4th E Practice Guide

Integrating Environmental Considerations in Performance Audit Work

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August 2015

Office of the Auditor General of Canada
Bureau du vérificateur général du Canada

Cat. No. FA3-63/2015E-PDF
ISBN 978-0-660-03242-9

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Introduction

Purpose

The purpose of this guide is to help auditors with little or no environmental expertise to identify and assess environmental risks that could be associated with the programs and activities they audit.

At the Office of the Auditor General of Canada (OAG), we audit the federal government and the governments of the northern territories. We examine significant issues and report what we find to Canada's Parliament and the northern legislative assemblies. We are thus in a good position to inform parliamentarians and Canadians about whether responsible entities are considering the environmental consequences of their activities appropriately.

This guide provides information to support the identification and assessment of environmental risks as part of

- the strategic audit planning process, and
- planning an individual performance audit.

Applicability and audience

The guidance presented in this guide applies to the performance audit practice.

The processes and templates described in this guide are not required for special examinations. The Internal Specialist—Environment and Sustainable Development (E&SD) has prepared a Preliminary Assessment of Environmental Risks—Crown Corporations. Teams that are conducting special examinations review this risk assessment during the planning phase and consult with the Internal Specialist. Nevertheless, teams conducting special examinations can use the information and templates referred to in this guide to familiarize themselves with environmental risks and liabilities that could be relevant for Crown corporations.

This guide was designed for OAG audit staff.

Auditors' responsibilities, including consultation with the Internal Specialist

Strategic audit planning

Teams that are preparing or revising strategic audit plans for specific entities are required to complete the Environmental Risk Profile for Strategic Audit Planning (Entity-Specific). Sign-off by the Internal Specialist—E&SD is mandatory.

Teams that are preparing or revising strategic audit plans for sectoral (government-wide) topics are encouraged to consult with the Internal Specialist—E&SD. See Section 1 for more information.

Individual performance audits

Teams that are planning performance audits are required to complete the OAG's Functional Risk Identification Template (FRIT) during the planning phase. Teams start to consider environmental risks associated with their audit subject matter when they complete the Section on Environment and Sustainable Development (E&SD) of the FRIT and consult with the Internal Specialist—E&SD. Sign-off of the E&SD component of the FRIT by the Internal Specialist—E&SD is mandatory. In cases where the initial screening reveals potentially significant environmental risks associated with subject matter being audited, the audit team is required to complete the Environmental Risk Screening Template for Performance Audit. Further consultation and sign-off by the Internal Specialist is mandatory.

How to use the guide

Teams use this guide to help them identify and assess environmental risks and complete required templates as part of the strategic audit planning process and the planning of an individual performance audit. The Internal Specialist—E&SD is available to support teams when they use the guide.

- See Section 1 if you are preparing or revising a strategic audit plan.
- See Section 2 if you are starting to plan an individual performance audit.

Important information about federal environmental and sustainable development policies, guidelines, and authorities is presented in the appendices:

- Appendix 1 provides information on the impact of human activities on the environment.
- Appendix 2 provides guidance on assessing the significance of environmental risks.
- Appendix 3 provides background information and resources on important issues and legal authorities relevant to the environment and sustainable development.
- Appendix 4 discusses hazards to human health associated with the built environment.
- Appendix 5 provides information and resources on Canada's international environmental commitments.

The Internal Specialist—E&SD is available to support teams when they use the guide.

Background and Context

Key terms and concepts

The environment and our audit mandate—the 4th E

The Office of the Auditor General of Canada (OAG) is empowered to examine the economy, efficiency, and effectiveness of government expenditures in performance audits. The OAG is also empowered to examine whether the government has given due regard to the environmental effects of its expenditures. At the OAG, we refer to this environmental mandate as the "4th E."

The "4th E"

Economy, efficiency, and effectiveness have always been known as the three Es of performance auditing.

In 1995, amendments to the *Auditor General Act* added a fourth E: the environment.

When conducting an audit, the auditor may ask the following questions:

- Has money been spent with due regard to economy?
- Has money been spent with due regard to efficiency?
- Are procedures in place to measure and report on the effectiveness of programs?
- **Has money been spent with due regard to the effects on the environment?**

The 4th E is contained in section 7(2)(f) of the *Auditor General Act*, which establishes the OAG's mandate to conduct performance audits and report our findings to Parliament. The 4th E is also contained in section 7.1 of the Act, which deals specifically with our audits of funding agreements.

A core principle behind sustainable development

The concept of sustainable development recognizes the interconnections between economic development, societal concerns, and the environment. Decisions that favour one element at the expense of the others can lead to unsustainable outcomes. This necessitated changing old patterns and attitudes as the pursuit of economic objectives often resulted in environmental damage and health-related concerns. As a result, efforts to advance sustainable development have often focused on environmental impacts. "Sustainable development" is defined in the *Auditor General Act*: see "Key definitions" below.

The role and influence of government

Through its policies, programs, and legal authorities, as well as the billions of dollars it spends each year, the federal government has a significant influence on almost every aspect of Canadian society and can play a key role in advancing environmental protection and sustainable development.

The activities of the federal and territorial governments can affect the environment in two ways:

- directly (i.e., through their own operations as part of the "government house"); or
- indirectly (i.e., through the control or influence they exert on the activities of others through their policies, plans, and programs).

Within the context of a strategic audit plan or the subject matter of a performance audit, it is important to consider how the government's activities may pose a risk to the environment. This is the starting point for any evaluation of environmental risks.

Key definitions

Environment:

For the purposes of this guide, the term "environment" encompasses the natural environment and the built environment.

The natural environment:

When we think of the environment, we generally think of the natural environment that surrounds us—the air, water, and land, as well as the diversity of plants, animals, and other organisms that inhabit our planet. It includes renewable resources such as timber and fisheries and non-renewable resources such as minerals, oil, and gas. Natural ecosystems serve a variety of functions that provide people with necessary and valuable benefits. For example, ecosystems provide clean water, maintain healthy and productive soil, pollinate wild plants and crops, and provide materials like wood and natural spaces for recreation. These are referred to as "ecosystem goods and services." We could not survive without them.

The built environment:

The built environment includes both the buildings in which people spend their time (at home, school, workplace, recreational facilities, shops and malls, etc.) and the broader built environment of human settlements (villages, towns, suburbs, and cities) and related infrastructure. North Americans spend close to 90 percent of their time indoors.

Connections between human health and well-being and the environment:

Human beings are not immune from the effects of negative changes to the environment. Smog remains a major environmental and health issue in Canada, especially in major urban centres. A variety of air pollutants are emitted from industrial processes and vehicle exhaust. While they degrade the quality of the air and atmosphere, exposure to air pollutants can lead to a number of health impacts. These range from minor breathing problems to premature death. The more common effects include changes in breathing and lung function, lung inflammation, and irritation and aggravation of existing heart and lung conditions like asthma and heart disease. Environment and Climate Change Canada estimates that air pollution costs Canadians and the Canadian economy billions of dollars per year due to increased hospital admissions and health care, missed days of work, and reduced worker productivity.

We are also affected by our built surroundings. Environmental conditions inside buildings where we live, work, and play can also play a significant role in health and well-being.

Information on human activities and impacts on the environment is provided in Appendix 1. For hazards related to the built environment, refer to Appendix 4.

Sustainable development:

Section 2 of the *Auditor General Act* includes the classic definition of sustainable development from the 1987 report of the World Commission on Environment and Development, *Our Common Future*, also known as the Brundtland Report:

> "Sustainable development" means development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Section 21.1 of the Act expands on this definition:

> Sustainable development . . . is a continually evolving concept based on the integration of social, economic and environmental concerns, and which may be achieved by, among other things,
>
> *(a)* the integration of the environment and the economy;
>
> *(b)* protecting the health of Canadians;
>
> *(c)* protecting ecosystems;
>
> *(d)* meeting international obligations;
>
> *(e)* promoting equity;
>
> *(f)* an integrated approach to planning and making decisions that takes into account the environmental and natural resource costs of different economic options and the economic costs of different environmental and natural resource options;
>
> *(g)* preventing pollution; and
>
> *(h)* respect for nature and the needs of future generations.

Audit Guidance: Section 1—Strategic Audit Plans

Assessing major risks is where effective strategic audit planning begins. When developing or updating strategic audit plans (SAPs), auditors consider environmental risks along with other business risks.

This section of the guide provides guidance on

- strategic audit planning for individual entities,
- strategic audit planning for sectoral (government-wide) topics, and
- steps for incorporating environmental risks into a strategic audit plan.

Strategic audit planning for individual entities

Teams complete the Environmental Risk Profile for Strategic Audit Planning (Entity-specific) and consult with the Internal Specialist—Environment and Sustainable Development (E&SD). This provides for a systemic approach to performing high-level assessments of entities' environmental risks by

- identifying an entity's strategic outcomes and related key activities, policies, programs, and operations;
- identifying potential associated environmental effects; and
- assessing the risks to determine whether they are significant.

If any significant environmental risks are identified, they are incorporated into the overall risk profile for the strategic audit plan.

