

*CLIMATE CHANGE CONSIDERATIONS
FOR DESIGNATED PROJECTS UNDER
THE IMPACT ASSESSMENT ACT:*

Companion Resource Tool (CRT) Guide



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Background

Climate change presents challenges to designated projects in Canada and may interact with a project's environmental, health, social and economic effects, as well as impact all phases of project construction, operation and decommissioning (e.g., most project infrastructure is built on the presumption of a stable climate and is not adapted to climate change).

Under the *Impact Assessment Act* (IAA), the effects of climate change on designated projects is a factor to consider under section 22(1)(j) – any change to the designated project that may be caused by the environment – and the analysis is supported by guidance documents on the [Practitioner's Guide to Federal Impact Assessments](#), as well as the [Strategic Assessment of Climate Change](#), which provides a consistent, predictable and transparent consideration of climate change throughout federal impact assessments. Research and case studies on the interactions between severe weather, climate variability and climate change and the activities of designated projects, as presented here, may also be used to support project assessments.

This project is intended to support the analysis of how climate change interacts with resource projects and associated environmental, health, social and economic effects under the IAA. The purpose of the project was three-fold:

1. Develop a conceptual framework depicting how severe weather, climate variability, and climate change can interact with designated projects and the environmental, health, social, and economic conditions of their receiving environments
2. Use the framework to help structure a related literature review.
3. Develop a searchable Companion Resource Tool (CRT) to collate information from the literature review and, more specifically, from 18 recent Environmental Assessment/Impact Assessment Reports on designated projects in Canada's mining and nuclear power sectors. The CRT may be further populated and drawn upon over time to support ongoing analyses.

This document is a Guide to CRT Version 1 (CRT V1).

Purpose of the CRT

The purpose of the CRT is to provide efficient access to curated information about the interaction between severe weather, climate variability and climate change and a designated project's environmental, health, social and economic effects, as well as to consider how climate change may affect a project's activities and physical works.

The CRT is an Excel-based searchable database. It aims to help users answer the following questions. How have/will severe weather, climate variability, and climate change:

- alter the contextual landscape of designated projects, including their environmental, health, social and economic effects?
- influence regulatory/policy/legal conditions that may affect project needs, requirements, demands, and locations?
- impact different phases and components of designated projects, and what adaptation interventions have been or could be implemented to address these effects?
- directly, indirectly, or cumulatively impact valued components of designated projects, and what mitigation measures have been or could be implemented to reduce, offset, or avoid these adverse effects?
- affected Indigenous groups in the context of designated projects, what concerns have they raised, and what adaptation measures have been proposed to address these concerns?

CRT V1 has not been comprehensively populated. For example, content drawn from Environmental Assessment Reports is currently limited to assessments conducted for recently designated (2011- 2022) mining and nuclear power projects in Canada. Additionally, some effect areas, such as social effects and effects on Indigenous communities, remain less developed due to limited availability of resources that clearly link climate hazards, project mechanisms, and valued components. As new resources become available that support this complete linkage, future versions of the CRT may be expanded accordingly.

CRT Logic Structure

The CRT's structure is based on a conceptual framework developed to support the consideration of climate change and extreme weather events within the context of designated projects and the federal impact assessment process. Appendix A presents the full conceptual framework.

