policy (2010), General Administration Manual • Yukon Government Climate Change Action Plan, 2009 • Yukon Government Climate Change Action Plan Progress Report, 2012 • Yukon Government Climate Change Action Plan Progress Report, 2015 • <i>Environment Act</i>
<p>The Government of Yukon uses information it gathers to respond to climate change.</p>	<ul style="list-style-type: none"> • Government of Yukon Climate Change Strategy, 2006 • Yukon Government Climate Change Action Plan, 2009 • Yukon Government Climate Change Action Plan Progress Report, 2012 • Yukon Government Climate Change Action Plan Progress Report, 2015 • <i>Environment Act</i> • Pan-Territorial Adaptation Strategy: Moving Forward on Climate Change Adaptation in Canada's North, Governments of Northwest Territories, Nunavut, and Yukon, 2011 • Pan-Canadian Framework on Clean Growth and Climate Change, 2016

Period covered by the audit

The audit covered the period between July 2006 and July 2017. This is the period to which the audit conclusion applies. However, to gain a more complete understanding of the subject matter of the audit, we also examined certain matters that preceded the starting date of the audit.

Date of the report

We obtained sufficient and appropriate audit evidence on which to base our conclusion on 5 October 2017, in Ottawa, Ontario.

Audit team

Principal: Casey Thomas

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List of Recommendations

The following is a list of recommendations found in the report. The number in front of the recommendation indicates the paragraph where it appears in the report. The numbers in parentheses indicate the paragraphs where the topic is discussed.

Recommendation	Response
Planning and leading	
<p>30. The Climate Change Secretariat, working with departments and other stakeholders, should prepare a comprehensive territory-wide risk assessment to help prioritize commitments to manage the impacts of climate change. (18–29)</p>	<p>The Secretariat’s response. Agreed. The Government of Yukon is already planning a climate risk-management approach for its own operations. In 2016, the Department of Environment was directed to work with government departments to integrate risk assessments and mitigation actions related to climate change in government policies, procedures, and projects. A climate risk assessment contract is under way, and this information will support high-risk departments to develop “climate risk reduction plans,” including an implementation and monitoring plan. It is anticipated that this work will be completed in 2019. Portions of this work will inform government commitments in a new climate change, energy, and green economy strategy planned to be released in 2019.</p> <p>The Government of Yukon will work to complete a Yukon-wide climate risk assessment to help Yukoners prioritize actions that will address the most significant current and expected impacts of climate change. The climate risk assessment would explore specific areas of vulnerability to climate hazards and recommend priority areas for risk reduction.</p>
<p>31. The Department of Environment; the Department of Energy, Mines and Resources; the Department of Highways and Public Works; and the Department of Community Services should develop climate change commitments that are time-bound and costed. Commitments to reduce greenhouse gas emissions should indicate the intended levels of reductions. (18–29)</p>	<p>The departments’ response. Agreed. It is anticipated that commitments and targets in the new 2019 Yukon strategy for climate change, energy, and green economy will be supported by clear milestones, completion dates, and associated costs. More rigorous monitoring and reporting for Yukon actions would work to support the actions and outcomes in the Pan-Canadian Framework on Clean Growth and Climate Change.</p> <p>The Government of Yukon will work to include levels of greenhouse gas emission reductions anticipated to be achieved in future commitments.</p>
<p>44. The Climate Change Secretariat should publicly report in a consistent manner on progress made on all commitments, and on the expenditures associated with meeting the commitments. (35–43)</p>	<p>The Secretariat’s response. Agreed. It is envisioned that reporting systems, including frequency, reporting language, cost, and established metrics for each commitment or target, will be part of the new Yukon strategy for climate change, energy, and green economy.</p>

Recommendation	Response
<p>Taking action</p> <p>55. The Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services should complete their work to carry out concrete actions in a timely manner to adapt to the impacts of climate change. This work could include, but is not limited to, implementing recommendations from reports, making information available to decision makers, and explicitly incorporating climate change into directives, processes, and policies so that they are integrated into decision making. (50–54)</p>	<p>The departments’ response. Agreed. The Department of Environment; the Department of Energy, Mines and Resources; and the Department of Community Services will carry out concrete actions in a timely manner. It is envisioned that the new 2019 Yukon strategy for climate change, energy, and green economy will include milestones and target completion dates to support decision making. Where appropriate, recommendations from reports will be included in directives, processes, and policies.</p>

