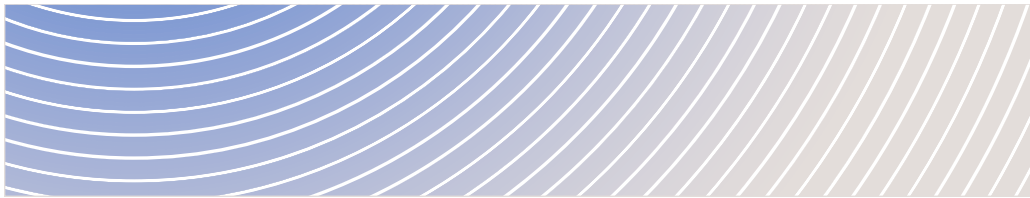


Tailored Information and Studies Guidelines



ONTARIO PUMPED STORAGE HYDROPOWER PROJECT

SEPTEMBER 1, 2026



Impact Assessment
Agency of Canada

Agence d'évaluation
d'impact du Canada

Canada

Contents

Abbreviations and definitions	iv
1 Introduction	1
1.1 Scope of the impact assessment	2
1.2 Selection of Valued Components	3
1.3 Federal permitting coordination	9
2 Project description	9
2.1 Project overview	9
2.2 Project components and activities	10
2.3 Receiving environment	11
2.4 Project purpose, need and alternatives considered	13
2.4.1 Purpose of the project	13
2.4.2 Need for the project	13
2.4.3 Alternatives to the project	13
2.4.4 Alternative means of carrying out the project	14
3 Biophysical environment	15
3.1 Geology and geological hazards	15
3.2 Soil and sediment	16
3.2.1 Baseline conditions	16
3.2.2 Effects to soil and sediment	17
3.3 Atmospheric and acoustic environment	18
3.3.1 Baseline conditions	18
3.3.2 Effects to the atmospheric and acoustic environment	20
3.4 Groundwater and surface water	22
3.4.1 Baseline conditions	22
3.4.2 Effects to groundwater and surface water	25
3.5 Terrestrial, riparian and wetlands environments	29
3.6 Terrestrial wildlife and wildlife habitat	29

3.7	Federal species at risk and their habitat	30
3.7.1	Baseline conditions.....	31
3.7.2	Effects to federal species at risk and their habitat	32
3.8	Fish and fish habitat.....	33
3.8.1	Baseline conditions for fish and fish habitat.....	33
3.8.2	Effects to fish and fish habitat.....	35
3.9	Birds and their habitat.....	36
3.9.1	Baseline conditions for birds and their habitat	37
3.9.2	Effects to birds and their habitat	38
4	Health, social and economic conditions	39
4.1	Baseline conditions for health, social and economic conditions.....	40
4.2	Effects on health, social and economic conditions.....	42
5	Indigenous Peoples	44
5.1	Indigenous physical and cultural heritage, and structures, sites, or things of significance	45
5.1.1	Baseline conditions for physical and cultural heritage, and structures, sites, or things of significance	45
5.1.2	Effects to physical and cultural heritage, and structures, sites, or things of significance.....	46
5.2	Current use of lands and resources for traditional purposes.....	47
5.2.1	Baseline conditions for current use of lands and resources for traditional purposes.....	47
5.2.2	Effects to current use of lands and resources for traditional purposes	48
5.3	Health, social and economic conditions of Indigenous Peoples.....	49
5.4	Rights of Indigenous Peoples	50
5.4.1	Baseline conditions.....	50
5.4.2	Impacts on rights of Indigenous Peoples	51
6	Contributions to inform decision making	52
6.1	Canada’s environmental obligations and climate change commitments.....	52
6.1.1	Environmental obligations.....	53
6.1.2	Climate change commitments	54

6.2 Sustainability.....	54
6.2.1 Social and economic well-being	54
6.2.2 Extent to which the likely effects of the project contribute to sustainability	55

Annex I – Generic requirements for Tailored Information and Studies

Guidelines.....	57
General information.....	57
Engagement with Indigenous groups	59
Public participation	64
Change to the project that may be caused by the environment	65
Potential malfunctions or accidents that may occur in connection with the project	66
Assessment methodology	68
Impact Statement summary	77

Annex II – Issues requiring no further information or outside the scope of the assessment 79

Abbreviations and definitions

Adverse federal effects	“Adverse effects within federal jurisdiction” and “direct or incidental adverse effects” as defined under the <i>Impact Assessment Act</i>
ATC-C	Army Training Centre – Central
COPC	Contaminant of Potential Concern
Declaration	United Nations Declaration on the Rights of Indigenous Peoples
ECCC	Environment and Climate Change Canada
GBA Plus	Gender-based Analysis Plus
GHG	Greenhouse gas
HHRA	Human Health Risk Assessment
HIA	Health Impact Assessment
IAA	<i>Impact Assessment Act</i>
IAAC	Impact Assessment Agency of Canada
IEPP	Indigenous Engagement and Partnership Plan
LSA	Local Study Area
Minister	Minister of the Environment, Climate Change and Nature
PA	Project Area

RSA Regional Study Area

SAR Species at Risk

SARA *Species at Risk Act*

SACC Strategic Assessment of Climate Change

TISG Tailored Information and Studies Guidelines

UXO Unexploded ordnance

VC Valued Component

1 Introduction

The federal impact assessment process prevents or mitigates significant adverse effects within federal jurisdiction — and significant direct or incidental adverse effects — by anticipating, identifying and assessing the effects of designated projects in order to inform decision making under the *Impact Assessment Act* (IAA). These Tailored Information and Studies Guidelines (TISG) for the Ontario Pumped Storage Hydropower Project (the project) proposed by TC Energy (the proponent) were tailored by the Impact Assessment Agency of Canada (IAAC). The TISG specify the information and studies that IAAC considers necessary for the conduct of the impact assessment based on adverse effects within federal jurisdiction and direct or incidental adverse effects (collectively referred to as adverse federal effects hereafter) that could potentially be significant.

The proponent must prepare an Impact Statement that includes the information and studies outlined in these TISG, as well as the Generic requirements for Tailored Information and Studies Guidelines in [Annex I](#).

The term “Impact Statement” refers to the information and studies that must be provided by the proponent in relation to the requirements of these TISG, including generic requirements in [Annex I](#). The information and studies may be provided as a single document or in a series of documents.

IAAC will use the proponent’s Impact Statement, along with other available information, to prepare an Impact Assessment Report.

The proponent is encouraged to engage IAAC as early as possible to clarify the requirements in the TISG and to support early resolution of issues. The proponent is also encouraged to submit interim documents for early review by IAAC such as topic-based interim technical reports which incorporate Indigenous and public engagement on the topic. A table of concordance must be provided to indicate where the information set out in these TISG has been provided. For an efficient review of submissions, IAAC may establish technical advisory groups comprised of Indigenous communities, federal authorities, provincial authorities and/or other relevant parties or experts.

Where the proponent is of the opinion that certain information is not required or cannot be provided, it should contact IAAC prior to submitting the Impact Statement to confirm whether the proponent’s rationale for excluding the information is appropriate. The rationale must also be included in the Impact Statement. The proponent should also notify IAAC of any changes made to the project relative to the Initial Project Description.

For each likely adverse federal effect, the proponent is encouraged to indicate whether the effect will be assessed by other jurisdictions and along what timelines. The proponent is also encouraged to provide information on how measures implemented or ensured by other jurisdictions would mitigate the adverse federal effects, including any specific mitigation measures that will be carried out or ensured by those jurisdictions.

As relevant, the proponent may refer to IAAC's [Practitioner's Guide to Federal Impact Assessments](#), for additional resources, including [Technical Considerations and References for Tailored Information and Studies Guidelines](#).

The proponent is directed to include mitigation measures, as applicable, noted in IAAC's [Standard mitigation measures - Streamlining the impact assessment process - Canada.ca](#)

Proponents should be aware that IAAC's guidance on the practice of the IAA and its regulations is being updated, and some guidance on the website may not reflect IAAC's current practices. Proponents remain responsible for following applicable legislation and regulations. Proponents are encouraged to engage with IAAC regarding the applicability of the guidance. For more information, please contact Nottawasaga@iaac-aeic.gc.ca.

1.1 Scope of the impact assessment

IAAC sets the scope of the assessment for the project taking into account the potential effects of the project and each of the factors listed in subsection 22(1) of the IAA. The factors in subsection 22(1) must be considered in an impact assessment, with the assessment focused on elements anticipated to be material to decision making. This scope is reflected in the selection of Valued Components set out in section [1.2 Selection of Valued Components](#) and in other requirements/direction throughout these TISG as well as in the Generic Requirements for Tailored Information and Studies Guidelines in Annex I, as applicable.

In addition, the Impact Statement must take into account, where relevant:

- any regional or strategic assessment;
- any study or plan that is conducted or prepared by a jurisdiction—or an Indigenous governing body—in respect to the region related to the project and that is provided to the proponent with respect to the project;
- any relevant assessment of the effects of the project that is conducted by or on behalf of an Indigenous governing body and that is provided to the proponent with respect to the project; and

- Indigenous Knowledge, community knowledge, as well comments received from Indigenous communities, the public, and any jurisdiction.

Where relevant, the Impact Statement must also take into account throughout the impact assessment Gender-based Analysis Plus (GBA Plus) which, in the context of an impact assessment, is an analytical tool and process that examines how sex and gender intersect with other identity factors to assess who may be disproportionately impacted by a project and how they may experience impacts differently. It helps identify the diverse experiences and needs of various population groups and informs strategies to mitigate barriers and promote equitable access to project benefits.

The TISG set out information and studies required in the proponent's Impact Statement. The TISG also set out in [Annex II](#), where IAAC will rely on information in the Initial Project Description instead of requiring information or studies from the proponent through these TISG, as well as where IAAC has determined issues are not within the scope of the impact assessment.

1.2 Selection of Valued Components

Valued Components (VCs) serve as the focal points of these TISG and of the impact assessment. IAAC selects, as VCs, the elements of the natural and human environments anticipated to be material for decision making following the impact assessment under the IAA. The assessment of effects on VCs must consider the likely effect pathways between project components or activities and the VC, with a focus on those effect pathways that are key issues.

The Impact Statement must include, at minimum, the following VCs:

Valued Component ¹ (VC) selected	Key issues
VCs for the assessment of adverse effects within federal jurisdiction, as defined under section 2 of the IAA	

¹ Information regarding the VCs identified may inform IAAC's assessment of more than one type of adverse federal effect or decision making factor, where appropriate. For example, the VC "terrestrial wildlife and wildlife habitat" may inform IAAC's assessment of both adverse changes to the environment that would occur on federal lands as well as adverse effects of an activity or a designated project carried out on federal lands.

Geology and geological hazards	Potential increase in terrain instability due to project construction and operations on karst-features.
Soil and sediment	Potential disturbance and mobilization of pre-existing contaminants (if present) during project construction.
Atmospheric and acoustic environment	Potential changes in air quality and the acoustic environment during construction, including from the disturbance of pre-existing contaminants on the Department of National Defence's Army Training Centre – Central (ATC-C).
Climate	Potential increase in GHG emissions during the construction phase and changes to carbon sequestration and storage.
Groundwater and surface water	Potential changes to groundwater and surface water quality from acid rock drainage/metal(loid) leaching, and the disturbance of pre-existing contaminants (if present). Potential changes to surface water flows and levels and to groundwater quantity and flow patterns due to project related activities, including dewatering, water management activities, overprinting of potential groundwater recharge areas, and reservoir water.
Terrestrial, riparian and wetland environments	No key issues identified.
Terrestrial wildlife and wildlife habitat	No key issues identified.
Federal species at risk and their habitat	Potential effects to Butternut trees and associated habitat during project construction.
Fish and fish habitat	Potential effects to fish and fish habitat due to changes in local hydrodynamic conditions in Georgian Bay from the intake and release of water through the inlet/outlet structure.

	Potential effects to fish and fish habitat due to substrate disturbance/resuspension of sediment in Georgian Bay during in-water construction. Potential effects to fish due to changes in water quality and temperature in Georgian Bay caused by the movement of water in and out of the upper reservoir. Potential risk of sublethal effects and/or mortality of fish due to impingement and entrainment in the lower inlet/outlet structure. Potential impacts to Lake Whitefish spawning habitat in Georgian Bay during in-water construction and operation of the inlet/outlet structure. Potential alteration or loss of small waterbodies and watercourses during the construction and operation of the reservoir, resulting in the harmful alteration, destruction, or disturbance to fish habitat.
Birds and their habitat	No key issues identified.
Health, social and economic conditions of local communities	Potential changes to air quality and noise during construction, as well as potential changes to water quality during construction and operations, which could affect human health through direct and indirect exposures. Potential impacts on local community safety and well-being due to the influx of workers during the construction phase, including increased pressure on local infrastructure and services, increased risk of harm from substance availability and increased human trafficking, sexual exploitation and increased gender-based violence.

	Potential impacts to local housing and labour market, due to the influx of workers during the construction phase, including potential changes to local businesses, employment, and housing availability and pricing.
Health, social and economic conditions of Indigenous Peoples	Potential effects to the health, social and economic conditions of the local community (above) that would be experienced disproportionately by Indigenous Peoples. Potential impacts on the health and well-being of Indigenous Peoples from environmental changes affecting water quality, resource quality and availability, and access to clean water and country foods, and other relevant social determinants of health. Potential impacts to the social and economic conditions of Indigenous Peoples from changes in access to lands and resources used for traditional purposes, affecting harvesting activities, cultural continuity and community well-being.
Indigenous Peoples' physical and cultural heritage, and structures, sites or things of historical, archaeological, paleontological or architectural significance	Potential disturbance or loss of physical and cultural heritage and structures, sites or things of historical and/or archaeological significant sites. Impacts of the project on the relationship with the land and water, including spiritual and cultural impacts, as well as to sacred, ceremonial or culturally important places, objects or things due to construction and operation of the project.
Current use of lands and resources for traditional purposes by Indigenous Peoples	Potential impacts to fishing, navigation, and harvesting due to changes in access to areas within Georgian Bay during the construction of in-water components. Impacts to the availability and quality of lands and resources due to the operation of the inlet/outlet structure in Georgian Bay.

	Cumulative impacts of existing restrictions on access to ATC-C in combination with any future restrictions caused specifically by the project.
Additional VCs for the assessment of direct or incidental adverse effects, as defined under section 2 of the IAA	
Recreational fishing and boating	Potential loss of access to nearshore waters and degradation of quality and/or quantity of resources resulting from the construction and operation of the inlet/outlet structure enabled by licences pursuant to the Dominion Water Power Act and Dominion Water Power Regulations , which authorize the construction and operation of a water power development, including the occupation and use of federal lands and waters, and the construction, maintenance, and operation of works required for water power.
Commercial fishing	Potential loss of access to nearshore waters for fishing during construction of the inlet/outlet structure, and potential changes to fish availability and quality in the area, that would result from licences pursuant to the Dominion Water Power Act and Dominion Water Power Regulations .
Additional VCs for decision-making factors under section 63 of the IAA	
Employment opportunities	The project may generate employment opportunities during the construction phase.
Ontario's future energy	The project may help address Ontario's anticipated growth in electricity demand by storing surplus energy and making it available during higher-use periods, as required, as well as by providing operational flexibility that may assist the provincial grid in adapting to changes in supply and demand conditions.
Clean energy transition	The project may support Canada and Ontario's transition to clean energy by storing surplus non-emitting electricity generation (e.g., wind, solar) for use during higher-demand periods, which may facilitate integration of renewable resources into

	the energy supply which may displace other domestic GHG emissions.
Economic benefits for Canadians	The project may provide economic benefits for Canadians and Ontarians by using domestic supply chains.
Indigenous economic participation and partnership	The project may support improvements to the economic conditions of Indigenous Peoples through opportunities for economic participation and partnership.

In focusing on information anticipated to be material to decision making under the IAA, the Impact Statement must also describe impacts on Indigenous rights².

Indigenous rights	Key issues
Adverse impacts on the ability of Indigenous Peoples to exercise their rights	Potential impacts to the exercise of rights of Indigenous Peoples, resulting from effects on lands, waters, and resources used for traditional purposes.

The proponent may select additional VCs through discussions with Indigenous communities and participants as well as in consideration of Indigenous Knowledge and community knowledge. Any additional VC should be related to adverse federal effects or IAA decision-making factors. Reasons for excluding a VC suggested by an Indigenous community should be discussed with the Indigenous community. The Impact Statement must include Indigenous communities' perspectives on the selection of VCs and a justification if a VC suggested by an Indigenous community is excluded.

VCs must be assessed following the requirements presented in these TISG, as well as the generic assessment methodology in Annex I which outlines the steps that must be applied to the assessment of each VC. When assessing the project's GHG emissions, the proponent should follow the Strategic Assessment of Climate Change (SACC) and the technical guides related to the SACC if there are any perceived deviations from the methodology set out in the [Generic requirements for Tailored Information and Studies Guidelines](#).