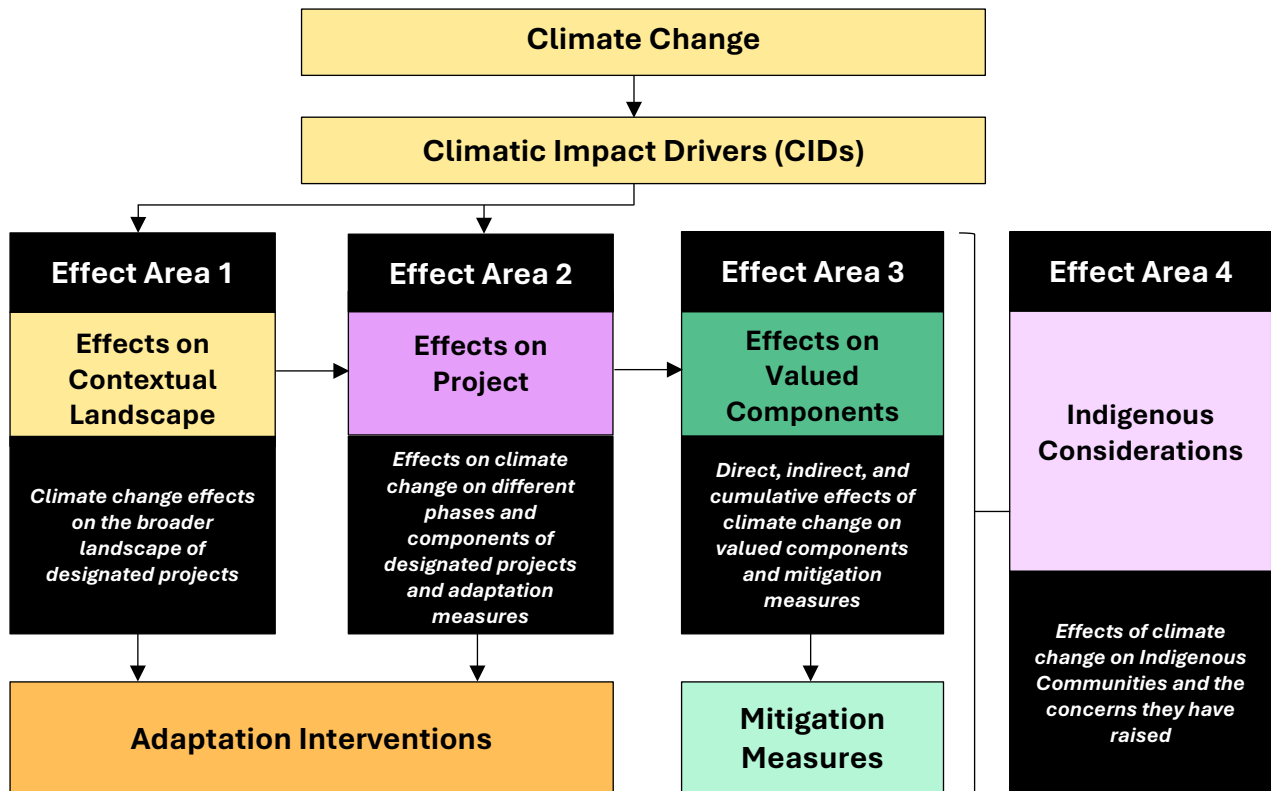


Figure 1: CRT Logic Structure

The effects areas and set of relationships shown in Figure 1 serve as the conceptual and structural framework for the CRT, including its **segmentation into four tabs** (Excel sheets): Effects on the Contextual Landscape, Effects on the Project, Effects on Valued Components, and Indigenous Considerations. Each sheet is structured to help impact assessment practitioners consider a core set of questions related to the effects of climate change and appropriate adaptation/mitigation measures. In each Effect Area, users are provided filtering options for searches by project sector, location, climatic impact driver (CID) type, landscape element, project phase, project component, valued component, and effect type. Table 1 describes the four key effect areas and the associated key questions.

Table 1: Four Key Effect Areas

Effect Area	Information Type	Questions Addressed
Effects on Contextual Landscape	Climate change effects on the broader landscape of designated projects	How has/will climate change alter the contextual landscape of designated projects?
		What are the specific environmental, health, social, economic, and regulatory/policy/legal effects of climate change that may influence project needs, requirements, demands, locations, etc.?
Effects on Project	Effects of climate change on different phases and components of designated projects and adaptation measures	What are the effects of climate change on a designated project's activities and physical works?
		What adaptation interventions have been or could be implemented to address these effects?
Effects on Valued Components	Direct, indirect and cumulative effects of climate change on valued components and mitigation measures	How has/will climate change directly/indirectly/cumulatively impact valued components?
		What mitigation measures have been or could be implemented to reduce, offset, or avoid the adverse effects of climate change on valued components?
Indigenous Considerations	Effects of climate change on Indigenous Peoples and the concerns they have raised	How are Indigenous groups affected by the interaction between climate change and a designated project's environmental, health, social and economic effects? What concerns have Indigenous Peoples raised?
		What adaptation measures have been proposed to address these concerns?

CRT Data Filtering Overview

The CRT is designed to help users filter data by selecting values from drop-down menus in the column headers to access the desired information. While some columns are consistent across all tabs, others are specific to each Effect Area. The general structure of the tabs is as follows:

- **Project Context Columns** (Project Type, Region, Province)
- **Climatic Impact Driver (CID)**
- **Effect Area Columns**
- **Effect**
- **Adaptation/Mitigation Measures**
- **Resource Information Columns** (Name, Resource Type, Date, Short Description)

The following tables outline the filtering options currently available for each Effect Area. As the database is updated, the filtering options will also be revised and expanded to reflect newly available information.

Table 2: Filtering Options for Effect Area 1 - Effects on Contextual Landscape

Project Type	Region	Province	Climatic Impact Driver	Landscape Element Type	Landscape Element Sub-Type
Mining Energy - Nuclear All	Central Atlantic Western Northern National International	Quebec	Drought	Environmental	Biodiversity
		Ontario	Erosion		Ecosystem Services
		Newfoundland and Labrador	Extreme Heat		Ecosystems and Habitats
		Nova Scotia	Flooding		Fish and Fish Habitat
		Prince Edward Island	Freshet		Migratory Birds
		New Brunswick	Heavy Precipitation		Other
		British Columbia	Hurricanes and Storms		Species at Risk
		Alberta	Ice Storms		
		Nova Scotia	Lake, River and Sea Ice	Health	Mental Health
		Manitoba	Mean Precipitation		Physical Health
		Saskatchewan	Mean Temperature		Social Well being
		Yukon	Permafrost	Social	Community Services
		Nunavut	Permafrost		Cultural Aspects
		Northwest Territories	Sea-level Rise		Customs
		National	Spring Snow Melt		Values
		International	Temperature	Economic	Employment
			Thawing Ice		Government Revenue/Spending
			Wildfires		Income
			Wind		Investments
					Local Economy
					Resources
				Regulatory/Policy/Legal	Federal/Provincial/Territorial Legislation
					Federal/Provincial/Territorial Policy
					Indigenous Rights
					International Commitments