Note: ***Regarding sectoral (government-wide) strategic audit planning:*** *Teams are encouraged to consult with the Internal Specialist—E&SD to discuss significant environmental risks that may be relevant for their SAP topic. There is a separate Environmental Risk Profile for Strategic Audit Planning (Sectoral Topics); however, completion of this template is not mandatory. Nevertheless, teams may wish to review and/or complete the template as it provides a framework to identify and assess environmental risks at a high level. Refer to Strategic audit planning for sectoral (government-wide) topics, below.*

Completing the Environmental Risk Profile for Strategic Audit Planning (Entity-Specific)

Step 1: Review key documents and resources

To become familiar with environmental issues and authorities that may be relevant for an entity, consider the following:

- potential impact of specific activities on the environment;
- commitments made in the Federal Sustainable Development Strategy as well as the entity's sustainable development strategy;
- infrastructure and other projects;
- facilities management and other aspects of government operations;

- hazards associated with the built environment;
- policy, plan, or program proposals that require the approval of a Minister or Cabinet;
- funding and other financial assistance activities;
- international environmental commitments; and
- environmental petitions submitted to the Office of the Auditor General of Canada by Canadian residents.

Note: *Some teams find it useful to review the Environmental Risk Screening Template for Performance Audit when they analyze environmental risks for their entities, as this template contains useful questions to consider.*

Step 2: Complete columns 1 to 3 of the Environmental Risk Profile

Summarize strategic outcomes and related program activities and sub-activities:

- Identify an entity's strategic outcomes and related key programs, sub-programs, activities, policies, and operations. Enter the entity's strategic outcome and related program activities in column 1 of the Environmental Risk Profile. Use as many rows as required.
- Enter related program sub-activities in column 2.
- Summarize key related policies, programs, projects, or operations for each program sub-activity. Focus only on major initiatives, and describe them very briefly in column 3.

Note: *If there is more than one strategic outcome, consider using a separate sheet for each of them.*

Step 3: Identify potential environmental effects

Determine which environmental effects may result from the policies, programs, or other activities that you noted in columns 1 and 2. Review columns 4 to 11 of the risk profile and mark those that could be relevant with an "x" or check mark.

Keep in mind that the government may affect the environment directly (through its own operations and activities) or indirectly (through the control or influence it has on others through its policies and programs).

Note: *For more information about human activities and their potential impact on the environment, see Appendix 1. A list of environmental issues associated with government operations is contained in the Environmental Risk Screening Template for Performance Audit (see question 4—Government Operations). Teams should also consult Appendix 4—The Built Environment: Hazards to Human Health and Well-Being.*

Environmental effects covered in the risk profile include

- **Effects on air, water, and land.** These kinds of effects could result from releases into the environment (e.g., pollution) or physical changes (e.g., erosion from forestry activities).
  - **Air effects** include climate change and other air quality issues, such as ozone layer depletion, smog, and acid rain. See column 4.

  - **Water effects** cover freshwater and the marine/coastal environments. They include changes to water quality and quantity, as well as effects on aquatic animals and plants (biodiversity), or their habitats. See column 5.
  - **Land effects** include changes to soil, habitats, and biodiversity, as well as contaminated sites. See column 6.
- **Generation, handling, or discharge of hazardous materials.** Such actions are known to have harmful effects on human health and the environment. See column 7.
- **Environmental emergencies.** These include accidents that may cause releases into aquatic or terrestrial ecosystems. Some occur on land (e.g., at rail or nuclear facilities) and others on water (e.g., shipping accidents). See column 8.
- **Depletion or degradation of natural resources.** See column 9. Examples include
  - consumption and use of natural resources and their derivatives;
  - degradation and other changes resulting from the harvesting, extraction, or processing of these resources; and
  - the generation of waste.
- **The built environment (buildings/infrastructure).** See column 10. Examples of effects that would impact human health and well-being associated with the built environment include
  - degraded indoor air quality;
  - degraded drinking water quality;
  - fires or explosions; and
  - other unsafe conditions related to structural integrity, poor building conditions, etc.

Note: *A description of some hazards associated with the built environment is provided in Appendix 4.*

- **Other effects.** Other environmental issues may not be covered in the environmental risk profile. If so, check off column 11 and describe them in the comments section.

Step 4: Analyze the level of risk to determine significance

To assess risk, we look at the likelihood of occurrence and the severity of the resulting effects (consequences). We also take management controls into consideration. If some are in place, they might affect the level of risk.

For effects identified in the environmental risk profile, proceed as follows:

- Estimate the seriousness or severity of the environmental effect (taking any controls into account) and enter the rating (Low, Medium, or High). See column 12.
- Estimate the likelihood of occurrence (taking any controls into account) and enter the rating (Low, Medium, or High). See column 13.

Consider these two factors together to determine if the risk is significant (check Yes or No). See column 14.

If different kinds of major environmental effects have been identified for a program sub-activity, it may be necessary to assess the level of risk for each of them separately.

Refer to Appendix 2—Assessing the Significance of Environmental Risks to determine the appropriate ratings.

Note: *For the purposes of strategic audit planning, risks are considered significant if they could result in a serious threat to human health and well-being, the environment, or natural resources.*

Step 5: Determine the degree of entity influence

Using Exhibit 1, identify how much influence or control the entity has over the program outcome or activity. Enter the result in the environmental risk profile. See column 15.

Exhibit 1: Degree of entity control or influence

Level	Description
Low	The entity has limited responsibility
Medium	The entity is involved but shares responsibility
High	The entity is directly responsible

Step 6: Provide comments

In the comments section, explain how you arrived at your conclusions about the risk ratings. In addition, include any connections to an entity's sustainable development strategy or any other information that was important to your analysis. Attach additional sheets with comments if necessary.

Step 7: Request Internal Specialist review and sign-off

Provide a copy of the completed environmental risk profile to the Internal Specialist and arrange a meeting to discuss your assessment and risk ratings.

Contact the Internal Specialist at any point to obtain advice on completing the environmental risk profile.

Strategic audit planning for sectoral (government-wide) topics

There is a separate Environmental Risk Profile for Strategic Audit Planning (Sectoral Topics). The risk profile provides a framework for identifying and assessing environmental risks for sectoral (government-wide) topics at a high level.

When considering environmental risks associated with these broad topic areas, it is useful to consider the key activities that come under the SAP topic. During the process of developing a SAP, it is likely that these key activities have been identified.

Key steps for considering environmental risks using the environmental risk profile template are described below.

Teams that wish to complete the environmental risk profile template should

- start by considering the core activities that are relevant to the sectoral area;
- enter the high-level core activities in column 1 of the Environmental Risk Profile, using as many rows as required;
- enter related sub-activities in column 2;
- summarize key related policies, programs, projects, or operations for each sub-activity, focusing only on major initiatives and describing them very briefly in column 3;
- identify relevant environmental effects associated with core activities and related sub-activities—see guidance for entity-specific SAPs (Step 3); and
- assess the significance of any environmental effects (risks) that have been identified—see guidance for entity-specific SAPs (Step 4).

Steps for incorporating environmental risks into a strategic audit plan

It is possible that no significant environmental risks will be identified for your entity or sectoral area. However, when significant environmental risks are identified, they are assessed in conjunction with other business risks identified during strategic audit planning.

The following are possible options for reflecting important environmental issues in a strategic audit plan:

- a full performance audit of an environmental issue,
- an environmental line of enquiry (LOE) within a performance audit,
- a horizontal audit that focuses on one or more environmental issues, or
- an environmental LOE within a horizontal audit.

Environmental Risk Profile for Strategic Audit Planning (Entity-Specific)

Audit team:	
Date:	
Entity / functional area:	

Instructions for completing this risk profile are found in section 1 of the 4th E Practice Guide. Please use the comments section to provide additional information or analysis. Sign-off by the Internal Specialist—Environment and Sustainable Development is mandatory.

Program Summary			**Potential Environmental Effects**																							**Risk Analysis**			**Entity**
1 **Strategic outcome:** **(Use a separate page for each strategic outcome: Note title of the outcome here)** **Related program activity** **(List individual program activities for the strategic outcome in rows below)**	**2** **Program sub-activity**	**3** **Key policies, programs, projects, operations**	**4** **Air**		**5** **Marine/freshwater**				**6** **Land**				**7** **Hazardous materials**		**8** **Environmental emergencies**		**9** **Natural resources (extraction and consumption)**						**10** **Buildings/ infrastructure**		**11** **Other**	**12** **Severity of environmental effect (impact)***	**13** **Likelihood of occurrence****	**14** **Significant environmental risk**	**15** **Degree of entity influence*****
			Climate change	Air quality (smog, ozone depletion, acid rain, etc.)	Surface water (marine and freshwater)	Groundwater / drinking water	Biodiversity (marine and freshwater)	Habitat	Agricultural land / soil	Contaminated sites	Habitat	Biodiversity (flora and fauna)	Toxic substances / hazardous waste	New substances / organisms	Land-based	Shipping-related	Land use	Energy	Water	Marine resources	Materials (timber, minerals, etc.)	Waste	Hazards	Structural	Other	High (H) Medium (M) Low (L)	High (H) Medium (M) Low (L)	Yes/No	High (H) Medium (M) Low (L)
			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐				
			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐				
			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐				

Team comments: (including remarks on the ratings assigned and any links to the Federal Sustainable Development Strategy and the entity's own sustainable development strategy)

Internal Specialist assessment and sign-off:

☐ The Internal Specialist agrees with the overall assessment.