² Indigenous rights refers to Aboriginal and treaty rights recognized and affirmed in [section 35 of the Constitution Act, 1982](#).

1.3 Federal permitting coordination

IAAC will provide coordination of federal permits, licences or authorizations (collectively called permits) early and throughout the impact assessment process to provide:

- clarity on permitting requirements, timelines and processes through the development of detailed federal permitting plans; and
- transparency on the status and progress of permits through public reporting on the Canadian Impact Assessment Registry Internet site.

The proponent is encouraged to develop federal permit applications concurrently with the impact assessment. Collecting and providing permitting information during the impact assessment process will expedite subsequent federal decisions. Early engagement with the federal government, Indigenous communities and the public is essential to support a speedy review of federal permits.

2 Project description

2.1 Project overview

The project subject to the impact assessment is the designated physical activity (the construction, operation, decommissioning and abandonment of a new hydroelectric generating facility) and any incidental physical activity (marine access structure, marine shipping within Georgian Bay³ and the portion of the transmission line on federal lands).

The Impact Statement must:

- describe the project, timing of each phase, and total lifespan, considering the perspectives of Indigenous Peoples, the public and other participants;
- provide the geographic coordinates (i.e., longitude/latitude using international standard representation in degrees, minutes, seconds) for the centre of the main project site, as well as beginning and end points for the transmission line;
- provide an estimate of the anticipated workforce region of origin (i.e., local community, Indigenous communities, regional, out-of-province or international employees) and describe anticipated accommodation arrangements for non-local workers;

³ The geographic scope of the marine shipping activity within Georgian Bay will be determined upon receipt of further information from the proponent.

- outline the larger context for the project, including how it relates to any other planned projects; and
- provide estimated capital cost of the project (in Canadian dollars), reflecting the total costs for activities necessary to carry the project from development to operation, which may include planning and design, environmental reviews and permitting, land acquisition, purchase of equipment, and construction, as applicable.

2.2 Project components and activities

The Impact Statement must:

- describe project components and activities to be carried out during each project phase, with a focus on components and activities with the greatest potential for significant adverse federal effects and impacts on Indigenous Peoples and their rights:
 - at a minimum, include:
 - Reservoir;
 - Ring Dam;
 - Upper Inlet/Outlet Structure;
 - Powerhouse;
 - Pump Turbine Generator units;
 - Access Tunnel;
 - Water Conveyance Structures;
 - Headraces;
 - Tailraces;
 - Spillway;
 - Lower Inlet/Outlet Structure;
 - Switchyard;
 - Electrical equipment;
 - Control room;
 - Offices;
 - Access;
 - Access Roads;
 - Marine Access Structure;
 - Temporary Construction Facility;

- Staging/storage yards;
 - Potential accommodation facility;
- Transmission line on federal lands; and
- Marine shipping in Georgian Bay;
- for each project activity, describe its location, method used to carry it out, schedule (expected start date, time of year, duration and frequency), magnitude and scale;
- identify activities that involve periods of increased disturbance relevant to adverse federal effects and impacts on Indigenous Peoples and their rights; and
- identify likely effect pathways between project components and activities and VCs, as well as on impacts on Indigenous rights, in sufficient detail to support the assessment of effects on VCs and their interactions;
- include maps of the project footprint and project components, major existing infrastructure, proponent lands, leased properties or lands and any adjacent resource leases, land uses and federal lands.

2.3 Receiving environment

The Impact Statement must describe the project's receiving environment in sufficient detail to assess the effects of the project on VCs and on impacts on Indigenous rights and, where appropriate, locate on map(s), including:

- services and infrastructure in the area, including:
 - roads;
 - municipalities and administrative regions;
 - resource development projects and activities;
 - local businesses and industries; and
 - other relevant uses of land and water, notably by Indigenous Peoples;
- local and regional climate, including historical records of weather variation and summary data, with data sources, from unique weather station identifiers for:
 - monthly mean, maximum and minimum temperatures as well as precipitation;
 - typical wind speed and direction; and
 - evaporation (e.g., using the Penman, Morton or Meyer Methods) or evapotranspiration;
- marine climatology (e.g., surface temperature, ice cover), marine environment, features and uses;

- primary, secondary and tertiary watersheds;
- waterbodies and watercourses, including intermittent and ephemeral, and their location;
- drainage basins in relation to key project components, flood risk areas, wetlands, and watersheds, as well as direction of flow on topographic map(s), at appropriate scales;
- riparian areas and wetlands (shallow open waters, swamps, fens, marshes, bogs) affected by the project, including:
 - wetland class, ecological community type and conservation status;
 - wetland habitat that provides important functions for species at risk, migratory birds and species of importance to Indigenous Peoples; and
 - distribution, disturbance level and abundance, at local, regional and provincial scales;
- navigable waterways. In support of federal permitting coordination, if the project includes works that may interfere with navigation and which may require approval(s) or exemption(s) by Transport Canada under the *Canadian Navigable Waters Act*, the proponent is encouraged to provide the navigability assessment (baseline conditions) with the Impact Statement in consultation with Transport Canada and users, including Indigenous Peoples. This will allow Transport Canada to consider whether an approval or exemption under the *Canadian Navigable Waters Act* is required and to expedite any subsequent regulatory process. Where applicable, the proponent is also encouraged to include in the Impact Statement a table listing:
 - waterbody or watercourse impacted;
 - type of work proposed;
 - physical characteristics of waterbody or watercourse;
 - known or suspected past, current or future use of the waterway;
 - potentially affected waterway users and concerns regarding waterway use and access; and
 - physical impacts from proposed work upstream and downstream;
- landcover in the area, including important vegetation species, communities and/or wildlife habitat;
- ecozones, ecoregions, and ecodistricts as per the province's or Canada's Ecological Land Classification;
- environmentally sensitive areas, such as national parks, Indigenous Protected and Conserved Areas, UNESCO World Heritage Sites, ecological reserves, proposed protected areas and habitats of federally listed species at risk;
- lands subject to conservation agreements;

- drinking water sources (e.g., Indigenous and municipal systems, private wells);
- terrain, soils and geology (surface, bedrock and unconsolidated sediments), with sediment stratigraphy and geomorphology, and summarize geotechnical characteristics of areas proposed for major project components. Support with maps and cross-sections at appropriate scale(s);
- landforms associated with important wildlife habitat features, including elevated land forms, eskers, ridges, cliffs, rock outcrops, exposed bedrock, talus and karst topography caves;
- areas of bedrock outcrops that will require blasting identified on geological maps;
- Indigenous traditional territories and/or consultation areas, Treaty and/or Title lands, Reserve lands, Indigenous harvesting regions (with permission of Indigenous communities), Métis settlements;
- federal lands; and
- culturally important features of the landscape.

2.4 Project purpose, need and alternatives considered

The proponent must identify the purpose of and need for the project, as well as alternatives to the project and alternative means of carrying it out in consideration of the perspectives and suggestions of Indigenous Peoples, the public and other participants.

2.4.1 Purpose of the project

The Impact Statement must outline what the proponent intends to achieve by carrying out the project, broadly classify the project type (e.g., hydroelectric generating facility) and indicate the target market (e.g., international, domestic, local).

2.4.2 Need for the project

The Impact Statement must describe the underlying opportunity or issue that the proponent intends to seize or solve by carrying out the project, such as demand for a resource or support for a federal or provincial government objective, and provide a rationale that the project is a warranted response.

2.4.3 Alternatives to the project

The Impact Statement must:

- provide a description of the alternatives to the project that are technically and economically feasible to meet the project need and achieve the project purpose from the perspective of the proponent as well as those suggested by Indigenous communities;
- compare the alternatives based on the potential for adverse federal effects and impacts on Indigenous Peoples and their rights, including as would result from interactions between effects and from malfunctions or accidents; and
- present the rationale for selecting the proposed project over other options or for why there is no technically and economically feasible alternative to the project.

To support more efficient federal permitting, the proponent is encouraged to provide an assessment of alternatives in the Impact Statement that follows the requirements set out in Annex C of the [Detailed Permitting Plan](#) and guidance found at [Permits, agreements and exceptions for Species at Risk Act - Canada.ca](#).

2.4.4 Alternative means of carrying out the project

The Impact Statement must:

- describe alternative means of carrying out the project, determine the preferred means and justify the exclusion of alternative means, considering:
 - technical and economic feasibility of alternative means, including use of best available technologies;
 - alternative means suggested by Indigenous communities, the public or relevant parties;
 - a comparison of potential for adverse federal effects and impacts on Indigenous Peoples and their rights, including as resulting from interactions between effects and from malfunctions or accidents; and
 - adverse effects to species at risk listed under Schedule 1 of SARA and their critical habitat, and how these effects may be avoided or reduced through alternative means of carrying out the project;
- address key project elements in the alternative means analysis, including:
 - project site;
 - project component locations;
 - timing options for components and phases of the project;
 - Transmission corridor:
 - route or corridor location;
 - width of the right-of-way;
 - access to the project site;

- transportation options (e.g., marine shipping, truck);
- project design:
 - facility design (e.g., open-loop versus closed-loop);
 - switchyard design;
 - inlet/outlet structure design;
- construction alternatives for the inlet/outlet structure, including:
 - tunnel boring;
 - in-water construction;
 - drilling; and
 - prefabrication;
- energy sources to power the project or project components;
- water and wastewater management elements:
 - location of all discharge points;
 - treatment technologies and techniques to control the quality of all site water; and
 - water conservation and reuse;
- hazardous and non-hazardous waste storage, transportation and disposal;
- location, construction and crossing methods for waterbodies, watercourses, wetlands and other features;
- management of excavated materials, including those that are acid generating or leachable; and
- suspension, abandonment or decommissioning options.

3 Biophysical environment

3.1 Geology and geological hazards

The Impact Statement must:

- as needed to assess effects to geology and the risk of geological hazards:
 - describe the geomorphology and geology in the LSA, based on data from existing sources and recent field surveys, and include relevant maps and cross sections, such as;

- areas of bedrock outcrop that will require blasting;
 - areas proposed for construction of major project components;
 - bedrock and surficial geologic units, including the extent of bedrock units prone to karstification; and
 - active and inactive structural geological features;
- describe any potential site instability, such as collapse, subsidence, and surface uplift of the subsurface materials and the backfill materials;
- describe the potential for vibrations arising from military exercises, training and testing, as well as other anthropogenic activities in the area that may impact the risk of geological hazards;
- identify and describe any geological hazards that exist in the LSA, such as;
 - history of natural or induced seismic activity, fault surface rupture, coseismic uplift/subsidence;
 - evidence of active faults;
 - karst and karstic feature; and
 - history of landslides and slope erosion;
- describe the likely effect pathways to geological hazards from specific project components (temporary and permanent) and activities during all phases of the project, identifying where effects pathways are only likely to extend within federal lands, including;
 - the potential for ground and rock instability/landslides, and subsidence during and following project activities;
- describe how the project will be engineered to avoid terrain instability; describe the residual effects and, if applicable, cumulative effects to geological hazards resulting from the likely effect pathways, including karst-related hazards, distinguishing between effects on federal lands and effects on non-federal lands.

3.2 Soil and sediment

3.2.1 Baseline conditions

The Impact Statement must:

- describe the terrain, soils and sediments within the PA, LSA and RSA, including sediment and soil types and stratigraphy;

- describe and map landforms including elevated land forms, eskers, ridges, cliffs, rock outcrops, exposed bedrock, talus and other karst topography caves in areas proposed for project construction;
- provide a description and location of any erosion-sensitive soils, predicted rates of erosion, location of erosion and deposition of sediments, and areas of ground instability in the PA and LSA;
- describe the suitability of topsoil and overburden for excess soil reuse in or outside of the PA or for use in the reclamation of disturbed areas including an assessment of the acid generating potential of overburden to be used and any contaminants present;
- describe the historical and current military land use and the potential for contamination of soils and sediments, including but not limited to, metals, energetic compounds, Per- and Polyfluoroalkyl Substances, petroleum hydrocarbons, or other site-specific contaminants, as applicable; and
- describe any known or suspected soil and sediment contamination within the PA, LSA, and RSA, including but not limited to historical and current military land use, that could be re-suspended, released or otherwise disturbed as a result of the project.

The baseline information should address appropriate federal and provincial guidelines and criteria, where applicable, in relation to soil/sediment quality benchmarks. If an appropriate baseline study demonstrates that natural background exceeds the available standards or guidelines (or that none exist for the contaminants of potential concern), soil/sediment quality benchmarks from the peer-reviewed scientific literature should be used with appropriate rationale.

3.2.2 Effects to soil and sediment

The Impact Statement must:

- describe the likely effect pathways to soil and sediment from specific project components (temporary and permanent) and activities during all phases of the project, including:
 - potential for and likelihood of soil erosion (e.g., wind, water) resulting from terrain disturbance, removal of vegetation, exposure of soil and overburden, or changes to landform stability associated with project activities;
 - potential for and likelihood of re-suspending, releasing or otherwise disturbing known or suspected soil and sediment contamination (e.g., in the receiving waterbody);
 - potential for changes to soil and sediment chemistry and physical parameters;

- potential for and likelihood of new soil and sediment contamination (e.g., from release of contaminants during unexploded ordnance (UXO) clearing) along with a schematic showing the extent of current and predicted post-construction contamination which should consider all depths of soils and sediments; and
- identify where effects are only likely to extend within federal lands;
- describe the residual effects and, if applicable, cumulative effects to soil and sediment resulting from the likely effect pathways, distinguishing between effects on federal lands and effects on non-federal lands.

3.3 Atmospheric and acoustic environment

3.3.1 Baseline conditions

The Impact Statement must:

- characterize the ambient air quality in the PA, LSA and RSA, and identify existing emissions and contaminant sources;
- provide baseline ambient air concentrations for contaminants, in particular near key receptors (e.g., ATC-C infrastructure, childcare and training locations; traditional land users; residences; and wildlife), and quantify emissions sources for the following:
 - total particulate matter;
 - particulate matter less than 2.5 microns (PM_{2.5});
 - particulate matter less than 10 microns (PM₁₀);
 - carbon monoxide (CO);
 - sulphur dioxide (SO₂);
 - nitrogen dioxide (NO₂) and nitrogen oxides (NO_x);
 - ozone (O₃);
 - volatile organic compounds (VOCs), individual or an appropriate subset;
 - polycyclic aromatic compounds, including polycyclic aromatic hydrocarbons (PAHs), alkylated PAHs, PAH transformation products, including nitro and oxy-PAHs, and dibenzothiophenes;
 - metals;
 - diesel particulate matter;
 - Contaminants of Potential Concern (COPC) associated with historical military land use, including but not limited to metals, energetic compounds, PFAS, PHCs, or other site-specific contaminants, as applicable; and

- any other relevant air pollutants from mobile, stationary or fugitive sources, including contaminants produced by the combustion of diesel fuel;
- compare ambient air quality results with applicable regional, provincial, and federal criteria and standards, and apply the most conservative criteria/standard. For air pollutants with established standards, the comparison must use the same averaging period and the statistical format associated with each numerical value;
 - standards include: *Canadian Ambient Air Quality Standards* (CAAQS), relevant provincial guidelines and any other relevant air quality standards or objectives. The proponent must refer to the new CAAQS by the Canadian Council of Ministers of the Environment (CCME) for PM_{2.5}, O₃, SO₂ and NO₂ for 2025 and 2030;
- describe dust (particulate matter) deposition rates;
- if modelling is undertaken to understand baseline ambient air quality, then describe direct and indirect sources of baseline air emissions, including mobile, stationary, and fugitive, and provide an inventory of all equipment sources of baseline air emissions;
- describe baseline noise and vibration sources (natural and anthropogenic), their geographic extent and temporal variations (including day and night differences);
- provide current ambient noise levels at key receptors (e.g., ATC-C infrastructure, childcare and training locations; traditional land users; residences; and wildlife), including the results of a baseline ambient noise survey and permissible noise levels for each receptor. At the time of collecting baseline data for the study on ambient noise, where there are human receptors, the following aspects must be considered:
 - natural sounds;
 - soundscapes;
 - representativeness of data collection times (e.g., typical, quiet or noisy times);
 - expectations regarding quiet conditions in specific places or at specific times (e.g., nap schedule at the ATC-C daycare from 12:00 p.m. to 2 p.m. Monday to Friday);
 - usual sleeping hours (the default assumption is 10 p.m. to 7 a.m.); and
 - degree of baseline annoyance attributable to existing noise sources (e.g., vehicle traffic, aircraft, other industrial noise);
- justify the selection of and provide information on all noise sensitive receptors in the study area, including any foreseeable potential receptors.

