Ontario Pumped Storage Project

Initial Project Description

February 24, 2026

Prepared for:
TC Energy

Prepared by:
Stantec Consulting Ltd.

Project Number:
123515349

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	Information and Management of Time Limits Regulation **Schedule 1 (Section 3) – Information Required in Initial Description of Designated Project**	**IPD Section**
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C	the legal description of land to be used for the project, including, if the land has already been acquired, the title, deed or document and any authorization relating to a water lot;	• Section 4.3 Legal Property Description
D	the project's proximity to any permanent, seasonal or temporary residences and to the nearest affected communities;	• Section 4.2 Proximity to Residences and Communities

	Information and Management of Time Limits Regulation **Schedule 1 (Section 3) – Information Required in Initial Description of Designated Project**	**IPD Section**
E	the project's proximity to land used for traditional purposes by Indigenous peoples of Canada, land in a *reserve* as defined in subsection 2(1) of the *Indian Act*, *First Nation land* as defined in subsection 2(1) of the *First Nations Land Management Act*, land that is subject to a comprehensive land claim agreement or a self-government agreement and any other land set aside for the use and benefit of Indigenous peoples of Canada; and	• Section 15.1 Indigenous Context
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	Information and Management of Time Limits Regulation **Schedule 1 (Section 3) – Information Required in Initial Description of Designated Project**	**IPD Section**
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	Information and Management of Time Limits Regulation **Schedule 1 (Section 3) – Information Required in Initial Description of Designated Project**	**IPD Section**
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18	A list of any jurisdictions that have powers, duties or functions in relation to an assessment of the project's environmental effects.	• Section 5 Regulatory Framework

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	Information and Management of Time Limits Regulation **Schedule 1 (Section 3) – Information Required in Initial Description of Designated Project**	**IPD Section**
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B	*aquatic species*, as defined in subsection 2(1) of the *Species at Risk Act*; and	• Section 10.1.4.1 Potential Effects of the Project on the Environment [Fish and Fish Habitat]
C	*migratory birds*, as defined in subsection 2(1) of the *Migratory Birds Convention Act*, *1994*.	• Section 10.3.4.1 Potential Effects of the Project on the Environment [Wildlife and Wildlife Habitat, including Species at Risk and Migratory Birds]
20	A list of any non-negligible adverse changes to the environment – that would occur on federal lands – that may be caused by the carrying out of the project.	• Sections 9 [Physical Environment], 10 [Biological Environment], 11 [Greenhouse Gas Emissions], 12 [Socio-Economic Context], 13 [Human Health], and 14 [Archaeology and Cultural Heritage]
20.1	A list of any non-negligible adverse changes to the marine environment — that are caused by pollution and that would occur outside Canada — that may be caused by the carrying out of the project.	• Not applicable – no marine environments present

	Information and Management of Time Limits Regulation **Schedule 1 (Section 3) – Information Required in Initial Description of Designated Project**	**IPD Section**
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21	With respect to the Indigenous peoples of Canada, a brief description of any non-negligible adverse impacts on physical and cultural heritage, the current use of lands and resources for traditional purposes or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance – occurring in Canada and resulting from any change to the environment – that may be caused by the carrying out of the project, based on information that is available to the public or derived from any engagement undertaken with Indigenous peoples of Canada.	• Section 14.4.1 Potential Effect on the Environment and Preliminary Mitigation [Archaeology and Cultural Heritage] • Section 15.3 Potential Effect on the Environment and Preliminary Mitigation [Indigenous Interests]
22	A brief description of any non-negligible adverse changes occurring in Canada to the health, social or economic conditions of Indigenous peoples of Canada, that may be caused by the carrying out of the project, based on information that is available to the public or derived from any engagement undertaken with Indigenous peoples of Canada.	• Section 12.4.1 Potential Effects of the Project on the Environment [Socio-Economic Context] • Section 13.3.1 Potential Effects of the Project on the Environment [Human Health] • Section 15.3 Potential Effect on the Environment and Preliminary Mitigation [Indigenous Interests]
22.1	If the project is to be carried out on federal lands or is *a federal work or undertaking*, as defined in subsection 3(1) of the *Canadian Environmental Protection Act,* a list of any non-negligible adverse effects that may be caused by the carrying out of the project.	• Sections 9.1.4.1 [Air Quality] 9.2.4.1 [Noise and Vibration], 9.3.4.1 [Visual Setting], 9.4.4.1 [Terrain, Geology and Soils], 9.5.4.1 [Groundwater], 9.6.4.1 [Surface Water] 10.1.4.1 [Fish and Fish Habitat], 10.2.4.1 [Vegetation and Vegetation Communities], 10.3.4.1 [Wildlife and Wildlife Habitat, including Species at Risk and Migratory Birds] 12.4.1 [Socio-Economic Context], 13.3.1 [Human Health], 14.4.1 [Archaeology and Heritage]
23	An estimate of any greenhouse gas emissions associated with the project.	• Section 11.1 Preliminary GHG Estimates
24	A list of the types of waste and emissions that are likely to be generated — in the air, in or on water and in or on land — during any phase of the project.	• Section 3.4 Waste and Emissions Generated by the Project

Part F: Summary

	Information and Management of Time Limits Regulation **Schedule 1 (Section 3) – Information Required in Initial Description of Designated Project**	**IPD Section**
25	A plain-language summary of the information that is required under items 1 to 24 in English and in French.	Plain Language Summary (French and English versions)

Acronyms/Abbreviations

4 CDTC	4th Canadian Division Training Centre
AAQC	Ambient Air Quality Criteria
AIA	Archaeological Impact Assessment
AOA	Archaeological Overview Assessment
BESS	battery energy storage systems
CAAQS	Canadian Ambient Air Quality Standards
CAES	Compressed air energy storage
CAO	Chief Administrative Officer
CANCEA	Canadian Centre for Economic Analysis
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
Class EA	Class Environmental Assessment
CLC	Community Liaison Committee
CO_2e	Carbon dioxide equivalent
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CWMP	Coastal Waters Monitoring Program
DFO	Department of Fisheries and Oceans Canada
DND	Department of National Defence
DPD	Detailed Project Description
ECCC	Environment and Climate Change Canada
ECA	Environmental Compliance Approval
ELC	Ecological Land Classification
EMF	Electromagnetic fields
ENGO	Environmental Non-Government Organization
EPCM	Engineering, Procurement, and Construction Management

ESA	*Endangered Species Act*
ESR	Environmental Study Report
GBA Plus	Gender-based Analysis Plus
GBHS	Grey Bruce Health Services
GHG	Greenhouse gas
GJ	Gigajoules
GWP	Global warming potential
HADD	Harmful Alteration, Disruption or Destruction
HDD	Horizontal directional drill
Hydro One	Hydro One Networks Inc.
IA	Impact Assessment
IAA	*Impact Assessment Act*
IAAC	Impact Assessment Agency of Canada
ICI waste	Industrial, Commercial and Institutional
IESO	Independent Electricity System Operator
IPD	Initial Project Description
ISED	Innovative, Science, and Economic Development Canada
kV	kilovolt
MCM	Ministry of Multiculturalism
MECP	Ministry of Environment, Conservation and Parks
MEM	Ministry of Energy and Mines
MNR	Ministry of Natural Resources
m/s	metres per second
Mt	million metric tonnes
MTO	Ministry of Transportation
MW	megawatt
MWh	megawatt-hour
NAPS	National Air Pollution Surveillance Program
NPC	Noise Pollution Control

NRCAN	Natural Resources Canada
NVCA	Nottawasaga Valley Conservation Authority
OEB	Ontario Energy Board
O. Reg.	Ontario Regulation
PSAC	Pumped Storage Advisory Committee
RSFD Class EA	Class Environmental Assessment for Resource Stewardship and Facility Development Projects
SACC	Strategic Assessment of Climate Change
SAR	Species at Risk
SARA	*Species at Risk Act*
SARO	Species at Risk in Ontario
SCA	*Species Conservation Act*
SLs	Screening Levels
TC Energy	TransCanada Energy Ltd.
TBM	tunnel boring machine
TOR	Terms of Reference
TWh	terawatt-hours
URT	Upper Risk Threshold

1 Overview of Project

TransCanada Energy Ltd. (TC Energy) is proposing to construct and operate a pumped hydroelectric storage facility (the Project) in the Municipality of Meaford to supply up to 10,600 mega-watt hours (MWh) of electricity to the Ontario electrical system. The Project is predominantly proposed to be on federal lands at the 4th Canadian Division Training Centre (4 CDTC) which is operated by the Department of National Defence (DND) and is within the traditional territory of Saugeen Ojibway Nation (Saugeen First Nation and Chippewas of Nawash Unceded First Nation). The location of the Project is illustrated on Figure 1-1 and the Saugeen Ojibway Nation Territory is shown on Figure 1-2. Pursuant to the *Physical Activities Regulations* issued under the *Impact Assessment Act* (IAA), a new hydroelectric generating facility with a production capacity of 200 megawatts (MW) or more may require the completion of an impact assessment (IA).

This Initial Project Description (IPD) has been prepared for formal submission to the Impact Assessment Agency of Canada (IAAC) based on the *Physical Activities Regulations* and the information requirements outlined in the *Information and Management of Time Limits Regulation*. The intent of this IPD is to include a level of detail similar in nature to the requirements of a Detailed Project Description (DPD) so that IAAC has sufficient information to make a determination whether an IA is required, in accordance with Section 16(2) of the IAA. TC Energy has been working to advance this Project since 2019, and this document is intended to not only identify changes to the environment and to health, social or economic conditions as a result of the Project that could cause potential effects within federal jurisdiction, but also as a public document where TC Energy can document and summarize the issues and concerns raised by the public, Indigenous rights-holders and Indigenous groups during this time. This IPD is provided to inform IAAC about the Project and to solicit input regarding the level of detail and suitability of the content for the IPD that will ultimately be submitted to IAAC to initiate the Planning Phase of the IA process.

1.1 Project Introduction

Over the coming years, Ontario's electricity demand is expected to increase. The Independent Electricity System Operator's (IESO) preliminary 2026 forecast indicates that Ontario's net annual energy demand will grow by 65% to 250 terawatt-hours (TWh) by 2050 (IESO 2025a). By 2034, capacity needs will grow by 2,100 MW (IESO 2025b). This growth in demand will occur during a time where Ontario is contemplating transitioning away from natural-gas power generation and is developing new emission-free sources of electricity production, such as nuclear, wind, solar, and hydro (IESO 2022a). New electricity sources are anticipated to principally be intermittent sources (i.e., wind or hydro) or baseload generators (i.e., nuclear), and new energy storage solutions will need to be developed to balance electricity production and demand across time. Using water and gravity, the Project is effectively a natural battery that will store available energy for when it is needed. When operational, the Project will provide 1,000 MW of flexible, clean energy to Ontario's electricity system — that's enough to power a million homes for up to 11 hours.

525000 540000 555000 570000

4950000 4935000 4920000

N

Georgian Bay

Project Location

4 CDTC Garrison

Meaford

Meaford Transformer Station

Collingwood

Wasaga Beach

Stayner

Stayner Transformer Station

HIGHWAY 26
GREY ROAD 112
GREY ROAD 18
GREY ROAD 40
GREY ROAD 29
GREY ROAD 12
GREY ROAD 119
GREY ROAD 19
GREY ROAD 7
GREY ROAD 13
GREY ROAD 2
GREY ROAD 31
GREY ROAD 30
HIGHWAY 10
MOUNTAIN ROAD
HIGH STREET
6TH STREET
POPLAR SIDEROAD
BEACHWOOD ROAD
SHORE LANE
RIVER ROAD WEST
NOTTAWASAGA SIDEROAD 33 & 34
NOTTAWASAGA SIDEROAD 21 & 22
COUNTY ROAD 124
COUNTY ROAD 91
COUNTY ROAD 7
COUNTY ROAD 42
COUNTY ROAD 9
FAIRGROUNDS ROAD SOUTH
NORTH NOTTAWASAGA CONCESSION 10

TOWN OF THE BLUE MOUNTAINS
MUNICIPALITY OF MEAFORD
TOWN OF COLLINGWOOD
TOWNSHIP OF CLEARVIEW
TOWN OF WASAGA BEACH
MUNICIPALITY OF GREY HIGHLANDS
TOWNSHIP OF CHATSWORTH

Stantec

Legend

- Project Location
- Project Components

Base Features

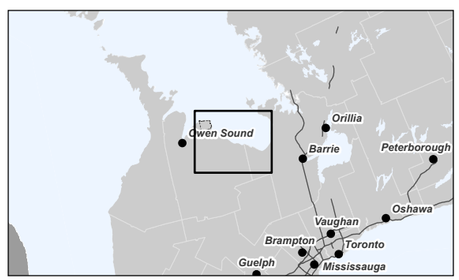
- Expressway / Highway
- Major Road
- Minor Road
- Watercourse
- 4 CDTC
- Municipal Boundary, Upper
- Municipal Boundary, Lower
- Waterbody

0 5 10 km

1:200,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2023.



Project Location
Meaford, ON

160901072 REV6
Prepared by atarli on 2025-12-17
Technical Review by AW on 2025-07-30

Client/Project
TC ENERGY ONTARIO
ONTARIO PUMPED STORAGE PROJECT

Figure No.
1-1

Title
Project Location

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Figure 1-2: Saugeen Ojibway Nation Territory

Modified based on image from Saugeen Ojibway Nation Environmental Office

1.2 Proponent Information

The Project is being advanced by TC Energy, a subsidiary of TC Energy Corporation. Key TC Energy personnel and their contact information is listed in Table 1-1.

It is envisioned, subject to a future agreement, that TC Energy will enter into a commercial partnership with Saugeen Ojibway Nation, which is comprised of Saugeen First Nation and Chippewas of Nawash Unceded First Nation. As prospective partners, TC Energy and Saugeen Ojibway Nation are collaboratively developing the Project and meaningfully advancing the foundations of the prospective partnership between Saugeen Ojibway Nation and TC Energy. In 2020, TC Energy and Saugeen Ojibway Nation entered into an agreement that creates a general framework for engagement on the Project and to provide the information and support needed for Saugeen Ojibway Nation to reach a decision on support for the Project. Should Saugeen Ojibway Nation enter into a commercial partnership with TC Energy, they will become an equity partner in the Project. As TC Energy and Saugeen Ojibway Nation continue to collaborate, a partnership agreement will be mutually developed for ratification (anticipated execution in 2028). While a partnership has not been reached at the time of the preparation of this IPD, TC Energy has collaborated with Saugeen Ojibway Nation in the planning of the Project and has committed to not construct the Project without Saugeen Ojibway Nation's support.

TC Energy is a major energy infrastructure company that has operated an extensive network of power generation and natural gas pipelines across North America for over 70 years. TC Energy aims to leverage the size and scale of their energy network and trading platform to be the premier source of low carbon energy for the North American industrial, natural gas, and oil sectors. Headquartered in Calgary, Alberta, TC Energy Corporation is a publicly traded company listed on the Toronto Stock Exchange (TSX:TRP) and New York Stock Exchange (NYSE:TRP).

Table 1-1: Key Proponent Contact Information

Head Office	TransCanada Energy Ltd. 450 – 1 Street S.W. Calgary, Alberta T2P 5H1 Phone: 1.800.920.2000 Website: www.tcenergy.com
Chief Executive Officer	François Poirier President and Chief Executive Officer TransCanada Energy Ltd. Mailing Address: 450 – 1 Street S.W. Calgary, Alberta T2P 5H1 Telephone: (800) 661-3805 Email: energy_storage@tcenergy.com
Principal Contact for the Impact Assessment	Stefan Skocylas Regulatory Lead TransCanada Energy Ltd. Mailing Address: 450 – 1 Street SW Calgary, Alberta T2P 5H1 Email: energy_storage@tcenergy.com
Alternate Contact for the Impact Assessment	Rebekah Janzen Manager – Environment, Land & Regulatory TransCanada Energy Ltd. Mailing Address: 450 – 1 Street SW Calgary, Alberta T2P 5H1 Email: energy_storage@tcenergy.com

TC Energy is exploring various financing and funding options to support the development of the Project, including the possibility of seeking financing from the Canada Infrastructure Bank.

This IPD has been informed through ongoing collaboration with Saugeen Ojibway Nation and has been developed by TC Energy and its Project Team of consultants (planners, scientists, engineers, and other experts) to inform Indigenous rights-holders, Indigenous groups, agency/municipal staff, interested parties and members of the public about the Project and corresponding changes to the environment.

TC Energy has retained Stantec Consulting Ltd. to lead and coordinate the preparation of the IPD. Technical support has been provided by Nichols Applied Management Inc., Environmental Resource Management (ERM) Consultants Canada Ltd., North South Consultants Inc., and GEI Consultants Canada Ltd., with additional technical support provided by a number of contractors and consultants as required by the Project Team.

2 Project Purpose, Need, and Benefit

2.1 Project Purpose and Need

The IESO has forecasted that overall demand growth for electricity in Ontario will expand 65% by 2050 from 2026 (IESO 2025a). This demand growth is attributed in part to strong economic growth in Ontario but also in part due to government policies that incentivize the transition of energy sources to electrification and decarbonization efforts (Ministry of Energy 2021). Numerous new potential and confirmed projects contribute to this demand growth, including industrial electric vehicle production and the supply chain sub-sector, commercial artificial intelligence service-providing data centres, incremental decarbonization/electrification projects across the commercial and industrial sectors, and higher population growth and household formation (IESO 2025b).

To meet this increased demand, IESO identifies that additional generation and peaking capacity will be required through a combination of supply sources by 2035 (IESO 2022a), including:

- New nuclear generation to provide baseload capacity – 11,248 MW
- New renewable generation, such as wind and solar to provide intermittent capacity – 12,501 MW
- Conservation demand response to reduce overall demand requirements – 5,000 MW
- Storage to match available capacity to peak demand periods – 2,507 MW

As noted, IESO anticipates that the Ontario electrical system will require substantial electricity storage to balance generation variability from renewable sources and to meet peak energy demand periods (IESO 2024). To address the supply shortfall, the then Minister of Energy (now Minister of Energy and Mines) directed the IESO to undertake a variety of procurement programs to seek both new generation and storage capacity over the short, medium, and long terms (Executive Council of Ontario 2022).

TC Energy has identified an opportunity to participate in the development of incremental storage with the Minister of Energy and Mines and is seeking to advance a grid-scale energy storage solution to help meet the future needs of the Ontario electrical system. The Project presents a unique and sustainable energy storage solution to address this existing and growing issue regarding the imbalances in the production and use of electricity in Ontario. Specifically, there are times when Ontario's electrical system produces more power than it can consume, resulting in wasted electricity and economic loss. This surplus electricity is predominantly from non-emitting intermittent renewable energy sources and nuclear energy generated at times of low demand (e.g., nights and weekends). Without system capability to store this surplus generation, electricity is either exported to adjacent markets (typically at an economic loss) or

generation is curtailed and therefore wasted. The Project seeks to address the electricity load demand in southern Ontario, specifically southwestern Ontario (areas west of Lake Simcoe) and close to the Greater Toronto Area where demand for electricity in Ontario is the greatest.

TC Energy has identified the following aspects as the design criteria it is seeking to fulfill:

- Provide 1,000 MW of non-emitting, firm electricity generation over approximately 11 hours for approximately 10,000 MWh of energy storage
- The ability to operate reliably under a variety of electrical load requirements for both the storage and generation of electricity
- The ability to switch quickly between storing electricity to generating electricity and vice versa
- Be located close to an interconnection facility able to handle the import/export of 1,000 MW of electricity
- Provide resource diversity for the supply and storage of energy to the Ontario electrical system
- Develop a form of energy storage that reduces reliance on critical minerals and that uses primarily Canadian inputs (approximately 83% of capital investment remains in Canada) [CANCEA 2024])
- Provide a facility with operational diversity by providing a wide variety of system ancillary/reliability/stability services, such as system inertia, regulation service, longer duration operating reserve, etc.

The Project intends to fulfill a portion of demand during Ontario's peak energy periods, which typically last longer than 4 hours and usually occur in the evening hours (IESO 2023a). This makes a longer duration storage solution more appropriate. The need for long duration energy storage is also anticipated to increase over time as the percentage of electricity in Ontario increasingly comes from nuclear and non-emitting energy generation sources as there are inherent fluctuations in output associated with these sources. Given the storage needs identified by IESO (2022b), a larger capacity storage solution is more desirable, but is also more challenging to locate, as it requires access to the appropriately sized electrical system infrastructure and appropriately sized site. As a long duration energy storage facility, the Project would also help address the supply shortfall identified by the Minister of Energy and Mines by providing power load management and frequency regulation, building resilience and adaptability into the electrical system. The need for the Project was further supported by the Ontario Government through their investment of up to $285 million to advance pre-development work for the Project announced in January 2025.

2.2 Project Benefits

In addition to addressing the supply shortfall in generation and peaking capacity by providing a long duration energy storage facility (discussed in Section 2.1), the Project would build resilience and adaptability into the Ontario electrical system by providing flexible storage and supply. Traditional energy generation in Ontario comes from a mix of sources, including nuclear, hydroelectric, natural gas, and renewable (i.e., solar and wind) sources. However, many of these traditional energy generation facilities do not have the ability to efficiently regulate output. Renewable energy generation alternatives (i.e., solar and wind) provide intermittent capacity and are dependent on ambient conditions. The Project would build adaptability into the system by capturing and storing excess energy during low demand and times of excess generation, then dispatching it back to the Ontario electrical system during periods of demand.

The Project also builds resiliency into Ontario's electrical system as a dependable resource that can be called upon to respond quickly to changing system conditions – generating power in the event of an unforeseen outage or absorbing excess electricity as a result of an unforeseen demand reduction, provided there is capacity. Start-up time for the Project is estimated to be under five minutes to reach full generation capacity. During a power interruption or black-out, the Project could be an important resource to assist in restoring the electrical system by providing power to the system almost instantaneously.

The Project would support the Government of Canada's and Government of Ontario's efforts to achieve sustainability goals/targets and combat climate change by providing an economically responsible and low emissions storage solution using proven technology to build resiliency and adaptability into Ontario's existing and future electricity system. In 2021, the Government of Canada committed to achieving net-zero emissions by 2050 in the *Canadian Net-Zero Emissions Accountability Act.* This Act established Canada's 2030 GHG emissions target at 40% to 45% below 2005 levels, with an interim objective of 20% below 2005 levels by 2026. Based on recent projections reported in the 2023 Progress Report, Canada is on track to exceed the previous 30% target below 2005 levels by 2030 and 20% emissions reductions below 2005 levels by 2026. In accordance with the *Canadian Net-Zero Emissions Accountability Act*, the Government of Canada is required to set progressively more ambitious GHG emissions targets for 2035, 2040 and 2045. To meet these targets, additional emissions reductions are needed (Environment and Climate Change Canada 2023).