Comments:

☐ The Internal Specialist recommends further analysis.

Comments:

Internal Specialist: ____________________ Date: ____________________

Audit PX: ____________________ Date: ____________________

Environmental Risk Profile for Strategic Audit Planning (Sectoral Topics)

Date:	
Topic area:	
Relevant entities:	
Profile completed by:	

Instructions for completing this risk profile are found in section 1 of the 4th E Practice Guide. The Environment and Sustainable Development Specialist team can assist in adjusting or adapting this form for special circumstances or issues. Please use the comments section to provide additional information or analysis.

Outline of Key Activities			Potential Environmental Effects																							Risk Analysis		
1 Key activity: [Consider the major activities that are encompassed by the sectoral topic and list them in this column]	2 Sub-activity [In this column – list relevant sub-activities that come under these major activities – list relevant entities – add rows as required]	3 Related policies, programs, projects, operations [High-level only. List those that are relevant and important in this column]	4 Air		5 Marine/freshwater				6 Land				7 Hazardous materials		8 Environmental emergencies		9 Natural resources (extraction and consumption)						10 Buildings/ Infrastructure		11 Other	12 Severity of environmental effect (impact)*	13 Likelihood of occurrence**	14 Significant environmental risk
			Climate change	Air quality (smog, ozone depletion, acid rain, etc.)	Surface water (marine and freshwater)	Groundwater / drinking water	Biodiversity (flora and fauna)	Habitat	Agricultural land / soil	Contaminated sites	Habitat	Biodiversity (flora and fauna)	Toxic substances / hazardous waste	New substances / organisms	Land-based	Shipping-related	Land use	Energy	Water	Marine resources	Materials (timber, minerals, etc.)	Waste	Hazards	Structural	Other	High (H) Medium (M) Low (L)	High (H) Medium (M) Low (L)	Yes/No
Core activity:	Sub-activity:		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
	Sub-activity:		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
Core activity:	Sub-activity:		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
	Sub-activity:		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
Core activity:	Sub-activity:		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
	Sub-activity:		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			

Additional background information: (including reference to the key entities responsible for delivery and performance, any relevant commitments in the Federal Sustainable Development Strategy, petitions, etc.)
Team comments: (with regard to overall conclusion and the risk ratings assigned)
Internal Specialist comments:
Comments:

*** Severity of environmental effect**

High: Potentially widespread or serious long term effect
Medium: Moderate effect over the medium term

**** Likelihood of occurrence**

High: Effect is occurring or is imminent
Medium: Effect is likely to occur at some time

Audit Guidance: Section 2—Planning a Performance Audit

This section of the guide is intended to help teams determine if there are any significant environmental issues related to the subject matter of their audit and, if so, to help them evaluate whether the issues are significant and should be included in the audit scope.

Teams start to assess environmental risks associated with subject matter of the audit when they complete the Office of the Auditor General of Canada's Functional Risk Identification Template (FRIT). After they have completed the Environment and Sustainable Development (E&SD) section, the Internal Specialist—E&SD determines whether environmental risks are potentially significant for the subject matter of the audit (i.e., the topic and/or entities that may be part of the audit). If so, the audit team is required to explore the significance of these risks in more detail by completing the Environmental Risk Screening Template for Performance Audit in this guide and consulting with the Internal Specialist. The example on the audit of military training and test areas below illustrates how the template can help identify environmental risks.

For background information and helpful links to documents and electronic resources, see Appendices 1 to 5.

Note: *The Environmental Risk Screening Template must be completed and sent to the Internal Specialist* ***before*** *the team starts to define the audit scope.*

Next steps

If teams identify potentially significant environmental issues, more planning work may be needed to determine whether they should be included in the audit scope. The Internal Specialist can provide advice on additional planning work, audit objectives, lines of enquiry, and criteria.

Example: Audit of military training and test areas

National Defence is the custodian of over 18,000 square kilometres of land dedicated to military training and testing.

During the planning phase of the audit, the audit team starts to explore environmental issues associated with the subject matter of the audit by completing the section on environmental risks in the Functional Risk Identification Template (the Environment and Sustainable Development section). When answering the questions in that template, teams might identify some of the following issues:

- potential contamination of soil and groundwater from repeated firing of munitions and other related activities,
- soil erosion and destruction of habitat from road construction or vehicle manoeuvres,
- environmental assessment requirements for military training facilities, and
- deforestation from land clearing.

Auditors would also find

- information on Federal Sustainable Development Strategy commitments and the department's environmental strategy,
- environmental petitions that Canadians have submitted to the Office of the Auditor General of Canada, and
- National Defence responses to petitions.

The team would explore the significance of these issues in more detail by completing the Environmental Risk Screening Template for Performance Audit in this guide.

Teams could include environmental issues in the audit scope by

- adding an environmental line of enquiry (LOE) within the performance audit, and
- including environmental issues in an LOE.

For more information on environmental issues associated with military training and test areas, refer to the 2003 April Report of the Auditor General of Canada, Chapter 7.

Environmental Risk Screening Template for Performance Audit

In cases where the Internal Specialist—Environment and Sustainable Development (E&SD) has determined that environmental risks are potentially significant for the subject matter being audited, the audit team is required to explore the significance of these risks in more detail by completing Steps 1 and 2 of this Environmental Risk Screening Template.

Note: For links to key documents and resources, see Appendices 1 to 5.	
Title and description of audit subject matter:	
Tabling date:	
Entities being audited:	
Members of audit team:	
Screening template completed by:	
Date:	
Documents/resources reviewed:	

Step 1: Completed Functional Risk Identification Template (FRIT)—Section on E&SD			
Risk-screening questions	**Yes**	**No**	**Team comments**
1. Are any of the activities listed in Appendix 1 of the 4th E Practice Guide relevant to the subject matter?	☐	☐	
2. Does the current Federal Sustainable Development Strategy contain any commitments ("Implementation Strategies") related to the subject matter?	☐	☐	
3. Does the subject matter include projects related to construction, operation, or decommissioning of physical assets?	☐	☐	
4. Are government operations an important focus of the audit?	☐	☐	
5. Does the subject matter involve grants or contributions? If yes, are there potential environmental impacts?	☐	☐	
6. Does the subject matter involve new policies, plans, or programs approved by the Minister or Cabinet?	☐	☐	
7. Have entities responded to environmental petitions related to the subject matter?	☐	☐	
8. Based on all our planning procedures (review of corporate risk profile, interviews, media searches, etc.), are there further indications that E&SD is particularly important to the subject matter?	☐	☐	
9. Is it possible that E&SD will be a "so what" or part of a "why so" of any possible adverse finding?	☐	☐	

Step 2: This screening template allows audit teams to consider potential environmental issues identified in the Section on E&SD of the Functional Risk Identification Template in more depth and to assess the significance of those issues.

Only answer the questions that correspond to the questions in the Functional Risk Identification Template (Section on E&SD) to which you answered "yes." For example, if you answered "yes" to question 1 in the template, complete question 1 of this screening template.

Note: Contact the Internal Specialist if you have any questions about this screening template.

1. Activities and environmental risks

1a Begin by describing the activities you identified when you completed the Section on E&SD of the Functional Risk Identification Template (question 1). Summarize them below along with a description of some of their potential effects on the environment. Consider effects on the natural environment and hazards associated with the built environment / infrastructure.

For guidance, see Appendix 1—Overview of the Potential Impact of Human Activities on the Environment and Appendix 4—The Built Environment: Hazards to Human Health and Well-Being. Consult the Internal Specialist if you require assistance.

1b Estimating level of environmental risk

For the issues that you identified, provide an estimated rating of risk.*

Issue (activity and effect)	Risk evaluation
	Impact: Likelihood: Rating (significant or not significant):
	Impact: Likelihood: Rating (significant or not significant):
	Impact: Likelihood: Rating (significant or not significant):

	Impact: Likelihood: Rating (significant or not significant):

* For guidance, see Appendix 2—Assessing the Significance of Environmental Risks. Consult the Internal Specialist if you need assistance.

1c International commitments related to the environment and sustainable development Consider the activities that you identified above. Are there any commitments under international environmental agreements* for these activities?	Yes	No
	☐	☐

* Information on international agreements and commitments is provided in Appendix 5.

1d If the answer is "yes," provide a description of the relevant agreements, related commitments, and responsible entities here. If you are unsure, explain your reasons.

1e Answer the following questions for the agreements and commitments that you identified:	Yes	No
• Are the commitments closely related to the audit subject matter?	☐	☐
• Are the commitments auditable (e.g., are they concrete, time-bound, and/or measurable)?	☐	☐
• Are the commitments significant?	☐	☐

To assess their significance, consider

- the scope and materiality (major or minor commitment),
- the issues they address and the level of environmental risk,
- the consequences resulting from failure to implement, and
- the level of parliamentary or public interest in the issue that the commitments address.

2. Sustainable development strategies

2a Summarize the Federal Sustainable Development Strategy commitments that are closely related to your audit subject matter below.

2b Briefly summarize how the responsible entities have translated these commitments into their individual sustainable development strategies* and provide your conclusions with respect to the list below.