3.3.2 Effects to the atmospheric and acoustic environment

The Impact Statement must:

- describe the likely effect pathways to the atmospheric and acoustic environment from specific project components (temporary and permanent) and activities during the construction phase of the project, including:
 - provide a detailed description of emission sources of air pollutants listed under section [3.3.1 Baseline conditions](#) for the construction phase. If applicable, include any contaminants from historical military land use that may be released due to construction activities;
 - use of atmospheric dispersion modelling to predict the fate of air pollutants resulting from project-related sources, and provide appropriately scaled contour map(s) plotting the predicted pollutant levels for the construction phase and the location of potential human receptors;
 - determine whether the formation of secondary pollutants (pollutants which are not directly emitted but form when other primary pollutants react in the atmosphere) resulting from the project has the potential to raise concentrations above baseline levels – if so, identify and characterize these pollutants;
 - conduct a source contribution analysis to assess the relative contributions of project and non-project emission sources on pollutant concentrations at key receptors. The analysis should be conducted for all pollutants where predicted concentrations exceed 10% of the applicable ambient air quality standard or guideline. Project emission sources should be grouped into operationally meaningful categories. Non-project contributions will be represented by ambient baseline monitoring data, supplemented by available provincial resources, with qualitative discussion of likely contributing sources and non-project emission sources on pollutant concentrations at key receptors;
 - model particulate matter emissions from unpaved road dust both with and without implementation of mitigation measures during the construction phase. Mitigation measures with varying control efficiency scenarios should be modeled such as 50% and 70% control efficiency;
 - assess air quality effects to the receiving environment through:
 - comparison with ambient standards, including the *Canadian Ambient Air Quality Standards*. The assessment should be based on the principles of “keeping clean areas clean” and continuous improvement, and in the context of air sheds and air zones with the Air Quality Management System;

- comparison with sensitive ecological receptors or VCs in the aquatic and terrestrial environment (consider effects thresholds of species in question); and
 - comparison to other appropriate existing guidelines, objectives, or standards, where relevant. This includes regional and community-based air quality guidelines;
- describe changes in ambient vibration and sound levels, including frequency and timing, during all phases of the project at potential receptor locations, including changes in the perception of non-anthropogenic sounds and predicted area of influence of project acoustic effects, including from:
 - blasting;
 - increased road traffic;
 - operation of various engines, motors, and/or equipment (e.g., drilling, tunneling);
 - tonal noise from transformers and impulsive noise from switching operations; and
 - low-frequency noise from mechanical systems associated with the underground powerhouse, such as fans, ventilation equipment, and other auxiliary systems;
- provide a vibration and sound impact assessment during all phases of the project;
- for project activities that result or may result in an increase in sound emissions:
 - quantify sound levels at appropriate distances from any project facility and/or activities and describe the timing, frequency, duration and characteristics of sound; and
 - compare predicted sound levels at receptor locations to relevant thresholds for assessing potential impacts to human health;
- provide the hourly distribution of baseline night-time sound events compared to the individual nighttime sound events expected at each receptor location, and, for the ATC-C daycare, provide the hourly distribution of baseline sound events during the nap schedule (12:00 p.m. to 2:00 p.m.) compared to individual sound events expected during this time; and
- for all effect pathways, identify where effects are only likely to extend within federal lands;
- describe the residual effects and, if applicable, cumulative effects to the atmospheric and acoustic environment resulting from the likely effect pathways, distinguishing between effects on federal lands and effects on non-federal lands.

The proponent should refer to Health Canada's [Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise](#) and [Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality](#) to ensure that it provides the information and analysis considered necessary to assess the project's impacts on human health in relation to changes to the sound environment and air quality. It is requested that the proponent complete the checklists provided in these guides (Appendix B in the noise guide and Appendix A in the air quality guide) to assist participants in verifying that the main elements of a noise or air quality impact assessment have been completed and in identifying the location of this information in the Impact Statement. These checklists will facilitate the review of the Impact Statement and will be particularly useful if analyses on these aspects are found in several sections of the Impact Statement.

The proponent should consult with the Ontario Ministry of the Environment, Conservation and Parks where an Environmental Compliance Approval under the *Environmental Protection Act* may be necessary for activities with emissions related to air, noise and/or vibration. If such an authorization is required, the proponent should identify and describe the thresholds that would need to be met, and the locations at which they need to be met, to obtain the Environmental Compliance Approval.

The proponent should also refer to the Ontario Ministry of the Environment, Conservation and Parks' [Environmental Noise Guideline – Stationary and Transportation Sources](#) for additional guidance on the proper control of sources of noise emissions to the environment.

For information requirements regarding GHG emissions, the proponent should refer to section [6.1.2 Climate change commitments](#).

3.4 Groundwater and surface water

3.4.1 Baseline conditions

The Impact Statement must:

- identify all waterbodies and watercourses likely affected, either directly or indirectly by the project, including Georgian Bay and all other waterbodies and watercourses within the LSA. Provide a table that groups waterbodies and watercourses by sub-watershed and includes the following information about each:
 - type of watercourse impacted (e.g., lotic or lentic system, lake, river, pond, temporary or permanent stream);
 - size of the waterbodies, wetlands and watercourses, as applicable (e.g., width at the ordinary high-water mark, length or area); and

- whether water flows/levels are regulated;
- as needed to assess effects to groundwater and surface water, including to inform relevant models, differentiating between conditions on federal lands and on non-federal lands, providing summary data in maps and tables, and ensuring that sampling sites are co-located for different elements (e.g., fish presence, water quality, sediment quality) and including both sites likely and unlikely (as reference) to be affected by the project, describe:
 - surface water hydrology in the LSA and RSA from on-site gauging stations, considering ice cover, freeze-thaw cycle and snow regime, flow hydrographs, water levels and seasonal baseflow for streams and rivers, as well as stage hydrographs for lakes, including quantitative characterization of baseline hydrology in a model detailing baseline surface water flows. The model results must account for inter-annual patterns including trends in flow, permanence, or ice cover, as well as seasonal, or contain an explanation of why these patterns are not material to the effects. This information must be used to characterize the quantity of water in watercourses and waterbodies, and the timing of flows and water levels to inform the assessment of effects to wetlands in section [3.5 Terrestrial, riparian and wetland environments](#) and to fish habitat in section [3.8.2 Effects to fish and fish habitat](#);
 - hydraulic conditions, such as local water velocities and levels, including measurements of water velocity profiles and characterization of water levels and flow variability in the potential perturbation zones (e.g., flow velocity, turbulence, shear stress). In Georgian Bay, also characterize local hydrodynamics, affecting nearshore circulation, sediment transport and vertical stratification in the vicinity of the project;
 - groundwater hydrogeology in the LSA, including:
 - groundwater-producing strata (coarse-grained sediments and permeable bedrock) that may be affected by the Project. Where current domestic, communal, or municipal water wells access these strata, their distance from the Project must also be mapped marked and added to the map;
 - the hydrostratigraphic units (aquifers, aquitards, aquicludes) of the hydrogeological environment in both bedrock and overburden and provide a piezometric map showing heads, groundwater elevations and the direction of groundwater flow for the various hydrostratigraphic units;
 - the structural geology of the hydrogeological environment, including major faults, fracture density, orientation with respect to groundwater flow directions, and magnitudes;
 - the hydrogeological parameterization used to classify competent bedrock, and the field data used to support this parameterization and classification;

- the groundwater flow boundaries of the hydrogeological environment, including groundwater divides and boundaries with surface water;
 - the hydraulic properties of the hydrostratigraphic units, including data on hydraulic conductivity, specific storage, transmissivity, storativity, saturated thickness, porosity, and specific yield, as applicable;
 - hydrogeological maps and cross-sections of the study area showing hydrostratigraphic units, water table elevations, potentiometric contours, interpreted groundwater flow directions, groundwater divides and areas of recharge and discharge; and
 - a conceptual model of the hydrogeological environment, including a discussion of geomorphic, hydrostratigraphic, hydrologic, climatic, and anthropogenic controls on groundwater flow;
- interactions between surface and groundwater, including a quantitative site surface water balance model detailing water intake and outflow to the environment and incorporating surface-groundwater exchanges, as well as delineation and characterization of groundwater-surface water interactions. Where multiple factors or temporal and spatial scales require consideration, a consistent multi-model or integrated modelling approach must be employed. This information must also be used to characterize aquifers and verify numerical flow modelling;
 - surface water and groundwater quality, including temporal trends and groundwater-surface water interactions, representative of seasonal and inter-annual variability and spatial representation relevant to the project components, the PA, LSA and RSA. The data should be presented in a compiled, tabulated, and graphed form using appropriately sensitive detection limits, and include relevant physicochemical parameters (e.g., temperature, pH, electrical conductivity, dissolved oxygen, turbidity, total suspended solids, total hardness, total dissolved solids, biological oxygen demand, carbonate equilibrium) and relevant chemical constituents (e.g., major and minor ions, total and dissolved trace metals / metalloids, radionuclides, total mercury, methylmercury, polycyclic aromatic compounds, persistent organic pollutants, nutrients, polycyclic aromatic hydrocarbons, petroleum hydrocarbons, per- and polyfluoroalkyl substances, energetic compounds or other site-specific contaminants, as applicable) in comparison to relevant environmental quality guidelines; and
 - a geochemical characterization program, as appropriate, for materials expected to be excavated, disturbed, or imported for use in construction, including estimates of material quantities, representative sampling and testing (e.g., acid-base accounting, short-term leach tests and kinetic testing) informed by established guidance (e.g., MEND, 2009), and an assessment of acid rock drainage, neutral drainage, and COPC leaching (e.g., short and long-term loading rates).

3.4.2 Effects to groundwater and surface water

The Impact Statement must:

- provide a preliminary site water management plan for the project's lifecycle, including:
 - water inflows and outflows from project site, including dewatering;
 - water diversion (if applicable); and
 - stormwater management;
- for each waterbody and watercourse likely affected, as well as groundwater, describe the likely effect pathways from project components or activities, including:
 - changes to groundwater quantity and flow pattern considering surface water and groundwater withdrawal and release (e.g., spatial scales, timing, quantity and quality of water withdrawn and released, flow rates and annual volumes), fluxes and the conditions under which this water is released into the receiving environment. Use a three-dimensional numerical groundwater flow model to simulate the hydrogeological system and estimate key water fluxes based on the calibrated baseline conditions model and include:
 - major project components, including reservoir, water conveyance structures, lower inlet/outlet structure, spillway, water management infrastructure,
 - predicted downgradient flow of groundwater affected by the project, with the use of figures showing groundwater piezometric contours, drawdown contours, and, if applicable, particle tracking results;
 - changes to groundwater-surface water interactions; and
 - an assessment of the sensitivity of key model outputs to hydraulic properties and climatic parameters such as recharge;
 - changes to surface water flows and levels in all watercourses and waterbodies, with the exception of Georgian Bay, considering surface water and groundwater withdrawal and release (e.g., spatial scales, timing, quantity and quality of water withdrawn and released, flow rates and annual volumes), fluxes and the conditions under which this water is released into the receiving environment. Use water balance models or hydrologic models and hydraulic models to quantify changes in surface water flows and hydraulic conditions in affected watercourses and waterbodies at a scale, resolution and level of detail relevant to support the effects assessment. As applicable, include:
 - major project components, including reservoir, water conveyance structures, lower inlet/outlet structure, spillway, water management infrastructure,

- changes to surface water flows and hydraulic conditions in the receiving environment caused by project components supported by quantitative data and quantitative characterization through modelling outputs, including:
 - flow regimes (e.g., timing and volumes) based on the hydrological model or water balance model calibrated to baseline conditions;
 - velocity regimes and flow hydraulics (e.g., localized velocity perturbations, turbulence, shear stresses, flow reversals); and
 - sediment transport and deposition patterns affecting habitat structure and water quality;
- an assessment of the sensitivity of key model outputs to hydraulic properties and climatic parameters such as recharge;
- changes to local hydrodynamic conditions in Georgian Bay. Use a hydrodynamic model, calibrated to baseline conditions to predict changes to the hydrodynamic conditions during all phases of the project and include:
 - major project components, including lower inlet/outlet structure, temporary structures, and any other components directly or indirectly affecting hydrodynamics in Georgian Bay;
 - changes to hydrodynamic conditions in Georgian Bay caused by project components during all phases of the project and supported by quantitative data and quantitative characterization through modelling outputs at adequate temporal and spatial scale, including:
 - velocity regimes and nearshore circulation (e.g., localized velocity perturbations, turbulence, shear stresses);
 - sediment transport (e.g., localized erosion, accretion) and potential morphological changes to the shoreline; and
 - vertical stratification (temperature, vertical mixing pattern);
- changes to surface water quality due to direct and indirect discharges (e.g., operation of the inlet/outlet structure, hydrostatic testing), surface erosion and sedimentation, generation and deposition of dust and particulate matter, Include physicochemical parameters (e.g., temperature, pH, salinity, dissolved oxygen, total suspended solids) and chemical constituents (e.g., major and minor ions, trace metals, radionuclides, nutrients, organic compounds, polycyclic aromatic hydrocarbons, petroleum hydrocarbons, per- and polyfluoroalkyl substances, energetic compounds or other site-specific contaminants, as applicable). Present expected changes as well as risk-based worst- and best-case scenarios. Use appropriate modelling and describe model assumptions, inputs and associated rationale;

- changes to surface water and groundwater quality resulting from acid rock drainage and/or metal(loid) leaching from all excavated, newly exposed or blasted material, including:
 - a consideration of all relevant material, including historical waste, such as waste rock, reservoir wall materials, soil and overburden, and potential construction material (i.e., excavated material, unconsolidated material);
- changes to surface water and groundwater quality due to re-suspension, release or disturbance of known or suspected soil or sediment contamination (e.g., UXO or other historical contamination on ATC-C);
- predicted temporal changes to water quality and sediment quality compared to baseline, applicable guidelines, site-specific objectives or benchmarks, and/or relevant toxicity test results (either site-specific or published):
 - indicate the source(s) of contaminants, and their transport and fate, including geographic extent, in the hydraulic environment;
 - as applicable, indicate where and when the water quality in the immediate receiving environment begins to meet water quality guidelines or baseline levels;
 - estimate quality and quantity of water and effluent streams released from the site to the receiving environment, including outflow from the inlet/outlet structure and effluent from treatment facilities, dewatering activities, seepage and surface run off from project components, and compare their quality to applicable guidelines, objectives or standards. For contaminants without regulatory release limits or water/sediment quality guidelines, compare predicted concentrations to any applicable baseline and to the lowest reasonably achievable concentrations, considering social and economic factors, the implementation of best available treatment technology economically achievable and information from relevant regulators;
 - update any models used to describe baseline conditions, and describe the contaminants associated with the project, their spatial and temporal locations, their potential flow paths (e.g., groundwater seepage pathways and how they relate to potential receptors), effects of the project on quantity of flow and how they could affect surface water, sediment and groundwater quality; and
 - describe the contaminant attenuation capacity within the hydrogeological units in the PA and use this input to assess off-site groundwater and surface water contamination. Alternatively, the proponent may conservatively assume no attenuation capacity, and describe degradation products (i.e., daughter materials) during groundwater flow;

- analyze and describe changes to surface and groundwater at a scale and resolution that allows for the application of results to the assessment of interrelated VCs, notably for fish and fish habitat and human health. Carry forward the assessment of potential changes in water quality, as required in the following sections of the TISG;
- for all effects pathways, distinguish between pathways that are only likely to extend within federal lands, only likely on non-federal lands, or likely to extend on both; and
- describe residual and, if applicable, cumulative effects to groundwater and surface water based on the likely effect pathways, distinguishing between effects on federal lands and effects on non-federal lands.

The proponent should refer to Health Canada's [Guidance for Evaluating Human Health Effects in Impact Assessment: Drinking and Recreational Water Quality](#) to ensure that it provides the information and analysis considered necessary to assess the project's effects on human health in relation to changes to water quality. The proponent should complete the checklist provided in this guide (Appendix A) to assist participants in verifying that the main elements of a water quality impact assessment have been completed and in identifying the location of this information in the Impact Statement. This checklist will facilitate the review of the Impact Statement and will be particularly useful if analyses on this aspect are found in several sections of the Impact Statement.

The proponent should consult with the Ontario Ministry of the Environment, Conservation, and Parks where an Environmental Compliance Approval under the [Environmental Protection Act](#) and a Permit to Take Water under the [Ontario Water Resources Act](#) may be necessary for sewage works and water taking and describe to Health Canada's [Guidance for Evaluating Human Health Effects in Impact Assessment: Drinking and Recreational Water Quality](#) to ensure that it provides the information and analysis considered necessary to assess the project's effects on human health in relation to changes to water quality. The proponent should complete the checklist provided in this guide (Appendix A) to assist participants in verifying that the main elements of a water quality impact assessment have been completed and in identifying the location of this information in the Impact Statement. This checklist will facilitate the review of the Impact Statement and will be particularly useful if analyses on this aspect are found in several sections of the Impact Statement.