The Government of Ontario committed to an emissions reduction target of 30% below 2005 levels by 2030 (Government of Ontario 2023). In 2022, Ontario forecasted hitting its 2030 target by reducing emissions by an additional 12 million metric tonnes (Mt) (to 143.7 Mt) from current projected levels (155.7 Mt) (Environment and Climate Change Canada 2023). It is estimated that the Project will reduce GHG emissions by an average of 490,000 tonnes per year

based on current emissions levels, which is the equivalent to taking 150,000 cars[1] off Ontario's roads, thereby supporting the Government of Ontario's and the Government of Canada's net-zero targets (Navigant 2020).

With the support of Saugeen Ojibway Nation, TC Energy aims to establish a benchmark Indigenous partnership for pumped storage development in Canada. The partnership structure is intended to advance economic reconciliation and support Saugeen Ojibway Nation's self-determination, while also creating employment and economic opportunities for Saugeen Ojibway Nation members. Own-source revenue generated through the Project, including revenues, taxes, and associated funding flowing to Saugeen Ojibway Nation, will support the governments of both Saugeen First Nation and Chippewas of Nawash Unceded First Nation.In April 2024, the Canadian Centre for Economic Analysis (CANCEA) released a report which took a deep dive into the economic and social benefits of the Project. Here are some highlights:

- The Project will generate roughly 41,000 jobs (direct and indirect), with 66% from full-time positions, and 1,700 construction jobs during the 4-year peak construction period.
- The Project will be built with Ontario supply chains. Of the total capital investment in the Project, 83% remains in Canada of which 92% stays in Ontario. More than 90% of the economic activity occurs in Ontario, with 30% of the total remaining in the local regions of Grey, Bruce, and Simcoe.
- The Project can help address affordability challenges with a third of the jobs created anticipated to be filled by those under 35, a demographic likely to be facing housing affordability pressures. As most jobs created will be in skilled sectors with generally higher incomes, these jobs have the potential to improve the affordability of affected households. There is a projected $450 million in social value contributions from the Project. This signifies a considerable improvement in regional well-being over the current levels experienced by Ontarians.

With its long duration output, fast response, and start-up capability, this pumped storage project is proposed by TC Energy for large-scale energy storage in Ontario. In comparison to other grid-scale energy storage options, pumped storage has a lower environmental footprint over its lifecycle (Simon et al., 2023). The Project will use a proven and deployable technological solution that is economically responsible and low emission, helping meet Ontario's unique electricity and power system needs. For employment and other socio-economic benefits associated with the Project, see Section 12.

[1] Assuming a standard 2016 model sedan in Ontario driven 15,000 km/year. Vehicle Emission Comparison Tool v. 1-1-5, Natural Resources Canada, July 2016, https://www.nrcan.gc.ca/energy/vehicle-emission-comparison-tool/18907.

3 Project Description

The Project is composed of a number of major components to store and redeploy energy by pumping water from Georgian Bay up to a reservoir, where the water is stored as potential energy. When the energy is needed, the water is released back into Georgian Bay, releasing the potential energy and converting that potential energy into electricity. Project components can be broken down into a number of sub-components based on how they will be operated and constructed.

The design and specification of the Project and components are ongoing and approximate, as engineering and field studies are being undertaken to confirm constructability, refine design, and improve efficiency, while seeking to reduce potential environmental effects of the Project.

In addition, a transmission connection will be required to connect the Project to the Ontario electrical system. At this time, a preferred connection point or route has not been determined as input from IESO and Hydro One will be required. This would be subject to a coordinated connection process led by IESO and Hydro One, under the purview of the Ontario Energy Board, with support provided by TC Energy and other electricity transmission and distribution companies, as required. Ultimate ownership and responsibility for construction and operation of the transmission connection will be determined as part of the IESO process. At this time, TC Energy's role in the transmission connection has not yet been determined. However, for the purposes of this IPD, a description of the transmission connection has been included as part of the Project.

3.1 Project Components

Table 3-1 identifies the key Project components and sub-components along with their location relative to federal lands (i.e., 4 CDTC) to assist in the identification of applicable regulations (see Section 5 for details on regulatory framework). Figure 3-1 illustrates the various components of the Project, Preliminary Project Boundary, and Preliminary Construction Zone. Figure 3-2 is a conceptual rendering of the Project that illustrates some of the key Project components in relation to the surrounding environment.

Table 3-1: Key Project Components

Project Component	Located on Federal Lands
• Reservoir o Ring Dam o Upper Inlet/Outlet Structure	Yes
• Powerhouse o Pump turbine generator (PTG) units o Access Tunnel	Yes
• Water Conveyance Structures o Headraces o Tailraces o Spillway	Yes
• Lower Inlet/Outlet Structure	Partially
• Switchyard o Electrical equipment o Control room o Offices	Yes
• Access o Access Roads o Potential Marine Access	Partially
• Temporary Construction Facility o Staging/storage yards o Potential accommodation facility	Partially
• Transmission connection	Partially

528000
530000
4948000
4946000
N
Potential Marine Access
Lower Inlet/Outlet Structure
Access Tunnel
Tailraces
Powerhouse
Upper Inlet/Outlet Structure
Headraces
Reservoir
Switch Yard/ Office
Georgian Bay
4 CDTC Garrison
Ring Dam
GREY ROAD 112
CAPTAINS COURT
HARBOUR BEACH DRIVE
CEDAR AVENUE
Vantor

Stantec

Legend

- Preliminary Project Boundary
- Preliminary Construction Zone
- Above Ground Project Component
- Below Ground Project Component
- Other Road
- Proposed Road (Preliminary Alignment)

Base Features

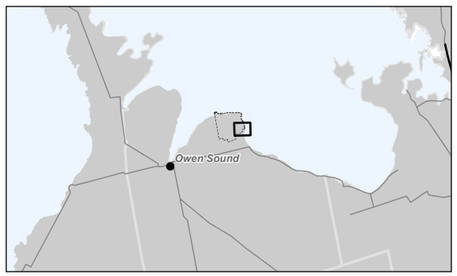
- Road
- Watercourse (Intermittent)
- Watercourse (Permanent)
- 4 CDTC
- Parcel Boundary
- Waterbody

0 0.5 1 km

1:17,500 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2023.
3. Orthoimagery © First Base Solutions, 2023.



Project Location
Meaford, ON

160901072 REV6
Prepared by atarli on 2025-12-17
Technical Review by AW on 2025-07-30

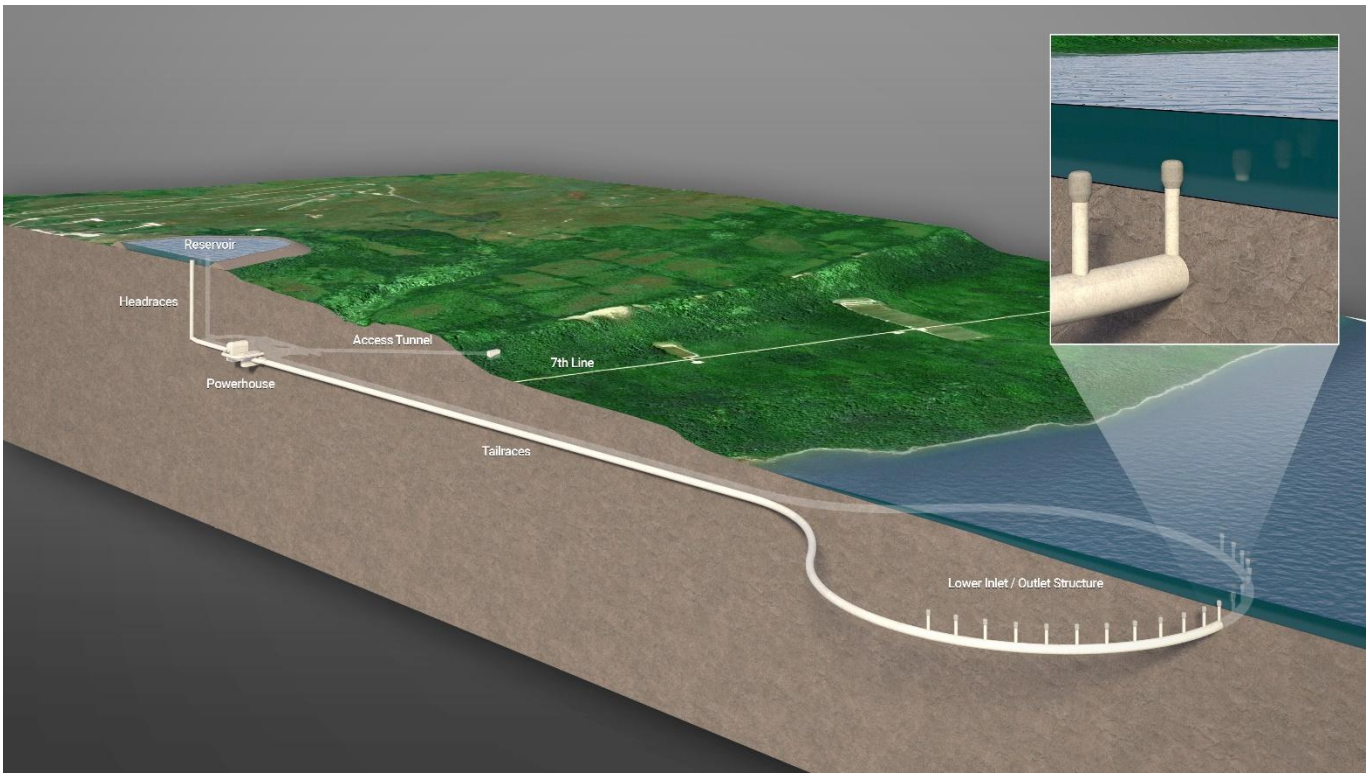
Client/Project
TC ENERGY ONTARIO
ONTARIO PUMPED STORAGE PROJECT

Figure No.
3-1

Title
Preliminary Project Components

\\ca0004-gpfss01\01\609\active\160901072\03_data\gis_cad\gis\mxds\APC\report_figures\160901072_PD_Fig3-1_Site_Plan Revised: 2025-12-17 By: atarli

Figure 3-2: Conceptual Rendering of Key Project Components



Note: This figure is not to scale

3.1.1 Reservoir

The Reservoir will be located close to Georgian Bay on top of the level plateau of the Niagara Escarpment, approximately 174 meters (m) above Georgian Bay's surface and 2,300 m from its shore. The Reservoir will hold approximately 26 million m^3 of water. To create the Reservoir, a Ring Dam will be constructed that is approximately 4.5 kilometers (km) in length to encircle approximately 135 hectares (ha) of land. The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure.

Based on the preliminary design, the Ring Dam will be constructed by removing overburden and near-surface weathered rock to reach competent bedrock within the Reservoir footprint. Where practical, excavated material will be reused to construct the Ring Dam with excess excavated materials being removed from site, as necessary. Additional required materials, including engineered fill, will be brought to site to construct the Ring Dam.

The Upper Inlet/Outlet Structure (refer to Figure 3-1) will be located within the Reservoir and will convey water into and out of the Reservoir. The Upper Inlet/Outlet structure will connect to two or more Headraces that will be outfitted with mechanisms to control the water being conveyed to and from the Powerhouse.

3.1.2 Powerhouse

The Powerhouse consists of a series of structures that will house the equipment necessary to pump water from Georgian Bay into the Reservoir and produce electricity when water is released back into Georgian Bay. The Project is proposing the use of four approximately 250 MW pump turbine generators (PTG) that will be located within the Powerhouse. The PTG units are reversible (i.e., same equipment pumps in one direction and generates in the other), which is a standard feature in modern pumped storage facilities. The Powerhouse is proposed as an underground chamber(s) with an Access Tunnel (illustrated on Figure 3-1 and Figure 3-2).

Potential construction methods are being considered for the Powerhouse, including underground mining methods and/or surface excavation methods. Materials generated from excavation for the Powerhouse will be assessed for their suitability for use in construction of the Ring Dam or other Project purposes.

3.1.3 Water Conveyance Structures

A series of structures will be developed to convey water to and from Georgian Bay and the Reservoir. These structures are referred to as Headraces (tunnels or pipes that convey water between the Powerhouse and the Upper Inlet/Outlet structure) and Tailraces (tunnels or pipes that convey water between the Lower Inlet/Outlet structure in Georgian Bay and the Powerhouse). These underground structures will be approximately 10 m in diameter and will be constructed using a variety of methods, including mining methods and traditional civil works.

Water levels in the Reservoir will be controlled by PTG operation. In the unlikely scenario water levels in the Reservoir exceed normal operating parameters, excess water will be drained to Georgian Bay by the Headraces, as described above, and then, if needed, through a contingency spillway.

3.1.4 Lower Inlet/Outlet Structure

The Lower Inlet/Outlet Structure will connect to the Tailraces and will allow for the withdrawal and release of water into Georgian Bay. The Lower Inlet/Outlet Structure will be located on or below the lakebed and is currently envisioned as an underground ring-type structure that will have multiple inlet/outlet ports located above the lakebed where water will be withdrawn and released. Inlet/outlet ports will be outfitted with screens and are envisioned to incorporate flow dispersion measures. Figure 3-2 illustrates a conceptual arrangement for the structure below the lake with ports being located above the lakebed. While a variety of designs are being evaluated, potential disturbance of lakebed sediments, alterations to local hydrologic conditions, and entrainment/impingement of aquatic species are considerations informing this design.

3.1.5 Switchyard and Offices

The Switchyard acts as an interface between the Project and Ontario's electrical system. The Switchyard will house electrical switches and equipment to control power import and export operations, including a control room that will interface with the Powerhouse. It is anticipated that the Switchyard will be located within a fenced, graveled yard. Support Offices and ancillary infrastructure (i.e., septic) will be located within or adjacent to the Switchyard. The Switchyard will be located at ground level, with two locations being considered either north or south of the Water Conveyance Structures, as illustrated on Figure 3-1.

3.1.6 Access

To facilitate construction and operational access to Project components, several roads and potential Marine Access may be required.

3.1.6.1 Access Roads

TC Energy is still evaluating the design, but it is anticipated that a number of new roads will be constructed, while existing roads will be upgraded and/or modified, to support both construction and operation access, and to allow uninterrupted access to 4 CDTC by DND. New roads will be constructed to an all-season standard (either paved or packed granular depending on location and intended use) and will incorporate appropriate drainage infrastructure. Figure 3-1 illustrates the potential locations of several roads within 4 CDTC; however, the location, design, and construction details will need to be determined with DND as the Project progresses.

3.1.6.2 Potential Marine Access

TC Energy is evaluating the possibility of using a Marine Access, which is an in-water structure to facilitate the movement of large components (e.g., PTG units) and bulk materials (e.g., engineered aggregates and excess soils). TC Energy is exploring potential Marine Access options including location, design options and whether it will be a permanent or temporary structure. Based on the preliminary evaluation, the potential Marine Access is located north of the Lower Inlet/Outlet Structure.

3.1.7 Temporary Construction Facilities

To support construction of the Project, several Temporary Construction Facilities may be required, including warehouses, laydown and staging/storage areas, and parking areas. TC Energy is evaluating the staging and storage needs required to support the construction activities associated with the Project. Additionally, TC Energy is evaluating the Project's needs for accommodation facilities off 4 CDTC, to support the workforce that will be required to construct the Project. Consistent with TC Energy's hire and buy local objective[2], TC Energy will prioritize local and regional workers wherever possible, reducing the need for additional accommodations. TC Energy will work closely with Saugeen Ojibway Nation, municipal governments, labour experts, and community service providers to support this approach. After construction activities are complete, any Temporary Construction Facilities will be removed, and the land will be reclaimed. TC Energy will work with rightsholders, municipalities, and other

[2] https://www.tcenergy.com/siteassets/pdfs/natural-gas/colt-and-greenview/tce-hire-buy-local.pdf

relevant parties, as applicable, to determine the end use of these lands prior to removal and reclamation.

3.1.8 Transmission Connections

As identified in Section 3, a connection to the Ontario electrical system will be required for the Project. However, care and control of the electrical connection system (i.e., transmission connection) have yet to be determined and will be subject to a process with IESO and Hydro One, with oversight by the Ontario Energy Board. TC Energy is in conversations with electricity transmission and distribution companies to progress options to develop, execute, own, and operate the transmission connection. Options being considered may include construction and/or operation by TC Energy, an electricity transmission and distributions utility company, or a combination of both. Confirmation of the location, design, and care and control of a transmission connection will be provided as Project planning progresses and additional engagement with Hydro One and IESO is undertaken.

TC Energy has identified that a high-voltage transmission connection, such as a 230 kilovolt (kV) or 500 kV transmission connection, would be required to connect to the Ontario electrical system. For the purposes of preliminary planning, a connection to either Hydro One's existing Stayner or Meaford Transformer Stations (locations illustrated on Figure 1-1) are identified in this IPD (see Section 6.2.8 for details). Additional electrical infrastructure will be required to connect to the Ontario electrical system, such as transformers, switches, and a shunt reactor, that would be installed at or adjacent to the existing Transformer Stations. This infrastructure would likely be located within in a gravel switching yard. In addition, Hydro One may be required to expand their existing transformer station to facilitate the interconnection with the Project.

3.2 Project Schedule

The Project is estimated to take approximately five and a half years to construct once necessary permits and approvals are secured. Once the Project is commissioned and ready to operate, it is envisioned that it could operate for the foreseeable future with proper maintenance and equipment upgrades.

In the event that the Project ceases to operate, TC Energy, as the proponent, would be responsible for decommissioning and associated land reclamation. Decommissioning and land reclamation methods will be determined through engagement with applicable federal departments and provincial agencies, rightsholders, as well as DND as the end land user, and in accordance with applicable regulations as required at the time.

Table 3-2 provides a high-level overview of the anticipated Project phases and schedule.

Table 3-2: Preliminary Schedule

Project Phase / Activity	Date
Construction	2029 to 2035
Operations	2035 onwards

To inform Project design and planning, initial work is underway or planned to characterize baseline conditions, advance the Project design, and determine regulatory requirements. This includes initiation of the following:

- Feasibility studies
- Biophysical, cultural, and social baseline studies (refer to Sections 9, 10, 12, 13, 14, and 15)
- Indigenous and public engagement (refer to Sections 7 and 8, respectively)
- Initiation of federal and provincial regulatory processes (IAA process, *Environmental Assessment Act* [EAA], permitting)

Further work on the detailed design and engineering plans, as well as project procurement, will progress as development of the Project continues.

3.3 Project Activities

TC Energy is proposing to construct and operate the Project, subject to obtaining all necessary permits and approvals. The following sections describe Project activities based on the phases outlined in Section 3.2 above.

3.3.1 Construction Phase

The construction phase will include the preparation of the site for construction, completion of proposed construction activities, and site restoration to facilitate operation of the Project. The sequencing of construction activities will continue to evolve as Project planning progresses; the order of activities listed below may be adjusted at the time of construction.

As an initial step of construction, some current DND infrastructure within areas proposed for development of the Project will need to be decommissioned. This infrastructure ranges in function and complexity, including but not limited to recreational fields, roads and utilities, training infrastructure, and buildings. The identification of infrastructure in conflict with the Project will be confirmed. A decommissioning strategy will be developed to address sequencing of construction activities, necessary unexploded ordnance (UXO) management/clearance, and necessary environmental mitigation measures including soil management, and material disposal that is appropriate. Detailed planning around the need for and extent of facility

decommissioning is being developed with DND inputs and is evolving as Project design and construction planning is advanced.

Prior to ground disturbance an UXO clearance will be conducted to identify and remove any possible UXO in accordance with DND requirements.

Site preparation includes clearing vegetation, grubbing and earthworks, as well as stockpiling of topsoil suitable for reclamation activities for areas impacted during construction that will not be used during operations. Earthworks will involve appropriate handling of soils, including management of potential contamination.

Construction activities include work to construct the Project components described in Section 3.1. Initially, work would focus on components required for construction access, including Access Roads and the potential Marine Access. Construction would shift to the Water Conveyance Structures and Powerhouse, which are anticipated to include excavation of vertical shafts, drilling, blasting, and/or tunneling. The Lower Inlet/Outlet Structure would also be constructed. Construction of the Reservoir would be initiated as early as possible once 4 CDTC infrastructure relocations are completed and would begin with soil and surface rock removal, bedrock excavation and eventual construction of the Ring Dam.

Given the early stage of design, numerous construction methods are being considered for the Lower Inlet/Outlet Structure, including but not limited to: tunnel boring, in-water construction, other forms of drilling, and prefabrication. Excavated material, if suitable, would be used to construct the Ring Dam around the Reservoir. In the event the materials are not suitable for construction or on-site use, excess materials will be appropriately disposed of off-site at a suitable receiving facility and in keeping with applicable regulations.

Once the Powerhouse, Reservoir, and Water Conveyance Structures have been constructed, pumping and control equipment, including the PTG units, Headraces, Tailraces and the Upper Inlet Outlet Structure, will be installed. The Switchyard and other site services will also be constructed at this time. Once construction of Project components has been completed, the facility will undergo system commissioning and disturbed areas will be progressively reclaimed to restore natural habitat and ecological function, where appropriate and feasible.

To facilitate construction, materials and equipment will need to be transported to site by either truck or boat (see Section 3.1.6) for details.

As identified in Section 3.1.8, a transmission connection will be required between the Project and the Ontario electrical system. Construction methodologies will be confirmed as the Project design advances and discussions with relevant parties progress.

3.3.2 Operation Phase

The facility will operate by pumping, storing and releasing water within the Reservoir. The facility will be operated from a control room within the Switchyard, which will communicate directly with equipment controls in the Powerhouse.

Over the course of the operations phase, routine inspection, monitoring, and maintenance activities will be completed to keep the facility operating in an efficient and safe manner. Monitoring will include both visual inspection of equipment and infrastructure, as well as process and redundant electronic controls. Over the life of the Project, it is expected that Project equipment will be maintained, refurbished, and potentially upgraded, as required.

3.4 Waste and Emissions Generated by the Project

3.4.1 Air Emissions

Construction-related emissions may include dust from vehicle travel on unpaved roads, earthworks and wind erosion of stockpiles, and exhaust emissions from stationary equipment (e.g., generators, pumps, etc.), light and heavy vehicles, and construction equipment.

The Project will be operated using electricity from Ontario's electric system and is not expected to create substantive air emissions as a result of its operation. Incidental activities, such as vehicle emissions used during maintenance activities, will occur during operation of the Project. However, with the prospect of increasing vehicular and industry electrification, it is probable that any limited incidental emissions would in turn decrease over time.

3.4.2 Noise Emissions

It is expected that Project construction will generate noise and vibration from vehicle traffic, the operation of construction equipment (excavation, earth movement, drilling), as well as tunneling and blasting activities.