	Yes	No
• Are they auditable (e.g., concrete, time-bound, and/or measurable)?	☐	☐
• Do they address significant matters?**	☐	☐

* Designated departments are required to prepare their own departmental sustainable development strategies. For information, see Appendix 3. Access the Departmental Sustainable Development Strategies on Environment and Climate Change Canada's website.

** To assess their significance, consider

- the scope and materiality,
- the level of environmental risk (for guidance, see Appendix 2),
- the consequences resulting from failure to implement, and
- the level of parliamentary or public interest in the issue that the commitments address.

3. Projects and environmental assessment requirements

3a Describe the kinds of projects* you identified in the Functional Risk Identification Template.

*Projects generally involve the construction, operation, modification, or decommissioning of physical works such as bridges, buildings, roads, or pipelines.

3b For the projects that you identified,	Yes	No
• are the projects situated on		
• federal lands,	☐	☐
• in the northern territories, or	☐	☐
• outside of Canada?	☐	☐
• are these types of projects listed in the Schedule to the *Regulations Designating Physical Activities*?	☐	☐
• is the entity involved in a significant number of projects (for the subject area being audited)?	☐	☐
• are these major projects (e.g., large-scale and/or long-term, involving significant expenditures)?	☐	☐

3c If the answer to any of the above questions is "yes," provide additional details.

Information on projects and environmental assessment requirements is provided in Appendix 3. Projects that are undertaken in the northern territories are subject to different requirements. The Internal Specialist can help audit teams confirm whether environmental assessments are required.

4. Government operations	Yes	No
4a Does the subject matter of the audit involve the significant use of resources such as energy, water, and materials?	☐	☐
4b Are any of the following areas relevant to the audit subject matter?	Yes	No
• Procurement of goods and services	☐	☐
• Buildings and infrastructure (new construction, renovation, or demolition)	☐	☐
• Vehicle fleet	☐	☐
• Energy consumption (including energy use, conservation, and greenhouse gas emissions)	☐	☐
• Facilities management	☐	☐
• Drinking water quality	☐	☐
• Real property (purchase, sale, or lease)	☐	☐
• Land management (including management of ecological values on federal land, such as wetlands and endangered species)	☐	☐

• Contaminated sites	☐	☐
• Fuel storage tanks (above ground and underground)	☐	☐
• Water usage	☐	☐
• Solid waste (including reducing, reusing, and recycling)	☐	☐
• Hazardous waste (handling, storage, and disposal)	☐	☐
• Waste water discharges	☐	☐
• Other pollution releases/emissions	☐	☐
• Hazardous substances, such as		
• solvents (such as those used in laboratories and maintenance yards)	☐	☐
• asbestos, lead paint, and polychlorinated biphenyls (PCBs) (often present in older buildings)	☐	☐
• ozone-depleting substances (in cooling and refrigeration systems)	☐	☐
• Indoor air quality	☐	☐
• Equipment operation	☐	☐

4c If the answer to any of the above questions is "yes," provide additional details.

4d For the issues that you identified, provide an estimated rating of risk.*

Issue (activity and effect)	**Risk evaluation**
	Impact: Likelihood: Rating (significant or not significant):
	Impact: Likelihood: Rating (significant or not significant):

*For guidance, refer to Appendix 2—Assessing the Significance of Environmental Risks. For guidance on environmental issues related to the built environment, consult Appendix 4. Some of these issues may be covered by commitments in the Federal Sustainable Development Strategy. See Appendix 3 for more information.

5. Funding or other financial assistance

5a Describe the funding or other forms of financial assistance, provided by the entity, that you identified in the Functional Risk Identification Template.

5b Describe the various activities that the entity supports through its funding or other financial assistance programs.

	Yes	No
5c Has the entity integrated environmental considerations into its funding activities?	☐	☐
5d Has the entity developed environmental review criteria?	☐	☐

5e If the answer to any question is "yes," provide additional details. If unsure, please explain.

6. Policy, plan, or program proposals (Strategic Environmental Assessment)

According to the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, federal departments and agencies are required to assess the potential environmental impact of proposed initiatives bound for Cabinet or ministerial approval. A strategic environmental assessment (SEA) is to be conducted when a proposal may result in important environmental effects, either positive or negative.* For more information on the directive, refer to Appendix 3.

* The directive does not apply if a proposal is a matter of routine government practice or human resource, financial, or administrative procedures.

6a For policy, plan, or program proposals that you identified in question 6 in the Functional Risk Identification Template, summarize the subject matter and scope.		
	Yes	No
6b Were environmental considerations discussed in the submissions or memoranda to Cabinet, Treasury Board, or a Minister?	☐	☐
6c If the answer is "yes," please describe the issues.		
	Yes	No
6d Was a strategic environmental assessment (SEA) prepared?	☐	☐
6e If the answer is "yes," provide additional details. If you are unsure, please explain.		
	Yes	No
6f Have public statements been issued for these SEAs?	☐	☐
6g If the answer is "yes," provide additional details. If you are unsure, please explain.		

7. Environmental petitions submitted to the Office of the Auditor General of Canada (OAG)		
7a Provide a brief summary of the major issues addressed in the environmental petitions* you identified in the Functional Risk Identification Template.		
* Access the OAG's online Petitions Catalogue. For information on the environmental petitions process, see Appendix 3.		
	Yes	No
7b Do the issues or commitments in the petition or entity response(s) strongly relate to the audit subject matter?	☐	☐
7c Did the entity make any commitments for future action in its petition response(s)?	☐	☐
7d If the answer to any of the above is "yes," provide additional details and assess the significance of the environmental petitions by considering the scope and materiality of the petition and any related commitments, the level of environmental risk, and the level of parliamentary or public interest in the issue.*		
* For guidance, see Appendix 2—Assessing the Significance of Environmental Risks.		
8. Conclusion	Yes	No
8a Are there potentially significant environmental risks or issues associated with the audit subject matter?	☐	☐
If you are unsure, discuss the environmental issues you identified with the Internal Specialist, who can help you answer this question.		
8b If your answer is "yes," summarize the important risks/issues that you have identified and ask the Internal Specialist for advice to further explore significance and auditability, and to develop a line of enquiry, if appropriate.		
8c If your answer is "no," explain your rationale.		
Note: Review and sign-off by the Internal Specialist is mandatory.		

Internal Specialist assessment and sign-off		
	Yes	No
The Internal Specialist agrees with the assessment.	☐	☐
Comments:		
	Yes	No
Further planning work is recommended.	☐	☐
Comments:		
Note: Teams are expected to document the conclusions above in the Subject Matter Assessment of Risk Template (SMART) for the audit.		
Internal Specialist: _____ Date: _____		
Audit PX: _____ Date: _____		

Appendix 1—Overview of the Potential Impact of Human Activities on the Environment

Within the context of a strategic audit plan or audit subject matter, it is important to consider how the government's activities may pose a risk to the environment. This is the starting point for any evaluation of environmental risks.

As we noted earlier in this guide, the activities of the federal and territorial governments can affect the environment in two ways:

- directly (i.e., through their own operations as part of the "government house"); or
- indirectly (i.e., through the control or influence they exert on the activities of others through their policies, plans, and programs).

The term "environment" encompasses the natural environment and the built environment. See Key terms and concepts for more information on the environment and the connections between human health and well-being and the environment.

For information on risks associated with the built environment, see Appendix 4.

How human activities can have an impact on the natural environment

In general, human activities have an impact on the natural environment by

- releasing substances into the environment (e.g., emissions, discharges, and waste production);
- changing and degrading water, land, and habitats; and
- using and depleting resources.

Human activities do not necessarily cause negative effects. Some activities, such as pollution prevention, may benefit the environment and enhance sustainability. Refer to Exhibit 2 below for examples.

Overview of activities

The following is an overview of the main categories of activities that have an impact on the natural environment:

- **Energy**—exploration, development, distribution, processing, management, consumption, or use (oil, gas, nuclear, other)
- **Natural resources**—development, management, harvesting (e.g., fisheries, aquaculture, forestry, hunting and trapping, mining)
- **Agriculture / food production**—land cultivation, animal husbandry, food processing and distribution
- **Procurement** and consumption of goods
- **Physical infrastructure**—construction or use of infrastructure, such as roads, housing, bridges, ports, buildings, railways, sewage, or waterworks

- **Transportation of people and goods**—road, marine, rail, or air transportation, and all related activities and infrastructure
- **Toxic or hazardous substances and materials**—generation, manufacture, use, management, transportation, or disposal (e.g., toxics and pesticides)
- **New substances and organisms**—development, deployment, and regulation (e.g., new chemicals, genetically modified organisms)
- **New products and technologies**—development and deployment
- **Industrial activity**—e.g., resource processing and manufacturing
- **Urban development**
- **Military activities**—training, equipment, materials, natural disasters, and other emergencies (e.g., preparation and response)
- **Waste generation or management** (including hazardous waste)
- **International trade** (export and import)
- **Cleanup or remediation of contaminated sites**

This is not an exhaustive list. Other activities that are not on this list may have an impact on the natural environment. Consult the Internal Specialist if you require further information.