The proponent should consult with the Ontario Ministry of the Environment, Conservation, and Parks where an Environmental Compliance Approval under the [Environmental Protection Act](#) and a Permit to Take Water under the [Ontario Water Resources Act](#) may be necessary for sewage works and water taking and describe how and to what extent this process could address adverse effects.

3.5 Terrestrial, riparian and wetlands environments

The Impact Statement must:

- describe and where available, map baseline conditions for terrestrial, riparian and wetland environments in the PA, LSA, and RSA using existing information and recent field surveys, as well as any provided Indigenous Knowledge. Identify terrestrial, wetland and riparian environments that are located on federal lands;
- describe the likely effect pathways to terrestrial, riparian and wetland environments from specific project components (temporary and permanent) and activities during all phases of the project, including;
 - describe and map the terrestrial, riparian and wetland environments that are likely to be affected by the project, including the extent of affected areas and whether they occur on federal or non-federal lands;
 - describe any hydrological or water flow changes, either permanent or temporary, that could alter moisture regimes or drainage conditions, and describe the effects on terrestrial, riparian and wetland environments on and off federal lands;
 - describe any changes to or loss of wetland function, including consideration of ecological (e.g., hydrological, biogeochemical cycling, habitat, climate functions) and socio-economic functions of wetlands; and
 - Identify where effects pathways are only likely to extend within federal lands;
- for any wetlands on federal lands, describe how effects to wetlands will be mitigated in accordance with the [*Federal Policy for Wetland Conservation*](#), including if necessary, a wetland compensation plan; and
- describe the residual effects and, if applicable, cumulative effects to terrestrial, riparian and wetland environments resulting from the likely effect pathways, distinguishing between effects on federal lands and effects on non-federal lands.

3.6 Terrestrial wildlife and wildlife habitat

The Impact Statement must:

- identify and justify the wildlife species that will serve as the focus of the effects assessment, considering that different species may be affected differently by the project and may require different mitigation;
- describe and map baseline conditions for terrestrial wildlife species selected and their habitat in the PA, LSA, and RSA using existing information and recent field surveys, as well as any provided Indigenous Knowledge. Identify terrestrial wildlife and wildlife habitat that are located on federal lands;

- describe the likely effect pathways to terrestrial wildlife species selected and their habitat from specific project components (temporary and permanent) and activities during all phases of the project, identifying where effects pathways are only likely to extend within federal lands;
- describe the standard mitigation measures or industry best practices that are necessary to sufficiently address the adverse effects to terrestrial wildlife in general and wildlife habitat; and
- describe the residual effects and, if applicable, cumulative effects to terrestrial wildlife in general and wildlife habitat resulting from the likely effect pathways, including:
 - residual effects to wildlife biodiversity, including changes to regional biodiversity and local and regional ecosystems; and
 - distinguish between effects on federal lands and effects on non-federal lands.

3.7 Federal species at risk and their habitat

The Impact Statement must address tailored requirements for each species at risk if the species or its habitat are likely to be in the project area or study areas, including those listed on Schedule 1 of SARA, or species assessed by COSEWIC as extirpated, endangered, threatened or of special concern. Specifically, the Impact Statement must consider, at minimum, each of the following species at risk:

- Butternut (Endangered);
- Western Chorus Frog, Great Lakes/St. Lawrence – Canadian Shield population (Threatened);
- Little Brown Myotis, Northern Myotis, and Tri- coloured Bat (Endangered);
- Red-headed Woodpecker (Endangered);
- Monarch (Endangered);
- American Hart's-tongue Fern (Special Concern);
- Black Ash (COSEWIC assessed as Threatened);
- Eastern Milksnake (Special Concern);
- Short-eared Owl (Special Concern);
- Snapping Turtle (Special Concern); and
- Silver-haired Bat, Hoary Bat, Eastern Red Bat (COSEWIC assessed as Endangered).

For fish that are species at risk, refer to section [3.8 Fish and fish habitat](#). For birds that are species at risk, refer to [3.9 Birds and their habitat](#). The Impact Statement must also

address any species at risk that are added to Schedule 1 or recommended by COSEWIC to be added, after these guidelines are published if the species or their habitat are likely to be in the project area or study area. It is recommended to refer to the most recent COSEWIC annual report for the list of assessed wildlife species posted on its website.

Where a permit under section 73 of the *Species at Risk Act* is likely required for the project, the proponent is encouraged to provide the information required for permitting during the impact assessment in support of an efficient and shortened permitting approval process, and refer to [Guidelines for permitting under Section 73 of Species at Risk Act](#).

3.7.1 Baseline conditions

The Impact Statement must include the following information regarding baseline conditions, and in doing so differentiate between baseline conditions on federal lands and on non-federal lands:

- For each species at risk:
 - describe abundance (including relative abundance in each habitat type), population status, and distribution;
 - describe seasonal and annual variation in abundance, distribution, and habitat use;
 - provide a map showing survey sites, species sighting records, the areas of highest concentration or areas of use;
 - describe the general life history (e.g., breeding, foraging) that may occur in the project area, or be affected by the project; and
 - identify setback distances, or other restrictions related to these species;
- provide any published studies that describe the regional importance, abundance, and distribution of species at risk, including recovery strategies or plans; and
- describe the source of the species at risk data, including survey design, sampling protocols, and data handling;
 - when using recognized standards, provide details of any modifications to the recommended methods and rationale for these modifications;
 - indicate who was consulted in the development of the baseline surveys (e.g., federal/provincial wildlife experts, specialists, and local Indigenous communities); and
 - describe how community knowledge and Indigenous Knowledge was incorporated

With respect to Butternut, the Impact Statement must also:

- identify all Butternut found within the PA and include:
 - the location of all Butternut individuals;
 - a Butternut health assessment for each Butternut, following Ontario provincial standards, including photos of the tree during the leaf on period;
 - a habitat characterization of the areas that support Butternut within the PA; and
 - assess the contribution of Butternut at the project site to the persistence of Butternut in the LSA and RSA.

The proponent should contact provincial or local government authorities to determine additional data sources and survey methods.

3.7.2 Effects to federal species at risk and their habitat

The Impact Statement must provide the following information regarding effects for each species at risk and in doing so, differentiate between effect pathways, residual effects and, if applicable, cumulative effects that are likely to occur on federal lands and on non-federal lands:

- describe the likely effect pathways to federal species at risk from specific project components (temporary and permanent) and activities during all phases of the project, including:
 - the area, biophysical attributes and location of habitat, including critical habitat, to be affected (e.g., destroyed, permanently altered, disrupted). Include direct and indirect effects due to sensory disturbances on usage patterns and migratory behaviour of species at risk;
 - describe the key indicators used to assess project effects and the sensitivity of species at risk to disturbance. Provide a rationale for their selection, including a clear connection to the indicators used to characterize baseline conditions;
 - provide analysis of potential effects separately for each species at risk, including separate analyses for each activity, component and phase of the project; and
 - identify where effects pathways are only likely on federal lands;
- describe the residual effects and, if applicable, cumulative effects that are likely to result from the project after avoidance and minimization measures have been applied, including the:
 - number of individuals killed, harmed, harassed;
 - number of residences damaged or destroyed; and
 - distinguish between effects on federal lands and effects on non-federal lands.

With respect to Butternut, the Impact Statement must:

- describe the likely effect pathways to Butternut from specific project components (temporary and permanent) and activities during all phases of the project, including:
 - the quantity and location of any Butternut that would be removed or affected during project construction;
 - increased competition from other species caused by change to tree cover that may affect Butternut; and
 - the potential introduction of invasive species, or increase in the spread and prevalence of diseases or pests; and
- describe the residual and, if applicable, cumulative effects to Butternut based on the likely effect pathways, including changes to natural regeneration within the LSA and RSA.

Further information on the SARA s.73 permitting process is available in the [Detailed Permitting Plan](#) on the CIAR Registry.

The proponent should consult with the Ontario Ministry of the Environment, Conservation, and Parks to fulfill any requirements of the [Species Conservation Act, 2025](#), that may be necessary and describe how and to what extent this process could address adverse effects.

The Government of Ontario should be considered a source of information on appropriate methodologies to predict impacts to wildlife species at risk.

3.8 Fish and fish habitat

The impact assessment must assess the effects of the project on fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act* based on likely effect pathways from project components or activities.

Where authorization(s) under section 34.4(2)(b) or 35(2)(b) of the *Fisheries Act* are likely required for the project, the proponent is encouraged to provide the information required for permitting during the impact assessment in support of an efficient and shortened permitting approval process, and refer to [Project Planning: Applying for a Fisheries Act Authorization](#) and the [Applicant's Guide Supporting the Authorizations Concerning Fish and Fish Habitat Protection Regulations](#).

3.8.1 Baseline conditions for fish and fish habitat

The Impact Statement must:

- list in a table all waterbodies and watercourses frequented by fish, or on which fish depend directly or indirectly, likely affected by the project. Include in the table:

- type and permanence (e.g., temporary, intermittent or ephemeral stream),
- size (e.g., width at the ordinary high water mark) and depths,
- ice regime, and
- whether water flows/ levels are regulated;
- for each of the waterbodies and watercourses listed above, present maps at appropriate scales using aerial imagery overlaid with relevant descriptions, as well as relevant summary tables, that depict:
 - the location and area of fish habitat,
 - the location of any known or potential barriers to fish passage, both natural and constructed including water management infrastructure or waterbody crossings (e.g., bridges, culverts, dams, weirs, beaver dam, waterfalls);
 - footprint areas of proposed works;
 - physical and biological characteristics at a level of detail commensurate with the potential for effects on fish and fish habitat, including:
 - species present, including sub-species and sub-populations, considering inter- and intra-annual and seasonal variations;
 - baseline habitat loss or disturbance (e.g., fragmentation);
 - habitat use or suitability for present species, including critical habitat and residences for species at risk, habitat function (e.g., feeding, migration, overwintering, rearing, nursery), habitat use during sensitive life stages (e.g., spawning, eggs, juveniles – such as Lake Whitefish spawning near intake/outlet reported by Indigenous communities), and how the habitat directly or indirectly support fish to carry out any of their life processes;
 - important habitat features (e.g., substrate types, riparian/aquatic vegetation, hydromorphology),
 - habitat areas with high fish abundance or diversity;
 - if applicable, flow direction;
 - existing local and regional sources of contaminants, including potential contamination on ATC-C from historical military use;
 - proximity to protected or sensitive habitat areas; and
 - presence of invasive or introduced species of concern;
- identify and describe the fish species that will serve as the focus of the effects assessment, considering that different species may be affected differently by the project and may require different mitigation. Include:
 - Lake Sturgeon (Special Concern)
 - Northern Brook Lamprey (Special Concern)

- Silver Lamprey (Special Concern)
- Deepwater Sculpin (Special Concern)
- Lake Whitefish (Indigenous/commercial importance)
- Salmon species
- Trout species
- Pike species
- Crayfish
- as needed to assess effects to the identified fish species and fish habitat, providing data in maps and tables, and ensuring that sampling sites are co-located for different elements (e.g., fish presence, water quality, sediment quality) and including both sites likely and unlikely (as reference) to be affected by the project, describe:
 - underwater soundscape and vibration, including those offshore, based on acoustic measurements, including vibration and sound sources, geographic extent, as well as spatial and temporal variations within the water column and at the seafloor;
 - the quantity of water in areas frequented by fish, based on the surface water hydrology information required in section [3.4.1 Baseline conditions](#),
 - in Georgian Bay, characterize hydrodynamics affecting nearshore circulation, sediment transport and vertical stratification in the vicinity of the project in areas frequented by fish through the year, based on the hydrodynamic characterization required in section [3.4.1 Baseline conditions](#);
 - groundwater-dependent areas frequented by fish, and aquifers related to groundwater-dependent areas frequented by fish, based on the quantitative site surface water balance model required in section [3.4.1 Baseline conditions](#); and
 - baseline tissue concentrations for contaminants in fish and other aquatic biota that contribute to bioaccumulation and/or biomagnification through the food chain, including arsenic and methylmercury, in comparison to relevant environmental quality guidelines.

3.8.2 Effects to fish and fish habitat

The Impact Statement must:

- describe the likely effect pathways to fish and fish habitat from project components or activities for each waterbody, watercourse and location likely affected by the project, during all phases of the project, including:
 - habitat alteration, disruption or destruction (temporary or permanent) relative to baseline, described in a table that outlines waterbody, area, habitat type,

sensitivity of habitat and impact (e.g., magnitude, intensity, persistence), and presented on maps at appropriate scales;

- risk to fish (including eggs) from noise and vibrations (e.g., blasting) including vibration contour mapping;
- risk of impingement or entrainment for all life stages (e.g., adult, juvenile, larval, eggs);
- changes to the alignment of waterbodies and watercourses, locations of any inlet/outlets and temporary structures, and proposed maximum pumping rates, and any resulting changes in surface water flows based on the quantitative characterization of the hydrology and in water levels and hydraulics, at a scale, resolution and level of detail relevant to assess the effects to fish and fish habitat;
- changes to surface water flows and levels and to groundwater quantity and flow patterns based on the hydrologic, hydraulic and three-dimensional numerical groundwater flow models required in section [3.4.2 Effects to groundwater and surface water](#), including assessment of changes on low-flow conditions and fish passage conditions;
- changes to local hydrodynamics in Georgian Bay (velocity regimes and nearshore circulation, sediment transport and vertical stratification) required in section [3.4.2 Effects to groundwater and surface water](#);
- changes to surface water quality, including to physicochemical parameters (e.g., temperature, pH, salinity, dissolved oxygen, total suspended solids) and chemical constituents (e.g., major and minor ions, trace metals, radionuclides, nutrients, organic compounds) based on surface water modelling required in section [3.4.2 Effects to groundwater and surface water](#);
- model tissue concentrations for contaminants, including arsenic and methylmercury, for fish and other aquatic biota contributing to bioaccumulation through the food chain compared to relevant environmental quality guidelines; and
- describe residual and, if applicable, cumulative effects to fish and fish habitat based on the likely effect pathways.

3.9 Birds and their habitat

The impact assessment must assess the effects of the project on all birds, with an emphasis on migratory birds as defined under the *Migratory Birds Convention Act, 1994* based on likely effect pathways from project components or activities.

3.9.1 Baseline conditions for birds and their habitat

The Impact Statement must:

- identify species likely present in the PA, LSA and RSA using existing information and/or recent field habitat surveys for the breeding and non-breeding season, as well as any provided Indigenous Knowledge and community knowledge;
- identify and justify the bird species (e.g., a species at risk) or groups of species such as habitat or foraging guilds (e.g., seabirds) that will be the focus of the effects assessment, considering that different species and groups of species may be affected differently by the project and may require different mitigation. Where there is uncertainty as to bird species likely present in the project areas, the selection of birds must be inclusive and representative. Birds, at a minimum, must include the following Schedule 1 SARA listed species:
 - Bank Swallow (Threatened)
 - Barn Swallow (Threatened)
 - Bobolink (Threatened)
 - Canada Warbler (Threatened)
 - Common Nighthawk (Special Concern)
 - Eastern Meadowlark (Threatened)
 - Eastern Whip-poor-will (Threatened)
 - Eastern Wood-peewee (Special Concern)
 - Evening Grosbeak (Special Concern)
 - Golden-winged Warbler (Threatened)
 - Grasshopper Sparrow, pratensis subspecies (Special Concern)
 - Olive-sided Flycatcher (Special Concern)
 - Red-headed Woodpecker (Endangered)
 - Rusty Blackbird (Special Concern)
 - Wood Thrush (Threatened)
- as needed to assess effects for each bird species or groups of species identified:
 - describe each population, including subpopulations or subspecies that may have distinct ecological requirements or migratory routes. In each description, include distribution, seasonal ranges, migration, movements, frequency and timing of occurrence, habitat association(s) and requirements for relevant life cycle stages, and sensitive periods (e.g., seasonal, time of day), including estimates of abundance or density where available;

- describe and quantify habitat based on data from existing sources and/or recent field habitat surveys and include relevant maps, differentiating between federal and non-federal lands. Maps should identify where applicable:
 - habitat survey locations;
 - high concentration areas including, breeding, feeding, wintering, movement, resting or roosting, staging and/or migrating;
 - important bird areas (e.g., bird sanctuaries), residences and critical habitat for species at risk as defined in recovery strategies;
 - rare, unique, protected or threatened habitat or habitat features (e.g., old forest, species-specific breeding habitat, eskers and other similar geological formations), and a description of how birds are expected to use that habitat year-round (e.g., winter, spring migration, breeding season, fall migration, movement corridors); and
 - project's footprint relative to the features described above, identifying temporary and permanent infrastructure.
- justify whether data from existing sources and/or recent field habitat surveys are sufficient to support the assessment of likely residual and cumulative effects on the birds identified and to determine the extent to which these effects are significant considering uncertainties and bias, as well as spatial and temporal representation. If not sufficient, conduct and include additional bird or habitat field surveys, as needed to assess effects, which may include:
 - identification of rare habitats or geological features, and critical habitat for species at risk; and
 - where risk or uncertainty related to effects on birds are moderate to high, where bird presence, population or distribution are poorly understood (e.g., flyway or stopover that could be affected to a high extent), or where appropriate mitigation measures are unknown or uncertain.