During operations, the Project is not expected to produce substantive environmental noise. Noise-generating infrastructure, including the Powerhouse, rotating equipment, high voltage transformers, and other associated equipment, will be located underground or within structures/buildings.

3.4.3 Liquid Discharges

During construction, potential liquid discharges primarily relate to runoff from within construction areas where soils have been exposed. Specifically, earth works have the potential to destabilize soil that could lead sediment accumulation in runoff. Additionally, some deep excavation and/or tunneling may require construction dewatering. To manage runoff and dewatering effluent, erosion and sediment control measures will be in place to reduce soil erosion, control sediment transport, and to temporarily detain water to allow for settling prior to discharge to the surrounding environment.

Domestic sewage during construction will be collected in portable washroom facilities, the contents of which will be regularly pumped out and disposed at a licensed disposal facility.

During operations, the Project is proposed to generate electricity through the discharge of water back into Georgian Bay. The Project has been designed to draw water from Georgian Bay into the Reservoir and then to discharge that same water back into Georgian Bay to produce power. The water is not treated, heated, or otherwise altered when being conveyed. A loss of water is not expected (i.e., water balance) through these operations, and no other operational water takings are anticipated.

During operations, domestic sewage is anticipated to be held in septic tanks and periodically pumped out for appropriate disposal at a licensed facility.

During the operations, surface water runoff will be managed through a storm water infrastructure to control the quantity and quality of runoff. This will include provisions to direct water in a manner that mimics natural flow patterns to maintain local hydrological conditions, to the extent practical.

3.4.4 Other Waste Types

Other types of waste that are anticipated to be generated during the construction and operations include the following:

- Excess soil and overburden – as indicated in Section 3.3.1 stripped materials suitable for use in the Ring Dam or for reclamation activities will be stockpiled for use on site. Any excess materials will be disposed of offsite, in accordance with relevant federal or provincial regulations
- Solid wastes generated during construction activities and operation of the Project, including Industrial, Commercial and Institutional (ICI) waste and recyclable materials (wood, paper, metal) – disposal through contracted waste disposal and recycling

- Waste oil generated from regular maintenance activities – disposal through licensed recycler
- Hazardous waste (paint, solvents, batteries, fluorescent light bulbs, herbicides, etc.) – disposal through licensed disposal facility
- Munitions scrap (e.g. UXO) – disposal through licensed party

Waste will be segregated and stored in accordance with applicable regulations and will be disposed of at a licensed disposal facility.

4 Project Location

The Project is proposed within the eastern area of the traditional territory of Saugeen Ojibway Nation and is located in Grey County, east of the City of Owen Sound and north of Meaford's downtown, along the southern shores of Georgian Bay (See Figure 1-1 and Figure 1-2). The proposed location of the Project is unique within southwestern Ontario as it allows for a substantial elevation change between the Reservoir and a large water body (i.e., Georgian Bay) within a relatively short distance that allows for the efficient generation of electricity while being located in near proximity to a portion of Ontario's electricity system that can interconnect with up to 1,000 MW of electricity.

With the exception of the transmission connection, as well as portions of the Lower Inlet/Outlet Structure and Access components, the Project will be predominantly located on 4 CDTC, which is administered by DND.

Planning of the Project on lands within 4 CDTC is subject to an Agreement in Principle with DND reached in July 2021. The Agreement outlines an understanding that allows TC Energy to proceed with feasibility studies and to advance through the IA process, while protecting the interests of the Canadian Armed Forces and DND. The Agreement in Principle is not an approval for the Project but rather the terms and conditions to determine if the Project can be accommodated within 4 CDTC such that a future agreement can be negotiated.

Portions of the Project may be located on a prominent topographical feature, the Niagara Escarpment, that begins along the south side of Lake Ontario and arcs northwestward along the southwestern portion of Georgian Bay, along Manitoulin Island, and along the north end of Lake Huron and Lake Michigan. Portions of the Niagara Escarpment are subject to the *Niagara Escarpment Planning and Development Act,* specifically those within the Niagara Escarpment Plan Area (Niagara Escarpment Commission 2017). The Niagara Escarpment is also designated as a UNESCO World Biosphere Reserve for its ecological diversity and cultural value. The 4 CDTC lands are excluded from the Niagara Escarpment Plan Area and corresponding regulations, as well as the UNESCO Biosphere Reserve (UNESCO 2025); however, the potential Meaford transmission connection would traverse both the Niagara Escarpment Plan Area and UNESCO Biosphere Reserve.

4.1 Geographic Coordinates

The centroid location of the Project at 4 CDTC (latitude/longitude), provided below, is a single reference point identifying the general location of the Project; however, the Project will occupy a larger area as indicated on Figure 2-1:

- Latitude - 44°40'33' N
- Longitude - 80°37'59' W

4.2 Proximity to Residences and Communities

The Project will be located adjacent to the 4 CDTC Garrison, which includes buildings and other infrastructure including administrative and maintenance buildings, classrooms, support services (including a daycare), and temporary and permanent accommodation facilities. The base provides training facilities for a range of military and non-military organizations. There are also residential properties adjacent to 4 CDTC, some of which are located less than 500 m from Project components.

The downtown area of Meaford is located approximately 5 km south of the Project.

4.3 Legal Property Description

As previously stated, the Project is primarily located on federal lands that comprise 4 CDTC. Table 4-1 summarizes the various properties where Project Components and activities are proposed along with a legal description of lands.

Table 4-1: Legal Property Description

Property Description	Property Identification Number (PIN)	Owner
Primary parcel for 4 CDTC	37099-0051	DND
Road allowance within southern portion of 4 CDTC land (considered federal lands)	37099-0054	Municipality of Meaford
Parcel immediately south of Road allowance	37102-0190	DND

4.4 Proximity to Federal Lands

The Project is primarily located on federally owned lands that are managed by DND and occupied by 4 CDTC. DND has been actively engaged on the Project and TC Energy is working with DND so that the proposed Project and its operation is compatible with existing and future activities undertaken at 4 CDTC. TC Energy initiated preliminary discussions with DND about the potential for the Project in 2016 and began more structured dialogue with DND in 2018. DND has established a Project Management Office as well as a Steering Committee and Working Group for the Project. For additional detail on DND engagement see Section 8.3.3. These mechanisms allow structured and ongoing dialogue and information sharing between TC Energy and DND, including an understanding of potential infrastructure relocation needs related to the Project and the concerns and interests of DND and 4 CDTC.

As a result of potential interactions between the Project and existing DND infrastructure within 4 CDTC, some DND facilities and access roads will need to be relocated. These relocation activities are not considered part of the Project and will be under the duty and care of DND.

All Project Components are proposed on lands located within the Province of Ontario as such, no changes to federal lands located outside of the Province of Ontario are proposed.

5 Regulatory Framework

The Project as proposed will be primarily subject to federal jurisdiction, as the majority of Project Components and facilities are located within federal lands, specifically 4 CDTC. The custodian of the lands that comprise 4 CDTC is DND. Access to these lands occurs pursuant to the *Dominion Water Power Act* and is subject to an Access Agreement between TC Energy and DND.

Several components are located adjacent to federal lands and may be subject to the Ontario EAA.

5.1 Federal Requirements

5.1.1 Impact Assessment Act

The *Physical Activities Regulations* defines the physical activities (designated projects) pursuant to Section 2 of the IAA that require the submission of an IPD to IAAC to assess the need for an IA. Section 42 of the Regulations, which is applicable to the Project, includes:

> *The construction, operation, decommissioning and abandonment of …(a) a new hydroelectric generating facility with a production capacity of 200 MW or more*.

The *Information and Management of Time Limits Regulation* of the IAA sets out the information to be included within IPDs and DPDs, along with legislated timelines. This document has been prepared to address the requirements of both the IPD and DPD as outlined in the *Information and Management of Time Limits Regulation*.

5.1.2 Dominion Water Power Act

TC Energy is progressing approvals under the *Dominion Water Power Act* with an intent to enter an initial lease term of up to 50 years, which would be renewable at the end of term under the *Dominion Water Power Act.* An authorization from Indigenous Services Canada will be required for the construction and operation of a water power facility on federal lands.

5.1.3 Other Federal Regulatory Requirements

In addition to the requirements under the IAA and *Dominion Water Power Act*, the Project will likely be subject to other federal Acts as summarized in Table 5-1. The table is not exhaustive and other federal approvals may be identified as the Project progresses through the IA process and detailed design.

Table 5-1: Other Federal Approvals

Legislation	Agency	Permit, Approval or Authorization	Project Related Activity
Fisheries Act	Department of Fisheries and Oceans Canada (DFO)	Authorization for the Harmful Alteration, Disruption or Destruction of fish habitat	Direct or indirect impact to fish or fish habitat through works planned to occur in Georgian Bay or fish bearing waterbodies
Species at Risk Act (SARA)	DFO/Environment and Climate Change Canada (ECCC)	Permit for activities that may affect species present	Required for work that may adversely affect aquatic and migratory bird species at risk and their habitat, or terrestrial species at risk or their habitat on federal lands
Migratory Birds Convention Act	ECCC	Compliance with the migratory breeding bird timing windows	Required for site preparation activities that have the potential to result in destruction of nests or individuals
National Defence Act	Department of National Defence	N/A	4 CDTC is administered by DND and is subject to controls and management appropriate to a Defence Establishment as defined by the *National Defence Act*.
Canadian Navigable Waters Act	Transport Canada	Approval from Navigation Protection Program Major/Minor Works	Required for Project components with potential to alter navigable waters
Aeronautics Act	Transport Canada	Section 601.23 (1) Aeronautical Obstruction Clearance Approval	Required for overhead transmission lines in proximity to aeronautical facilities
Transportation of Dangerous Goods Act	Transport Canada	Explosives Transportation Permit	Required for the transportation of explosives by road in loads greater than 2,000 kilograms (kg)
Explosives Act	Natural Resources Canada	License	Required to store blasting explosives or any other type of industrial explosives (if the quantity exceeds 75 kg or 100 detonators, or the period of storage exceeds 90 days)

5.2 Provincial Requirements

5.2.1 Ontario Environmental Assessment Act

Project components located outside of federal lands will be subject to the EAA and may be required to complete certain Class Environmental Assessments independent from requirements under the federal IAA.

At this time, it is anticipated that a Class Environmental Assessment for Resource Stewardship and Facility Development Projects (RSFD Class EA), administered by the Ministry of Natural Resources (MNR), will be required. This Class EA may be triggered should authorizations under the jurisdiction of the MNR be required for the Project, for example for work on Crown lands such as the bed of Georgian Bay. The RSFD Class EA is an approved process for the evaluation and identification of mitigation measures for a variety of projects considered to have predictable and manageable impacts on the environment for which the MNR has jurisdiction(Ministry of Natural Resources 2024). As the Project will require the disposition of Crown resources under the jurisdiction of the MNR (e.g., work on Crown lands such as the bed of Georgina Bay), the RSFD Class EA will be triggered and will need to follow one of four categories:

- Category A projects are those that are of low negative environmental effects and/or public, Indigenous rights-holders, Indigenous group or agency concern.
- Category B projects have the potential for low to medium negative environmental effects and/or public, Indigenous rights-holders, Indigenous group or agency concern.
- Category C projects have the potential for medium to high negative environmental effects and/or public, Indigenous rights-holders, Indigenous group or agency concern.
- Category D projects require an Individual EA (as defined in Part II of the EAA) due to the potential for high negative environmental effects and/or public, Indigenous rights-holders, Indigenous group or agency concern.

Categories B, C, and D require a formal planning process which will include public, stakeholder and Indigenous group consultation.

The decision-making process to determine the category of the Class EA is typically undertaken by the MNR based on a suite of screening criteria that include natural environment, land use, resource management, social cultural and economic, and Indigenous considerations. The MNR also considers concerns from the public, agency, Indigenous rights-holders, and Indigenous groups when screening a project.

Assuming the MNR will screen the disposition of Crown resources under the jurisdiction of MNR to either a Category B or C, TC Energy will be required to document the need for the Project, alternatives, potential environmental effects, and appropriate mitigation and monitoring for possible adverse effects. A record of consultation will also be required. Once all requirements are met, MNR will issue a Statement of Completion authorizing the Project to proceed.

The transmission connection is anticipated to be subject to a Class Environmental Assessment for Transmission Facilities (TF Class EA) and would be regulated by the Ontario Energy Board. At this time, preliminary estimates indicate that the transmission connection will be subject to a full Class EA for TF as the connection would be greater than 115 kV but less than 245 kV and longer than 50 km in length or is greater than or equal to 500 kV and greater than 2 km (Hydro One 2024). As identified in Section 3, ownership and construction responsibility are still being determined. The TF Class EA is designed to provide the MECP with sufficient information to approve certain frequently occurring projects through a single review, confirming they are planned and carried out efficiently and in an environmentally acceptable manner (i.e., without requiring extensive individual assessments for projects with predictable environmental effects). Specifically, the TF Class EA consists of the following steps:

- Establish Need
- Alternatives to the Undertaking
- Define Study Area
- Notice of Commencement
- Environmental Inventory (including agricultural resources; forestry resources; cultural heritage resources; land use and communities; mineral resources; natural environment resources; recreation resources; and visual and aesthetic resources)
- Identify and Evaluate Alternative Methods
- Select Preferred Alternative and Draft Environmental Study Report (ESR)
- Notice of Completion of Draft ESR
- Statement of Completion and Final ESR

Opportunities for public, stakeholder and Indigenous input occur, at a minimum, at the Notice of Commencement and Notice of Completion of Draft ESR steps. Submission of the Statement of Completion to the MECP is the final step in the Class EA for TF, after which the proponent can implement a project, subject to other permitting and approval requirements.

5.2.2 Other Provincial Regulatory Requirements

In addition to the requirements under the EAA described above, Project activities that occur outside of federal lands (e.g., Project activities associated with the construction and operation of the transmission connection, potential Marine Access and Lower Inlet/Outlet Structure) will likely also be subject to the Provincial Acts listed in Table 5-2. The table is not exhaustive and other provincial approvals may be identified as the Project progresses through the IA process and detailed design. In general, provincial agencies will conduct reviews and if satisfied with the information presented, will issue authorizations under the applicable legislation that may include various conditions for approval.

Table 5-2: Other Provincial Regulatory Requirements

Legislation	Agency	Permit, Approval or Authorization	Project Related Activity
Ontario Water Resources Act	Ministry of Environment, Conservation and Parks (MECP)	Section 34: Category 3 Permit to Take Water (PTTW)	Required for construction or operation dewatering activities
Ontario Heritage Act	Ministry of Multiculturalism (MCM)	Letter of Acceptance under Part IV (cultural heritage) and Part VI (archaeology)	Construction activities with potential to disturb resources of archaeological value and properties of cultural heritage value or interest
Ontario Energy Board Act	Ontario Energy Board (OEB)	OEB Approval; Ontario Regulation (O Reg.) 53/05; O Reg. 161/99; Section 92 approval	Required to build new transmission facilities
Endangered Species Act[3]	MECP	Notice of Activity Registration and/or *Endangered Species Act* Permit	Project activities that have potential to impact species at risk (SAR) or their habitat
Conservation Authorities Act	Grey Sauble Conservation Authority/ Nottawasaga Valley Conservation Authority	Permit for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses, O Reg 41/24	Project activities that constitute regulated works within areas regulated by Conservation Authorities

[3] The *Endangered Species Act* has been recently amended by the Government of Ontario and will be replaced with the *Species Conservation Act* (SCA). While the SCA is not yet in effect, it has been assumed that approvals under the SCA will apply.

Legislation	Agency	Permit, Approval or Authorization	Project Related Activity
Ontario Water Resources Act	MECP	Section 53: Environmental Compliance Approval (ECA) – Industrial Sewage	Required for industrial sewage discharge from the Project, including storm water
Environmental Protection Act	MECP	Section 9 (1): ECA – Air & Noise	Required for air and noise emissions from the Project
Public Lands Act	MNR	Section 14(1): Location Approval and Plan Approval	Works below the high-water mark of watercourses or waterbodies
Niagara Escarpment Planning and Development Act	Niagara Escarpment Commission	Niagara Escarpment Development Permit	Required for potential transmission corridor across the Niagara Escarpment Plan Area. Note, the 4 CDTC lands are excluded from the Niagara Escarpment Plan Area and corresponding regulations

5.3 Regional or Strategic Assessments

The federal Strategic Assessment of Climate Change – Revised October 2020 is applicable to the Project. Since operation of the Project is anticipated to continue beyond 2050, this Project will be expected to achieve net-zero.

As per the requirements of the *Information and Management of Time Limits Regulation*, a review was undertaken for other studies or plans relevant to the Project that are being or have been conducted of the region where the Project is to be carried out, including any Regional Assessment carried out under the IAA, or by any jurisdiction including by or on behalf of an Indigenous governing body, where the study or plan is available to the public. No publicly available studies or plans of relevance to the Project were identified.

6 Project Alternatives

The *Information and Management of Time Limits Regulations* outlines the requirements for information to be included in an Initial and Detailed Project Description, including a list and description (respectively) of alternatives to and alternative means of carrying out a project that are technically and economically feasible. As per Section 1 of this IPD, the intent of this IPD is to also satisfy the requirements of an IPD and DPD; therefore, a description of alternatives to and alternative means are provided.

6.1 'Alternatives To' the Project (Alternative Technologies)

Energy storage provides a solution capable of addressing the imbalance that occurs between supply and demand for electricity over a period of time. Energy storage is a cost-effective solution that allows decarbonization of electric power systems, including those that use intermittent sources (wind and solar generation) while maintaining system reliability (MIT 2022).

TC Energy has identified a business case that supports the development of the Project to meet the need for long-duration energy storage in Ontario. As outlined in Section 2.1, TC Energy has identified an opportunity at this location to provide incremental energy storage to the Ontario electrical system and is proposing pumped storage as the preferred technology to achieve this goal. To address the requirements of the *Information and Management of Time Limits Regulations*, the technical and economic feasibility of the following "Alternatives To" this Project are discussed:

- "Do Nothing"
- Mechanical Energy Storage technologies, including:
  - Pumped-storage hydroelectricity
  - Compressed air energy storage (CAES)
  - Flywheel storage
- Electrochemical Energy Storage technologies, including:
  - Redox flow batteries
  - Lithium-ion batteries

Various commercially available technologies exist that use these methods to transform and store electrical energy for future use. These methods, along with the "Do Nothing" alternative, are described below as "Alternatives To" the Project.

6.1.1 Do Nothing

A “Do Nothing” alternative (i.e., whereby the Project would not proceed) does not meet the purpose of the Project as stated by TC Energy in Section 2.1. The opportunity to provide incremental energy storage to the Ontario electrical system would not be realized and is therefore not technically feasible.

Further, under this scenario, the potential effects from the Project would not be realized. Should the Project not proceed, any advantages/benefits of the Project would not occur from the “Do Nothing” (no action) alternative, since it represents the status quo. While potential adverse effects on the environment would be avoided under this scenario, failing to proceed with the Project would result in unrealized benefits and would not address the need for energy storage in the province.

6.1.2 Mechanical Energy Storage

The global need for energy storage has driven the progression of several mechanical energy storage technologies, including:

- Pumped-storage hydroelectricity
- CAES
- Flywheel storage

6.1.2.1 Pumped-Storage Hydroelectricity

Pumped-storage hydroelectricity, which is being proposed for this Project, uses water and gravity to store potential energy prior to generating electricity to provide load balancing to electrical systems. Water from a lower reservoir is pumped to an upper reservoir and is temporarily stored until the electricity system signals the need for additional generation. When electricity is required, water is returned to the lower reservoir, passing through a turbine generating electricity.

Pumped-storage technology is a mature technology that has been deployed globally on a variety of scales (IESO 2021, MIT 2022). These types of facilities tend to have large footprints and are capital intensive due to their size (MIT 2022). They are also subject to siting constraints, requiring sufficient grade differences to produce the necessary head to power the turbines. However, they have long operational lifecycles and high maximum power rating potential (WEC 2016). They also provide longer storage duration (10 hours) compared to batteries (4 hours) (ICF 2020).

In Ontario, the Sir Adam Beck Pumped Storage Facility in Niagara Falls provides 228 MW of energy storage. Pumped storage projects play a more substantial role in energy storage elsewhere in the world, such as the East Asia and Pacific region that has a pumped storage capacity of 98,433 MW, and Europe with 56,105 MW of pumped storage capacity (International Hydropower Association 2025). Globally, there is an installed pumped storage capacity of approximately 200 GW(International Hydropower Association n.d.), with an estimated 600 GW of additional projects currently in development (International Hydropower Association 2025).

6.1.2.2 Compressed Air Energy Storage

CAES is an established mechanical storage technology that involves pressurizing air to store it and then releasing the air through turbines to generate electricity. The compression of the air generates thermal energy; systems are categorized according to where the compressed air is stored (above ground in tanks or pipes, or below ground in salt caverns, aquifers and hard rock mines), and the management of the thermal energy (expelled versus stored) (MIT 2022). Compressors can be powered by the electrical system or through combustion of fossil fuels. Where combustion is used to compress air, the technology is not considered a zero-emission technology.

CAES facilities have a high maximum power rating and typically operate more efficiently over longer durations (e.g., 12 to 24 hours) (Crotogino et al. 2001, MIT 2022). CAES facilities have low energy density and are subject to siting constraints for below ground storage, while above ground storage is considered prohibitive due to size and safety constraints (MIT 2022).

6.1.2.3 Flywheel Storage

Flywheel storage is another mechanical storage option. Flywheel storage is accomplished by rotating a large rotor in a vacuum to a high speed and maintaining that speed. Energy is added to the system, which increases how fast the rotor is spinning. Energy is later withdrawn from the system, slowing down the rotor. Energy to rotate the flywheel generally comes from electricity.

Flywheel technology is considered a developed technology that has a low maximum power rating (20 MW range), but has a long life-cycle, high energy density, and capacity for quick response (WEC 2016).

6.1.3 Electrochemical Energy Storage

Electrochemical energy systems store energy through reduction and oxidation reactions (MIT 2022). Electrochemical energy storage is more recognizable as battery technology, including:

- Redox flow batteries
- Lithium-ion batteries

Among energy storage solutions, electrochemical energy storage (i.e., battery energy storage systems [BESS]) offers a potential alternative to pumped storage technology. Although these systems provide some of the same services to the electrical system, they differ widely in their construction and maintenance requirements, supply chain reliance, and project lifespans. Pumped storage provides a more reliable and sustainable path forward for energy storage in Ontario. While most of the construction resources for the Project would be sourced domestically, BESS would require substantial amounts of critical minerals, such as lithium, to be sourced from abroad, particularly from China (CANCEA 2024). This has the potential to expose a BESS project to price volatility and risk (CANCEA 2024).