Note: *Exhibit 2 below provides detailed examples of various activities and the potential impacts of these activities on air, water, land, and biodiversity.*

Exhibit 2: Human activities and examples of potential impact on the natural environment

The first part of this chart provides illustrative examples of activities that have an impact on air, water, and land, including biodiversity. The second part of the chart provides examples of the types of impacts that may result from those activities.

Examples of activities that will lead to impacts on various components of the environment

Air	Surface water (e.g., lakes, rivers)	Groundwater	Coastal areas / marine	Land
• Transportation (all modes) • Energy (production, refining, and distribution) • Generation of electricity (e.g., burning of coal, natural gas) • Use of refrigerants and coolants (ozone-depleting substances) • Metal smelting and other industrial activities (e.g., pulp and paper, chemical manufacturing, and other heavy industries) • Mining of aggregates • Application of pesticides • Waste incineration • Use of various volatile chemicals • Heating (e.g., with wood, oil)	• Removal of shoreline vegetation • Forestry and mining • Collection, storage, and disposal of agricultural waste • Application of pesticides • Sewage discharges • Industrial and other discharges (e.g., pulp and paper, mining, chemical, food processing) • Manure management • Spills and accidental releases of pollutants • Boating and shipping (e.g., discharges of fuel, ballast water) • Waste disposal • Fuel storage, distribution, refuelling • Draining and removal of wetlands • Development of infrastructure (e.g., dams and bridges)	• Provision of water for drinking and household uses • Water for industrial activities • Irrigation • Manure management (e.g., collection, storage, disposal, or spreading) • Fuel storage, distribution, and refuelling • Waste disposal • Urban development (removal of vegetation, increase in hard surfaces) • Fires and explosions	• Discharges of sewage or waste water • Energy (exploration, production, distribution) • Commercial fisheries • Dredging • Ocean dumping • Boating and shipping (e.g., discharge of fuel, ballast water) • Aquaculture • Urban development (removal of coastal vegetation, including wetlands) • Spills and accidental releases	• Transportation infrastructure (roads, highways, bridges) • Forestry and mining activities • Agriculture (e.g., soil tilling, livestock grazing, fertilizers and pesticides) • Spreading of manure and sewage sludge • Storage and distribution of fuels and other hazardous materials (e.g., storage tanks) • Landfilling of waste • Spills and accidental releases • Military training and testing (use of training areas) • Fires and explosions

Examples of potential impact

Air	Surface water (e.g., lakes, rivers)	Groundwater	Coastal areas / marine	Land
• Releases of carbon dioxide and other greenhouse gases, which contribute to global warming • Depletion of the ozone layer • Impairment of air quality • Smog (including particulates, ground-level ozone) • Effects on human and wildlife health (e.g., upper respiratory problems and higher rates of hospitalization) • Acidification of lakes and rivers (acid rain) • Deposition of air pollutants on land	• Reduction in quality of habitat for fish and other aquatic organisms • Increased runoff and erosion • Depletion of fish populations • Impairment of water quality (pollutants, pathogens, bacteria, nutrients) • Need for increased water treatment • Increased algal growth/blooms • Decreased biodiversity • Introduction of exotic, invasive species (e.g., zebra mussels)	• Reduced groundwater quality (e.g., from pollutants, toxins, hydrocarbons, pathogens, bacteria) • Impairment of drinking water quality • Need for increased water treatment • Reduced groundwater quantity • Surface water effects (reductions in quality and quantity)	• Alteration or degradation of quality of fish and other marine habitat • Depletion of fish populations • Increased disease and pathogens affecting fish • Impairment of water quality (e.g., pollutants, including petroleum products, pathogens, bacteria, nutrients) • Introduction of exotic, invasive species • Reduction of tourism activity	• Depletion of renewable and non-renewable resources • Soil and groundwater contamination • Erosion or desertification • Reduction or removal of wildlife habitat • Reduction or removal of wetlands • Reduction in biodiversity (soil organisms, plants, wildlife) • Increased surface water runoff or stormwater runoff • Mining waste • Opening of remote areas

Exhibit 3: Opportunities to advance environmental sustainability

Examples of ways to avoid or minimize environmental impacts and advance environmental sustainability:

- consider environmental issues in the early stages of decision making (e.g., when planning new projects, policies, plans, and programs);
- reduce energy consumption and/or increase use of renewable energy sources through increased efficiency (e.g., enhanced fuel efficiency for vehicles, reduced electricity consumption by household appliances) and green building design (new buildings) or retrofitting;
- increase use of renewable energy sources;
- advance, support, and employ green technologies;
- reduce consumption of resources;
- increase reuse and recycling, which will reduce resource consumption, waste production, and disposal;
- establish and maintain protected areas (terrestrial and marine);
- improve eco-efficiency;
- implement green procurement practices—purchasing more environmentally friendly goods and services;
- prevent pollution by avoiding the use of hazardous/toxic materials and by using cleaner fuels, clean emissions technologies for engines, and cleaner or zero-emission energy sources (e.g., solar and wind power);
- promote sustainable certification in various sectors;
- advance socially responsible policies and practices;
- improve emergency planning, preparedness, and response;
- implement environmental management systems (EMS); and
- develop environmental training programs.

Appendix 2—Assessing the Significance of Environmental Risks

To assess risk, we consider the likelihood of a risk event occurring and the magnitude of the impact (severity) of any effects that may result. The overall risk rating is a product of these two factors.

If management controls are in place, we also consider how they would mitigate or reduce the level of risk.

Overall Risk = (Impact) x (Likelihood)

Estimating the impact (the severity of the environmental effect)

Factors to consider when assessing the severity of an environmental effect include

- the magnitude (ranging from little effect to loss of function);
- the location or proximity (e.g., beside important fish habitat, in a sensitive ecosystem);
- the size or scale of effect (e.g., total area, percentage of animal population affected, size of population);
- the timing (e.g., during migration, spawning, nesting season);
- the duration (e.g., short-term or long-term; reversible or irreversible); and
- the socio-economic and health implications.

Use the descriptions in Exhibit 4 to determine the magnitude of the impact. Consider whether any management controls are in place. If there are, consider whether they reduce or mitigate the extent of the environmental effect, and take them into account when assigning the rating.

Exhibit 4: Impact (severity of environmental effect)

Level	Description
Low	• Limited or no environmental effect
Medium	• Moderate effect but not affecting ecosystem functions • Impact over the medium term
High	• Serious environmental effects or impairment of ecosystem functions • Potentially widespread or long-term impact on the environment

Estimating likelihood of occurrence

Use the descriptions in Exhibit 5 to determine the likelihood of the risk event occurring. If management controls are in place that could reduce the likelihood that the risk event will materialize, they should be taken into consideration when assigning the rating.

Exhibit 5: Likelihood that a risk event will occur

Level	Description
Low	• May occur but only under exceptional circumstances
Medium	• Likely to occur at some time
High	• Occurring or imminent

Rating overall risk to determine significance

The overall risk rating is the product of severity and likelihood. Plot the intersection of these ratings on the risk assessment chart (Exhibit 6). Any effect that yields a risk rating in the darkest boxes of the table is considered to pose a significant environmental risk and warrants further consideration and analysis.

Exhibit 6: Risk assessment chart

		Likelihood of occurrence		
Impact (severity of effect)		Low	Medium	High
	Low	L/L	L/M	L/H
	Medium	M/L	M/M	M/H
	High	H/L	H/M	H/H

The example below illustrates the various steps that are involved in identifying and assessing environmental risks related to the subject matter of an audit.

Example: An audit of rail transportation

An audit team is planning an audit of Transport Canada's oversight of rail transportation in Canada.

The first step is to consider the types of activities related to rail transportation. These could include the following:

- carriage of goods (hazardous and non-hazardous)
- movement of trains and cars on rail sidings
- track maintenance

The next step is to examine these activities in more detail and consider their environmental effects. For example, consider the activity **"Carriage of goods."** Think about the types of activities associated with transport of goods by rail and the kinds of effects that might result from these activities (on the natural environment and/or on people). They might be continuous or ongoing effects, or effects that would result if a risk event like an accident occurred. The following are some activities and related effects that could be identified:

Effects (continuous or ongoing)

- Small leaks and spills—contaminates soil or other parts of the surrounding environment, especially in areas where there is frequent use (e.g., near sidings)
- Engine emissions—degrades air quality
- Noise—negatively impacts enjoyment of property by residents and users of nearby buildings or other uses

Effects from an accident or derailment

- Release(s) of solid, liquid, or gaseous materials from rail cars or tank cars. The severity of the effects would depend on the characteristics of the specific commodities that are being transported and the volumes involved. Effects could include
  - contamination of nearby land and water bodies
  - negative effects on flora and fauna and their habitat (aquatic and terrestrial)
  - impairment of water quality for drinking, recreation, fishing, or other uses
  - migration into groundwater, with resulting degradation of groundwater quality
  - if goods are flammable or have explosive properties, fires and/or explosions could occur, leading to personal injuries and other damage, including property damage

To evaluate the overall level of risk and significance for a rail accident or derailment, take the following actions:

- Evaluate the magnitude of the impact (**severity**) of these effects. Assign a rating of **High**, **Medium**, or **Low**. The risk rating for impact is influenced by a variety of factors, as described in Exhibit 4 above.
- Evaluate the **likelihood** of these risks occurring. The risk rating for likelihood is influenced by a variety of factors, as described in Exhibit 5 above. Assign a rating of **High**, **Medium**, or **Low**. Rail transport data for commodities and accident rates would help to determine the rating for likelihood.
- Determine the overall risk rating using the risk assessment chart found in Exhibit 6.