Table 3: Filtering Options for **Effect Area 2** - Effects on Project

Project Type	Region	Province	Climatic Impact Driver	Project Phase	Project Component Type	Project Component Sub-Type
Mining Energy - Nuclear All	Central	Quebec	Drought	Construction Decommissioning & Abandonment Operation	Accessory Infrastructure	Accessory Buildings
	Atlantic	Ontario	Erosion			Roads
	Western	Newfoundland and Labrador	Extreme Heat			Railway Infrastructure
	Northern	Nova Scotia	Flooding			Structural
	National	Prince Edward Island	Freshet			Water Networks and Landing Strips
	International	New Brunswick	Heavy Precipitation		Main Infrastructure	Main Buildings
		British Columbia	Hurricanes and Storms			Storage Facilities
		Alberta	Ice Storms			Structural
		Nova Scotia	Lake, River and Sea Ice			Tailings Management Facilities
		Manitoba	Mean Precipitation			Water Management Facilities
		Saskatchewan	Mean Temperature		Utility Infrastructure	Utility Buildings
		Yukon	Permafrost			
		Nunavut	Permafrost			
		Northwest Territories	Sea-level Rise			
		National	Spring Snow Melt			
		International	Temperature			
			Thawing Ice			
			Wildfires			
			Wind			

Table 4: Filtering Options for **Effect Area 3** - Effects on Valued Components

Project Type	Region	Province	Climatic Impact Driver	Nature of Impact	Landscape Element Type	Landscape Element Sub-Type	
Mining Energy - Nuclear All	Central	Quebec	Drought	Direct	Environmental	Biodiversity	
	Atlantic	Ontario	Erosion	Indirect		Ecosystem Services	
	Western Northern National International	Newfoundland and Labrador	Extreme Heat	Cumulative		Health	Ecosystems and Habitats
		Nova Scotia	Flooding				Fish and Fish Habitat
		Prince Edward Island	Freshet				Migratory Birds
		New Brunswick	Heavy Precipitation				Physical Health
		British Columbia	Hurricanes and Storms				Air Quality
		Alberta	Ice Storms				Species at Risk
		Nova Scotia	Lake, River and Sea Ice				Mental Health
		Manitoba	Mean Precipitation		Physical Health		
		Saskatchewan	Mean Temperature		Social Well-Being		
		Yukon Nunavut Northwest Territories National International	Permafrost		Social	Community Services	
			Permafrost			Cultural Aspects	
			Sea-level Rise			Customs	
			Spring Snow Melt			Values	
			Temperature			Economic	Employment
			Thawing Ice				Government Revenue/Spending
			Wildfires				Income
		Wind	Investments				
			Local Economy				
			Resources				

Table 5: Filtering Options for Effect Area 4 - Indigenous Considerations							
Category	Project Type	Region	Province	Climatic Impact Driver	Project Phase	Element/Component Type	Landscape Element Sub-Type
Impacts on Contextual Landscape	Mining	Central	Quebec	Drought	Operation	Accessory Infrastructure	Accessory Buildings
Impacts on Project	Energy - Nuclear	Atlantic	Ontario	Erosion	NA	Main Infrastructure	Main Buildings
Impacts on Valued Components	All	Western	Newfoundland and Labrador	Extreme Heat			Tailings Management Facilities
		Northern	Nova Scotia	Flooding			Water Management Facilities
		National	Prince Edward Island	Freshet		Utility Infrastructure	Utility Buildings
		International	New Brunswick	Heavy Precipitation		Environmental	Biodiversity
			British Columbia	Hurricanes and Storms			Ecosystem Services
			Alberta	Ice Storms			Ecosystems and Habitats
			Nova Scotia	Lake, River and Sea Ice			Fish and Fish Habitat
			Manitoba	Mean Precipitation			Migratory Birds
			Saskatchewan	Mean Temperature			Other
			Yukon	Permafrost			Air Quality
			Nunavut	Permafrost			Species at Risk
			Northwest Territories	Sea-level Rise			Mental Health
			National	Spring Snow Melt			Physical Health
			International	Temperature		Health	Social Well-Being
				Thawing Ice		Social	Community Services
				Wildfires			Cultural Aspects
				Wind			Customs
							Values
						Economic	Employment
							Government Revenue/Spending
							Income
							Investments
							Local Economy
						Regulatory/Policy/Legal	Resources
							Federal/Provincial/Territorial Legislation
							Federal/Provincial/Territorial Policy
							Indigenous Rights
							International Commitments

Note: Some filtering options are mutually exclusive; selecting one option may limit the availability of others. For example, choosing “Landscape Element Type: Environmental” will restrict the available “Landscape Element Sub-Types” to categories such as biodiversity, ecosystems, or species at risk.

Appendix A: Conceptual Framework for Considering Climate Change within the Canadian Impact Assessment Process

Impacts of Climate Change on Designated Projects and Valued Components Under the Impact Assessment Act