6.1.3.1 Redox Flow Battery

A redox flow battery (or flow battery) stores and releases energy through a reversible electrochemical reaction between two solutions or electrolytes (as opposed to between two solid electrodes). These electrolytes are separated by an ion-selective membrane that allows for a charge/discharge of battery by circulating the electrolyte though the cells holding the electrolytes, allowing electrons to pass through the membrane (VBR Energy 2023).

The technology has a relatively low energy density (compared to lithium-ion battery technology) and facilities have long life cycles (WEC 2016). Disadvantages include frequency of maintenance, smaller capacity (reduced scalability) (U.S. Department of Energy 2022), and availability and cost of raw materials, depending on which reagents are used in the design (MIT 2022).

6.1.3.2 Lithium-Ion Battery

Lithium-ion batteries are rechargeable and use solid compounds as electrodes. To use the energy, lithium ions migrate from the negative electrode to the positive electrode through the liquid electrolyte. Electrons simultaneously migrate the same direction through an external circuit, which generates power. The process is reversed to charge the battery (MIT 2022).

Lithium-ion batteries are one of the highest energy-density technologies and commonly used on a small scale for consumer items (cellphones and electric vehicles) (EESI 2019). However, lithium-ion battery storage technology is better suited to short-term storage (a few hours) and more frequent cycling (MIT 2022).

6.2 Alternative Means of Carrying out the Project

"Alternative means" are the various technically and economically feasible ways, including through the use of best available technologies that would allow a designated project and its physical activities to be carried out. Alternative means can include options for locations, development, and / or implementation methods, routes, designs, technologies, and mitigation measures that may result in short-term or lasting effects.

This section describes the alternative means of carrying various components of the Project as a means to optimize capabilities, economics, safety, and reduce community and environmental concerns.

At this stage, TC Energy is considering (or has considered) alternative means of carrying out the following key components of the Project:

- Project location
- Lower water source
- Ring Dam design
- Location of Switchyard and Offices
- Project access roads
- Potential Marine Access
- Transmission connections

As the Project progresses and engineering design advances, additional alternatives may be considered as it relates to construction methodologies, management of excavated materials, siting of specific components, and other activities associated with the Project.

6.2.1 Project Location

A key consideration is the location of the Project. Siting parameters that are necessary for a pumped-storage hydroelectric facility include:

- Sufficient elevation differential between the upper and lower reservoirs (at least 10%), to generate sufficient hydraulic head
- Close proximity to a water source, for efficiency of energy generation (within 3 km of source is preferred)
- A large enough body of water as water source, sufficient to reduce impacts of water exchanges
- Sufficient area for the upper and lower reservoirs that is not in conflict with other land uses, or otherwise protected lands
- Proximity to the load demand in southwestern Ontario
- Proximity to a suitable high-voltage interconnection point with sufficient capacity
- Identified property capable of hosting the Project

The Project seeks to address the electricity load demand in southern Ontario, specifically southwestern Ontario (areas west of Lake Simcoe). Within southwestern Ontario, there is sufficient high-voltage transmission infrastructure such that all areas west of Barrie, with the exception of the northern end of the Bruce Peninsula, are within approximately 50 km of high-voltage transmission facilities.

The greater challenge for Project siting is identifying areas with elevation grades of 10% or greater in southwestern Ontario. The Niagara Escarpment topographical feature near Georgian Bay affords that necessary elevation change.

Large natural water bodies for pumped storage facilities are typically substantial rivers or lakes, and Lake Huron is sufficiently large. The availability of sufficient land for development is also a requirement.

The selected location for the Project on 4 CDTC property controlled by DND satisfies these siting criteria. No other suitable location has been identified. The selected Project site on 4 CDTC (Meaford) presents a unique opportunity within southwestern Ontario. The Project site specifically satisfied the technical requirements and represents a location in southwestern Ontario that is suitable for pumped storage. The site at 4 CDTC is located on Georgian Bay, which provides a large source of natural water. The location has a natural elevation change of 150 m from the top of the Niagara Escarpment to the Georgian Bay shoreline. The site is acceptably close to a robust interconnection point at the Stayner Transformer Station or Meaford Transformer Station and is close to the Greater Toronto Area where demand for electricity in Ontario is the greatest.

6.2.2 Lower Water Source

Pumped-storage hydroelectric facilities require an upper reservoir and lower water source to establish an appropriate amount of force from gravity to efficiently turn a turbine to generate electricity. The lower water source can be either “open loop” or “closed loop”, in which the water used to generate electricity is either hydraulically connected to an external body of water or is re-circulated. The determination of whether to use an open or closed loop system is based in part on the location of the facility, the surrounding topography, and available water resources.

For the lower water source, several conceptual options considered in terms of location and design include:

- Onshore Lower Reservoir (closed loop) – an onshore closed loop reservoir situated between the Niagara Escarpment and the shoreline of Georgian Bay with a dedicated intake for initial filling and supplement replenishment.
- In-water Ring Dyke or Dam (hybrid closed loop) – a nearshore, closed loop reservoir consisting of an approximate 3,100 m ring dyke or dam located on lands adjacent to the shoreline and/or within Georgian Bay. The ring dyke/dam would isolate the reservoir area from Georgian Bay.
- Open System with Excavated Onshore Channel and Barrier – an open-loop system with Georgian Bay as the water source using a conventional shoreline Powerhouse and Inlet/Outlet Structure with an excavated channel. This concept could have a barrier net or a nearshore screened dam. The barrier net would be located some distance from the entrance of the inlet channel, beyond the zone of hydraulic influence, to mitigate fish entrainment. The screened dam would create a sheltered area in-water using breakwaters and a mesh screen to allow water to enter and exit the area.
- Open System with Inlet/Outlet Structure (currently preferred) – an open loop system with Georgian Bay functioning as the water source using an offshore screened Inlet/Outlet Structure outfitted with a series of diffuser ports.

6.2.3 Spillway

As outlined in Section 3.1.3, in the unlikely scenario where water levels in the Reservoir exceed normal operating parameters, a contingency spillway is being considered to provide a conveyance route for water from the Reservoir to Georgian Bay. Options being considered include:

- Dewatering through Headraces
- Overflow spillway with flow discharge directed away from populated areas and existing infrastructure

6.2.4 Reservoir Design

The Reservoir has been sited on the plateau of the Niagara Escarpment, which is broad and generally level. Removal of surface material (vegetation, soil, subsoil) and excavation to competent bedrock is needed to construct the Reservoir. A Ring Dam will be constructed around the perimeter of the excavation that will form the embankment of the Reservoir, the slope and surfacing of which will be designed to control surface water runoff related to the structure.

TC Energy is exploring a number of potential options regarding the Reservoir that consider the type of material and technique used to construct the dam and subsequently its geometry.

6.2.5 Location of Switchyard and Offices

The Switchyard will be located at ground level with alternate locations being considered in proximity to the Water Conveyance Structures. TC Energy is still exploring options for the design and footprint of both the Switchyard and Offices.

6.2.6 Project Access Roads

As outlined in Section 3.1.6, TC Energy is evaluating access requirements within 4 CDTC, which also include maintaining access for DND activities. TC Energy continues to work with DND to identify whether a new dedicated access road would be required from 9th Line or if existing access roads within 4 CDTC could be used and/or upgraded to accommodate Project related traffic and to facilitate continued access for DND.

Access requirements to the area near the shores of Georgian Bay are also being evaluated, including potential access and/or upgrades to the road coming from 7th Line. Consideration will be given as to whether or not these roads would need to be permanent during operations or if they could be removed once construction has been completed.

6.2.7 Potential Marine Access

TC Energy is evaluating the possibility of using potential Marine Access (e.g., a dock) to provide shipping access to the site for the transport of larger bulk items. Currently this structure is proposed north of the Lower Inlet/Outlet Structure, although the final location is still being evaluated. Whether or not the potential Marine Access is temporary or permanent is also being evaluated and will be dependant on long-term Project needs, as well as the potential use by DND.

6.2.8 Transmission Connections

As outlined in Section 3.1.8, further discussion regarding the transmission connection will be required between TC Energy, electricity and transmission distributions companies, IESO, and Hydro One. This will include discussions around care and construction of the transmission connection along with an analysis of potential alternative means of connecting the Project to the Ontario electrical system, which may include, but is not limited to, connecting to Hydro One's Stayner or Meaford Transformer Stations. For the purposes of preliminary planning the following tie-in options are being considered.

- Stayner Transmission Connection Option – a transmission connection option alignment that would include high-voltage submarine cables buried underneath Georgian Bay, beginning from the Project Switchyard to a parcel of land owned by TC Energy in the Town of Wasaga Beach. The connection option would then continue underground or overhead to the Hydro One Stayner Transformer Station.
- Meaford Transmission Connection - a transmission connection alignment that would see the installation of high-voltage underground or overhead cables or a combination of both from the Project to the Meaford Transformer Station.

6.2.9 Other Alternative Means

While the Project is in early stages, it is anticipated that TC Energy will evaluate construction methodologies such as excavation methods (e.g., open excavation, drilling, blasting, tunneling), the management of excavated materials (e.g., use of materials on-site versus off-site) and locations of Temporary Construction Facilities, including on and off federal lands, and other potential alternative means that may be identified in the future as design progresses.

7 Indigenous Engagement

This section of the IPD provides information on TC Energy's Indigenous[4] Engagement Program for the Project, including:

- Engagement program approach
- Design and implementation of the engagement program
- Identification of potentially affected Indigenous rights-holders and Indigenous groups
- Key outcomes of the engagement program up to May 2025
- Plans for ongoing engagement

TC Energy recognizes the importance of early and meaningful engagement with Indigenous rights-holders and Indigenous groups and strives to establish and maintain mutually respectful relationships throughout the development of the Project. Engagement with Saugeen Ojibway Nation—comprised of Saugeen First Nation and the Chippewas of Nawash Unceded First Nation—began in October 2018. Engagement with additional Indigenous rights-holders and Indigenous groups expressing interest in the Project began in September 2019. From the Project's earliest stages, TC Energy has engaged with Saugeen Ojibway Nation. As described in Section 1.2, Saugeen Ojibway Nation and TC Energy have entered into an agreement that creates a framework for engagement, to provide the information and support needed for Saugeen Ojibway Nation to reach a decision on support for the Project.

TC Energy continues to engage with potentially affected Indigenous rights-holders and Indigenous groups to meet or exceed regulatory and its corporate requirements and commitments as articulated in its Indigenous Relations Policy and Commitment Statement[5].

TC Energy values the feedback provided by Indigenous rights-holders and Indigenous groups and recognizes that shared information will contribute to the IA process.

7.1 Indigenous Engagement Approach

The Indigenous Engagement Program for the Project is designed to foster productive dialogue and exchange of information with potentially affected Indigenous rights-holders and Indigenous groups, with the intent to build and sustain support through early and honest engagement, mitigating impacts, and by developing mutually beneficial partnerships. It is developed and adapted according to the nature, location, and potential effects of the Project, and to the identified interests, information needs and concerns of Indigenous rights-holders and

[4] "Indigenous" has the meaning assigned by the definition of Aboriginal peoples of Canada in subsection 35(2) of the *Constitution Act, 1982*: (2) In this Act, "aboriginal peoples of Canada" includes the Indian, Inuit and Métis peoples of Canada.

[5] https://www.tcenergy.com/siteassets/pdfs/about/governance/tc-our-commitment-statement-en.pdf

Indigenous groups. While the underlying principles remain the same, the scope and depth of engagement may vary according to the potential for Project-related effects and the identified interests of each Indigenous group.

TC Energy's Indigenous Engagement Program for the Project is carried out according to a four-step process:

- Step 1: Establish the engagement approach
- Step 2: Identify potentially affected Indigenous rights-holders and Indigenous groups
- Step 3: Implement engagement program activities
- Step 4: Respond to questions and concerns

As outlined in Section 8.1.2, TC Energy engages with diverse populations in ways that are culturally appropriate and guided by the preferences, requests, and advice of the groups who may be affected (e.g., holding in-person and virtual meetings specific to Indigenous rights-holders and Indigenous groups, organizing site visits, offering opportunities to participate in fieldwork). TC Energy will continue to adapt its inclusive engagement approach to reflect feedback received.

7.1.1 Principles and Goals

TC Energy's *Indigenous Relations Policy*[6] outlines the guiding principles for the Project's Indigenous Engagement Program and builds on TC Energy's values of safety, innovation, responsibility, collaboration, and integrity. These values guide engagement with Indigenous rights-holders and Indigenous groups for all TC Energy business activities. TC Energy's policies, principles and practices guide the design and implementation of the Indigenous Engagement Program for the Project.

The goal of the Indigenous Engagement Program for the Project is to provide Project information and seek feedback from Indigenous rights-holders and Indigenous groups, to anticipate, prevent, mitigate, and manage conditions that have the potential to affect Indigenous interests. TC Energy strives to meet this goal by:

- Establishing a practical approach for the implementation of Project-specific engagement activities
- Initiating engagement activities as soon as possible in the planning of the Project
- Providing clear, relevant, and timely information to potentially affected Indigenous rights-holders and Indigenous groups

[6] https://www.tcenergy.com/siteassets/pdfs/about/governance/tc-indigenous-relations-policy.pdf

- Responding to concerns raised and documenting commitments made during engagement activities

7.1.2 Indigenous Knowledge Studies

TC Energy recognizes the importance of including Indigenous knowledge in Project design. It is also understood that interested and potentially affected Indigenous rights-holders and Indigenous groups are best placed to decide what information they wish to share with applicants in relation to their interests in the Project area and concerns they may have. Working with these Indigenous rights-holders and Indigenous groups to develop an understanding of their Indigenous knowledge and interests in and around the Project area can enhance and shape Project design and planning.

TC Energy understands that there is no universally accepted definition of Indigenous knowledge, and that it is community specific, and place based, arising from Indigenous peoples' intimate relationship with their environment and territory over thousands of years (IAAC 2022). Indigenous knowledge may consist of Traditional Ecological Knowledge and Traditional Land and Resource Use and forms part of a larger body of information which encompasses knowledge about cultural, environmental, economic, political, and spiritual inter-relationships, which is typically identified by, and gathered through, engagement with Indigenous rights-holders and Indigenous groups. Indigenous knowledge is considered cumulative and dynamic, developed through the experiences of earlier generations, informing the practice of current generations, and evolving in the context of contemporary Indigenous societies (IAAC 2022).

The collection of Indigenous knowledge with interested Indigenous rights-holders and Indigenous groups is intended to:

- Identify and consider potential impacts of the Project on Indigenous rights-holders and Indigenous groups' rights and interests
- Incorporate Indigenous knowledge in Project planning
- Identify concerns about the Project
- Propose measures to avoid, mitigate or otherwise manage potential adverse Project effects on Indigenous interests

In addition to receiving Indigenous knowledge through ongoing engagement, Indigenous knowledge may be collected through Project-specific Indigenous knowledge studies. Where an Indigenous group has identified an interest in conducting an Indigenous knowledge study, TC Energy work with interested groups to initiate study planning and have discussions to:

- Understand through map review or other means where the Indigenous group prefers to exercise their rights and interests relative to the Project area. The scope of study would consider land tenure, land or water use, and accessibility
- Determine whether the Indigenous group requires any level of support from TC Energy or if the study will be entirely self-directed
- Schedule study activities and timelines that enhance the incorporation of study results to Project planning and opportunities for issues resolution
- Establish reasonable funding to support the study commensurate to the scope, scale and setting of the Project by executing agreements with interested potentially affected Indigenous rights-holders and Indigenous groups

Indigenous knowledge shared with TC Energy will be considered and TC Energy will demonstrate how comments or feedback received from the Indigenous rights-holders and Indigenous groups will be considered in Project planning, including the IA, as appropriate. Information shared with TC Energy that is identified as confidential will not appear on the public record. Confidentiality provisions are included in TC Energy's agreements and allow for the protection of confidential information provided by Indigenous rights-holders and Indigenous groups, as informed by:

- IAAC (2023a) Guidance: Indigenous Knowledge under the *Impact Assessment Act*
- IAAC (2023b) Guidance: Protecting Confidential Indigenous Knowledge under the *Impact Assessment Act*
- IAAC (2021) Guidance: Gender-based Analysis Plus in Impact Assessment
- IAAC (2022) Indigenous Knowledge Policy Framework for Project Reviews and Regulatory Decisions

As each Indigenous group may have different processes or means of gathering and sharing Indigenous knowledge, TC Energy will tailor its approach to meet a group's specific needs by seeking feedback from the contributing Indigenous group on how Indigenous knowledge has been described when informing Project planning.

7.2 Identification of Potentially Affected Indigenous Rights-holders and Indigenous Groups

TC Energy identified potentially affected Indigenous rights-holders and Indigenous groups based on the location of the Project within asserted traditional territories, established treaty areas and settlement areas, TC Energy's own operating experience and established network of contacts, and based on the advice of the Government of Canada. To understand the scope of potential interest in the Project, TC Energy sent notice and offers of engagement to a number of potentially affected or interested Indigenous rights-holders and Indigenous groups consisting of First Nations, Métis citizen groups, and political tribal organizations. Table 7-1 lists the Indigenous rights-holders and Indigenous groups that expressed an interest in engaging with TC Energy on the Project among those who were contacted. Engagement was informed by IAAC guidance (September 25, 2023), which included their preliminary list of potentially impacted Indigenous rights-holders and Indigenous groups, identified by an asterisk in Table 7-1.

Future direction or advice provided to TC Energy by federal and provincial authorities and agencies may result in changes to the list of Indigenous rights-holders and Indigenous groups identified for engagement on the Project. Where additional Indigenous rights-holders and Indigenous groups are identified for engagement by government agencies or self-identify through the course of Project planning, TC Energy will share Project information and arrange introductory meetings accordingly.

Table 7-1: Identified Indigenous Rights-holders and Indigenous Groups

Indigenous Rights-holders and Indigenous Group	Treaties/Agreements
First Nations	
Alderville First Nation*	Williams Treaties 2018 Williams Treaties Settlement Agreement
Beausoleil First Nation*	Treaty 18 Williams Treaties 2018 Williams Treaties Settlement Agreement
Chippewas of Georgina Island First Nation*	Treaty 18 Williams Treaties 2018 Williams Treaties Settlement Agreement
Chippewas of Nawash Unceded First Nation*	Treaty 45 ½ Treaty 72
Chippewas of Rama First Nation*	Treaty 18 Williams Treaties 2018 Williams Treaties Settlement Agreement

Indigenous Rights-holders and Indigenous Group	Treaties/Agreements
Curve Lake First Nation*	Williams Treaties 2018 Williams Treaties Settlement Agreement
Hiawatha First Nation*	Williams Treaties 2018 Williams Treaties Settlement Agreement
Mississaugas of Scugog Island First Nation*	Williams Treaties 2018 Williams Treaties Settlement Agreement
Saugeen First Nation*	Treaty 45 ½ Treaty 72
Six Nations of the Grand River*	Nanfan Treaty 1701 (or Treaty of Albany 1701)
Wendat Nation (Huron Wendat Nation)*	Huron-British Treaty of 1760 2023 Framework Agreement between Huron-Wendat Nation and Canada
First Nation Organizations	
Chippewa Tri-Council	First Nation signatories to Treaty 18 and the Williams Treaty, including: • Beausoleil First Nation • Chippewas of Georgina Island First Nation • Chippewas of Mnjikaning (Rama) First Nation
Saugeen Ojibway Nation	First Nation signatories to Treaty 45 ½ and Treaty 72, including: • Saugeen First Nation • Chippewas of Nawash Unceded First Nation
Métis Organizations and Potentially Affected Métis Groups	
Historic Saugeen Métis*	TC Energy is not aware of any treaty or agreement between the Crown and the Historic Saugeen Métis
Métis Nation of Ontario (Region 7)*	Consultation Agreement between Métis Nation of Ontario and Government of Canada Métis Self-Government Recognition and Implementation Agreement
Métis Nation of Ontario (Land, Resources, and Consultation Branch – Toronto)	
Note: *Preliminary list of potential affected Indigenous rights-holders and Indigenous groups identified by IAAC for engagement on the Project.	

7.3 Engagement Program Activities

TC Energy implemented a wide range of engagement activities and communication tools to share information with and solicit feedback from Indigenous rights-holders and Indigenous groups on the Project. These have included, but are not limited to:

- Participation in community events, open houses/information sessions: in-person and virtual sessions that included presentations and hosting info booths
- Face-to-face and virtual meetings: focused discussions with members of Indigenous rights-holders and Indigenous groups to cover specific topics
- Email, telephone calls, text messages: standard communications to coordinate logistics and to confirm receipt of information
- Site visits: in-person tours to both the Project location (on land and boat), as well as to see other pump storage facilities
- Indigenous newsletters: newsletters and fact sheets describing Project information, updates, and other pertinent information related to the Project
- Initial Project notification package: a package to provide Indigenous rights-holders and Indigenous groups with an overview of the Project, contact information for TC Energy, and an invitation to engage with TC Energy on the Project
- Project mailouts/announcements: formal notifications to inform Indigenous rights-holders and Indigenous groups about the Project and/or Project related changes (e.g. announcements from provincial government that affect the Project)
- Visual Communication tools: various models (e.g., scale models, working models, key component models, cut aways, and profiles) and renderings to support in-person and virtual engagement activities
- Project website: online resource that included Project information including videos, renderings, and maps. The site also contained contact information and a Frequently Asked Questions section that is updated periodically.
- Indigenous knowledge studies[7]

The following sections provide additional detail on TC Energy's approach to documenting and responding to questions and concerns.

7.3.1 Responding to Questions or Concerns

Questions or concerns identified by Indigenous rights-holders and Indigenous groups during engagement activities were and will continue to be recorded and considered by TC Energy. As part of preparing responses (where required), such questions or concerns are shared with the appropriate Project technical specialists or designated environmental consultant. Once a

[7] Indigenous knowledge is community specific, and place based, arising from Indigenous peoples' intimate relationship with their environment and territory over thousands of years (IAAC 2022). See Section 7.1.2.

response is developed, it is provided to the Indigenous group for further comment or dialogue, see Section 7.4 for a summary of comments received to date.

TC Energy seeks to work collaboratively with Indigenous rights-holders and Indigenous groups through an iterative process to address Project-related questions or concerns and to provide information on how their input influenced Project design or planning changes. TC Energy continues to discuss with Indigenous rights-holders and Indigenous groups potential measures to avoid, mitigate or otherwise manage potential effects of the Project and to address or respond to questions or identified concerns.

The outcomes of these efforts will be considered for incorporation in Project planning, and reported in regulatory submissions, as appropriate.