The following table illustrates how the final overall risk rating is estimated.

Potential environmental risk	Risk factors	Risk rating
Accident/Derailment	**Impact (severity)** Some considerations affecting the risk rating: • Trains carry a variety of different types of goods—hazardous and non-hazardous. All types of dangerous goods are transported by rail. • Spills or releases can have significant impacts, especially if large volumes are involved.	Medium to High
	Likelihood Some considerations affecting the risk rating: • Rail accidents are a frequent occurrence in Canada. • There has been an increase in the number of trains carrying petroleum products (e.g., crude oil). • Overall volumes of petroleum products being transported by rail has increased substantially. Railways traverse large and small water bodies on an ongoing basis.	High
	Overall risk rating	M/H to H/H Significant: Yes

Appendix 3—Background and Resources

The background information and resources contained in this appendix will help audit teams to identify and assess environmental risks as teams develop strategic audit plans or subject matter for their performance audits.

This appendix provides information on the following topics:

- the Federal Sustainable Development Strategy and strategies that are prepared by designated departments and agencies;
- physical infrastructure and other projects, which may be subject to the *Canadian Environmental Assessment Act, 2012*;
- facilities management and other aspects of government operations;
- funding or other financial assistance activities;
- policy, plan, or program proposals that require approval from a Minister or Cabinet (strategic environmental assessment); and
- environmental petitions, which Canadian residents submit to the Office of the Auditor General of Canada (OAG).

For more information on any of these topics, please consult the Internal Specialist.

Note: *For detailed information on human activities and their potential impact on the environment, see Appendix 1. For background information on hazards related to the built environment, see Appendix 4. Information on international environmental agreements and commitments is provided in Appendix 5.*

Sustainable development strategies

Sustainable development strategies are important tools by which the federal government can advance sustainable development and make environmental and sustainable development decision making more transparent and accountable to Parliament. These strategies are meant to be the main vehicle to drive responsible management, from an environmental and sustainable development perspective, throughout the federal government. The strategies set out the goals, targets, and implementation strategies designed to contribute to the overall goal of furthering sustainable development.

Federal Sustainable Development Strategy

With the passage of the 2008 *Federal Sustainable Development Act*, the government acknowledged the need to integrate environmental, economic, and social factors in all government decision making. The Act requires that a Federal Sustainable Development Strategy (FSDS) be developed that would make environmental decision making more transparent and accountable to Parliament.

Federal Sustainable Development Strategy 2013–2016

Federal Sustainable Development Strategy 2010–2013

The four priority themes in the FSDS 2013–2016 are

- climate change and air quality,
- water quality and availability,
- protecting nature and Canadians, and
- shrinking the environmental footprint—beginning with government.

The FSDS contains goals, targets, and related commitments. Commitments in the FSDS are referred to as "implementation strategies." Responsible departments and agencies are identified for each implementation strategy.

Departmental sustainable development strategies

The requirement for designated departments and agencies to prepare sustainable development strategies, then update them and present them to Parliament every three years, has existed since 1995. These same designated departments and agencies are required to respond to environmental petitions.

Since the introduction of the first Federal Sustainable Development Strategy in 2010, departmental sustainable development strategies must now include plans and objectives that comply with and contribute to the federal strategy. The designated departments and agencies report on their sustainable development activities in annual reports on plans and priorities and departmental performance reports, as well as on their websites. Some prepare stand-alone sustainable development strategies.

These departmental sustainable development strategies can be accessed on the Environment and Climate Change Canada website.

Strategies that were prepared by departments and agencies prior to the enactment of the *Federal Sustainable Development Act* can be accessed via the links in Exhibit 7.

Exhibit 7: Entity sustainable development strategies (1997–2009)

Departments/agencies required to prepare sustainable development strategies (SDSs) and respond to environmental petitions				
Departments and agencies	**SDS I (1997–2000)**	**SDS II (2000–2003)**	**SDS III (2003–2006)**	**SDS IV (2007–2009)**
Agriculture and Agri-Food Canada	I	II	III	IV
Atlantic Canada Opportunities Agency	I	II	III	IV
Canada Border Services Agency	N/A	N/A	N/A	IV
Canada Economic Development for Quebec Regions	I	II	III	IV
Canada Revenue Agency * Revenue Canada ** Canada Customs and Revenue Agency	I*	II**	III	IV

Exhibit 7: Entity sustainable development strategies (1997–2009) (continued)

Departments/agencies required to prepare sustainable development strategies (SDSs) and respond to environmental petitions				
Departments and agencies	**SDS I (1997–2000)**	**SDS II (2000–2003)**	**SDS III (2003–2006)**	**SDS IV (2007–2009)**
Canadian Heritage	I	II	III	IV
Canadian International Development Agency	I	II	III	IV
Citizenship and Immigration Canada	I	II	III	IV
Environment Canada	I	II	III	IV
Finance Canada, Department of	I	II	III	IV
Fisheries and Oceans Canada	I	II	III	IV
Foreign Affairs and International Trade Canada	I	II	III	IV
Health Canada	I	II	III	IV
Human Resources and Skills Development Canada * Human Resources Development Canada **Human Resources and Social Development Canada	I*	II*	III*	IV**
Indian and Northern Affairs Canada	I	II	III	IV
Industry Canada	I	II	III	IV
Justice Canada, Department of	I	II	III	IV
National Defence	I	II	III	IV
Natural Resources Canada	I	II	III	IV
Parks Canada	N/A	II	III	IV
Public Health Agency of Canada	N/A	N/A	N/A	IV
Public Safety Canada * Solicitor General Canada ** Public Safety and Emergency Preparedness Canada	I*	II*	III**	IV
* Public Service Human Resources Management Agency of Canada (the new Office of the Chief Human Resources Officer (part of the Treasury board of Canada Secretariat) has assumed responsibility for the agency's functions)	N/A	N/A	N/A	IV*
Public Works and Government Services Canada	I	II	III	IV

Exhibit 7: Entity sustainable development strategies (1997–2009) (continued)

Departments/agencies required to prepare sustainable development strategies (SDSs) and respond to environmental petitions				
Departments and agencies	**SDS I (1997–2000)**	**SDS II (2000–2003)**	**SDS III (2003–2006)**	**SDS IV (2007–2009)**
Transport Canada	I	II	III	IV
Treasury Board of Canada Secretariat	I	II	III	IV
Veterans Affairs Canada	I	II	III	IV
Western Economic Diversification Canada	I	II	III	IV
Federal organizations that voluntarily prepare strategies				
Canadian Environmental Assessment Agency	I	II	III	IV
Correctional Service Canada	I	II	III	IV
Office of the Auditor General of Canada	I	II	III	IV
Royal Canadian Mounted Police	I	II	III	IV

Projects and environmental assessment requirements

The construction, operation, modification, and demolition or decommissioning of projects can pose a variety of environmental risks. Projects involve physical works such as bridges, pipelines, nuclear facilities, and marine terminals.

Environmental assessment is a process to ensure that environmental effects are identified and considered in decision making before a project proceeds.

Under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), federal environmental assessments are required for proposed projects that have been "designated," either by regulation or by the Minister of the Environment and Climate Change. The *Regulations Designating Physical Activities* identify the different project categories that may require an environmental assessment under CEAA 2012.

In addition, pursuant to section 67 of CEAA 2012, a federal environmental assessment may be required for other types of projects if they are located on federal lands (e.g., national parks, military bases, First Nations reserves).

Note: *Projects that are undertaken in the northern territories or outside of Canada are subject to different requirements.*

Consult with the Internal Specialist if you require more information.

Government operations

As the single largest enterprise in Canada, the federal government has a significant environmental footprint in its own right. For example, when the federal government purchases goods and services, leases and operates buildings and facilities, and operates its fleet of vehicles, the following may occur:

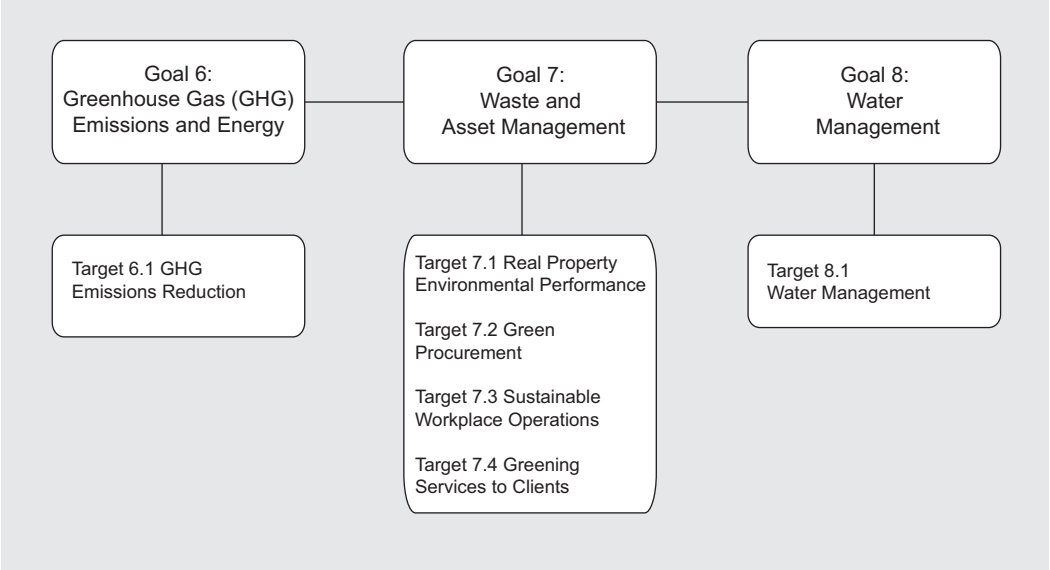
- natural resources, energy, and water are consumed;
- emissions are released;
- waste is generated; and
- hazardous substances need to be managed.