3.9.2 Effects to birds and their habitat

The Impact Statement must:

- describe the likely effect pathways to birds from specific project components (temporary and permanent) and activities during all phases of the project, considering risks of mortality (e.g., from collisions, predators), habitat changes (e.g., habitat loss), and disturbances (e.g., from light, presence of workers) and identify where effect pathways are only likely on federal lands;
- using IAAC's [standard mitigation measures](#), identify those measures that are necessary to sufficiently address the adverse effects to birds for the pathways identified and where they would be applied;

- describe what measures will be put in place to mitigate effects to birds from the operation of the reservoir during drawdown and refill events; and
- describe residual and, if applicable, cumulative effects resulting from the likely effect pathways, to:
 - migratory birds; and
 - non-migratory birds, distinguishing between effects on federal lands and on non-federal lands.

4 Health, social and economic conditions

The Impact Statement must describe the existing health, social and economic conditions as well as the likely project effects on health, social and economic conditions for local and Indigenous communities.

The Impact Statement must define local communities by identifying potentially affected people whose populations, services, infrastructure, or health, social or economic conditions could reasonably be affected by the project. This should include ATC-C occupants and members of the Canadian Armed Forces, nearby municipalities, rural communities, and other communities or populations connected to the project through residential proximity, employment, transportation routes, worker accommodations, services, resource use, recreation, or other credible effect pathways. The Impact Statement must also:

- identify communities based on credible project-effect pathways;
- consider effects extending beyond the project site or host municipality; and
- update the communities considered where engagement or assessment identifies additional affected communities.

In addition to the requirements set out in section 4, the Impact Statement must include the information required in section [5.3 Health, social and economic conditions of Indigenous Peoples](#) for Indigenous Peoples.

4.1 Baseline conditions for health, social and economic conditions

The Impact Statement must:

- describe baseline health conditions of the local and Indigenous communities that may be impacted (temporarily or permanently) by the project in sufficient detail to support the assessment. Include:
 - sufficient detail to assess relevant determinants of health, including:
 - the location of representative current and foreseeable future human receptors that could be affected by the project, including maps where possible, and identify where Indigenous use occurs, including:
 - land uses and activities (e.g., areas used for recreation, fishing, boating, and Indigenous land-based activities, which may include, but is not limited to, gathering, hunting, trapping, fishing and other traditional, cultural, and recreational activities);
 - permanent and temporary residences;
 - recreational, cultural and drinking water sources, both surface and groundwater (including springs, wells and wellhead capture zones, surface water intakes and source water protection zones), and whether they are permanent, seasonal, periodic, or temporary;
 - sensitive receptors (e.g., schools, childcare facilities, hospitals, community centres, retirement complexes, health care centres);
 - a description of drinking water sources and intakes, both surface and groundwater, including depth, stratigraphy, screened hydrostratigraphic unit and piezometric level and capacity, flow rates, approximate wellhead capture zones, and the distance from project activities;
 - the contaminants of potential concern (COPC) and their relevant baseline concentrations in ambient air, water sources (drinking, recreational, or cultural), soil and sediments, and tissues of country foods consumed by Indigenous peoples;
 - a conceptual site model, as a key outcome of the problem formulation exercise of the risk assessment, that illustrates the connections existing between the COPC, human receptors and the current and future exposure pathways. This model may be complemented by preliminary model predictions; and
 - a conceptual model of health effect pathways that illustrates the connections between the project and relevant social determinants of

health, including psychosocial factors (e.g., place-based connections linked to mental wellbeing);

- describe baseline social and economic conditions of the local and Indigenous communities that may be impacted by the project in sufficient detail to support the assessment. Include:
 - presence, location and capacity of municipal/local services (e.g., health care services, mental health services, addiction services, cultural and/or healing centres, social programs and other community services); housing, and infrastructure in the area (e.g., childcare facilities, schools, banks, hospitals, community centres, safe shelters, retirement complexes, health care centres); transportation infrastructure anticipated to be used during the construction phase; and emergency response capacity. Include maps where possible;
 - the main economic activities of local and Indigenous communities, using disaggregated data, and include information on wage labour, entrepreneurial activities and traditional economic activities, and an overview of Indigenous businesses, including any use of lands and waterbodies for economic activities;
 - local and Indigenous workforce, including existing employment rates, availability of skilled and unskilled workers in the local and regional study area, educational attainment levels, economic well-being in the local and regional study area, existing barriers to employment and participation in the labour market, and workforce development and training plans; and
 - as needed to assess effects to social and economic existing conditions, where applicable, describe:
 - community safety and cohesion, including level of support and engagement in community or neighborhood, social networks and social activities⁴;
 - demographic characteristics and major socio-cultural values and concerns;
 - relevant historical local community background; and
 - applicable history of the local community with previous developers and industry; and
- describe how cumulative effects have already affected the health, social and economic conditions of potentially affected local and Indigenous communities.

⁴ For reference, there are relevant indicators within the “social cohesion and connections” subdomain within the [Quality of Life Framework for Canada - Canada.ca](https://www.canada.ca/en/social-development/quality-of-life-framework-for-canada)

4.2 Effects on health, social and economic conditions

The Impact Statement must:

- for the local community and each Indigenous community, based on the conceptual site model and referring to relevant health-based guidance and guidelines, include:
 - a Human Health Risk Assessment (HHRA). Where exposure pathways, contaminants, or receptors are excluded from the HHRA, or where a complete HHRA is not undertaken, provide a clear scientific rationale and describe how potentially affected people's input and concerns were considered in that decision; and
 - a Health Impact Assessment (HIA), or if an HIA is not included, provide a rationale for why an HIA is not warranted;
- describe likely effect pathways to social and economic conditions, as well as environmental exposure pathways and health effect pathways, involving key biophysical and social determinants of health, including psychosocial factors, from specific project components (temporary and permanent) and activities during all phases of the project to local community and Indigenous community receptors, including:
 - exposure to contaminants in the environment (e.g., ambient air⁵, soils and sediments, country foods (traditional foods), water (drinking, recreational, and cultural) and noise and vibration);
 - where changes to the quality of water used for drinking, cultural and recreational purposes is likely, compare predicted water quality to the strictest guideline values for the following criteria: [Guidelines for Canadian Drinking Water Quality](#) (GCDWQ), or any relevant provincial water quality standards or guidelines;
 - in situations where project-related air, water or noise emissions meet local, provincial or federal guidelines, and yet concerns from local and Indigenous communities were raised regarding human health effects, provide a description of the local and Indigenous community concerns and how they were or are to be addressed;
 - changes in the availability of drinking water due to changes in groundwater quantity in drinking water wells; and

⁵ For non-threshold contaminants (e.g., PM_{2.5} and NO₂), or when the predicted concentrations approach or exceed applicable air quality guidelines and standards, it is suggested that modelled concentrations be compared to health-based air quality values, when available (e.g., WHO Global Air Quality Guidelines)

- changes in the experience and accessibility of recreational activities (e.g., boating, fishing, swimming); and
- effects associated with the influx of transient workers (in-and-out migration effects), during the construction phase of the project, including:
 - increased pressure on local infrastructure, facilities and services (e.g., emergency, health, mental health and social), including any need for expanded infrastructure, facilities and services (e.g., education and childcare facilities) due to project components or activities, including related expenditures from the proponent;
 - increased traffic volume and changes in route patterns;
 - road safety, including effects arising from a higher risk of accidents (e.g., a higher risk of impact on the road system and emergency services during the construction phase due to an increased use of roads);
 - changes in availability, accessibility, capacity and quality of health, mental health, emergency and social services, including increased response and/or wait times and differential effects on population groups identified through GBA Plus; and
 - community safety and well-being, including potential effects related to:
 - illegal and disruptive activities;
 - increased harms related to substance availability and use;
 - human trafficking, sexual exploitation and gender-based violence;
 - the safety and security of local and Indigenous women, girls and gender-diverse people;
 - changes in local economic activity (including non-commercial/trade economy);
 - cost of living and differential effects on economic well-being; and
 - changes in housing availability, housing affordability, home ownership,
- change in property values;
- changes in employment for local and Indigenous communities and associated effects to local businesses and services resulting from:
 - training programs, initiatives and measures, including any designed to improve employment opportunities, well-being and retention for Indigenous Peoples such as workforce equity, diversity and inclusion, culturally appropriate supports and safe work environments;
 - proposed apprenticeship opportunities, skills development initiatives, and partnerships with educational institutions, Indigenous organizations, unions, and local training providers;

- the ability and interest of the local labour market to meet demand and the potential for labour shortages in relevant sectors as a result of the project;
- any potential short, medium and long-term changes to the local and regional labour markets as a result of the project; and
- relevant environmental changes;
- estimated levels of economic participation for local and Indigenous communities in comparison to the total project requirements (e.g., employment, total dollar value of contracts); and
- direct or indirect change to economic hardship and opportunities, including impacts to commercial fishing within Georgian Bay and the tourism industry;
- distinguish between effects pathways that are only likely on federal lands, only likely on non-federal lands, or likely on both; and
- describe any residual and, where applicable, cumulative effects to the health, social and economic conditions on local communities that will not be described in section [5.3 Health, social and economic conditions of Indigenous Peoples](#), resulting from the identified effect pathway, distinguishing between effects on federal lands and on non-federal lands, where applicable.

5 Indigenous Peoples

The Impact Statement must demonstrate how impacts on Indigenous Peoples and their rights were considered and assessed, including:

- impacts resulting from any change to the environment on physical and cultural heritage or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance;
- impacts resulting from any change to the environment on the current use of lands and resources for traditional purposes;
- changes to the health, social or economic conditions of Indigenous Peoples; and
- impacts on Indigenous rights.

Indigenous Peoples are best placed to understand how a project may impact them. The assessment of impacts on Indigenous Peoples and their rights must be done in collaboration with Indigenous communities as outlined in Engagement with Indigenous groups in [Annex I](#). Where relevant, the proponent must collaborate with Indigenous communities to incorporate information from or about them into the assessment of all VCs (e.g., biophysical VCs).

The proponent is expected to engage with all Indigenous communities impacted by the project, as set out in the [Indigenous Engagement and Partnership Plan](#) (IEPP), and to describe the outcomes of that engagement in the Impact Statement. In addition, the results of engagement should be analyzed and presented separately for each Indigenous community. This community-specific assessment does not need to repeat the entire analysis of each VC, but should summarize and present the information relevant to that community. To the extent possible, each community-specific assessment should be done in a way that works best for that Indigenous community.

The proponent must include conclusions on the potential impacts on Indigenous Peoples and their rights for each of the Indigenous communities affected by the project. If an Indigenous community has provided their own conclusions, those conclusions must be included in the Impact Statement. In that case, the proponent is not required to provide separate conclusion and should discuss with each Indigenous community whether it is appropriate for the proponent to provide their views on those conclusions.

Where requested by Indigenous communities, parts or all of the assessments of effects on Indigenous Peoples and their rights can be combined in the community-specific assessment. For example, effects on the current use of lands and resources for traditional purposes and impacts on Indigenous rights to hunt, fish, and trap can be reported together. Indigenous communities may also identify holistic VCs that encompass multiple environmental, health, social, or economic elements. Undertaking these assessments together, when requested, will support consistent conclusions.

In all cases, the Impact Statement must demonstrate that all requirements were met.

5.1 Indigenous physical and cultural heritage, and structures, sites, or things of significance

The Impact Statement must assess and clearly distinguish the impacts of the project to physical or cultural heritage and the impacts to specific structures, sites or things of significance.

5.1.1 Baseline conditions for physical and cultural heritage, and structures, sites, or things of significance

The Impact Statement must:

- describe baseline conditions for elements of physical and cultural heritage or structures, sites, or things of significance that may be impacted by the project, including the location of these features on maps, if they have been shared by

Indigenous communities with the proponent and if the proponent has permission from the Indigenous communities for the information to be shared publicly. If required, a coarser geographic resolution can be presented; and

- describe how existing cumulative effects have already impacted physical and cultural heritage, including access restrictions to ATC-C.

5.1.2 Effects to physical and cultural heritage, and structures, sites, or things of significance

The Impact Statement must:

- describe residual and, if applicable, cumulative effects to physical and cultural heritage, and structures, sites or things of historical, archaeological, paleontological or architectural significance. Include effects to:
 - burial sites;
 - spiritual sites, including rivers and watercourses;
 - cultural and ancestral landscapes;
 - teaching areas used to transfer knowledge between generations;
 - sacred, ceremonial or culturally important places, plants, animals, objects, beings or things;
 - places with archaeological potential or artefacts;
 - historically occupied sites (e.g., within restricted areas on ATC-C);
 - elements of the environment identified by Indigenous communities as having heritage value;
 - oral histories;
 - cultural values and experiences on the land;
 - changes to the experience with physical and cultural heritage;
 - changes to the cultural value, spirituality, or importance associated with physical and cultural heritage; and
 - changes to sacred, ceremonial or culturally important places, objects or things;
- describe how impacts on Indigenous Peoples and their rights will also impact the ability of Indigenous Peoples to transmit their culture, language or Indigenous Knowledge intergenerationally, for example, through ceremonies, harvesting, teaching of stewardship laws, or a community tradition of sharing; and
- provide copies of correspondence with provincial, or Indigenous authorities responsible for heritage resources with comments on any physical and cultural heritage resource assessment.

5.2 Current use of lands and resources for traditional purposes

The Impact Statement must assess the impacts of the project to the current use of lands and resources for traditional purposes.

5.2.1 Baseline conditions for current use of lands and resources for traditional purposes

The Impact Statement must:

- describe baseline conditions for current use of lands and resources by Indigenous Peoples currently practiced outside of ATC-C, or historically practiced inside and outside of ATC-C, that may be impacted by the project in sufficient detail to support the assessment. Include a description of:
 - each species of importance to Indigenous communities, including lake whitefish, lake sturgeon, pike, rainbow trout, salmon, crayfish, black ash, cranberry, deer, wild rice, and plants and trees used as a source of medicine, species use (e.g., magnitude, timing), availability as country foods (traditional foods) or for other traditional purposes and whether their consumption has cultural importance for Indigenous communities, including medicinal uses. For fish, birds, terrestrial wildlife, species at risk, and plants, refer to the requirements in section [3.8 Fish and fish habitat](#), section [3.9 Birds and their habitat](#), section [3.6 Terrestrial wildlife and wildlife habitat](#), section [3.7 Federal species at risk and their habitat](#), and section [3.5 Terrestrial, riparian and wetland environments](#) of the TISG respectively. Where possible, identify and map sites used in the study areas or historically important sites for the collection of country foods, such as important fishing sites; and
 - existing navigable waters and their uses, navigable water users, and existing concerns regarding navigable water use and access; and
 - describe how existing cumulative effects have already impacted the current use of lands and resources for traditional purposes, including access restrictions on ATC-C.

5.2.2 Effects to current use of lands and resources for traditional purposes

The Impact Statement must:

- describe residual and, if applicable, cumulative effects on current use of lands and resources for traditional purposes. Include effects to:
 - traditional activities presently practiced outside of ATC-C, or historically practiced inside and outside of ATC-C;
 - specify the locations, frequency, duration or timing of fishing, hunting, trapping, gathering plants or medicines, access or travel routes, cultural or ceremonial activities and other traditional practices, including any avoidance of resources due to perceived quality;
 - consider access to, as well as any economic burdens of, and increased time for, travelling further to:
 - culturally important harvesting areas or resources and travel routes for conducting traditional practices (e.g., physical access to harvest-specific species, culturally important locations);
 - traditional territories, communities and reserves; and
 - locations of importance for traditional use. including camps, cabins and gathering, staging, or teaching grounds; and
 - consider efforts by Indigenous communities to restore traditional practices;
 - the quantity, distribution, and quality (including perceived quality) of resources available for harvesting and consumption of country foods (traditional foods);
 - for each species used, consider relevant changes in population, distribution, seasonal ranges, migration, movements, frequency and timing of occurrence, abundance and/or density as well as relevant habitat association(s) and sensitive periods (e.g., seasonal, time of day);
 - navigation including navigable waters for each affected waterway and likely effect pathway (in-water construction for inlet/outlet structure and marine access, etc.);
 - the use of riverbanks, travel ways, navigable waterways and waterbodies, including for social and ceremonial purposes, travel or recreation, and navigable water users;
 - the experience of being on the land and nearby waters;
 - consider any changes in air quality, noise and sensory disturbance, artificial light, visual aesthetics/landscape, including due to perceived contamination; and

- any other element identified by Indigenous communities.