7.3.2 Reporting

TC Energy's Project engagement activities, as well as the outcomes of those activities, have been and will continue to be tracked with a response provided, as appropriate. Engagement activity information is collected and managed in a database designed to support this work. Information collected includes the following:

- A list of Indigenous rights-holders and Indigenous groups provided with Project-specific information
- A description of how and when information was provided
- Dates and locations of activities throughout the engagement process
- A summary of engagement efforts and outcomes, including information on questions and concerns raised, and responses and measures taken
- A description of outstanding concerns and proposed follow-up with Indigenous rights-holders and Indigenous groups, if required

7.4 Summary of Engagement

This section summarizes TC Energy's engagement activities carried out for the Project with Saugeen Ojibway Nation, beginning in October 2018, and with other Indigenous rights-holders and Indigenous groups beginning in September 2019. The scope and depth of engagement may vary according to the proximity to Project components and activities, potential effects and the identified interests of each Indigenous group.

Following initial identification of Indigenous rights-holders and Indigenous groups (see Section 7.2), an initial Project notification package was provided to each identified Indigenous group in

September 2019. After the package was sent, TC Energy contacted each Indigenous group to confirm:

- Receipt of the Project notification package
- Level of interest in the Project
- The primary point of contact for engagement

Regardless of level of responsiveness, TC Energy continues to share Project information on a periodic basis with Indigenous rights-holders and Indigenous groups and remains available to meet to discuss the Project, address questions and concerns and consider additional information brought forward from Indigenous rights-holders and Indigenous groups, for review and incorporation into Project planning, as appropriate.

TC Energy continues to work with Indigenous rights-holders and Indigenous groups who have responded to Project notifications to develop Project-specific engagement plans that respect their different processes or means of gathering and sharing information. TC Energy, where appropriate, provides resources to support Project-related engagement activities.

In addition to the initial Project notification package, TC Energy continues to provide Project-related notifications by email with information such as Project progress and updates to all Indigenous rights-holders and Indigenous groups identified in Section 7.2, unless the Indigenous group expressly stated they have no interest in the Project. These engagement activities are summarized below.

- In July 2020: TC Energy provided an update regarding a substantial design change to the Project. TC Energy identified that it had progressed engineering studies, completed some elements of the feasibility work, assessed the feedback received from Indigenous rights-holders and Indigenous groups and determined that the original design concept for the Project would be adjusted. TC Energy provided an overview and presentation on the redesigns for the Project. TC Energy explained the changes would address many of the concerns heard during engagement with Indigenous rights-holders and Indigenous groups (as summarized in Section 7.5). The update notification included an offer to schedule a virtual meeting to further discuss the Project and the design changes and a link to the Project's website where Project information was available.
- In March 2021: TC Energy provided an update on additional feasibility studies undertaken to help guide Project design. The update outlined that geotechnical, geophysical, and environmental terrestrial field studies would begin during the week of April 5, 2021, within the boundaries of 4 CDTC, and that aquatic environmental field studies would be undertaken in the waters offshore of 4 CDTC in late April 2021.
- In July 2021: TC Energy provided a notification letter and Project factsheet regarding its agreement with DND for the Project to complete feasibility studies and to advance

through the IA process, while protecting the interests of the Canadian Armed Forces and DND on federal lands. The notification included information on the provincial EA process, the federal IA process and next steps. TC Energy provided links to a new website for the Project, a sign-up option for the e-newsletter and encouraged Indigenous rights-holders and Indigenous groups to contact TC Energy should they have any questions or concerns.

- In January 2023: TC Energy provided an Indigenous-focused Project newsletter, highlighting Project updates, including design changes based on feedback from Indigenous rights-holders and Indigenous groups; reiterating its commitments to incorporating feedback from ongoing engagement; summarizing local community investment initiatives; providing an update on the environmental regulatory process, including field survey summaries; and finally re-issuing an invitation to engage TC Energy on the Project.
- In July 2023: TC Energy provided a notice of Ontario Government's *Powering Ontario's Growth* strategy that includes Ministerial direction to the Independent Electricity System Operator to conduct a final assessment of the Project and commence of Ontario Environmental Registry regulatory amendments that would see future pumped hydro facilities be rate regulated under the *Ontario Energy Act*.
- In January 2024: TC Energy provided a news release announcing the continued advancement of the Project following direction from the Ontario Minister of Energy to IESO outlining next steps related to the Project. TC Energy indicated it remains committed to providing ongoing updates to Indigenous rights-holders and Indigenous groups and invited engagement. Also in January 2024, TC Energy provided an Indigenous-focused newsletter that outlined work undertaken in 2023 and re-iterated an offer to engage on the Project.
- In January 2025: TC Energy provided a Project announcement that the Government of Ontario announced an investment of up to $285 million to support pre-development work for the Project. TC Energy invited Indigenous rights-holders and Indigenous groups to engage with the Project.

The following sections describe the results of engagement with each Indigenous group.

7.4.1 Saugeen Ojibway Nation

Saugeen Ojibway Nation is composed of Chippewas of Nawash Unceded First Nation and Saugeen First Nation. Since first connecting with the Chiefs of Saugeen First Nation and Chippewas of Nawash Unceded First Nation in the fall of 2018 to invite the two First Nations to participate in the Project, the relationship between TC Energy and Saugeen Ojibway Nation has evolved as a collaboration to co-develop the Project which is of mutual interest and benefit to

both parties. For example, this involved developing the objectives, themes, timing, methodologies, equipment deployment, and participation in field studies.

- In October of 2019, TC Energy committed to not construct the Project without Saugeen Ojibway Nation's support and is developing an agreement that would provide Saugeen Ojibway Nation with an equity position in the Project along with other environmental and economic commitments. TC Energy has also provided Saugeen Ojibway Nation with funding to collaborate and engage on the Project through several Letters of Agreement. TC Energy has facilitated Saugeen Ojibway Nation's active participation in TC Energy's baseline environmental studies. The knowledge derived and shared from this collaboration could inform meaningful changes to TC Energy's environmental baseline sampling protocols and the overall design of the Project, particularly the aquatic components (see Section 7.5).
- TC Energy held information sessions for membership in November 2019, February 2021, April 2021, June 2021, October 2021, February 2022, March 2022, June 2022, May 2023 to September 2023 consecutively, of which five were virtual due to COVID-19. Topics discussed at these information sessions included, but were not limited to, Project overviews, technical aspects of the Project, potential environmental effects, and employment, contracting, and economic participation opportunities. In parallel, Saugeen Ojibway Nation is leading its own engagement and communication process with their members, including conducting community-led data collection and analysis to inform their priorities and issues regarding the Project, with TC Energy providing support where requested and appropriate. Saugeen Ojibway Nation Environment Office's *Independent Report on the Proposed Pumped Hydro Storage Project* (2023), prepared for the Membership of the Saugeen Ojibway Nation, identifies potential environmental effects associated with TC Energy's proposed Project. Based on the research and information available at the time of writing, the report outlines key interactions and potential impacts, and provides direction on how these impacts may be reduced or avoided, including what they may mean for Saugeen Ojibway Nation Membership. The report will be used as a reference to help inform TC Energy of Saugeen Ojibway Nation priorities and to guide Project planning and any subsequent implementation.
- TC Energy organized a site visit with Saugeen Ojibway Nation in November 2022 to 4 CDTC to view the proposed Project footprint on land. During this same visit, TC Energy and Saugeen Ojibway Nation representatives toured Georgian Bay by boat to view the locations of the components that will be under water. A visit to the City of Toronto's Ashbridges Bay wastewater outfall facility was also arranged in June 2022 to observe the subterranean construction and tunneling techniques that the Project may employ.

- In November 2022, TC Energy met with Saugeen Ojibway Nation Environment Office to discuss the Project, which included providing an update on the second winter aquatics study and planning for another site tour in spring 2023.
- In December 2022, TC Energy met with Saugeen Ojibway Nation Environment Office to discuss the engagement plan for the Project for 2023. Goals, objectives, and an overall strategy were developed, and timelines associated with the engagement plan were also discussed. TC Energy and Saugeen Ojibway Nation continued the conversation on the collaborative engagement plan throughout January and February 2023.
- In June 2023, TC Energy organized a site visit for over 20 Saugeen Ojibway Nation members, leaders and technical staff to visit the Independent Electricity System Operator's Control Room. TC Energy organized this fact-finding visit because many members, leaders and staff wanted to know more about how the Project would be used in a future, modernized, Ontario electrical grid. On the tour, staff from the Control Room were able to provide a clear understanding of how electricity is managed on a minute-by-minute basis; and how electricity is procured in Ontario. At the conclusion of the tour, members were better able to understand the multiple ways a long duration energy storage facility, like the Project, could add value to Ontario's electricity management and operations.
- TC Energy has also organized several additional site visits to existing pumped storage facilities for Saugeen Ojibway Nation members, leaders and technical staff. This included a visit to a facility in Florida, Massachusetts in October 2023, a facility in Ludington, Michigan in December 2023, and a visit to Niagara Parks' Powerhouse and Tunnel in Niagara Falls Ontario in June 2025.
- From January to December 2023, TC Energy met with the Saugeen Ojibway Nation Environment Office on a regular basis to have ongoing collaborative discussions on the design of the Project. Extensive discussions were undertaken to understand Indigenous concerns regarding water flow, fish entrainment, impingement and real-time discussions on design of diffuse inlet/outlet risers that would address Indigenous concerns.
- From February to October 2023, TC Energy met with the Saugeen Ojibway Nation Environment Office, advisors and leaders on a regular basis to discuss the engineering, procurement, construction and management strategy for the Project.
- From April to December 2023, TC Energy met with the Saugeen Ojibway Nation Environment Office on a regular basis to coordinate a variety of environmental field surveys. The goal of these meetings was to confirm field monitors were in place, information collected was sufficient, archeological protocols were developed to communicate possible findings, to maintain open communication between technical staff regarding fieldwork participation, and provides responses to questions.

- In June 2023, TC Energy emailed Saugeen Ojibway Nation staff about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led the webinar with the intention of familiarizing Indigenous rights-holders and Indigenous groups on the federal IA processes.
- On September 18, 2023, TC Energy emailed the Saugeen Ojibway Nation Environment Office staff to notify them of an archaeological find located on 4 CDTC. The archaeological find was pottery. Staff confirmed awareness based on reports from their field monitors who were present.
- From January to May 2024, TC Energy met with the Saugeen Ojibway Nation Environment Office, and fabricators on a regular basis to have ongoing discussions on the design of the Project, and the potential to incorporate procurement of specific Indigenous built materials into Project design. A specific request from Saugeen Ojibway Nation was for the Project to develop a Saugeen Ojibway Nation-specific procurement, employment and training plan that would include specific manufacturing and procurement opportunities for affiliated businesses and members.
- In March 2024, Saugeen Ojibway Nation leaders and TC Energy jointly provided a deputation to the Township of the Archipelago in Parry Sound, Ontario. Saugeen Ojibway Nation leaders outlined their ongoing commitment to environmental protection and stewardship. Saugeen Ojibway Nation leaders provided an overview of their historic support for environmental protection projects in the interest of protecting Georgian Bay. They outlined their threshold for advancing and supporting projects. TC Energy provided and clarified the information about the Project. As a result of this deputation, the Township of the Archipelago withdrew proposed motions to object to the Project.
- In April 2024, TC Energy invited Saugeen Ojibway Nation leaders and staff to a supplier forum event in Owen Sound. TC Energy shared with local suppliers, vendors and interested parties a general overview of the rationale for using the concept of an Engineering, Procurement, Construction and Management firm to support the advancement of the Project. TC Energy emphasized the need to foster local and Indigenous contracting and employment. The proposed strategies to foster local and Indigenous contracting and employment is a direct result of feedback received from Saugeen Ojibway Nation, as well as other Indigenous rights-holders and Indigenous groups. As of May 2025, TC Energy continues to work on this procurement and employment plan and will continue to seek feedback and advice as part of its development.
- In May 2024, TC Energy met with Saugeen Ojibway Nation members, staff and leaders at a community event. Several members approached the information booth and display and asked questions of staff.

- In July, August, and September 2024, TC Energy, with the approval of Saugeen Ojibway Nation leaders, undertook a series of virtual and in-person information sharing sessions with community members. The information sessions were 1-hour in duration and provided members with general information about the proposed design, environmental protection measures, how design directly reflects feedback from Saugeen Ojibway Nation and ongoing commitments to continue to incorporate feedback, and how a partnership would be structured. TC Energy provided responses to questions and a summary report of the membership outreach was shared with Saugeen Ojibway Nation Environment Office and leaders.
- On July 23, 2024, TC Energy provided notice that remaining field work is being paused until the Project has further certainty from the Government of Ontario to proceed.
- In March, April and May 2025, TC Energy, with the approval of Saugeen Ojibway Nation leaders, undertook a series of virtual information sharing sessions with members. The information sessions were 1-hour in duration and provided members with general information about the proposed design, environmental protection measures, how design directly reflects feedback from Indigenous rights-holders and Indigenous groups and ongoing commitments to continue to incorporate feedback and how partnership would be structured. TC Energy provided responses to questions and a summary report of the membership outreach was shared with Saugeen Ojibway Nation Environment Office and leaders.

7.4.2 Chippewa Tri-Council

TC Energy notes that there are two Williams Treaties that were negotiated in 1923. One is with the Chippewas in the north portion of the Treaty area, which includes Beausoleil First Nation, Chippewas of Georgina Island First Nation, and Chippewas of Mnjikaning (Rama) First Nation. These three First Nations form the Chippewa Tri-Council, a political and service delivery alliance of the three First Nations. Their alliance continues today. The Chippewa Williams Treaties First Nations prefer to be engaged through their collectives given their nationhood alliance and their geographical territories.

- In September 2020, TC Energy contacted Chippewa Tri-Council to request a meeting with Chippewa Tri-Council leadership to address any questions about the Project and to discuss an engagement process. TC Energy also requested to meet to discuss participation in the Project's preliminary environmental aquatic and terrestrial reconnaissance fieldwork.
- In November 2020, TC Energy followed up with Chippewa Tri-Council on organizing a first meeting between Chippewa Tri-Council leadership and TC Energy to discuss the Project and define an ongoing engagement process. TC Energy noted that it would like to understand how Chippewa Tri-Council would like to participate in the planning of

the spring field studies for the Project. TC Energy stated that it would like to engage early with Chippewa Tri-Council so that the discussions inform the scope of the assessment and shape the Project's design in a way that avoids and reduces potential effects on Chippewa Tri-Council's interests. An introductory meeting was held in to provide a general overview of the Project.

- Between December 2020 and March 2021, capacity funding and Letter of Agreement discussions were held between TC Energy and Chippewa Tri-Council staff. An agreement was executed in March 2021 which included details on an engagement process for the Project. TC Energy and Chippewa Tri-Council scheduled ongoing meetings with Chippewa Tri-Council Consultation staff. Chippewa Tri-Council hired staff dedicated to engagement on the Project. Both parties remain committed to ongoing engagement.
- In February of 2022, TC Energy offered Chippewa Tri-Council an opportunity to participate in the planned 2022 field studies for the Project to further build awareness of the Project and build community capacity, through paid employment as a field technician.
- In December of 2022, TC Energy met with the Chippewa Tri-Council staff and leadership to discuss the Project which included an overview of the Project, including information on location, benefits of the Project, timeline, as well as field and engineering studies completed to date. TC Energy responded to several questions from Chippewa Tri-Council staff and leaders related to impacts to fish, the location selected for the Project, size of the Project, water quality monitoring and potential business, contracting and employment opportunities. On the same day, TC Energy provided Chippewa Tri-Council a copy of the presentation that was delivered at the meeting.
- Through February and March 2023, TC Energy and the Chippewa Tri-Council exchanged emails to set up a meeting to discuss Chippewa Tri-Councils participation in field studies, such as the archaeological field studies for the upcoming season. TC Energy provided information on the field program and links for Chippewa Tri-Councils to apply for monitoring positions as part of the studies. Chippewa Tri-Councils confirmed their interest in the studies and noted they would share the information with their Chiefs.
- In June 2023, TC Energy emailed Chippewa Tri-Council staff about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led the webinar with the intention of familiarizing Indigenous rights-holders and Indigenous groups on the federal IA processes. No response was provided.
- On August 21, 2023, TC Energy sent a letter to Chippewa Tri-Council Chiefs and staff that outlined the next steps in developing a relationship. The letter affirmed meetings began in November 2020, a letter of agreement was executed in 2021, and TC Energy and Chippewa Tri-Council leaders met in December 2022 to answer leadership questions regarding environmental protection and economic participation. TC Energy

acknowledged Chippewa Tri-Council expressed an interest in forming a commercial partnership. TC Energy committed to meeting with staff in September 2023 to provide a presentation on potential participation options. Due to scheduling conflicts and the lack of clarity from the Government of Ontario on a commercial pathway for the Project, TC Energy has not undertaken this presentation as of May 2025.

- In August 2023, TC Energy and Chippewa Tri-Council staff worked on establishing a SharePoint site to share technical documentation on the Project.
- On September 18, 2023, TC Energy emailed Chippewa Tri-Council staff to notify them of an archaeological find located on 4 CDTC lands. The archaeological find was pottery. TC Energy provided a verbal description of the find. TC Energy indicated because the find is located on 4 CDTC lands, Department of National Defence must screen any documentation referencing the property prior to release. Once DND completes their review and approval, the Project will share licensed archeological reports.
- In January 2024, TC Energy emailed Chippewa Tri-Council staff and offered to meet to provide project updates. A teleconference meeting took place January 10, 2024, where TC Energy provided an update on the Project, confirmed the Government of Ontario's intentions to advance the Project and TC Energy's next steps in response.
- In February, March, and April 2024, a series of emails between TC Energy and Chippewa Tri-Council staff were written to set up a time for a teleconference to discuss potential field studies for 2024 and capacity funding and participation. On February 23, 2024, TC Energy emailed a draft funding schedule and workplan for input. A revised Letter of Agreement including funding and a workplan was shared on April 11, 2024.
- On July 23, 2024, TC Energy provided notice that remaining field work is being paused until the Project has further certainty from the Government of Ontario to proceed. As environmental surveys were paused for the latter half of 2024, discussions with Chippewa Tri-Council including executing a Letter of Agreement were also paused.
- On February 5, 2025, TC Energy and Chippewa Tri-Council staff held a teleconference call to provide a verbal briefing on what to anticipate in 2025. TC Energy also asked questions to better inform a drafting of a Letter of Agreement, workplan and budget for participation. Parties agreed TC Energy would draft a Letter of Agreement for review.
- On March 21, 2025, TC Energy and Chippewa Tri-Council staff held a teleconference call to review a draft workplan and schedule. Chippewa Tri-Council staff had several verbal revisions they wished TC Energy to make. Topics of discussion focused on treaty-protected fishing rights in Georgian Bay and cultural and archaeological interests. Based on this feedback, TC Energy committed to re-drafting the workplan and budget and reflect Chippewa Tri-Council priorities.

7.4.3 Historic Saugeen Métis

- TC Energy and Historic Saugeen Métis met in February 2020, to discuss the Project. TC Energy provided an overview of the Project and responded to questions regarding the lifespan of the Project, the genesis of the Project, estimates on construction and operations jobs, and Reservoir construction methods. Historic Saugeen Métis requested they be kept up to date on any potential employment opportunities. TC Energy and the Historic Saugeen Métis met again in October 2020, where TC Energy provided a Project presentation, discussed the Inlet/Outlet Structure, and the environmental studies completed and planned. Historic Saugeen Métis expressed interest in the archeological studies.
- In 2021, due to COVID-19 restrictions, limited interaction took place with the Historic Saugeen Métis. TC Energy provided periodic updates to Historic Saugeen Métis via email and teleconference calls as required.
- In March 2022, Historic Saugeen Métis indicated their interest in an update presentation regarding environmental studies for the Project. In April 2022, TC Energy and Historic Saugeen Métis began holding monthly Project meetings to discuss various aspects of the Project including design, the Lower Inlet/Outlet Structure, environmental studies, water turbidity and potential effects on fish, and timelines for the Project, as well as eventual decommissioning. An engagement capacity funding agreement was executed with Historic Saugeen Métis in February 2022.
- In February 2023, TC Energy met twice with the Historic Saugeen Métis to discuss the Project, field study activities to date, engagement activities for 2023, and Historic Saugeen Métis interest in participating in the archeology studies. During the meeting, the potential for an in-person community information session and a site tour were discussed. Historic Saugeen Métis expressed the importance of collecting and incorporating their Indigenous knowledge in a way that is respectful and has Historic Saugeen Métis input. A follow-up meeting was also scheduled for May 2023.
- In May 2023, TC Energy met with the Historic Saugeen Métis to discuss community priorities and interests, including impacts to archaeology and vegetation. The Historic Saugeen Métis also provided a cultural presentation during the meeting through which they provided an overview of the historical uses of the Project area.
- In June 2023, TC Energy emailed Historic Saugeen Métis staff about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led the webinar with the intention of familiarizing Indigenous rights-holders and Indigenous groups on the federal IA processes No response was provided.
- In August 2023, TC Energy participated in their annual community rendezvous festival and spoke to citizens directly about the Project. Historic Saugeen Métis staff indicated

at the event they would be interested in reconvening with TC Energy in October 2023 to discuss a workplan and budget for 2024 and corresponding Letter of Agreement.

- On September 18, 2023, TC Energy emailed Historic Saugeen Métis staff to notify them of an archaeological find located on 4 CDTC lands including an offer to provide a briefing and discuss next steps. The archaeological find was pottery.
- In October and November 2023, a series of emails between TC Energy and Historic Saugeen Métis discussing the potential on collaborating on a Letter of Agreement. Historic Saugeen Métis staff agreed to TC Energy's suggestion of postponing discussions until further certainty from the Government of Ontario was provided.
- On December 21, 2023, TC Energy met with Historic Saugeen Métis staff and provided a general Project overview including key milestones reached in 2023 and what to anticipate for 2024.
- In February 2024, TC Energy and Historic Saugeen Métis collaborated on developing a draft workplan and budget. In April TC Energy responded to the last version of the workplan and budget. On April 23, 2024, Historic Saugeen Métis signed a Letter of Agreement including a workplan and budget.
- On March 21, 2024, TC Energy and Historic Saugeen Métis staff and leaders met for a technical update on the Project. TC Energy outlined anticipated environmental work in 2024 and how they intend to progress with the regulatory process.
- Historic Saugeen Métis requested a guided tour of 4 CDTC to get a better sense of the location, size and scale of the Project, a baseline understanding of the current usage and status of the lands. Both parties agreed to work on securing a tour in 2024. On May 13, 2024, TC Energy provided a guided tour to 4 CDTC for approximately seven Historic Saugeen Métis staff and leaders. The tour began with a viewing of the location of the Reservoir, followed by the general location of the Water Conveyance Structures and a view of the lakeshore. Historic Saugeen Métis were pleased to be able to have access to 4 CDTC and their questions were answered.
- On July 23, 2024, TC Energy provided notice to Historic Saugeen Métis that remaining field work is being paused until the Project has further certainty from the Government of Ontario to proceed. As a result, Letters of Agreement were not executed for 2024.
- In December 2024, TC Energy had in-person discussions with Historic Saugeen Métis staff to provide a brief verbal Project update.
- On March 4, 2025, TC Energy met with Historic Saugeen Métis staff and provided a verbal update on the Project including anticipated 2025 field work and the regulatory process.