Greening government operations is one of the four priority areas under the Federal Sustainable Development Strategy. Under Theme IV: Shrinking the Environmental Footprint—Beginning with Government, the government has established goals and related targets for the following areas:

- greenhouse gas (GHG) emissions and energy,
- asset management,
- waste management, and
- water management.

The goals and targets under Theme IV are presented below in Exhibit 8.

Exhibit 8: Goals and targets under Theme IV of the Federal Sustainable Development Strategy 2013–2016



Source: Planning for a Sustainable Future: A Federal Sustainable Development Strategy for Canada 2013–2016

The Office of Greening Government Operations (OGGO) was created within Public Works and Government Services Canada (now Public Services and Procurement Canada) in 2005. Its mandate is to accelerate the greening of the government's operations by working closely with other federal departments, particularly the Treasury Board of Canada Secretariat and Environment and Climate Change Canada.

Contaminated sites

Over 22,800 federal contaminated sites have been identified across the country. Various policies, guidelines, and funding programs are in place to support departments and agencies as they assess, remediate, or manage these sites. Improper fuel storage accounts for approximately 65 percent of all federal contaminated sites in Canada. These sites are listed in the Treasury Board's Federal Contaminated Sites Inventory.

Other important issues associated with government operations and assets are listed in the Environmental Risk Screening Template for Performance Audit (see question 4). Teams should also consult Appendix 4 for information on hazards associated with the built/indoor environment.

Funding or other financial arrangements or support

Federal entities can indirectly cause environmental effects by providing others with funding, loans, or other forms of financial assistance. The activities or initiatives that benefit from these arrangements may have environmental consequences.

Furthermore, when conducting audits of funding agreements, the OAG should consider environmental impacts. With respect to a recipient under any funding agreement, audit teams may ask the following questions:

- Has money been spent with due regard for economy and efficiency?
- Has money been spent with due regard for the effects on the environment?[1]

Considering the environment during the development of policy, plan, and program proposals: the Cabinet Directive on Strategic Environmental Assessment

To make informed decisions that support sustainable development, decision makers at all levels of government must have relevant information on environmental, economic, and social factors. This is particularly important for ministers of federal departments, whose decisions on government policies, plans, and programs can have important implications for Canada's economy, society, and environment. It is also important for stakeholders to see that the government has considered factors in all three areas when making its decisions.

Integrating environmental considerations in the decision-making process for policies, plans, and programs is the subject of a federal Cabinet directive. According to the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals and related

[1] Section 7.1 of the *Auditor General Act*

guidelines, a strategic environmental assessment (SEA) should be performed for a policy, plan, or program proposal when the following two conditions are met:

- A proposal is submitted to an individual Minister or to Cabinet for approval (e.g., memoranda to Cabinet or Treasury Board submissions).
- The implementation of the proposal may result in important environmental effects, either positive or negative.

To determine whether a strategic environmental assessment must be performed, a preliminary environmental assessment (scan) must be conducted for every proposal.

In the first Federal Sustainable Development Strategy, released in 2010, the government committed to applying strategic environmental assessments (SEAs) more stringently.[2] Submissions to an individual Minister or to Cabinet, including Treasury Board, should discuss any strategic environmental assessments and the outcomes of this analysis as an integral part of examining the options presented.

Reporting and transparency

The results of any completed SEAs are reported through departmental performance reports and public statements. The Cabinet directive requires that federal departments and agencies publish a public statement for SEAs. According to the SEA guidelines, departments and agencies shall prepare a public statement of environmental effects when a detailed assessment of environmental effects has been conducted through an SEA in order to assure stakeholders and the public that environmental factors have been appropriately considered when decisions are made.

Public Statements of Strategic Environmental Assessment can be accessed on the Canadian Environmental Assessment Agency website.

Environmental petitions from Canadian individuals, groups, and other organizations

Under the provisions of the *Auditor General Act*, Canadians can submit environmental petitions to the OAG. Federal departments and agencies are responsible for responding to these petitions within a set time frame. The OAG has received over 400 petitions since 1997. They cover a wide range of environmental and sustainable development issues that are the responsibility of the federal government.

Most petitions and responses are provided in full in the OAG's Petitions Catalogue. Petitions can be searched by petition number, by issue, or by federal institution.

If you locate a petition that is relevant to the subject matter of your audit and the full text is not available in the catalogue, please contact the Petitions team to request a copy.

[2] *2014 Fall Report of the Commissioner of the Environment and Sustainable Development, Chapter 4*

Appendix 4—The Built Environment: Hazards to Human Health and Well-Being

Our built surroundings can play a significant role in health and safety and well-being. We spend the majority of our time each day in workplaces, homes, or other indoor settings. Examples of hazards associated with the built environment include materials such as asbestos, mould, or other toxics, such as lead in paint. Many of these hazards have an impact on indoor air quality. Other kinds of building hazards include emergencies such as fires and explosions and issues related to building condition and structural integrity. Reducing risk requires appropriate management, including adequate heating and ventilation systems, risk identification and risk assessment, periodic inspections, and regular maintenance, as well as hazard prevention and emergency preparedness and response.

The Directory of Federal Real Property lists real property holdings (buildings and land) of the federal government. It includes properties that are owned or leased. The directory can be searched by custodial department, agency, Crown corporation, and port authorities. It provides information on building age and condition (critical, poor, fair, good, etc.). See the Directory of Federal Real Property on the Treasury Board of Canada Secretariat website.

An overview of the following hazards is provided in this appendix:

- asbestos;
- mould;
- radon;
- risks related to fuel combustion for power generation or heating (such as carbon monoxide and other air pollutants, and fuel storage tanks);
- bacteriological hazards and other pathogens;
- safe drinking water;
- volatile organic compounds (VOCs);
- lead; and
- electrical and fire hazards.

Please note that this is not an exhaustive list. Some hazards that are not covered here include the heavy metal mercury (present in old thermostats, among other things) and polychlorinated biphenyls (PCBs). Although they are effectively banned in Canada, PCBs are still found in older transformers and other electrical equipment.

Asbestos: Asbestos was used for decades as insulation, roofing, and fire and sound proofing, as well as in ceiling tiles, floor tiles, paints, adhesives, and plastics. It was valued in many commercial applications because of its heat resistance, strength, insulating, and friction characteristics. Asbestos is a fibrous material that can get trapped in the lungs after inhalation. If inhaled, it can cause cancer and other diseases. Effects include fibrotic lung disease, lung cancer, pleural disorders, and a type of cancer called mesothelioma. Overall use of asbestos in Canada has declined dramatically since the mid-1970s. As of 2014, Canada continued to

import some manufactured goods containing asbestos, including friction materials, tubes and pipes, corrugated sheets and panels, paper, millboard, clothing, and other goods. Asbestos safeguards are required in most jurisdictions to minimize risk from everyday exposure and during maintenance work or renovations. For example, Section 10.19 of the *Canada Occupational Health and Safety Regulations* refers to control of hazards, including protecting employees from exposure to a concentration of airborne chrysotile asbestos in excess of one fibre per cubic centimetre. Health Canada offers a fact sheet about the health risks of asbestos on its website. It includes advice for proper handling of asbestos.

Mould: Mould is a common term referring to fungi that can grow inside buildings, often on or behind drywall and ceiling tiles. It thrives in damp conditions. Moulds can affect indoor air quality because the mould spores and fragments disperse into the air and are inhaled. Health Canada considers any indoor mould growth to be a significant health hazard, as it can increase the risk of allergy symptoms such as eye, nose and throat irritation, wheezing, coughing, phlegm build-up, and asthma conditions. Studies have confirmed a significant association between damp conditions in homes and an increased risk of developing asthma. Health Canada has produced a Residential Indoor Air Quality Guideline for Mould and Indoor Air Quality in Office Buildings: a Technical Guide.