5.3 Health, social and economic conditions of Indigenous Peoples

The Impact Statement must include the requirements set out in [section 4](#) in addition to the information set out in section 5.3 for Indigenous Peoples. For all pathways of effect assessed in [section 4](#), the Impact Statement must describe whether the effects would be experienced disproportionately by Indigenous Peoples.

The Impact Statement must:

- Describe baseline health, social and economic conditions of Indigenous Peoples that may be impacted by the project in sufficient detail to support the assessment. Include:
 - community profiles for each impacted Indigenous community. Use disaggregated data to reflect diverse population groups within each Indigenous community, as appropriate, and incorporate both health and demographic information. Use definitions of physical and mental health, and well-being and wellness from the perspective of each Indigenous community, and include the [Community Well-Being Index](#); and
 - health outcomes identified as of interest by Indigenous communities, as well as the biophysical and social risk and protection factors relevant to these health outcomes identified by Indigenous communities, such as the level of food security and food sovereignty within Indigenous communities;
- describe likely environmental exposure pathways and health effect pathways involving key biophysical and social determinants of health, including psychosocial factors. Include:
 - factors contributing to the resilience and overall well-being of Indigenous communities, considering:
 - disturbance and avoidance of culturally meaningful sites;
 - changes to recreational, spiritual, cultural, or ceremonial use of water, and relationship to the water;
 - traditional food security, traditional and cultural practices, and food sovereignty, including food availability, accessibility, and utilization as well as food system stability; and
 - perceived quality of country foods (traditional foods) and water for drinking, recreation and cultural use;

- risks to family and household cohesion and safety from workforce interactions with Indigenous communities, including differential impacts on diverse population groups and giving particular attention to the [National Inquiry into Missing and Murdered Indigenous Women and Girls](#) (Calls for Justice 13.1-13.5), and contributing factors (e.g., workforce housing arrangements, working conditions, workplace culture, substance misuse) which have the potential to exacerbate gender-based violence;
- changes to Indigenous communities' ability to manage or improve social and economic conditions, including in relation to engaging in traditional and other economic activities⁶; and
- describe residual and, if applicable, cumulative effects to the health, social and economic conditions of Indigenous Peoples considering that they are interrelated and together influence well-being outcomes. Provide a rationale and supportive data, including where the effects are predicted to be avoided or where they do not exceed federal standards, guidelines or descriptors following the application of mitigation measures.

5.4 Rights of Indigenous Peoples

The IAA affirms the Government of Canada's commitment to ensure respect for the rights of Indigenous Peoples of Canada recognized and affirmed by section 35 of the *Constitution Act, 1982*.

5.4.1 Baseline conditions

The Impact Statement must:

- describe the rights of Indigenous Peoples impacted by the project, including historical context and the importance of the rights to the rights-bearing communities (e.g., the connection of rights to practices, customs, beliefs, worldviews, and livelihoods);
- include information on how rights have already been impacted by cumulative effects;

⁶ Refer to the Indigenous Skills and Employment Training (ISET) Program agreement holders serving the affected area, including Anishinabek Employment and Training Services, and opportunities to leverage existing Skills and Partnership Fund (SPF) agreements, to support Indigenous employment, skills development, and labour market training initiatives associated with the project;

- document the nature and extent of the exercise of rights of Indigenous Peoples, impacted by the project, as identified by the Indigenous community(ies); and
- document how Indigenous communities were involved in the baseline characterization of their rights.

5.4.2 Impacts on rights of Indigenous Peoples

The proponent must share studies and information about the project and its potential impacts with Indigenous communities prior to assessing the impact of the project on their rights, and collaborate with Indigenous communities in assessing impacts on those rights.

The Impact Statement must:

- describe the project's residual and cumulative impacts on the rights of Indigenous Peoples and their severity from project activities on ATC-C and those occurring off ATC-C. Consider links between resources, access, and experience and include impacts to:
 - residual impacts on the exercise of rights;
 - interference with the quality and quantity of resources available for the exercise of rights (including preferred species);
 - changes to the ability to travel freely in the territory and to access areas important to the exercise of rights;
 - changes to the experience associated with the exercise of rights, including in connection to land, well-being, knowledge of the landscape, air quality, noise exposure, effects of vibrations, and safety;
 - impacts on Indigenous traditions and practices;
 - impacts on stewardship of traditional lands and resources by Indigenous communities;
 - changes to the ability of Indigenous communities to derive future economic benefits from the land or water;
 - changes to the ability to maintain an ongoing relationship with the land or water; and
 - all other elements of significance identified by Indigenous communities;
- describe solutions to concerns raised about impacts on the exercise of rights, as agreed to by Indigenous communities;
- describe how the assessments of impacts on Indigenous Peoples (including impacts on physical and cultural heritage or site, structure or things of significance, current use of lands and resources for traditional purposes, and the health, social, and economic conditions of Indigenous Peoples) were integrated into the

assessment of impacts on Indigenous rights and considered in determining residual and cumulative impacts and their severity;

- describe the methodology used and agreed to by Indigenous communities for assessing impacts on their rights, and include any Indigenous-led studies that were provided if permission has been obtained from the Indigenous community to include them; and
- where an Indigenous community has not provided its views on the impact of the project on their rights to the proponent, or where the proponent and an Indigenous community, in consultation with IAAC, agree that the Indigenous community will provide information on impacts on their rights directly to IAAC, provide an explanation.

6 Contributions to inform decision making

At the decision-making phase of the IAA, should the decision maker determine that the adverse federal effects that are likely to be caused by the project are likely to be, to some extent, significant, the decision maker will decide whether they are justified in the public interest in light of the extent to which they are significant and of the factors set out in section 63 of the IAA. This section of the TISG outlines information that would inform IAAC's analysis of certain section 63 factors.

6.1 Canada's environmental obligations and climate change commitments

IAAC, with the support of federal authorities, will analyze the extent to which the project's likely effects contribute to Canada's ability to meet its environmental obligations, as well as Canada's commitments in respect of climate change. Where the proponent is of the view that the likely effects of the project would contribute to Canada's environmental obligations and/or commitments in respect of climate change, the proponent is encouraged to substantiate this view in the Impact Statement by describing these likely effects and the extent of their contribution (e.g., net increase in biodiversity through ecosystem restoration; net GHG emission reductions through the displacement of electricity generated from fossil fuels).

6.1.1 Environmental obligations

Federal environmental obligations relevant to this project include those set out in the following instruments:

Biodiversity⁷

- [*Convention on Biological Diversity*](#) and [*Kunming-Montreal Global Biodiversity Framework*](#) and its domestic framework, [*Canada's 2030 Nature Strategy*](#), as well as legislation supporting its implementation including SARA and relevant recovery strategies and action plans developed under SARA available on the [species at risk public registry](#);
- [*Convention on Wetlands of International Importance Especially as Waterfowl Habitat \(Ramsar\)*](#), as implemented in part under the [*Federal Policy on Wetland Conservation*](#) and the [*North American Waterfowl Management Plan*](#);
- [*Convention for the Protection of Migratory Birds in the United States and Canada*](#), as implemented in part under the [*Migratory Birds Convention Act \(1994\)*](#), and supporting conservation objectives from ECCC's [bird conservation regions and strategies](#); The Impact Statement must:

The information gathered during the Planning phase suggests that the project would not contribute to meeting biodiversity-related environmental obligations due to the direct and indirect loss of habitat and increased mortality risk for birds, terrestrial wildlife, species at risk, and vegetation.

Where the proponent is of the view that the likely effects of the project contribute to Canada's biodiversity-related environmental obligations, the proponent is encouraged to:

- describe plans and commitments that contribute to Canada's biodiversity-related environmental obligations;
- describe and, where possible, quantify likely changes in biodiversity resulting from the project referring to relevant guidance such as the [*Convention on Biological Diversity's Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment*](#),
- describe whether, applying the mitigation hierarchy, the project would result in no net loss or in net positive impacts on biodiversity; and
- describe whether and how the project's likely effects will contribute to the targets identified in [*Canada's 2030 Nature Strategy*](#) such as Target 2 (ecosystem

⁷ The Convention on Biological Diversity defines biological diversity, or biodiversity, as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."

restoration), Target 3 (protected and conserved areas), Target 4 (species recovery), Target 6 (invasive alien species), Target 7 (pollution and biodiversity, focusing on chemicals and air pollutants), Target 11 (ecosystem services and functions), Target 14 (mainstreaming of biodiversity values), Target 21 (knowledge sharing), and Target 22 (inclusion of Indigenous Peoples, women/girls, youth/children, persons with disabilities, and environmental human rights defenders in decision making).

6.1.2 Climate change commitments

Where the proponent is of the view that the likely effects of the project contribute to Canada's climate change commitments, the proponent is encouraged to describe its plans and commitments accordingly.

Greenhouse gases emissions

The proponent must assess the project's GHG emissions following the [Strategic Assessment of Climate Change](#) (SACC) and the technical guides related to the SACC, developed by ECCC, including the [Guidance on quantification of net GHG emissions, impact on carbon sinks, mitigation measures, net-zero plan and upstream GHG assessment](#). At minimum, the proponent is required to provide the information as it relates to all project components and activities that are carried out on federal lands, including the reservoir, powerhouse, water conveyance structures and switchyard, as well as portions of the access, temporary construction facility, and transmission connection. The proponent is encouraged to keep apprised of updates to the SACC and related technical guides published by ECCC.

6.2 Sustainability

Sustainability is the ability to protect the environment, contribute to the social and economic well-being of the people of Canada and preserve their health in a manner that benefits present and future generations. Information throughout the TISG can be used to support the analysis of the extent to which the likely effects of the project contribute to sustainability.

6.2.1 Social and economic well-being

Where the proponent is of the view that the likely effects of the project contribute to sustainability, the proponent is encouraged to analyze the project's effects on the well-being of potentially affected populations, in addition to analyzing the well-being of Indigenous communities following requirements in the Indigenous Peoples section of the TISG. Where information in this section is also relevant to another section of the TISG

(e.g., Health, social and economic conditions) this information can be submitted as one package. The proponent is encouraged to include in its Impact Statement a description of:

- likely contributions of the project to components of the [Community Well-Being Index](#) (education, labour force activity, income and/or housing) identified as of importance through public consultations;
- workforce and economic development opportunities informed by local and regional economic activities and workforce capacity, including:
 - opportunities for employment. Include the anticipated number and timeline of full-time and part-time positions using the National Occupational Classification system, as well as skill and education levels required for the positions;
 - anticipated workforce region of origin (i.e., local, regional, out-of-province or international employees);
 - investment in training opportunities;
 - anticipated work scheduling for construction and operation;
 - accommodation and lodging requirements for the workforce during each project phase;
 - workplace policies and programs such as those related to hiring and employment, codes of conduct, workplace safety, and cultural training; and
 - employee assistance programs and benefits programs;
- likely effects of the project on the local and regional infrastructure and services and their capacity;
- economic benefits for Canadians, including Gross Domestic Product growth, tax revenue, as well as indirect benefits such as investments in the development and adoption of clean technologies and growth of innovative Canadian firms, clusters, and supply chains (e.g., by relying on Canadian supply chains for project construction and operations); and
- other benefits for Canadians, including providing energy storage solutions necessary to support Ontario's future electricity demand and transition to an emission free system.

6.2.2 Extent to which the likely effects of the project contribute to sustainability

The Impact Statement must:

- provide an analysis of the extent to which the project's likely positive effects and adverse federal effects contribute to sustainability according to the following steps:

- identify the VCs from section [1.2 Selection of Valued Components](#) and any additional key issues relevant to the sustainability analysis, informed by Indigenous Knowledge and the project context including employment opportunities during construction, Ontario's future energy, clean energy transition, economic benefits for Canadians, and Indigenous economic participation and partnership;
- describe the connections between the VCs identified for the sustainability analysis;
- consider the benefits and costs to the environmental, health, social and economic well-being of present and future generations; and
- describe the balance of positive effects and adverse federal effects on the VCs; and
- provide a conclusion on the extent to which the project's effects contribute to sustainability from no contribution to low, moderate, or high contribution.

Annex I – Generic requirements for Tailored Information and Studies Guidelines

This annex sets out the generic requirements that the proponent must follow when preparing their Impact Statement. It acts in addition to the project-specific requirements outlined in the rest of this document and must be fulfilled unless otherwise indicated.

IAAC's guidance on the practice of the IAA and its regulations is being updated, and the current versions of the guidance, referred to in this document, may not reflect IAAC's current practices. Proponents remain responsible for following applicable legislation and regulations. Proponents are encouraged to engage with IAAC regarding the applicability of the guidance. For more information, please contact Nottawasaga@iaac-aeic.gc.ca.

At the time of publishing, potential changes to the IAA are proposed by the Government of Canada in the [Getting Major Project Built](#) discussion paper.

General information

The Impact Statement must provide the following information:

- name(s) of the proponent(s) and, where applicable, of the legal entity(ies) that would develop, manage and operate the project;
- contact information for proponent representatives for the project (e.g., name, address, phone, email);
- overview of corporate structure, including roles and responsibilities of key personnel;
- information on individuals that have prepared the information or studies and their qualification as demonstrated by formal education, training or certification, experience, or credibility or community recognition as Indigenous Knowledge holders. Where possible, the proponent should use experts who are members of a professional body or recognized association. Indigenous Knowledge holders should be identified in accordance with any community-specific engagement protocols and procedures;
- information on how it ensured scientific integrity in the preparation of the Impact Statement, including by following existing standards and best practices for the responsible conduct of scientific research as well as by declaring and managing any

real or perceived conflict of interest for individuals involved in preparing the Impact Statement; and

- if an Indigenous community has agreed to the proponent describing or summarizing Indigenous Knowledge in the Impact Statement, information on how the Indigenous Knowledge described by proponents has been validated by the Indigenous community.

The Impact Statement must identify the regulatory framework relevant to the project such as:

- any federal decision that would permit the carrying out – in whole or in part – of the project, including any financial support that federal authorities are, or may be, providing to the project;
- legislative or regulatory requirements – including related to Indigenous consultations and public engagement – that are applicable to the project at the federal, provincial, regional and municipal levels or from any body, including a co-management body, established under a land claim agreement referred to in section 35 of the *Constitution Act, 1982*, or from an Indigenous governing body;
- government policies, resource management plans, planning or study initiatives relevant to the project and/or its impact assessment, including regional or strategic assessments, and their implications;
- treaty, self-government, land claims or other agreements between federal or provincial governments and Indigenous communities that are pertinent to the project and/or its impact assessment;
- relevant land use plans, land zoning, or community plans;
- information on land lease agreement or land tenure, when applicable; and
- municipal, regional, provincial and/or national objectives, standards or guidelines, by-laws or ordinances that have been used by the proponent to assist in the assessment of effects on VCs.

The Impact Statement must demonstrate that relevant ethical guidelines and cultural protocols governing data collection and confidentiality have been followed such as:

- to protect personal information, including for disaggregated data from small or unique populations; and
- established standards for the management of Indigenous data or standards adopted by an Indigenous community, including obtaining permission from Indigenous communities before including information from or about them.

In terms of format and accessibility, the Impact Statement must:

- summarize the documents that served as key references and are not otherwise publicly accessible, and, where possible, append them to the Impact Statement; and
- include all information in a machine-readable, accessible format. Where information is provided as a map in the Impact Statement, the proponent must provide corresponding electronic geospatial data file(s). IAAC will make the geospatial data files available to the public under the terms of the [Open Government Licence – Canada](#). Geospatial data files must follow IAAC’s [Guidance on submitting geospatial data](#). In addition, the proponent should be prepared to provide data on request, including surveys, analyses, methods, modelling, and results in well-documented data files, including geoenabled format where available.

Engagement with Indigenous groups

The proponent must engage with Indigenous Peoples early and throughout the impact assessment process to understand potential impacts of the project on Indigenous Peoples and their rights, including cumulative effects, and to incorporate Indigenous Knowledge. Engagement must be carried out in good faith in a manner that is attentive to the concerns of Indigenous Peoples, committed to producing mutually beneficial outcomes and recognizing the wide diversity of Indigenous Peoples. The project should be designed to minimize adverse effects and to maximize positive impacts on Indigenous Peoples and their rights.