- In March and April 2025, a series of emails were exchanged between TC Energy and Historic Saugeen Métis staff to collaborate on an updated 2025 Letter of Agreement workplan and budget.

7.4.4 Huron Wendat Nation

- A Project introductory meeting with Huron Wendat Nation occurred in September 2021 to provide an overview of the Project. During that meeting TC Energy described the Project, including location and timelines, provided an overview of the 2021 archaeological, aquatic and terrestrial environmental studies that have occurred and are upcoming for the Project, and discussed preliminary details about the potential transmission connection options. Huron Wendat Nation indicated interest in the archaeological field studies and expressed that they were less concerned about the environmental effects, as they would rely on other more proximate, potentially affected Indigenous rights-holders and Indigenous groups to guide the IA process.
- In November 2022, TC Energy met with Huron Wendat Nation to discuss the Project. The meeting included an overview of the design of the Project, field studies, and the IA process. TC Energy responded to questions from Huron Wendat Nation related to environmental studies, turbidity, water temperature, and sediment control, as well as depth of the Reservoir. TC Energy agreed to explore the opportunity for a site visit in 2023. On the same day, TC Energy emailed the presentation that was delivered at the meeting.
- In March 2023, TC Energy met with Huron Wendat Nation to discuss the Project, and the engagement activities of interest to Huron Wendat Nation. Huron Wendat Nation expressed interest in participating in the field studies and requested another meeting to discuss archaeology.
- In June 2023, TC Energy met with Huron Wendat Nation to discuss a 2023 and 2024 capacity funding agreement and workplan. The parties discussed interests in reviewing technical documents, exploring economic participation and archeological participation if human remains were discovered.
- In June 2023, TC Energy emailed Huron Wendat Nation staff about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led the webinar with the intention of familiarizing Indigenous rights-holders and Indigenous groups on the federal IA processes. No response was provided.
- In August 2023, TC Energy met with Huron Wendat Nation and discussed key updates to the Project including potential archaeological finds. Huron Wendat Nation requested reports and fieldnotes be shared once they become available. The archaeological find was pottery. TC Energy also discussed a revised capacity funding agreement and

sought more information on possible direct sole source procurement opportunities such as translation services.

- In September 2023, Huron Wendat Nation staff provided contact information for translation services contacts if TC Energy required translation services.
- On September 18, 2023, TC Energy emailed Huron Wendat Nation staff to notify them of an archaeological find located on 4 CDTC lands including an offer to provide a briefing and discuss next steps. The archaeological find was pottery.
- In January, February and March 2024, a series of emails and teleconference calls took place between TC Energy and Huron Wendat Nation staff to discuss a new Letter of Agreement, workplan and budget to be engaged on the Project, with a focus on archaeological information sharing and participation and contracting and procurement opportunities.
- On March 5, 2024, TC Energy had a teleconference call with Huron Wendat Nation staff and discussed the archaeological protocol for the Project. Huron Wendat Nation staff requested to participate as embedded monitors on all phases of archaeology in all locations of the Project. TC Energy's response was clarified that the current archeological plan for 2024 was to focus exclusively on 4 CDTC lands which required DND security clearances and a limited number of staff on site because of the required military escort. A full Huron Wendat Nation embedded monitoring program on 4 CDTC, from a safety, security clearance and logistics perspective, was not possible. TC Energy did commit to sharing archaeological reports as they become available and if there was the discovery of human remains or sites of findings that could be of Huron Wendat Nation heritage, the Huron Wendat Nation staff would be contacted and embedded monitoring would be revisited.
- In June and July 2024, TC Energy exchanged emails with Huron Wendat Nation staff indicating there was a change in TC Energy staff and new points of contact would be leading relationship building on behalf of the Project. Huron Wendat Nation staff acknowledged the change in staff and contact information and reiterated their interest in knowing more about the Project and seeking contracting opportunities.
- In July 2024, TC Energy provided notice that remaining field work is being paused until the Project has further certainty from the Government of Ontario to proceed. As a result, Letters of Agreement were not executed for 2024.
- In March, April and May 2025, there were email exchanges between TC Energy and Huron Wendat Nation staff to discuss a meeting date and time to provide an update on the Project, learn more about the regulatory process that the Project must follow and re-commence discussions on a Letter of Agreement, workplan, and capacity.

7.4.5 Métis Nation of Ontario

TC Energy is engaging with all four Métis Nation of Ontario Region 7 councils (Barrie-South Simcoe Métis Regional Council, Georgian Bay Métis Regional Council, Great Lakes Métis Regional Council, Moon River Métis Regional Council), primarily through the Métis Nation of Ontario Land, Resources, and Consultation Branch.

- TC Energy and Métis Nation of Ontario met in January 2020 to discuss the Project. Métis Nation of Ontario indicated their interest in harvesting at the proposed Project site prior to construction. An engagement capacity funding agreement was executed with Métis Nation of Ontario in April 2021.
- In June 2021, TC Energy presented the Project to the Regional Consultation Committee, responded to questions primarily relating to fish, and held information sessions with Métis Nation of Ontario citizens in July 2021 and February 2022. During the information sessions with the Métis Nation of Ontario citizenship, TC Energy presented an overview of the Project including the design and environmental studies underway and planned. At the sessions, TC Energy responded to questions regarding the design including Reservoir concepts, the siting of infrastructure including the Powerhouse and Water Conveyance Structures and interactions with Georgian Bay; the water temperature and potential effects to the environment as well as fish and fish habitat. TC Energy also committed to respond in writing to any questions that it was unable to answer during the session, which were provided to Métis Nation of Ontario in March 2022. Since February 2022, TC Energy holds regular meetings with Métis Nation of Ontario consultation staff.
- In July 2022, TC Energy attended the Métis Nation of Ontario Fish Fry at the Hibou Conservation Area outside of Owen Sound, Ontario and shared information via a Project information booth. Approximately 40 people visited the TC Energy booth.
- In November 2022, TC Energy met with Métis Nation of Ontario and their Regional Consultation Committee representatives to discuss the Project. TC Energy provided an overview of the Project design, field studies and the IA process. TC Energy also responded to questions from Métis Nation of Ontario related to the amount of power the Reservoir would supply, specifics regarding how pumped hydroelectric storage works and potential impacts to fish. Métis Nation of Ontario requested a site visit in 2023. It was agreed that TC Energy and Métis Nation of Ontario host an information session for Métis Nation of Ontario community members in 2023.
- In February 2023, TC Energy met with Métis Nation of Ontario twice to discuss the Project. Métis Nation of Ontario requested a site visit and TC Energy agreed to seek approval from DND to allow for a site visit. In subsequent follow-ups, DND declined to allow an escorted tour of 4 CDTC.

- In April and May 2023, TC Energy and Métis Nation of Ontario met to discuss planning for Project information sessions in Owen Sound, Ontario. Due to scheduling conflicts, these information sessions did not take place. TC Energy and Métis Nation of Ontario staff continued to meet on a regular basis to share information about the Project.
- In June 2023, TC Energy emailed Métis Nation of Ontario staff about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led an information webinar for Indigenous rights-holders and Indigenous groups to become more familiar with the IA process. No response was provided.
- In July 2023, Métis Nation of Ontario staff indicated a continued interest in seeking an escorted tour of 4 CDTC to be better informed about the location of the Project and potential interests. In August 2023, TC Energy re-submitted an access request to DND for Métis Nation of Ontario leaders and staff to have an escorted tour of the facility. In September 2023, TC Energy confirmed DND have granted permission for an escorted tour, pending necessary waivers and clearances which are forthcoming.
- On September 18, 2023, TC Energy emailed Métis Nation of Ontario staff to notify them of an archaeological find located on 4 CDTC lands, including an offer to provide a briefing and discuss next steps. The archaeological find was pottery.
- On October 18, 2023, eleven Métis Nation of Ontario staff, council presidents, Regional Chairs, elder and youth representatives attended a guided tour of 4 CDTC lands. The tour consisted of the group viewing the proposed location of the Reservoir, preliminary location of the proposed air pressure vents for a buried Powerhouse, the approximate location of Water Conveyance Structures and a lakeshore viewing to gain a better sense of where water interactions would take place. On the tour, many questions focused on fish and habitat protections, water quality, and how much aggregate would be needed. All questions were answered.
- In November and December 2023, TC Energy and the Métis Nation of Ontario staff regular teleconference calls to share updates regarding the Project.
- In March and April 2024, TC Energy and the Métis Nation of Ontario staff held meetings to provide updates on the Project and exchanged emails to discuss a 2024 Letter of Agreement, workplan, and budget to participate in ongoing discussions.
- In April 2024, Métis Nation of Ontario extended an invitation to TC Energy to participate in their Métis and Energy Knowledge Symposium (the Symposium) being held in proximity to the Project in Collingwood, Ontario. The purpose of the Symposium was to provide an information sharing opportunity for the Métis Nation of Ontario regional council members, citizens and staff to learn about a wide range of energy projects taking place in the Georgian Bay area and for proponents to present to consultation committees and answer questions. The Symposium took place on June 21, 2024. TC Energy had to decline to participate in the Symposium because of the lack of certainty the Government of Ontario provided the Project on a commercial pathway.

- On July 23, 2024, TC Energy provided notice that remaining field work is being paused until the Project has further certainty from the Government of Ontario to proceed. As a result, Letters of Agreement were not executed for 2024.
- In March and April 2025, TC Energy and Métis Nation of Ontario staff exchanged emails and regular update calls to work on a 2025 workplan and capacity funding budget that would be included in a Letter of Agreement. A major milestone both parties have agreed to work on is for TC Energy to present at Métis Nation of Ontario's 2025 Energy Symposium being held in Collingwood, Ontario. The anticipated date is June 7, 2025. Both parties are also working on securing another Métis Nation of Ontario guided tour of the Project including a 4 CDTC tour and a guided tour of the proposed site where the transmission connection comes ashore in Wasaga Beach Ontario and the Stayner Transformer Station in Clearview Township Ontario. The anticipated date for the guided tour is June 5, 2025.

7.4.6 Mississauga Williams Treaties First Nations

There are two Williams Treaties that were negotiated in 1923. The second Williams Treaty is with the Mississauga in the southern portion of the Treaty area, which includes Alderville First Nation, Curve Lake First Nation, Hiawatha First Nation and Mississaugas of Scugog Island First Nation.

- In June 2021, TC Energy and the Mississauga Williams Treaties First Nations met to discuss the Project. The intention of the meeting was to present the Project and discuss how they would like to be engaged. TC Energy provided an overview and presentation of the Project. During the overview of the Project several questions were asked with regards to the environment, engineering, and design. TC Energy committed to provide fulsome, written responses to the questions that were asked during the meeting that TC Energy was unable to answer during the meeting. These written responses were provided on June 22, 2021.

Additional engagement activities that have occurred directly with Mississauga Williams Treaties First Nations are described below.

7.4.6.1 Alderville First Nation

In September 2019, TC Energy received an email from Alderville First Nation, in response to the Project notification package, noting that the Project was not located within Alderville First Nation's traditional territory and therefore they would not be commenting on the Project at that time. TC Energy replied to confirm receipt of the email. Alderville First Nation also replied to the March 2021 Project update regarding feasibility studies, noting previous conversations regarding the Project and indicating again that the Project is located in Treaty 18 and not located within Alderville First Nation traditional territory. Alderville First Nation did however indicate in their response that the Project sounded like a beneficial, clean energy project.

7.4.6.2 Hiawatha First Nation

- In 2021, due to COVID-19 restrictions, limited interaction took place with the staff. TC Energy provided periodic updates to Hiawatha First Nation via email and teleconference calls as required.
- In June 2023, TC Energy emailed Hiawatha First Nation staff and leaders about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led an information webinar for Indigenous rights-holders and Indigenous groups to become more familiar with the federal IA process. No response was provided.
- On September 18, 2023, TC Energy emailed Hiawatha First Nation staff to notify them of an archaeological find located on 4 CDTC lands, including an offer to provide a briefing and discuss next steps. On September 20, 2023, Hiawatha First Nation representative responded and confirmed an interest in learning more about the Project and requested TC Energy share documentation with Hiawatha First Nation staff. TC Energy provided a verbal description of the find. TC Energy indicated because the find is located on 4 CDTC lands, Department of National Defence must screen any documentation referencing the property prior to release. Once DND completes their review and approval, the Project will share licensed archeological reports.
- On December 5, 2023, TC Energy emailed Hiawatha First Nation staff and extended the opportunity to learn more about the Project. Staff responded and both parties agreed to a teleconference call on December 14, 2023. TC Energy provided a verbal update on the Project. Hiawatha staff were impressed TC Energy was intending to partner with Indigenous rights-holders and Indigenous groups and there was no immediate concerns or questions. Hiawatha First Nation requested TC Energy keep them updated on any new milestones or significant changes to the Project.
- In February and March 2024, TC Energy and Hiawatha First Nation representatives discussed the need to develop a Letter of Agreement including a funding schedule for Hiawatha to participate in the Project. Hiawatha First Nation staff indicated their focus

would be on keeping communication channels open to TC Energy and reviewing technical submissions and potentially commenting if required.

- On July 23, 2024, TC Energy provided notice that remaining field work is being paused until the Project has further certainty from the Government of Ontario to proceed. Because environmental surveys were paused for the latter half of 2024, discussions with Hiawatha First Nation including executing a Letter of Agreement were also paused.
- On April 21, 2025, TC Energy met with Hiawatha First Nation staff to provide an update on the Project. TC Energy provided an overview of key timelines, the federal IA process, field work planned for 2025 and asked how Hiawatha First Nation would like to proceed in learning more about the Project. Hiawatha First Nation staff did not specify if there are any impacts to the exercising of rights being impacted by the Project but, did request that TC Energy create a high-level Project Agreement letter including a workplan and funding schedule that would maintain the ability of Hiawatha to review documentation and be available for further discussions once more information becomes available. TC Energy is preparing that high-level letter as of May 2025.

7.4.6.3 Curve Lake First Nation

- In May 2021, TC Energy provided Curve Lake First Nation with a notification outlining the new design of the Project and a presentation outlining the benefits of the Project.
- Project introductory meetings with Curve Lake First Nation consultation staff occurred in June 2021. TC Energy and Curve Lake First Nation continue to meet on a regular basis with their consultation staff and quarterly with Curve Lake First Nation's Land and Resources Consultation Officer to provide Project updates. TC Energy has provided several overview presentations of the Project including information on Project location and design, pumped storage technology and the environmental and archaeological studies conducted to date for the Project. At these meetings, TC Energy and Curve Lake First Nation also discussed the Project timelines and benefits. Curve Lake First Nation expressed interest in participating in archaeological field studies but understood that opportunities were limited due to DND access limitations and safety protocols and therefore accepted that Chippewa Tri-Council and Saugeen Ojibway Nation would be provided the opportunity to participate in the studies. Curve Lake First Nation has indicated to TC Energy that they are interested in reviewing technical documents pertaining to the archaeological field studies.
- An engagement capacity funding agreement was executed with Curve Lake First Nation in February 2022. The agreement with Curve Lake First Nation is based on the understanding that Curve Lake First Nation will review and provide input on technical

documents pertaining to the Project and will share their findings and reports with the other six Williams Treaties First Nations communities.

- In February 2023, TC Energy emailed Curve Lake First Nation to request a meeting to provide a Project update. In March 2023, TC Energy met with Curve Lake First Nation and provided an update on the Project and responded to questions including details on the Reservoir, lifecycle analysis of the Project, information on fish entrapment, information on operations and maintenance and an overview of the regulatory process. Curve Lake First Nation expressed interest in reviewing the technical and archaeological documentation once available. TC Energy provided a copy of the presentation that was delivered at the meeting.
- In June 2023, TC Energy emailed Curve Lake First Nation staff about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led an information webinar for Indigenous rights-holders and Indigenous groups to become more familiar with the federal IA process. No response was provided.
- In July 2023, Curve Lake First Nation indicated they have sufficient resources under their existing capacity funding agreement for the remainder of the year and suggested discussions begin in October 2023 to renew the capacity funding agreement for upcoming work in 2024.
- In September 2023, TC Energy emailed Curve Lake First Nation staff to notify them of an archaeological find located on 4 CDTC lands. The archaeological find was pottery. The archaeological find was pottery. TC Energy provided a verbal description of the find. TC Energy indicated because the find is located on 4 CDTC lands, Department of National Defence must screen any documentation referencing the property prior to release. Once DND completes their review and approval, the Project will share licensed archeological reports. On October 4, 2023, TC Energy and Curve Lake First Nation representatives had a technical briefing to discuss archeological findings as per September 2023 notice. TC Energy's licensed archaeologist provided the briefing and answered Curve Lake First Nation's questions.
- On December 6, 2023, TC Energy was invited to attend Curve Lake First Nation's Fall 2023 community gathering. It was an opportunity to meet with Curve Lake First Nation leaders and members. Curve Lake First Nation questions during the Fall community gathering focused mostly on general interest questions regarding the Project; interest in the location and employment and trades opportunities. Curve Lake First Nation members who attended the session did not express an interest in potential adverse impacts on how they practice rights. Curve Lake First Nation presentations by their own staff focused on how the First Nation exercises fishing rights in nearby lakes such as Curve Lake, Rice Lake and the Trent-Severn Waterway system. There was a great amount of discussion regarding the stewardship and harvesting of wild rice, incidental

hunting/trapping cabins on Ontario Crown Land and fishing but the areas being discussed did not include Georgian Bay.

- In February 2024, Curve Lake First Nation staff discussed opportunities for TC Energy to support the First Nation in cultural activities. TC Energy provided a draft workplan and funding schedule that would be part of a Letter of Agreement.
- In April 2024, TC Energy provided a final revision to the proposed Letter of Agreement, workplan, and funding schedule based on feedback and discussions with Curve Lake First Nation staff.
- On July 23, 2024, TC Energy provided notice to Curve Lake leaders and representatives that remaining field work is being paused until the Project has further certainty from the Government of Ontario to proceed. As a result, Letters of Agreement were not executed for 2024.
- In October 2024, Curve Lake First Nation extended an invitation to TC Energy to participate in a November 2024 Energy Fair being held in the community. This would have been an opportunity to meet with Curve Lake First Nation members, local contractors and vendors, leaders and consultation staff. Unfortunately, TC Energy had to send its regrets and not participate in this information sharing opportunity because of the lack of commercial certainty from the Government of Ontario.
- In February, March, and April 2025, TC Energy and Curve Lake First Nation staff exchanged emails and had a teleconference call to provide an update on the Project, what to expect for anticipated 2025 field work and TC Energy committed to developing a Letter of Agreement, workplan, and funding schedule. Curve Lake First Nation indicated they believe they have members who exercise their rights in the Project area and would like to focus their discussions on exploring what those activities are and how to avoid, mitigate or accommodate those activities.
- Curve Lake First Nation and TC Energy hold monthly teleconference calls to share updates on the Project.

7.4.6.4 Mississaugas of Scugog Island First Nation

A Project introductory meeting with Mississaugas of Scugog Island First Nation consultation staff took place in December 2021. Mississaugas of Scugog Island First Nation indicated their interest in the transmission portion of the Project. TC Energy continues to share Project related information as it becomes available.

- In January 2022, TC Energy engaged with Mississaugas of Scugog Island First Nation to discuss Project updates and community interests, including the transmission portion of the Project, ecological restoration, and contracting opportunities.

- In June 2023, TC Energy emailed Mississaugas of Scugog Island First Nation staff and leaders about an upcoming federal IA training webinar taking place on June 8, 2023. IAAC led an information webinar for Indigenous rights-holders and Indigenous groups to become more familiar with the federal IA process. No response was provided.
- On September 18, 2023, TC Energy emailed Mississaugas of Scugog Island First Nation staff to notify them of an archaeological find located on 4 CDTC lands including an offer to provide a briefing and discuss next steps. The archaeological find was pottery.
- In December 2023, TC Energy emailed Mississaugas of Scugog Island First Nation staff and reiterated the offer to engage in the Project. No response was provided.
- In March 2024, TC Energy emailed Mississaugas of Scugog Island First Nation an overview of key activities being undertaken for the proposed Project and requested an opportunity to brief staff. Leadership responded and confirmed a staff member's contact information and further discussions can take place.
- In April 2024, TC Energy met with Mississaugas of Scugog Island First Nation staff to provide an overview and briefing about the Project. Staff were encouraged to see TC Energy make progress in partnering with Indigenous rights-holders and Indigenous groups. Mississaugas of Scugog Island First Nation staff did not express any concerns regarding the Project. Mississaugas of Scugog Island First Nation requested TC Energy develop a Letter of Agreement that is focused on developing a non-rights-based relationship between the Project and the community until more information becomes available regarding the final footprint of the Project. As of May 2025, TC Energy continues to draft a requested Letter of Agreement.
- In April 2025, TC Energy met with Mississaugas of Scugog Island First Nation staff and discussed updates to the Project. Mississaugas of Scugog Island First reiterated they do not see any exercising of rights being impacted by the Project but, again requested TC Energy develop a high-level Project Agreement that is non-rights based in nature so that ongoing information sharing can take place and potential socio-economic, employment and contracting opportunities can be explored.

7.4.7 Six Nations of the Grand River

In February 2020, Six Nations of the Grand River confirmed no interest in the Project as they assert claims within the Haldimand Tract as far as approximately Dundalk, Ontario and as per claims within the Nanfan Treaty Area from the Dish with One Spoon Treaty and the principle of Sharing our Lands. Six Nations of the Grand River does not assert claims in the Saugeen Peninsula[8], the treaty area of Saugeen First Nation and Chippewas of Nawash Unceded First Nation.

7.5 Influence of Indigenous Engagement on Project Planning and Design

TC Energy's engagement with potentially affected Indigenous rights-holders and Indigenous groups has influenced their approach on engagement, the preliminary design of the Project, and various other aspects that will be considered as the Project moves forward.

TC Energy has continuously adapted its communication materials and methods because of the feedback shared by potentially affected Indigenous rights-holders and Indigenous groups to date. Changes to communication materials and approaches have included:

- Rebuilding the Project website
- Developing a new Project overview video, a 'What is Pumped Storage', and other videos focused on specific topics of interest
- Developing three dimensional digital renderings to support virtual engagement
- Creating a working model, scale model, and tabletop models of key components of the Project, as well as a three-dimensional model of the facility with a side-cut for use during in-person engagement activities
- Including a Frequently Asked Questions section on the Project website, that is updated periodically
- Facilitating guided tours of 4 CDTC lands
- Facilitating guided tours of existing pumped storage facilities

The following are key design evolutions that have occurred as a result of engagement with potentially affected Indigenous rights-holders and Indigenous groups:

- Changes have been made to the aquatic sampling methodology for the Project's field studies, based on feedback from Saugeen Ojibway Nation

[8] Saugeen Peninsula used in place of Bruce Peninsula per request by Saugeen Ojibway Nation.