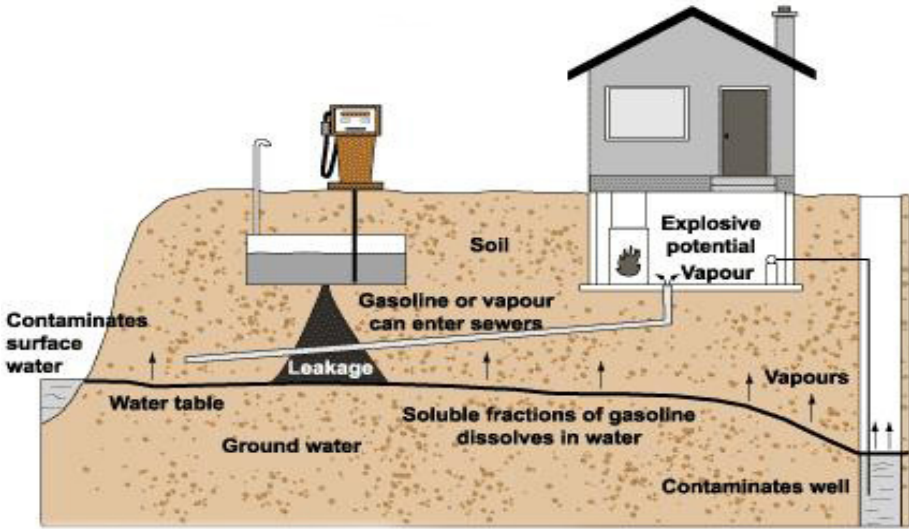
Radon: Radon is a radioactive gas that is invisible and odourless. Radon gas is released from the natural breakdown of uranium in soil, rock, and water. It can enter all types of buildings and accumulate to high levels. Because of its radioactive properties, it can damage lung tissue and cause lung cancer over time. It has been identified as the second leading cause of lung cancer after smoking. A cross-Canada survey of radon concentrations in homes, conducted by Health Canada, found that 6.9 percent of Canadians are living in homes with radon levels above the current radon threshold of 200 becquerels per cubic metre. This study did not examine workplaces where people might also be at risk of long-term exposure to radon gas.

Risks related to fuel combustion for power generation or heating:

- **Carbon monoxide and other air pollutants:** Carbon monoxide can result from the incomplete burning of wood, propane, natural gas, heating oil, coal, charcoal, gasoline, etc. It can cause harmful effects by reducing the delivery of oxygen to the heart, brain, and other tissues. At high concentrations, it can lead to death. It is reported that more than 50 people die each year from carbon monoxide poisoning in Canada. Some provinces, such as Ontario, now require the installation of carbon monoxide alarms in residential buildings. Heating by wood creates other risks, aside from carbon monoxide. There are increasing concerns about pollutants contained in wood smoke, such as fine particulate matter. Evidence is mounting about the adverse health effects of wood smoke on the lungs and cardiovascular system.
- **Fuel storage tanks:** Fuel storage tanks are commonplace in Canada. Spills and leaks from fuel tanks, fuel supply lines, and other related systems can contaminate surrounding soils, surface water and groundwater, and air; create combustion hazards; pose direct toxic risks to humans, plants, and animals; affect soil processes; and cause aesthetic problems, such as objectionable odour and sheen. Left unmanaged, they can cause significant adverse effects. Contamination in soil or groundwater can migrate into indoor air in adjacent or overlying buildings. This is known as vapour intrusion. Where vapour intrusion occurs, there is the potential for impacts to indoor air quality and unacceptable chronic health

risks to building occupants, as well as increased risk of fire or explosions. The elementary school in the First Nations community of Attawapiskat was closed due to health concerns after a large diesel spill seeped into the soil and groundwater around the school. Exhibit 9 illustrates how leaks from fuel storage tanks can cause various problems.

Exhibit 9: Leaking underground petroleum storage tanks can cause a number of problems



Source: Environment and Climate Change Canada

Bacteriological hazards and other pathogens: Exposure to bacteria and other pathogens can cause illness, including food-borne illnesses. Building premises need to be maintained in a clean and sanitary condition to avoid transmission of bacteria and other pathogens or contaminants, especially in areas where food is prepared and consumed. The Canadian Food Inspection Agency has developed a *Guide to Food Safety* (2010).

Safe drinking water: Drinking water needs to be free of both disease-causing organisms and chemical concentrations that have been shown to cause health problems. It should also have minimal taste and odour, making it aesthetically acceptable for drinking. The Guidelines for Canadian Drinking Water Quality–Summary Table establish safe levels for microbiological contaminants such as bacteria (for example E. coli), protozoa, and viruses, as well as chemicals and heavy metals like lead and arsenic. The guidelines are developed by the Federal-Provincial-Territorial Committee on Drinking Water. Ensuring a safe supply of drinking water involves management from source to tap—this means ensuring a safe, available source of water, protecting it from contamination, using effectiveness treatment where necessary, and preventing water quality deterioration in the distribution system. Employers under federal jurisdiction must provide potable water that meets the guidelines. The federal government updated Guidance for Providing Safe Drinking Water in Areas of Federal Jurisdiction–Version 2 in 2013. At a minimum, water should be analyzed on a regular basis to confirm that it meets the Canadian guidelines and other requirements.

Volatile organic compounds (VOCs): These are a large group of chemicals that evaporate at room temperature. They are contained in a variety of products, including carpets, adhesives, composite wood products, paints, solvents, upholstery fabrics, varnishes, and vinyl flooring, all of which off-gas or release VOCs into indoor air. Studies have shown indoor levels of VOCs to be two to five times higher than the levels outdoors. Some common examples of VOCs include acetone, benzene, formaldehyde, ethylene glycol, toluene, and xylene. Some individual VOCs have been identified as being carcinogenic or neurotoxic. Short-term or acute symptoms to high levels of VOCs include eye, nose, and throat irritation, headaches, nausea, dizziness, and exacerbation of asthma. Chronic health effects could include increased risk of cancer, liver damage, kidney damage, and central nervous system damage. Health Canada has developed indoor air quality guidelines for some VOCs, such as formaldehyde, toluene, and benzene.

Lead: Lead can be found in homes through lead-based paints, in contaminated soil and dust, and in drinking water (due to lead plumbing and piping) (see section on safe drinking water, above). Findings of elevated levels of lead residues in household dust in older buildings in a Health Canada study raise concerns about human exposure. Lower levels of lead can cause adverse health effects on the central nervous system, kidneys, and blood cells. The effects on children and fetuses are more severe, as this can affect physical and mental development. Children may also be at risk of higher exposures than adults through lead dust and mouthing of lead-contaminated objects.

Electrical and fire hazards: Fire hazards in workplaces or other building settings are common. They include the presence of flammable liquids and vapours, accumulation of waste and combustible materials, objects that generate heat, faulty electrical equipment, smoking, and overloading power sockets. Fire risks can be minimized through regular inspections and appropriate building design with fire exits, fire safety equipment, and emergency preparedness and response programs and procedures.

Appendix 5—Canada's International Commitments on the Environment and Sustainable Development

Canada is a party to more than 130 international agreements that address environmental and sustainable development issues. These include bilateral agreements and regional or multilateral treaties. Obligations assumed through these legally binding agreements must be met domestically, and the federal government is responsible for matters under federal jurisdiction. Canada's international commitments can serve as a useful source of audit criteria.

Some international instruments that Canada has adopted are not legally binding, as formal treaties are. However, these instruments should be consulted and may serve as a source of audit criteria. Examples include declarations and action plans under the auspices of the circumpolar Arctic Council or the United Nations Sendai Framework for Disaster Risk Reduction 2015–2030.

Canada's international commitments cover a diverse array of topics, such as

- the Arctic;
- fisheries resources;
- shipping;
- air quality, including ozone-depleting substances;
- greenhouse gases and climate change;
- biodiversity;
- nuclear safety;
- water quality;
- disasters/crises;
- food safety;
- hazardous pollutants and substances; and
- movement of hazardous waste.

To identify agreements that apply to Canada, you can perform searches using the following online resources:

- International Environmental Agreements (IEA) Database Project, hosted by the University of Oregon

Note: *Information is listed for specific countries and by subject matter. Searches can be performed using specific keywords or topics. In most cases, the text of the agreement is also provided.*

- Environmental Treaties and Resources Indicators (ENTRI) is an online resource that allows you to identify by country parties or by topic. Treaty texts can also be accessed using keyword searches. ENTRI is a project of the Socioeconomic Data and Applications Center (SEDAC) of the National Aeronautics and Space Administration (NASA) and Columbia University's Center for International Earth Science Information Network.

New international sustainable development goals

In 2012, during the United Nations Conference on Sustainable Development (Rio+20) in Rio de Janeiro, Brazil, a process was launched to develop a set of Sustainable Development Goals (SDGs) for the post-2015 period to build upon experiences with the Millennium Development Goals (MDGs) and other past initiatives and agreements. Similar to the MDGs, the plan is for the SDGs to have targets and indicators that countries can use as a framework to guide their policies and action plans. The SDGs are to apply to all nations, large or small, insular or landlocked, developed and developing. They will serve as important benchmarks and sources of criteria for future audits. The SDG goals cover environmental, social, and economic concerns. The SDGs are listed in Exhibit 10.

Exhibit 10: Sustainable Development Goals

Goal 1: End poverty in all its forms everywhere

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5: Achieve gender equality and empower all women and girls

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10: Reduce inequality within and among countries

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12: Ensure sustainable consumption and production patterns

Goal 13: Take urgent action to combat climate change and its impacts

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

Source: *Transforming Our World: The 2030 Agenda for Sustainable Development*