The proponent’s engagement efforts should be consistent with the Government of Canada’s commitment to implement the United Nations Declaration on the Rights of Indigenous Peoples (the Declaration) as a comprehensive international human rights instrument and Canada’s roadmap for reconciliation. The Declaration emphasizes the importance of recognizing and upholding the rights of Indigenous Peoples and ensuring that there is effective and meaningful participation of Indigenous communities in decisions that affect them, their communities and territories. The Declaration also emphasizes the need to work together in partnership and respect, as articulated through the principle of free, prior and informed consent. This principle reflects working together in good faith on decisions that impact Indigenous Peoples, with the intention to achieve consensus.

Engagement should also be consistent with jurisprudence and best practices in respect of implementing the common law duty to consult. The IEPP identifies Indigenous communities that the Crown will consult with to understand the concerns and potential impacts of the project on their exercise of potential or established Aboriginal or Treaty rights and, where appropriate, make accommodations. The degree of engagement with each community will vary and in general, will be proportionate to the evidence provided by Indigenous communities regarding potential pathways of impact from the project on

Aboriginal or Treaty rights. Engagement is also conducted for other purposes, including as an opportunity to learn about and further explore Indigenous communities' interests in a project, or to understand other potential project effects not directly related to the exercise of Aboriginal or Treaty rights.

Engagement with Indigenous communities must involve ongoing information sharing and collaboration between the proponent and Indigenous communities to contribute to the development and validation of conclusions and assessment findings related to potential impacts and effect pathways to Indigenous Peoples and impacts on the rights of Indigenous Peoples. The results of any engagement with each Indigenous community must be presented in the Impact Statement, and, as best as possible, convey the perspective of the Indigenous communities being engaged. The record of engagement and inclusion of Indigenous Knowledge in the Impact Statement should demonstrate that the proponent sought to build consensus and obtained the agreement from specific Indigenous communities regarding information specifically pertaining to those Indigenous communities that is presented in the Impact Statement.

The proponent must:

- engage with Indigenous communities identified in the IEPP. The proponent's level of engagement with each Indigenous community may differ depending on the severity of impacts on the Indigenous community and their rights. Determination of the proponent's level of engagement and the corresponding opportunities offered to each impacted Indigenous community as part of the impact assessment process should be determined through discussion with Indigenous communities;

Share information

- share project information with Indigenous communities early, frequently, and transparently. Information should be shared in formats requested by the communities to ensure it is accessible and understandable;
- if communities decline participation or do not respond, continue sharing information unless requested otherwise;

Collaborate

- collaborate with Indigenous communities in completing the Impact Statement;
- engage with Indigenous communities to understand and discuss perspectives and seek agreement on the nature of impacts on Indigenous Peoples and their rights;
- seek input from Indigenous communities on criteria and benchmarks for describing those impacts;

- engage with Indigenous communities to identify appropriate ways to address or mitigate those impacts;
- foster meaningful dialogue with the full participation of diverse population groups (e.g., Elders, women, youth, gender diverse and two-spirit peoples) to ensure that GBA Plus is integrated into the assessment process and to identify strategies that mitigate adverse impacts and expand benefits to diverse populations groups;

Report

- present the results of engagement with each Indigenous community in the Impact Statement, and convey their perspectives;

Validate

- ensure Indigenous communities have the opportunity to review and comment on information, and incorporate their comments in the Impact Statement; and

Support

- support the participation of Indigenous communities in the preparation of the Impact Statement. This support could include funding for studies conducted by impacted Indigenous communities.

IAAC notes that not all Indigenous communities may be willing to collaborate with the proponent, therefore the proponent must demonstrate that they have made best efforts at collaboration, and provide IAAC with an explanation regarding circumstances where collaboration was not possible. The proponent should continue to share information and analyses with the Indigenous communities, to use publicly available sources of information to support the assessment, and to document their efforts in that respect.

Indigenous Knowledge considerations

Indigenous Knowledge is holistic and should be brought together on equitable footing with scientific or technical information. Indigenous Knowledge should be collected and conveyed in a culturally appropriate manner that follows Indigenous methodology and captures the context in which it was provided, and informs all aspects of the impact assessment. Indigenous Peoples have ownership of their Indigenous Knowledge.

The Government of Canada recognizes that Indigenous Peoples refer to their knowledge in different ways, characteristic of their unique languages. Within the context of the TISG, the term Indigenous Knowledge is used to refer to all Indigenous ways of knowing. The proponent is encouraged to respect the terminology preferences of the Indigenous communities involved in the assessment.

Proponents must align with IAAC's guidance document [Indigenous Knowledge under the Impact Assessment Act: Procedures for Working with Indigenous Communities](#).

Indigenous Knowledge should be incorporated throughout the Impact Statement, including in group-specific sections and wherever Indigenous Knowledge has informed the assessment of VCs. Where Indigenous Knowledge is provided, the Impact Statement must:

- reflect that community-specific engagement protocols and procedures around Indigenous Knowledge in assessment processes are understood, respected and implemented;
- indicate where Indigenous Knowledge has been incorporated and how it was considered. Information should be specific to the individual Indigenous communities involved in the assessment and describe contextual information about the members within an Indigenous community (e.g., women, men, two-spirit peoples, Elders and youth); and
- indicate where Indigenous Knowledge that was provided was not included in the assessment and provide a rationale. Where findings differ between Indigenous Knowledge and scientific or technical studies, the proponent must clearly present how both were considered in the Impact Statement.

Indigenous Knowledge provided in confidence must be protected in alignment with IAAC's guidance on [Protecting Confidential Indigenous Knowledge under the Impact Assessment Act](#).

Record of engagement

The Impact Statement must provide a record of engagement that describes the proponent's efforts to seek the views of each impacted Indigenous community, including:

Who was engaged

- the list of Indigenous communities with whom the proponent engaged or attempted to engage, with a description of engagement activities and efforts with each community, including dates, means and results;
- the list of Indigenous communities who wished to be engaged but were not engaged, with reasons for the omission;
- details of efforts to engage diverse population groups in culturally appropriate ways to support the collection of information needed for the GBA Plus;

How Indigenous communities were engaged

- the perspectives of each Indigenous community about how they wish to be engaged and how those perspectives informed engagement;
- a description of how information was communicated with each community based on preferred methods for receiving information and any solutions implemented for people and locations where technological resources are limited or language barriers exist (e.g., translation of documents or summaries in Indigenous languages);
- a description of how the capacity needs of Indigenous communities were considered and timelines adequately communicated to ensure Indigenous communities had the ability to gain understanding of, and contribute to, information in the Impact Statement;
- a description of the proponent's progress in seeking free, prior, and informed consent from Indigenous communities, as identified by the Indigenous communities themselves, where Indigenous communities have agreed to include this information in the Impact Statement;
- a description of how Indigenous communities were provided an opportunity to evaluate the project's adverse impacts on their members, communities, activities and rights, as identified by them;

Validation

- a description of how Indigenous communities reviewed draft sections of the Impact Statement, how the proponent sought to build consensus about the information contained in the Impact Statement, and how any disagreements were addressed;

Policies and protocols

- any agreements pertaining to engagement;
- the proponent's Indigenous engagement policies related to the collection of Indigenous Knowledge and traditional land use information;
- where applicable, a copy of each group-specific engagement plan developed collaboratively by the Indigenous community and the proponent, or a rationale for using a single plan;
- the list of consultation or engagement protocols adopted by each Indigenous community, with written copies, if available;

Studies and expertise

- where applicable, a description of Indigenous-led studies or assessments provided to the proponent and a summary of their scope, objectives and timelines; and

- any proponent plans and commitments to continue to work with, and seek the knowledge and expertise of, Indigenous Peoples throughout the lifecycle of the project, should the project proceed.

Analysis and response to questions, comments and issues raised

The proponent is encouraged to work with Indigenous communities who demonstrate an interest in drafting sections of the Impact Statement that concern them. Where applicable, sections of the Impact Statement prepared by Indigenous communities must be clearly identified. Where the proponent's conclusions are different from those of Indigenous communities, it must be clearly documented with a rationale.

The proponent must:

- detail the main questions, comments and issues raised by each Indigenous community during engagement activities, and describe the proponent's responses, including how matters have been addressed in the Impact Statement or will be addressed in the future;
- indicate where and how Indigenous Peoples' knowledge, perspectives and values were considered and contributed to decisions regarding the project or its assessment;
- consider and incorporate spiritual practices, cultural beliefs, laws and norms in the assessment, including whether the project would be inconsistent with Indigenous laws and norms; and
- describe the type of information received from Indigenous communities (e.g., Indigenous Knowledge, data).

Public participation

The proponent must engage with the public (e.g., local communities, stakeholders). Engagement activities should be inclusive and ensure that interested members of the public have an opportunity to share their views, with a particular attention to individuals and communities affected by the project, and consideration for the official language needs of the people being engaged.

Summary of public engagement activities

The Impact Statement must describe the proponent's public engagement activities regarding the project, including:

- efforts made to distribute project information and materials;
- where and how consultations were held;
- the persons, organizations and diverse population groups consulted; and
- efforts made to collect and incorporate community knowledge and to engage diverse population groups in support of the GBA Plus.

Analysis and response to questions, comments and issues raised

The Impact Statement must:

- provide a summary of key issues which were raised through engagement with the public, including related to the adverse federal effects of the project and relevant disproportionate effects on diverse population groups, and how they were addressed in the Impact Statement or a rationale where they have not;
- describe how questions and comments raised by the public influenced the design of the project, mitigation measures or the follow-up program; and
- provide details and commitments regarding how the public will be kept involved should the project proceed, such as public involvement in the follow-up program, including monitoring.

Change to the project that may be caused by the environment

The Impact Statement must:

- describe how environmental conditions, including natural disturbance regimes (e.g., fire, floods, droughts, pests) and natural hazards (e.g., landslide/terrain hazards, severe or extreme weather conditions), could adversely affect the project. This would include credible external events for which the resulting effects on VCs could be major without careful management, considering different probability patterns (e.g., 5-year flood versus 100-year flood) and range of potential future climate scenarios;
- describe known and relevant trends in meteorological events, weather patterns or physical changes in the environment that are expected to result from climate change over the life of the project;
- describe the climate data, projections and related information used to identify expected trends due to climate change. Incorporate this information into baseline conditions, as relevant, as well as into the assessment of effects to VCs where they

could be contributing or complicating factors for malfunctions or accidents (e.g., increased risk of forest fires);

- identify any areas of potential wind or water erosion;
- as applicable, describe the effects seismic events would have on facilities and specify the soil movement parameters that will be used with the probability of occurrence (e.g., 2% in 50 years) and the best practice codes and guides that are or will be used (e.g., National Building Code of Canada 2020, CAN/CSA-Z662 standard); and
- provide details of planning, design and construction strategies intended to minimize adverse effects of the environment on the project. Include a description of the project's climate resilience and how the impacts of climate change have been integrated into the project design and planning throughout the life of the project.

Potential malfunctions or accidents that may occur in connection with the project

Major effects could be caused by the failure of certain works resulting from malfunctions (i.e., works do not operate as intended) or from accidents (i.e., human error), including in cases where events resulting from effects of the environment on the project are a contributing or complicating factor (e.g., flooding, earthquake, landslide, forest fire). Malfunctions or accidents that may occur in connection with the project must be described (even if unlikely to occur) and, where relevant, their effects on each VC must be assessed. For projects that include marine shipping or navigation, the proponent is encouraged to review the Navigation Safety Assessment Process voluntary [National Guidelines](#) and work collaboratively with IAAC, Transport Canada and the Canadian Coast Guard to consider the merit for integrating the Navigation Safety Assessment Process studies within the Impact Statement.

The Impact Statement must:

- identify potential malfunctions or accidents and their likelihood, at each project phase, considering the design and lifespan of project components, complicating factors such as weather or external events, and the potential for vandalism, sabotage or other malicious acts;
- describe the methodology used to identify potential malfunctions or accidents and their likelihood, including definitions for classifications of likelihood, consequence and risk (e.g., information sources, recognized risk assessment methodology, professional expertise, similar project, participants' input);
- describe for each identified malfunction or accident, including worst-case scenarios and lower-consequence scenarios:

- potential consequences focusing on adverse federal effects and their effect pathways. The proponent must incorporate these effects into the effect assessment for each VC and for impacts on Indigenous Peoples and their rights, as relevant,
- failure mode(s),
- quantity, mechanism, rate, form and characteristic of contaminants, emissions and other materials released or discharged into the environment,
- influence of local and regional terrain, topography and weather conditions (e.g., difficult access for interventions),
- as applicable, modelling for any contaminants spilled or released indirectly into water or air,
- locations of sensitive receptors (e.g., humans, fish and fish habitat),
- timing related to sensitive receptors (e.g., migration and nesting periods of migratory birds, spawning periods for fish, hunting season), and
- impact on critical infrastructure (e.g., ability and capacity of drinking water treatment plants or facilities to treat water sources affected by accidental releases from the project);
- provide environmental sensitivity mapping that identifies site-specific conditions and sensitive receptors adjacent to project activities, including shores, streams and wetlands frequented by fish and/or migratory birds, and likely routes to them. Shoreline classification surveys and mapping must be conducted along major waterways where large spills are possible;
- describe safeguards to avoid and prevent malfunctions or accidents, including project design choices and operational considerations such as engineering, monitoring and management systems, safety and risk reduction standards; and
- describe the emergency response to the identified malfunctions or accidents to minimize their potential consequences including:
 - emergency preparedness, response systems, arrangements, plans and/or coordination with the responsible response organizations,
 - the role of the proponent in the response,
 - response strategies and any integration of response operations into an incident management system (for example, the Response Command System, Incident Command System),
 - emergency response training and exercise programs, including participation of impacted Indigenous communities, and
 - emergency communication plans that would provide emergency instructions to surrounding communities, including Indigenous communities.

Assessment methodology

The assessment methodology below outlines the steps that must be applied to the assessment of each VC identified in the project-specific TISG unless the project-specific TISG indicate otherwise. The assessment should be based on likely effect pathways from specific project components or activities to the VC, with key issues assessed in-depth and applying the precautionary principle where there is uncertainty. The proponent is encouraged to leverage existing information as well as the requirements and the means (e.g., regulatory frameworks) of other jurisdictions in assessing and mitigating effects on VCs.

Spatial and temporal boundaries

Appropriate spatial and temporal boundaries must be established to describe the baseline conditions and to assess likely effects on each VC and on Indigenous rights.

Spatial boundaries

The Impact Statement must:

- describe the PA, defined as the project footprint including all temporary and permanent areas associated with the project, and alternatives considered;
- describe the relevant spatial boundaries for each VC and for Indigenous rights and provide a rationale, considering:
 - the LSA, defined as the area beyond the project footprint where project effects or impacts may extend,
 - the RSA, defined as the larger region delineated by ecological, social, economic or other appropriate boundaries, including where cumulative effects may occur, and that may extend beyond Canada's jurisdiction;
 - the location of potential receptors, including any relevant movement pattern,
 - connections between VCs and between VCs and Indigenous rights,
 - Indigenous Knowledge, community knowledge, and scientific evidence, and
 - geographic extent of effects of past, existing and reasonably foreseeable projects and activities;
- show the spatial boundaries on maps to clearly illustrate the predicted geographic extent of changes to the environment as visual tools to support engagement and consultation with the public and Indigenous communities (i.e., zone of influence maps with defined boundaries); and

- identify where spatial boundaries may extend to areas that are on federal lands, in a province other than the one where the project is being carried out, and outside Canada.

Temporal boundaries

The Impact Statement must:

- describe the temporal boundaries for each VC and provide a rationale for each boundary, considering:
 - schedule of all phases of the project,
 - temporal extent of effects from the project and of impacts on Indigenous Peoples and their rights
 - past conditions and historical context,
 - Indigenous Knowledge, community knowledge and scientific evidence,
 - timing of past, existing and reasonably foreseeable projects and activities and of their effects, and
 - boundaries will generally be larger for cumulative effects, and may extend beyond the lifecycle of the project.

Baseline conditions

Baseline conditions are the existing conditions prior to the project, including how historical, past or existing projects and activities have already affected the conditions, and must be established in a manner and at a level of detail relevant to predict the likely effects of the project on each VC.

For baseline conditions of each VC, the Impact Statement must:

- describe existing baseline conditions and connections among VCs to support reliable analyses, estimates, extrapolations and/or predictions possible;
- describe changes in the baseline conditions that are likely to occur in the future, if the project were not carried out, including future changes due to climate change, or specify if changes are not likely;
- describe data sources and data collection methods, including the use of existing or historical information and any sampling, survey and research protocols, modelling methods, software used, any assumptions and any statistical estimates of predicted value and variance;
- show that the data sources used are representative of conditions within the established spatial and temporal boundaries and account for natural variability,

especially if surrogate data from representative sites are used rather than specific measurements at the project site;

- where GBA Plus is applied, show how disaggregated data by relevant various population groups (e.g., gender, age, location) have been used;
- indicate where baseline data gaps or uncertainty in baseline conditions exist and any steps taken to address these;
- describe how Indigenous Knowledge, community knowledge and scientific evidence were considered in determining baseline conditions;
- where the VC includes a SAR that is listed under Schedule 1 of SARA that is likely to be affected by the project:
 - provide the common and scientific name of the species and, if applicable, its status on Schedule 1 of SARA, and availability of a recovery strategy, action plan or management plan,
 - provide information and/or mapping at an appropriate scale for species presence and critical areas such as residences, movement corridors, areas of highest concentration, identified or proposed critical habitat and/or recovery habitat. If applicable, differentiate between federal and non-federal lands,
 - identify critical periods (e.g., denning, rutting, spawning, calving, breeding, roosting), and
 - describe applicable threats and conservation goals outlined in the recovery strategy.