- Potential impact on sensitive near-shore habitats and waters has been reduced as the Lower Inlet/Outlet Structure will be located further from shoreline and in deeper water
- Potential impact to fish movement and water clarity has been reduced as the number of inlet/outlet ports has increased, and their configuration has changed to reduce the speed at which water moves in and out of the structures to the same level of existing currents
- Lakebed, shoreline, and aquatic disturbances will be reduced through the use of tunneling construction techniques for the Lower Inlet/Outlet Structure
- Potential noise and visual impacts, as well as disturbances to cultural heritage resources and archaeology, vegetation, and wildlife may be reduced or avoided as key Project components, including the Powerhouse, Headraces, and Tailraces are proposed underground

Finally, since spring 2023, the involvement of Makwa-Cahill, a business partnership of Chippewas of Nawash Unceded First Nation, on the Inlet-Outlet Structure design has brought unique expertise and Saugeen Ojibway Nation perspective to the process. TC Energy, the Saugeen Ojibway Nation Environment Office, TC Energy's lead designers, and Makwa-Cahill as the lead fabricator continue to participate in the Lower Inlet/Outlet Structure design process. Further refinements to the design will aim to reduce potential effects on fish and fish habitat.

In addition to the above, Table 7-2 provides a consolidated summary of the topics, key information, including Indigenous knowledge, and concerns shared by potentially affected Indigenous rights-holders and Indigenous groups through engagement with TC Energy. Table 7-2 also summarizes the influence that the outcomes of this engagement had on the Project to date and outlines how these items will be considered moving forward. The information presented in Table 7-2 is integrated throughout subsequent sections of this IPD, as applicable, as these engagement outcomes will inform the development of the Impact Statement, detailed design, permitting, and associated follow-up and monitoring programs.

Table 7-2: Summary of Key Information, Indigenous Knowledge and Concerns for the Project

Key Information, Indigenous Knowledge, Concern	Influence on the Project
Concerns regarding impacts to fish stocks and spawning grounds, fish and fish mortality (entrainment/impingement)	The Lower Inlet/Outlet Structure siting and design, including appropriately sized screens and low-flow velocity, are anticipated to reduce potential mortality of fish during operation and to mimic natural currents to the extent practical. Aquatic studies will continue to inform design and operational parameters, which may be refined, as necessary and feasible, to increase protective measures. Studies focussing on the distribution and abundance of small fish (including both small-bodied species and the larvae and juveniles of large-bodied species) will support refinement of the design of the Lower Inlet/Outlet Structure to reduce entrainment of these organisms, if feasible. The aquatic surveys conducted to date have not identified spawning shoals or other high-value habitats for key life stages for fish near where the Lower Inlet/ Outlet Structure is planned to be located. However, studies are being expanded to understand the aquatic environment to better identify any potential sources for fish in vulnerable life stages. The Impact Statement will include an assessment of potential effects to fish and fish habitat, including proposed mitigations. It will also consider anticipated authorization under the Fisheries Act, when developing mitigations.
Concerns regarding disturbance to the lake shoreline, lakebed and aquatic habitat resulting from tunneling/drilling	The Tailraces and Lower Inlet/Outlet Structure are anticipated to be located underneath the lakebed and are expected to be installed using underground mining methods and/or a tunnel boring machine (TBM), where feasible. These methods will avoid direct lakebed disturbance, where possible. All construction activities will be conducted in compliance with a project-specific Environmental Protection Plan that will detail the necessary environmental protections, practices and mitigation measures that will be developed as an outcome of the IA and current best management practices for construction.

Key Information, Indigenous Knowledge, Concern	Influence on the Project
Concerns regarding potential effects to species at risk	Sequencing of construction activities will be planned to reduce potential interactions with wildlife to the degree possible. Mitigation measures will be developed to address potential impacts and reduce negative effects. Where construction activities are initiated during breeding or migratory periods, appropriate surveys will be conducted in advance and appropriate avoidance measures will be evaluated in the event of the identification of a wildlife feature. Where the potential to affect SAR exists, the mitigation hierarchy of avoidance, mitigation and offsetting will be applied. Where impacts cannot be fully avoided, a SARA permit and or approval under the *Ontario Species Conservation Act*, as applicable, will be sought to allow mitigation to be implemented under the terms of the permit. Aquatic SAR are included in the efforts to reduce effects through design and siting. Similar to terrestrial SAR, data are being gathered to identify possible presence and the mitigation hierarchy will be applied. Appropriate permits or approvals will be obtained.
Concerns regarding changes to water quality, water turbidity and water temperature	The Project does not use water for cooling or to produce steam; the water is simply moved between Georgian Bay and the Reservoir without treatment or alteration. During normal operation of the Project, water is expected to be moved in and out of the Reservoir on a regular and frequent basis. The establishment of operation procedures can be used to reduce potential thermal effects. Turbidity and water quality are driving factors in the design of the Lower Inlet/Outlet Structure. Preliminary design has focused on dissipating water flow through multiple, raised, deep water lakebed inlet and outlet ports at a very slow speed, similar to Georgian Bay's natural currents. The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure. Surface water patterns and potential effects will be considered during design, construction, and operations. TC Energy has been collecting data for three years and continues to collect data to better understand existing conditions. This information will be used to further enhance the design.
Concerns regarding potential effects to soil and groundwater quality resulting from long-term water storage	The Reservoir will be constructed by removing overburden and near-surface weathered rock to reach competent bedrock. Topsoil is planned to be conserved for reuse or storage. Other materials excavated on site will be used for construction depending on conditions; otherwise imported material may be necessary. The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure. Potential interactions with surface and groundwater will be assessed to inform management strategies to protect local water resources.

Key Information, Indigenous Knowledge, Concern	Influence on the Project
Changes to wildlife and wildlife habitat, including: • Habitat destruction • Habitat fragmentation and access restrictions resulting in altered movement patterns	The Impact Statement will include an assessment of potential effects to wildlife and wildlife habitat, including proposed mitigations measures. TC Energy will work with Indigenous rights-holders and Indigenous groups, federal departments and provincial authorities, and the public, as well as through Saugeen Ojibway Nation guidance and participation in terrestrial field studies, to collaboratively develop approaches to avoid or reduce potential effects on wildlife-supporting ecosystems. This may include design or siting optimization to reduce interaction with wildlife and wildlife habitat, such as reducing habitat loss by reusing existing disturbances or constructing methods to limit surface disturbance (e.g., trenchless installation), where appropriate. Wildlife studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures, including potential terrestrial habitat offsets.
Safety concerns: • Reservoir safety and changes to the ability to exercise or practice rights below the site	TC Energy acknowledges the Project would occur on lands and waters with a history of Indigenous and non-Indigenous use and occupation. TC Energy will design the Project to meet or exceed applicable engineering, design, and safety standards. The facility will be subject to regular inspection and maintenance throughout the operational life of the Project. TC Energy is committed to building and maintaining safe facilities with the protection of people, the environment and assets in mind. Through ongoing engagement efforts, Indigenous and local knowledge of the Project area continues to be gathered. TC Energy will continue to engage with Indigenous rights-holders and Indigenous groups throughout the planning and execution of the field studies. Indigenous rights-holders and Indigenous groups will also be engaged to discuss potential impacts on the exercise or practice of Indigenous and treaty rights identified, and the mitigation options available to reduce those impacts. The Project infrastructure is largely located within 4 CDTC, which is federal land subject to access restrictions. The lakebed is provincial Crown land. One of the transmission connection options (not on lakebed) will likely be on private land and along existing roads and rights-of way. Where possible and appropriate, siting of surface infrastructure will avoid identified interests. Past, present, and reasonably foreseeable future projects will be considered in the cumulative effects assessment for the Project.

Key Information, Indigenous Knowledge, Concern	Influence on the Project
Concerns regarding restrictions on access to: • Traditional territory for harvesting wild foods and medicinal plants due to development and privatization • Project area for recreational use (e.g., hiking, recreational fishing, camping)	Through ongoing engagement efforts, Indigenous and local knowledge of the Project area continues to be gathered. TC Energy will continue to engage with Indigenous rights-holders and Indigenous groups throughout the planning and execution of the field studies. Indigenous rights-holders and Indigenous groups will also be engaged to discuss potential impacts on the exercise or practice of Indigenous and treaty rights identified, and the mitigation options available to reduce those impacts. The Project infrastructure is largely located within 4 CDTC, which is federal land subject to access restrictions. The lakebed is provincial Crown land. The transmission connection option (not on the lakebed) will likely be on private land and along existing roads and rights-of way. Where possible and appropriate, siting of surface infrastructure will avoid identified interests. Past, present, and reasonably foreseeable future projects will be considered in the cumulative effects assessment for the Project.
Concerns regarding impacts of the Project and development on the long-term sustainability of animal and plant populations	During the Project planning phase TC Energy will work with Indigenous rights-holders and Indigenous groups, regulatory authorities, and the public to collaboratively develop approaches to avoid or reduce effects on wildlife and vegetation. This may include design or siting optimization to reduce interaction with vegetation, wildlife and wildlife habitat, such as reducing habitat loss by reusing existing disturbances or constructing using minimal surface disturbance techniques, where appropriate. Wildlife and vegetation studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures.
Concerns regarding impacts to archaeology, heritage, cultural and/or spiritual sites and burial sites	TC Energy initiated archaeological assessments in 2020 in accordance with relevant federal/provincial processes, and in collaboration with Saugeen Ojibway Nation. Studies on 4 CDTC will continue and will be expanded to include the footprint of all associated Project infrastructure on or off 4 CDTC. These studies will help identify potential archaeological resources, and if warranted, further work will be undertaken to either avoid the resource or manage it through systematic recovery in consultation with Indigenous rights-holders and Indigenous groups and relevant authorities. Identifying burials, archaeological sites and historical features is an important aspect of the studies undertaken as part of Project development. Burials are considered the most sensitive of cultural sites and avoidance will be a priority. Studies to date have not identified settlement period burials within the preliminary Project footprint. Burials are considered unlikely within the Reservoir footprint, considering the very shallow soils over bedrock. Nevertheless, in addition to ongoing archaeological assessment, TC Energy will continue to engage interested Indigenous rights-holders and Indigenous groups to obtain Indigenous knowledge regarding the potential for historical burials. During construction, TC Energy will implement an archaeological chance find procedure, developed in collaboration with Indigenous rights-holders and Indigenous groups, to manage previously

Key Information, Indigenous Knowledge, Concern	Influence on the Project
	unknown resources, if found. This will include specific protocol if human remains are identified. TC Energy plans to install components (e.g., Powerhouse, Headraces, and Tailraces) as well as near-shore infrastructure using low disturbance techniques (e.g., tunneling, horizontal directional drilling), where feasible, to reduce surface disturbances which might put archaeological resources at risk. Where possible and appropriate, siting of surface infrastructure will avoid identified archaeological resources.
Concerns regarding the suitability of the Project location and potential alternatives to the Project (e.g., solar energy)	TC Energy believes Ontario will require a portfolio approach to lowering emissions on the electrical system, while also maintaining a reliable, affordable and efficient energy supply. Long duration, grid-scale storage will work in coordination with other technologies. The proposed location of the Project is unique within Ontario as it allows for a substantial elevation change between Georgian Bay and the Reservoir within a relatively short distance that allows for the efficient generation of electricity while being located in near proximity to a portion of Ontario's electrical system that can interconnect with up to 1,000 MW of electricity. As part of the rigorous federal regulatory reviews necessary for the Project, TC Energy will establish the need for the Project and document alternative approaches that it has considered.

7.6 Planned Future Engagement Activities

TC Energy continues to actively engage with potentially affect Indigenous rights-holders and Indigenous groups (See Section 7.2) consistent with the approach described in Section 7.1. Engagement activities will continue during all Project phases. TC Energy will continue to respond to questions and concerns, and ongoing engagement activities will continue with the intent to:

- Address any Project-related questions or concerns
- Progress workplans that provide capacity funding for communities
- Understand interests in education, training, apprenticeship, employment, supplier capacity development, and contracting opportunities
- Gather input, including Indigenous knowledge, on Project design and planning and measures to avoid, mitigate or manage potential effects through ongoing engagement activities
- Formalize economic participation terms with Saugeen Ojibway Nation
- Work with other Indigenous rights-holders and Indigenous groups to identify potential Project related economic participation and opportunities such as employment, procurement, and community supports

- Work with other potentially affected Indigenous rights-holders and Indigenous groups to identify interest and capacity and to verify communication and outreach protocols for opportunities related to employment and contracting
- Address environmental question and concerns, such as the development of appropriate mitigations, permit applications, and follow-up and monitoring programs, as required

TC Energy will also continue to engage with potentially affected Indigenous rights-holders and Indigenous groups in accordance with the direction set out by IAAC during the IA process.

7.7 Overarching TC Energy Initiatives

TC Energy undertakes various programs within the communities and regions in which they operate, supporting multiple education and training, community investment, and contracting and employment opportunities. While these opportunities may not be specific to the Project, they are part of maintaining positive relationships and contributing to social and economic well-being through such things as supporting potentially affected Indigenous rights-holders and Indigenous groups' needs and aspirations and participation in Project (and in some cases broader reaching) opportunities. These opportunities are described below.

7.7.1 Education and Training

TC Energy recognizes the importance of providing opportunities for Indigenous participation both on the Project, as well as more broadly across areas where TC Energy works and operates. TC Energy has been supporting Indigenous rights-holders and Indigenous groups potentially affected by its projects through community investment in education and training to support Indigenous rights-holders' and Indigenous groups' capacity development programs since 1999. TC Energy will continue to provide support and resources to Indigenous rights-holders and Indigenous groups to increase their ability to participate in Project activities and to support their long-term goals for skills development and training.

In collaboration with potentially affected Indigenous rights-holders and Indigenous groups, and in alignment with TC Energy's Indigenous Relations Policy, TC Energy has been and will continue working with Indigenous rights-holders and Indigenous groups to identify opportunities for capacity development. As part of TC Energy's ongoing broader corporate engagement program, TC Energy will work with potentially affected Indigenous rights-holders and Indigenous groups through their human resource coordinators, economic development and education officers, or other designated responsible representatives, to support the immediate and/or long-term training needs of Indigenous rights-holders and Indigenous groups, so that support and/or associated programs are fit-for-purpose.

Training and capacity development programs which TC Energy has supported and sponsored in the past include:

- Literacy and numeracy programs
- Job readiness and life skills programs
- Administration courses for Band staff
- Safety tickets, first-aid, and cardiopulmonary resuscitation (CPR) training
- Heavy equipment operators training
- EA/IA and monitoring courses
- Pre-trades training

This experience continues to inform TC Energy's approach to education and training initiatives and programs, which are tailored and adapted to the interests of Indigenous rights-holders and Indigenous groups engaged on the Project.

At the time of preparing the IPD, TC Energy provided resources to support marine operator training for a Chippewas of Nawash Unceded First Nation fisher who has been subcontracted to support TC Energy's aquatic baseline studies.

TC Energy supported the Habitat for Humanity and Tiny Homes programs in both Saugeen Ojibway Nation communities to address priority housing needs and to build skilled trade capacity in the community.

A Memorandum of Understanding was signed by TC Energy in April 2022 with Makwa-Cahill, the Georgian College of Applied Arts and Technology, the Huronia Area Aboriginal Management Board, Bruce Power, and the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada to collaborate on the establishment of a Joint Training and Community Development Program. The Program aims to develop local and Indigenous workers to support Makwa-Cahill and Bruce Power's operations, the Project's construction, and eventual operations, and further contribute to regional economic development.

7.7.2 Community Legacy

TC Energy has three focus areas for community legacy, in addition to education and training:

- Safety: work with Indigenous rights-holders and Indigenous groups to understand how TC Energy can support their safety initiatives, including emergency preparedness, accident prevention and education and training

- Resilient communities: support community-led initiatives that bring communities together through initiatives such as cultural preservation and community events or that address community sustainability priorities
- Environment: work with communities to conserve important habitat, protect species at risk and the environment

Since 1999, TC Energy's Community Legacy Program provides support for community-led initiatives within these focus areas with Indigenous rights-holders and Indigenous groups potentially affected by its projects including, but not limited to, safety equipment and safety programs, emergency preparedness, Pow Wows, Métis festivals, breakfast programs, cultural/language preservation, Elders programs, reconciliation initiatives, habitat conservation, species protection, and more.

TC Energy recognizes that each Indigenous group's needs and interests are unique. Funding to communities is designed to provide flexibility in the development of initiatives that will support each Indigenous group's long-term goals and priorities.

Some examples of Saugeen Ojibway Nation initiatives supported by TC Energy over the course of 2022 to 2025 include the following:

- COVID-19 relief
- Housing (Habitat for Humanity, Tiny Homes7.7.1)
- Marine vessel safety and operator training
- School lunch program at Saugeen First Nation
- Food banks at Saugeen First Nation and the Chippewas of Nawash Unceded First Nation
- Little National Hockey League community teams support
- Water Ceremony and Water Walk support

Other initiatives supported by TC Energy include:

- Curve Lake First Nation's archaeological and heritage program
- Support for youth sports teams in Chippewas of Rama First Nation, Saugeen First Nation and the Chippewas of Nawash Unceded First Nation
- Beausoleil First Nation Fire and Emergency Services Auto Extrication Upgrade
- Chippewas of Georgina Island First Nation COVID-19 relief
- Historic Saugeen Métis rendezvous community cultural gathering
- Chippewas of Nawash Unceded First Nation 2025 ice storm blackout emergency relief

TC Energy remains available to further discuss community legacy initiatives and opportunities for support with potentially affected Indigenous rights-holders and Indigenous groups at their request and will continue to identify opportunities for collaboration in all operating regions.

7.7.3 Contracting and Employment

TC Energy's approach to contracting and employment for the Project are established to increase the participation of those Indigenous rights-holders and Indigenous groups potentially affected by the Project. Business engagement activities seek to provide business opportunities for participation arising from Project-related activities to qualified Indigenous contractors, suppliers, and individuals and are designed to:

- Gather proximate and local Indigenous business interests for contracting and employment opportunities
- Identify contracting and employment opportunities for Indigenous rights-holders and Indigenous groups and businesses through the Project's Contractor(s) and subcontractors or through contracts with TC Energy
- Provide Project Contractor(s) with information of business capacity and capabilities from local communities, Indigenous rights-holders and Indigenous groups for inclusion in subcontracts and employment opportunities
- Inform Project Contractor(s) of services (subcontracts) that are designated to be executed by qualified and competitive Indigenous suppliers only, and propose targeted services to be prioritized for qualified and competitive proximate and local Indigenous and non-Indigenous businesses
- Enhance capacity of Indigenous businesses and individuals to participate in the Project including education and training
- Encourage the participation of local, Indigenous and diverse workers and businesses on the Project

TC Energy continues to provide information about contracting and employment opportunities to potentially affected Indigenous rights-holders and Indigenous groups and Indigenous businesses, obtain information regarding Indigenous group interest, capacity and capability relating to the Project, and discuss potential economic participation in the Project to build reciprocal business relationships.

Opportunities for economic participation through contracting and employment will occur in the construction phase of the Project. In collaboration with proximate and local Indigenous rights-holders and Indigenous groups, TC Energy is actively working to realize economic opportunities for Indigenous rights-holders and Indigenous groups and Indigenous businesses on all aspects of the Project.

Indigenous rights-holders, Indigenous groups and businesses that show an interest in contracting opportunities are also directed to TC Energy's online vendor registration portal to submit business information. The information received is captured in TC Energy's Indigenous Business Directory and is provided, with consent, to Contractor(s) for consideration of contracting and employment opportunities.

TC Energy will implement the Hire & Buy Local Program to facilitate the participation of local communities, Indigenous rights-holders and Indigenous groups potentially affected by the Project through employment and contracting opportunities. Local Indigenous businesses and employees will be included in Project employment and contracting opportunities, based on, but not limited to:

- An assessment of scope and scale of work activities available
- Proximity to the Project
- Potential business interests of proximate and local groups

TC Energy will outline expectations and requirements in contracts with Engineering, Procurement, and Construction Management (EPCM) and subsequent prime contractors to hire qualified and competitive contractors and employees. Expectations regarding local, diverse and Indigenous participation are reviewed and communicated at the EPCM and prime contractor pre- and post-award meetings. EPCM and subsequent prime contractors are required to report regularly on their performance relating to its Hire & Buy Local Program requirements. Sub-contractors will be selected based on an assessment of best total value, including their qualifications, capacity, capability, safety performance, availability, and price.

TC Energy continues to engage with leadership and economic development officers from both Saugeen First Nation and the Chippewas of Nawash Unceded First Nation on identifying businesses and has met with member-owned businesses to confirm interest, evaluate capacity and identify supplier development opportunities.

TC Energy has also:

- Partnered with the Chippewas of Nawash Unceded First Nation's Makwa-Cahill business partnership on a constructability and fabrication review of the Inlet-Outlet Structure of the Project's generation facility
- Selected Makwa Development, a Chippewas of Nawash Unceded First Nation member-owned business to provide Indigenous engagement support for the Project's Saugeen Ojibway Nation capacity assessment and development plan related to economic development
- Purchased office supplies, promotional material, and other services from Indigenous, local and diverse vendors
- Subcontracted a Chippewas of Nawash Unceded First Nation fisher to provide a vessel, crew, and piloting for the Project's aquatic baseline studies since 2020

Feedback gathered through TC Energy's business engagement activities to date has informed the development and maintenance an Indigenous business directory specific to the Project. This directory will be referred to in advance of any contracting opportunities throughout the lifecycle of the Project and will be verified from time to time with Indigenous rights-holders and Indigenous groups during ongoing Project engagement.

8 Public Engagement

This section of the IPD provides information on TC Energy's engagement with communities and regulatory agencies since 2019, including:

- Engagement program approach
- Identification of interested parties
- Design and implementation of the engagement program
- Key outcomes of the engagement program up to May 2025
- Plans for ongoing engagement

TC Energy recognizes the importance of early and meaningful engagement with the community and agencies to share information, understand comments, and address or resolve concerns during the Planning Phase of the Project. The overriding principle underpinning the Project's engagement program is that interested parties will be engaged in a fair, honest, open, consistent and timely manner by the Project Team, so that interested parties will have the opportunity to provide input into Project plans and the IA process.

TC Energy has created a separate approach to Indigenous engagement, which is discussed in Section 7.