Mitigation measures

The Impact Statement must identify mitigation measures that are technically and economically feasible and that would eliminate, reduce, control or offset adverse effects within federal jurisdiction, as well as direct or incidental adverse effects (collectively referred to as adverse federal effects). The proponent is encouraged to follow the mitigation hierarchy in order of priority by exhausting feasible mitigation measure options at each level before moving to the next – prioritizing to eliminate, then to reduce, control and, as a last resort, offset adverse federal effects. If an offset is considered, the proponent should prioritize replacement and restoration on-site over compensation at another location. The proponent should focus on mitigation measures required to avoid significant adverse federal effects or to achieve the predicted extent of significance.

The Impact Statement must:

- for each effect pathway to an adverse federal effect on each VC likely to be significant (in the absence of mitigation measures), including effect pathways from malfunctions or accidents and interactions between effects, describe the proposed mitigation measure(s), including as applicable:

- mitigation measures that are part of the project design and that are required to achieve the predicted extent of significance of adverse federal effects,
- mitigation measures that will contribute to or ensure the management of adverse federal effects through federal, provincial, regional or municipal legislative or regulatory frameworks (such as regulations, approvals, permits, programs, environmental protection plans, environmental management systems, and complementary measures). Where available, provide copies of correspondence from any jurisdiction that will be implementing mitigation measures regarding how they will be implemented and/or enforced,
- relevant standard mitigation measures from IAAC's list of [standard mitigation measures](#), or
- new or innovative mitigation measures to mitigate complex project-specific adverse federal effects.
- describe how the mitigation measures may also address adverse impacts on Indigenous rights and, if necessary, describe any additional measures to address adverse impacts on Indigenous rights;
- document the collaboration and perspectives of Indigenous communities on mitigation measures and on any additional measures to address adverse impacts on Indigenous Peoples and their rights or to enhance the benefits for Indigenous Peoples, including:
 - how the proponent has addressed the suggestions and recommendations from impacted Indigenous communities,
 - how Indigenous Knowledge was considered,
 - how the timing of Indigenous activities on the land was considered (e.g., schedule of project activities), and
 - the mechanisms through which collaboration with Indigenous Peoples to implement the measures will occur;
- describe any differentiated mitigation measures, or additional measures, for each Indigenous community;
- describe whether and how GBA Plus resulted in differentiated mitigation measures, or any additional measures, for diverse population groups so that adverse effects do not fall disproportionately on specific groups, including Indigenous communities. The proponent is encouraged to develop mitigation measures in collaboration with impacted Indigenous communities and communities, including diverse population groups that may be differentially impacted;
- where applicable, describe any environmental protection plan(s) or environmental management systems for the project through which the proponent will implement the specific mitigation measures or additional measures;

- if no mitigation measure is proposed for an effect pathway to an adverse federal effect on a VC likely to be significant, provide an explanation, including any reasons why mitigation is not possible;
- with the permission of agreement signatories, note if any impacts on Indigenous Peoples and their rights are addressed through an impact benefit agreement with an Indigenous community; and
- provide a table listing all mitigation measures essential to ensure the project will not result in significant adverse federal effects, or to reduce their extent of significance (to low or moderate significance), and any additional measures to address impacts on Indigenous rights and, for each measure:
 - identify the VC(s) and effect pathway(s), or the impact, that the measure addresses,
 - identify the measure as a specific commitment that clearly describes how the proponent intends to implement it. Measures are to be specific (including when and where it applies), achievable, measurable (identify quantifiers or thresholds) and verifiable, and described in a manner that avoids ambiguity in intent, interpretation and implementation. Specify and justify where implementation of the measure would be triggered by a pre-established quantifier or threshold,
 - provide available evidence of the effectiveness of the measure, including quantifying to what extent it would eliminate, reduce, control or offset significant adverse federal effect(s), and based on relevant scientific literature, best management practices, government standards or guidance and/or successful implementation in similar situations. The proponent is also encouraged to share the evidence available with Indigenous communities. Uncertainty on effectiveness must be considered in the [residual effects assessment](#) and inform measures included in the [follow-up program](#), and
 - for mitigation measures or commitments to avoid or lessen effects to species at risk listed under Schedule 1 of SARA that are likely to be affected by the project, describe how the mitigation measure is consistent with applicable recovery strategies, action plans, and management plans.

Residual effects assessment

After considering the technically and economically feasible mitigation measures, the Impact Statement must assess the likely residual adverse federal effects as well as impacts on Indigenous Peoples and their rights based on the likely effect pathways from project components and activities to the relevant VC, including effect pathways resulting from potential malfunctions or accidents and interactions between effects. Residual effects are changes to the environment or to the health, social or economic conditions, and the positive and negative consequences of these changes, that are likely to be

caused by the carrying out of the project after mitigation measures have been implemented.

The Impact Statement must:

- describe residual effects in the context of the baseline conditions and based on a conceptual model illustrating the connections among VCs, including by using figures and/or tables. Describe the method used and assumptions made. If a general rather than detailed description of effects is provided, provide a rationale (e.g., application of standard or proven mitigation measures would lead to no or minimal residual effects). If a quantitative estimate is provided, specify the model used, parameters, margins of errors, as well as relevant model calibration, validation and performance metrics;
- describe the likelihood of effects occurring, including methods and rationale;
- where residual effects are not likely to occur following the application of mitigation measures (e.g., common effect mitigated through a [standard mitigation measure](#)), provide rationale and supporting information;
- where the VC includes a species at risk that is listed under Schedule 1 of SARA, describe likely effects to the species (e.g., number of individuals killed, harmed, harassed), its residences (e.g., number of residences damaged, destroyed, permanently altered, disrupted) and its critical habitat (e.g., number of hectares damaged, destroyed, permanently altered, disrupted) based on likely effect pathways and information in applicable recovery strategies, action plans and management plans. Provide a rationale where effects are not likely or where the measures that will be taken to avoid or lessen the likely adverse effects and to monitor them will be implemented by another jurisdiction;
- indicate where predictions may be affected by climate change or other relevant temporal changes in baseline conditions (e.g., demographic or health trends, natural disturbances regime, cultural changes) and describe how relevant scenarios (e.g., changes in climate extremes) affect the predictions;
- describe relevant perspectives and concerns from Indigenous communities and other participants;
- describe where and how Indigenous Knowledge, community knowledge and scientific evidence were considered in assessing residual effects; and
- provide a conclusion on residual effects for each VC, as well as impacts on Indigenous Peoples and their rights.

Cumulative effects assessment

The Impact Statement must assess the project's likely cumulative adverse federal effects as well as impacts on Indigenous Peoples and their rights. Cumulative effects are

changes to the environment or to the health, social and economic conditions, that are likely to result from the project's residual effects in combination with the effects of other projects and physical activities that have been or will be carried out.

For adverse federal effects on VCs and impacts on Indigenous Peoples and their rights, the Impact Statement must:

- identify the VCs where residual effects are likely or where there is uncertainty, ensuring to include all impacts on Indigenous Peoples and their rights where Indigenous communities anticipate residual effects;
- identify the other past, existing and reasonably foreseeable projects or activities with potential effects on the VCs that could interact with the residual effects of the project;
- describe the cumulative effects on the identified VCs as the likely residual effects of the project in combination with the other identified projects and activities (additive, synergistic, compensatory, and masking effects), including relevant methods and assumptions;
- provide a rationale for any excluded VC (e.g., residual effects are not likely to occur or not likely to interact with effects from other projects or activities);
- describe how Indigenous Knowledge, community knowledge, scientific evidence as well as relevant perspectives and concerns from Indigenous communities and other participants were considered;
- identify any additional mitigation measures specific to cumulative effects and, where measures to mitigate cumulative effects are beyond the control of the proponent, identify parties that have authority to mitigate the effects, how the proponent will work with other parties and summarize any commitments or complementary measures by other parties; and
- provide a conclusion on cumulative effects for each relevant VC and impacts on Indigenous Peoples and their rights.

Extent to which likely adverse federal effects are significant

For likely residual and cumulative adverse federal effects on VCs, the Impact Statement must:

- describe the effect using benchmarks such as standards, guidelines, objectives or descriptors, where they exist, as well as criteria most appropriate for the effect such as magnitude, geographic extent, timing, duration, frequency, reversibility, social and ecological contexts, and uncertainty;

- provide a rationale for the choice of criteria informed by the perspectives of Indigenous communities and other participants, Indigenous Knowledge, community knowledge and scientific evidence; and
- characterize the extent of significance on a scale of not significant; low, moderate or high significance.

Follow-up program

A follow-up program is a program for verifying the accuracy of the impact assessment and determining the effectiveness of the mitigation measures. Monitoring is a key part of a follow-up program, which entails collecting the information necessary to verify the accuracy of the predictions related to adverse federal effects and determine the effectiveness of the mitigation measures to decide whether new or modified actions are required to protect VCs.

For adverse federal effects on VCs, the Impact Statement must:

- identify VCs that would be included in the follow-up program, including a rationale for why they are included or not, considering the extent to which the likely residual and cumulative effects are significant, including associated uncertainty, and a description of how Indigenous Knowledge, community knowledge and input from relevant authorities and other interested parties have informed the selection;
- where the VC includes a SAR that is listed under Schedule 1 of SARA and that is likely to be affected by the project, as applicable describe how the follow-up program is consistent with applicable recovery strategies, action plans, and management plans;
- describe the opportunities, including funding opportunities and engagement structure, for the involvement of Indigenous communities identified in the IEPP in the development and implementation of the follow-up program and its associated monitoring activities; and
- provide a table that describes, for each VC included in the follow-up program:
 - the impact predictions and/or mitigation measures that would be evaluated through the follow-up program,
 - the actions the proponent proposes to take if monitoring results show that the impact predictions are not accurate and/or the mitigation measures are not effective,
 - preliminary information (e.g., conceptual or presented as options) on:
 - the proposed monitoring methodology, including a description of how Indigenous Knowledge, community knowledge and input from relevant authorities and other interested parties have informed the choice of the proposed methodology, and

- the party responsible for the implementation of the monitoring program and the system of accountability,
- if applicable, whether and how disproportionate effects identified in the GBA Plus would be addressed.

If the proponent considers that existing or anticipated monitoring activities required through other regulatory instruments would provide the data necessary to achieve the objectives of the follow-up program for a particular VC, the Impact Statement must include a justification for the use of data from these other monitoring activities.

The proponent should consider the use of adaptive management to address uncertainties associated with impact predictions or the effectiveness of mitigation measures. Adaptive management does not eliminate the need to provide sufficient information to assess effects to VCs and identify mitigation measures.

Uncertainty and bias

Where uncertainty or bias may meaningfully impact conclusions (including those on the estimates of baseline conditions, effectiveness of mitigation measures, residual effects, cumulative effects, the extent of significance of likely residual and cumulative adverse federal effects and requirements for the follow-up program), the Impact Statement, in reporting its assessment and conclusion on each VC, must:

- describe the major sources of uncertainty, such as uncertainty arising from:
 - limitations on data accuracy, precision, completeness and reliability,
 - environmental variability, including spatiotemporal variability,
 - extrapolations from other contexts (e.g., baseline conditions are extrapolated from other locations, time periods, populations or communities),
 - extrapolations from proxy measures or indicators, and
 - model limitations arising from incomplete or imperfect knowledge of the structure or function of the system being modelled;
- describe the major sources of bias such as:
 - selection bias resulting in non-representative sample populations,
 - confounding bias arising from inadequate control of factors that may influence project effects,
 - measurement bias associated with the methods used to establish baseline conditions,
 - detection bias in monitoring or surveillance data,
 - outcome reporting bias or publication bias when relying on external studies or scientific publications, and

- observer, confirmation, performance, or interpretation bias by those conducting or interpreting studies;
- provide a quantitative lower bound or upper bound (where possible) or qualitative estimate of the magnitude of uncertainty, and/or of the direction and magnitude of bias, and describe how it impacts the conclusions for each VC. If no estimate was possible, provide a rationale;
- describe approaches that were used or could be used to reduce sources of uncertainty or bias (e.g., additional data collection or research), as well as any legislative or regulatory framework that will manage uncertainty or bias (e.g., adaptive management imposed by a provincial regulation); and
- describe how the precautionary principle was applied and any precautionary approaches that have been used in the effects assessment or in the development of mitigation measures.

Impact Statement summary

The proponent must provide a stand-alone plain language summary of the Impact Statement in English and French. The summary must contain sufficient details for the reader to understand the project and its adverse federal effects and impacts on Indigenous Peoples and their rights, including maps illustrating the project location and key project components. The summary provides an opportunity for the proponent to demonstrate through a plain-language narrative how it addressed issues raised, notably those raised by Indigenous communities and the public. The proponent is also encouraged to include visual tools to illustrate the predicted geographic extent of changes to the environment (e.g., zone of influence maps with defined boundaries) as well as relevant tables listing the mitigation measures and the follow-up program.

The Impact Statement Summary, must describe:

- residual and cumulative adverse federal effects, and the mitigation measures to address them;
- impacts on Indigenous Peoples and their rights, and the mitigation measures or any additional measures to address them;
- where applicable, proposed enhancements to increase positive effects from the project;
- whether the residual and cumulative adverse federal effects caused by the carrying out of the project are likely to be, to some extent, significant and, if so, the extent to which they are significant;

- where the proponent is of the view that the likely effects of the project would contribute to Canada's environmental obligations and/or commitments in respect of climate change, the information to substantiate this view;
- if applicable, the extent to which the effects that are likely to be caused by the project contribute to sustainability; and
- the follow-up program.

Annex II – Issues requiring no further information or outside the scope of the assessment

This annex identifies issues that are included in the scope of the federal impact assessment, but for which IAAC has determined no further information is required from the proponent, as well as issues for which IAAC has determined are out of scope of the federal impact assessment. The contents of this annex were informed by proponent documents, as well as comments from Indigenous communities, federal and provincial experts, and the public.

Issue	Rationale
Issues within scope of the federal impact assessment but for which no further information is required to inform the assessment	
Visual environment/aesthetics	Based on the information in the Initial Project Description, IAAC understands that potential project related changes to the visual environment will be mitigated through project design, including the placement of key project components underground and ensuring project components located above ground are partially or fully screened by vegetation. Although the reservoir will be a permanent feature, the proposed design and screening measures are expected to reduce its visibility from nearby residents and public viewpoints. Additionally, project-related lighting will be installed in accordance with applicable building codes and occupational health and safety standards.
Changes to air quality during project operations. Note: GHG emissions are treated separately, see section 6.1.2 Climate change commitments	Based on the information provided in the Initial Project Description, IAAC understands that the Project would operate using electricity from Ontario's electrical system and is not expected to generate substantive operational air emissions. Operational air emissions would be limited to incidental sources, such as occasional vehicle use associated with operation and maintenance

	activities, which the proponent indicates are not expected to adversely affect local or regional air quality. The proponent also notes that its corporate fleet is transitioning toward electrification and lower-emission vehicles, which is expected to further reduce operational emissions over time. While construction activities have the potential to affect air quality through dust and equipment emissions, the IPD identifies these effects as being associated primarily with the construction phase, with no comparable operational emission sources identified.
Issues that are not within scope of the federal impact assessment	
Energy pricing	Electricity and energy pricing in Ontario relate to project financing, public expenditures, and broad market or regulatory factors. Electricity and energy prices are influenced by numerous factors beyond a single energy project and are subject to separate regulatory and market processes.
Financial Liability for an accident or malfunction, including those associated with UXO clearance	Future financial responsibility, liability, and public expenditures for accidents and malfunctions are addressed through legal, contractual, and regulatory mechanisms outside of federal impact assessment. Additionally, UXO clearance will be undertaken in accordance with established Department of National Defence protocols before construction activities proceed.
Effects to human health from construction and operation of the portion of the transmission line on ATC-C	Based on advice from Health Canada, taking into account the International Commission on Non-Ionizing Radiation Protection's established guidelines for limiting exposure to extremely low frequency electromagnetic frequency, and the current scientific evidence, adverse human health effects to residents located outside ATC-C are not expected as a result of exposure to extremely low frequency electromagnetic frequency from the proposed transmission line.