8.1 Engagement and Participation Approach

8.1.1 Engagement Commitment

TC Energy's Stakeholder Engagement Commitment Statement[9] outlines the guiding principles for the Project's engagement program and builds on TC Energy's core values of safety, innovation, responsibility, collaboration, and integrity. TC Energy will continue to uphold these values in their commitments to protect our planet, create shared prosperity, and empower people. Engagement will focus on upholding these commitments and building and sustaining support through early and honest engagement, mitigating impacts, and by developing mutually-beneficial partnerships.

The following principles are used to guide engagement activities:

- We identify and consider the perspectives of interested parties
- We are visible, present, and approachable in the community

[9] https://www.tcenergy.com/siteassets/pdfs/about/governance/tc-stakeholder-engagement-commitment-statement.pdf

- We recognize that diverse thought, opinions, and experiences contribute to better decisions and outcomes and that feedback can help shape project design
- We take ownership and accountability for our decisions and outcomes
- We track, measure, and report on our performance to learn and improve

TC Energy has been actively engaging with the public, multiple levels of government, and regulators regarding the Project since 2019.

8.1.2 Engaging Diverse Populations

The IAA requires applicants to apply Gender-based Analysis Plus (GBA Plus[10]) to identify the potential for the Project to disproportionately impact diverse groups of people, including vulnerable populations and populations identified by gender (Government of Canada 2019). Gender-based analysis plus is a means of identifying and analyzing how sex, gender and other identity factors of vulnerable populations (e.g., 2SLGBTQI+[11]) might result in different groups of people being affected by a project in different ways. Individual and social identity factors can include sex, gender, religion, race, social position, income, age, ability, and education.

In accordance with IAAC's guidance for *Gender-based Analysis Plus in Impact Assessment* (2021), Project-specific engagement activities must be designed to facilitate the effective involvement of all potentially affected diverse groups of people. TC Energy engages with diverse populations in ways that are culturally appropriate and guided by the preferences, requests, and advice of the groups who may be affected (e.g., holding in-person and virtual meetings specific to Indigenous rights-holders and Indigenous groups, organizing site visits, offering opportunities to participate in fieldwork).

TC Energy will continue to adapt its inclusive engagement approach to reflect feedback received.

[10] IAAC (2024) defines Gender-based Analysis Plus (GBA Plus) as an analytical tool used to support the development of responsive and inclusive policies, programs, and other initiatives. GBA Plus is a process for understanding who is impacted by the issue or opportunity being addressed by the initiative; identifying how the initiative could be tailored to meet diverse needs of the people most impacted; and anticipating and mitigating any barriers to accessing or benefitting from the initiative. GBA Plus is an intersectional analysis that goes beyond biological (sex) and socio-cultural (gender) differences to consider other factors, such as age, disability, education, ethnicity, economic status, geography (including rurality), language, race, religion, and sexual orientation.

[11] The Government of Canada uses this acronym to refer to the Canadian community. 2S: recognizes Two-Spirit people as the first 2SLGBTQI+ communities; L: Lesbian; G: Gay; B: Bisexual; T: Transgender; Q: Queer; I: Intersex, considers sex characteristics beyond sexual orientation, gender identity and gender expression; +: is inclusive of people who identify as part of sexual and gender diverse communities, who use additional terminologies.

8.1.3 Identification of Interested Parties

In preparation for formal communications in 2019, TC Energy developed an initial list of interested parties for the Project through a combination of desktop research, experience, and operating energy infrastructure projects across Ontario.

The following potential groups were identified:

- Municipal leaders and representatives (elected officials and staff of county and local municipalities):
  - Bruce County
  - City of Owen Sound
  - County of Simcoe
  - Grey County
  - Municipality Northern Bruce Peninsula
  - Municipality of Grey Highlands
  - Municipality of Meaford
  - Municipality of West Grey
  - Tiny Township
  - Town of Collingwood
  - Town of Hanover
  - Town of South Bruce Peninsula
  - Town of the Blue Mountains
  - Town of Wasaga Beach
  - Township of Chatsworth
  - Township of Clearview
  - Township of Essa
  - Township of Georgian Bluffs
  - Township of Severn
  - Township of Southgate
  - Township of Springwater
  - Township of The Archipelago
- Provincial and federal government agencies and representatives:
  - 4 CDTC
  - DFO
  - DND
  - ECCC
  - Grey Sauble Conservation Authority
  - IAAC
  - Crown-Indigenous Relations and Northern Affairs Canada
  - Department of Finance Canada
  - Natural Resources Canada
  - Intergovernmental Affairs
  - Innovation, Science and Economic Development Canada
  - Canada Infrastructure Bank
  - Ministry of Energy and Mines
  - Ministry of Finance
  - Ministry of Natural Resources
  - Ministry of Economic Development, Job Creation and Trade

  - Ministry of Economic Development, Job Creation and Trade
  - Ministry of the Environment, Conservation and Parks
  - Ministry of Indigenous Affairs and First Nations Economic Reconciliation
  - Ontario Energy Board
  - Hydro One
  - Independent Electricity System Operator
- Landowners and occupants whose lands are near the Project
- General public and citizens groups with common interests
- Land users (recreational/outdoor organizations)
- Emergency responders
- Local, regional, and provincial community and environmental organizations
- Organized labour
- Public and separate school boards
- Chambers of Commerce

As the process of identification is ongoing and continues throughout the evolution of the Project, the list of interested parties is regularly updated. Interested parties are encouraged to identify other potentially interested parties and within each of these larger groups, specific parties may self-identify at any time in the process, and engagement would be initiated.

Identified parties have been provided with notifications about the Project and have received invitations to participate in engagement opportunities, details of which are discussed in the following sections.

8.1.4 Engagement and Documentation Tracking

TC Energy has established a system to track and record communications, engagement activities, comments, and concerns raised by the public. TC Energy will review records frequently, and concerns will be considered and responded to as appropriate. This information will also be used to inform Project design, identification of potential effects, and identification of potential mitigation measures for the Project.

8.2 Engagement Methods

TC Energy supports a collaborative, inclusive, community-based approach to the development of the Project. Engagement and communication methods have been selected with the goal of expanding perspectives on the Project by providing varying opportunities for input. The intention is to listen, gather feedback, build trust, educate, and resolve concerns. The following in-person and virtual engagement methods have been established and/or are proposed to facilitate participation and accessibility of information to the public:

- Community Liaison Committee
- Local Project Office and Coffee Chats
- Community Information Sessions
- Project Website, Toll Free Phone, Email, and Social Media
- Factsheets and Newsletters
- Video Series
- Media
- Door-to-door Canvassing
- Environmental Non-Government Organization Workshops
- Visual Aids and Models
- Virtual Meeting Rooms

These methods will continue during the IA process and Project development and will be further informed through direction provided by IAAC during the establishment of Project plans (i.e., Public Participation Plan). Details of the engagement activities undertaken up to May 2025 are provided in Section 8.3.

8.2.1 Community Liaison Committee

A Community Liaison Committee (CLC) was established by TC Energy for the Project in November 2020, with representation from groups surrounding the Project, to provide a formal structure to facilitate collaborative issues and opportunity-based engagement between community representatives and TC Energy. The CLC considers various topics of interest and concern and collaborates to identify community/regional benefits and reduce and mitigate potential negative effects of the Project.

Membership is intended to be diverse, inclusive, and representative of the community, yet limited in numbers to create a manageable working group and includes organizations and individuals who demonstrate that they represent their community or organization. The term of service for each member is one year, with the possibility of renewal depending on the needs of the CLC and the wishes of the individual member.

Members include:

- TC Energy (Committee Chairperson)
- Saugeen Ojibway Nation
- Municipality of Meaford (Municipal Staff)
- Sunnyside Cottage Association
- Meaford Chamber of Commerce
- Grey County Economic Development Office
- Grey Bruce Health Services
- Georgian College
- Labourers' International Union of North America (LiUNA)
- The Provincial Building and Construction Trades Council of Ontario
- 4 CDTC representatives

It is anticipated that the CLC will remain active through all Project phases of development, construction, and operations. The CLC may also establish sub-committees regarding specific concerns from communities. Summary notes from each CLC meeting will be posted on the Project website, where the CLC Terms of Reference (TOR) are also available.

In 2024, the Municipality of Meaford established the Pumped Storage Advisory Committee (PSAC) comprised of residents and interested parties. Being sensitive to stakeholder fatigue, TC Energy's CLC's work was paused in recognition of the Municipality's request to engage through the PSAC.

8.2.2 Local Project Office and Coffee Chats

TC Energy opened a Project office in April 2022 at 390 Sykes Street North, in Meaford. This Project office provides a central location for community discussion and an opportunity to facilitate greater local participation. The office is open from 9:00 a.m. to 5:00 p.m. five days a week for members of the public to drop-in and ask questions, provide comments, and participate in events hosted by TC Energy, including weekly Community Coffee Chats. Community Coffee Chats are two-hour meetings that occur twice weekly and provide attendees

with an overview of the Project and allow for in-depth discussions with the Project Team. By soliciting feedback in a respectful, earnest, and controlled fashion, TC Energy provides an opportunity to learn about, and speak to valid concerns, consider Project changes, and track support of those opposed, neutral, or supportive. To evaluate the effectiveness of the Community Coffee Chats, follow-up surveys were provided to attendees in 2022 and 2023 seeking feedback on the effectiveness of these sessions as an engagement tool. Feedback was positive and showed participants were consistently satisfied with the Community Coffee Chats, as such the survey was closed in 2023. As of May 1, 2025, TC Energy has hosted over 200 Community Coffee Chats with more than 150 residents.

The following provides a list of top reoccurring issues expressed at Community Coffee Chats:

- Housing supply for workers and potential strain on local amenities
- Construction impacts and timeline
- Construction opportunities for local contractors and vendors
- Reservoir design and safety concerns
- Unexploded ordnance at 4 CDTC
- Project cost and impact to ratepayers
- Environmental protection
- Impacts to Georgian Bay
- Need for the Project
- Acknowledging and honouring original land use of 4 CDTC property

8.2.3 Community Information Sessions

TC Energy has and will continue to host Community Information Sessions with the goal of providing information and gathering feedback regarding the Project. Community Information Sessions include open houses, targeted workshops, and other events. TC Energy will also participate in community-planned events and host concern-specific community meetings as required or requested.

Questions received at the Community Information Sessions were posted on the Project website so community members could review the questions, along with the responses to address each question. Materials that are made available at the Community Information Sessions, including the display panels, a video recording of TC Energy's presentation, informative booklets and fact sheets were also made available on the Project website, so they can be accessed by community members who were not able to attend the events.

A virtual Community Information Session format was used on account of the COVID-19 pandemic. This format enabled safe and accessible participation from a wide range of interested parties and communities, including municipalities, that may potentially be impacted by the proposed transmission connection option. It also provided an opportunity for seasonal residents to attend the event if they had relocated away from the Project area.

8.2.4 Project Website, Toll Free Phone, Email, and Social Media

TC Energy maintains a dedicated Project website (www.ontariopumpedstorage.com), which hosts information about the Project, answers to frequently asked questions, community newsletters, factsheets, opportunities for the community to get involved, studies produced for the Project, and Project updates.

A separate website was established in summer 2022 for Meaford-specific information (www.poweredbymeaford.com), including schedules for future engagement activities, local business opportunities, and frequently asked questions.

Both websites list the following Project contact information:

Ontario Pumped Storage
390 Sykes Street North
Meaford, ON, N4L 1J4
Toll free phone line: 1-844-551-0055
Meaford area local line: 1-519-538-7941
Project e-mail: energy_storage@tcenergy.com

Interested parties can sign up for Project email updates through the Stay Informed page on the www.poweredbymeaford.com website.

Additionally, TC Energy has developed a Project-specific social media presence, producing geo-targeted campaigns to reach residents that may not be aware of the Project and provide or direct them to the Project website or other engagement events to find information on the Project.

The following are TC Energy's Social Media channels:

- YouTube: https://www.youtube.com/@transcanada
- Facebook: https://www.facebook.com/TCEnergyCorporation
- X: https://x.com/TCEnergy
- LinkedIn: https://ca.linkedin.com/company/tcenergy

- Instagram: https://www.instagram.com/tcenergy/

8.2.5 Factsheets and Newsletters

Project information newsletters have and will be distributed to interested parties as development progresses and milestones are achieved. TC Energy will continue to produce and distribute newsletters and factsheets as required. Future topics may include environmental components (e.g., aquatics, terrestrial environment), the IA and environmental assessment processes, potential environmental impacts and mitigations, including socio-economic effects, procurement, training processes, and employment. Factsheets may be distributed via mail, email, newsletter, Project websites, social media, and physical copies. Any interested party can subscribe to the Ontario Pumped Storage Project Community Newsletter by signing up on the www.ontariopumpedstorage.com website.

8.2.6 Video Series

TC Energy has produced a video series[12] to help explain various aspects of the Project. Videos have been posted on the Project website. Examples of video series include:

- Series of videos with subject matter expert narratives explaining different aspects of environmental protection
- Series of videos with subject matter expert narratives explaining the pre-qualification process and opportunities to contract with TC Energy on the Project

8.2.7 Media

TC Energy has initiated a comprehensive local media campaign to provide awareness of the Project and to inform Meaford and area residents of the need for the Project and the positive benefits it will bring to the community. The media campaign enables the Project to reach a larger audience and encourages community members to engage with the Project Team by attending a Community Coffee Chat or viewing the Project website for more information.

The media campaign includes advertising in a number of local print publications, radio stations, and digital outlets. The following provides a list of media outlets the Project has engaged with for advertising purposes.

[12] The video series is available at: https://www.ontariopumpedstorage.com/about/resources/.

Print**:**

- The Meaford Independent
- Collingwood Connection
- Wasaga-Stayner Sun
- Owen Sound Sun-Times
- Grey Bruce This Week
- On the Bay Magazine

Radio:

- Meaford - CJGB-FM (Adult Contemporary)
- Owen Sound - CFOS-AM (Oldies, AC)
- Owen Sound - CIXK-FM (Hot AC, Mix 106.5)
- Owen Sound – CIBU-FM (Cool 94.5 Classic Hits)

Digital**:**

- The Meaford Independent
- Collingwood Connection
- Owen Sound Sun-Times
- Owen Sound Hub
- Facebook, Instagram, X , LinkedIn, YouTube, Google
- Geotargeted digital programmatic

8.2.8 Door-to-door Canvassing

TC Energy has canvassed Municipality of Meaford residents to provide information about the Project, answer questions and invite residents to a Community Coffee Chat. TC Energy retained local third-party canvassers who were trained to make door-to-door visits. The main goal of the canvassing exercise was to understand local concerns and solicit feedback, build relationships, raise awareness, enhance local presence, and remind residents about the open invitation to attend Community Coffee Chats.

8.2.9 Environmental Non-Government Organization Workshops

TC Energy has held several workshops with Environmental Non-Government Organizations (ENGOs) to share Project information and to solicit feedback, specifically feedback on creative solutions and approaches to environmental protection and management tied to these organizations' areas of specialization. The workshops ranged from 1 to 3 hours in length and were hosted in person as well as virtually. The purpose of the discussions was to provide ENGOs with a detailed briefing on proposed re-design of the Project, approach to environmental protection, transmission routing and ongoing data collection and environmental monitoring. ENGOs raised many questions regarding impacts to lake water levels, water temperature, safety, impacts to fish and fish habitat, biodiversity, ecological interconnectivity and construction techniques. TC Energy was able to address all their questions either in the sessions or through written responses after the discussions.

8.2.10 Visual Aids and Models

TC Energy developed a scale model of the Project, which shows the proposed location of the Reservoir, a cutaway to demonstrate the location of the Powerhouse and Water Conveyance Structures, and Lower Inlet/Outlet Structure into Georgian Bay. TC Energy also created tabletop models of key Project components including the Powerhouse, diffuse inlet/outlet risers (part of the Lower Inlet/Outlet Structure), and Reservoir (Upper Inlet/Outlet Structure). TC Energy then created samples of mesh barriers that are currently being studied for potential use on the inlet/outlet risers (part of the Lower Inlet/Outlet Structure).

Although conceptual at this time, as design of the facility continues, these aids are used during in-person engagement activities to help visualize the Project components so interested parties can better understand the proposed design, location, and design safeguards being contemplated, especially its relation to the land since access to 4 CDTC and the surrounding waters is restricted.

8.2.11 Virtual Meeting Rooms

TC Energy anticipates the development of virtual meeting rooms to inform the public regarding aspects of the Project in an accessible and convenient manner. Topics for virtual meeting rooms may include: an overview of the Project; overview of the regulatory processes; information regarding environmental studies; and information pertaining to contracting and procurement. The content and focus of the virtual meeting rooms is anticipated to align with the Project's regulatory process and design and construction schedule.

8.3 Summary of Engagement Activities To-Date

8.3.1 Municipal Engagement

TC Energy maintains ongoing communication with municipalities in Bruce, Grey and Simcoe Counties to provide key Project updates. TC Energy provides regular updates to elected officials as well as municipal staff through Project newsletters, Council presentations, staff workshops, and email communications.

Specifically, TC Energy has been engaging with the Municipality of Meaford's elected officials and staff since 2019. As the host community, the Project will have a meaningful and long-term direct impact on the Municipality and surrounding region. Over the past few years, the Project Team has focused its efforts on building and fostering positive relationships with the Municipality and providing the Municipality with opportunities to provide early input into Project planning and the development phase. The Project Team has provided numerous delegations to Council, hosted meetings with staff and elected officials, and will continue to provide regular opportunities for engagement with the Municipality as the Project advances.

A summary of engagement with municipalities, including several key Council meetings of particular importance to the Project are noted below:

2019

- June 2019 – Introductory meetings held with Municipality of Meaford staff and municipal Councilors.

2020

- June 1, 2020 – At a special Meaford Council meeting, the Chief Administrative Officer (CAO) presented a report on the Project, which documented concerns that largely pertained to protection of the environment. The report recommended that the Municipality submit a letter to DND declaring their support for the Project to move forward (with conditions) to the applicable environmental assessment approvals process. That recommendation was advanced with unanimous support from the Municipal Council.

2021

- December 16, 2021 – TC Energy held a teleconference briefing with the Municipality of Wasaga Beach planning staff to discuss the recent acquisition of a property in Wasaga Beach in relation to the Project. Staff were provided with a briefing regarding the Project's timelines and permitting requirements. Wasaga Beach staff were interested in working closely with TC Energy regarding municipal public works in the area including

drainage and channel works that may require an easement on the property. Both parties committed to ongoing discussions and collaboration.

2022

- January 31, 2022 – TC Energy provided a Delegation to Council of the Municipality of Meaford that outlined in detail how TC Energy addressed the Municipality's questions and concerns from the June 1, 2020 CAO Report. All questions and concerns were addressed.
- February 24, 2022 – The Municipality of Wasaga Beach and TC Energy enter into a License Agreement that allows the Municipality access to TC Energy property to conduct outlet channels and drainage related to Municipal public works. Both parties continue to coordinate ongoing engagement.
- May 9, 2022 – Following the January 2022 delegation to Council and the response to the CAO's 2020 Report, the Municipality of Meaford passed a unanimous motion at Council that directed the CAO to discuss with TC Energy possible community betterments and provide regular updates to Council on progress. Subsequent discussions with the CAO of the Municipality of Meaford were held in May and June 2022.
- July 25, 2022 – The Municipality of Meaford accepted a CAO report that outlined possible Community Betterment Agreement concerns and priorities.
- August to November 2022 – TC Energy canvassed every household in the Municipality of Meaford at least once (approximately 5,000 households). During this time, canvassers knocked on more than 8,758 doors and had conversations with more than 1,941 residents.
- December 2022 – TC Energy provided Project briefings to Councils in the following municipalities:
    - Grey County (December 8, 2022)
    - Town of Collingwood (December 12, 2022)
    - City of Owen Sound (December 12, 2022)
    - Clearview Township (December 12, 2022)

2023

- February 27, 2023 – at a Meaford Council meeting, Council passed a motion of conditional support for the construction and operation of the Project. Council support is contingent on TC Energy fulfilling the following conditions:

1. Reasonable cost recovery by TC Energy for all costs incurred by the Municipality
2. Development of a regulatory plan to address the Municipality's role throughout the Project's lifecycle
3. Successful negotiation of a Community Benefits Agreement with the Municipality
4. Completion of all applicable regulatory processes and obtaining all associated permits and approvals

- August 2023 – TC Energy hosted a booth at the Association of Municipalities Ontario Conference in London as a way to further engage with interested municipalities and drive awareness about the Project.
- September 2023 – The Municipality of Meaford provided letter of support for the Project.
- October 30, 2023 – The Municipality of Meaford Committee of the Whole recommended that the Project be recognized as a Strategic Priority for the Municipality in 2024, allowing the Municipality to develop public engagement procedures.
- November 13, 2023 – The Municipality of Meaford Council approved the 2022-2026 Strategic Priorities which included a new item entitled: Ontario Pumped Storage Project Charter, which directed staff to form two committees related to the Project: (1) An informal Ontario Pumped Storage internal working group; and (2) A formal Municipal Committee comprised of local residents called the OPS Community Steering Committee, and a TOR to be tabled in 2024.

2024

- January 2024 – TC Energy hosted a booth at the Rural Ontario Municipalities Association Conference in Toronto as a way to further engage with interested municipalities and drive awareness about the Project.
- February 12, 2024 – Municipality of Meaford held a regular council session at which staff presented a draft TOR for the proposed PSAC (See Section 8.2.1 for additional details). This municipal advisory committee would report to the Mayor and Council on advice regarding the benefits and potential impacts of the Project on the Municipality. Meaford Council deliberated, including hearing from TC Energy via a deputation regarding feedback on the contents of the draft TOR. The Municipal Council voted to postpone adoption of the draft TOR until comments from the public and from councilors could be addressed.
- February 26, 2024 – Staff presented a revised TOR for the proposed PSAC at a Municipality of Meaford Council meeting. The Council passed a motion to adopt the TOR and requested staff conduct interviews with residents of Meaford who are interested in sitting on the committee.

- March 2024 – TC Energy provided Project briefings to Councils in the following municipalities around the Georgian Bay basin:
  - Tiny Township (March 13, 2024)
  - Town of the Blue Mountains (March 18, 2024)
  - Town of South Bruce Peninsula (March 19, 2024)
  - Township of Severn (March 20, 2024)
  - Township of Georgian Bluffs (March 20, 2024)
  - Township of The Archipelago (March 22, 2024)
  - Municipality Northern Bruce Peninsula (March 25, 2024)
  - City of Owen Sound (March 25, 2024)
- March 25, 2024 – The City of Owen Sound passed unanimously a motion of conditional support for the Project.
- April 2024 – TC Energy provided Project briefings to Councils in the following municipalities around the Georgian Bay basin:
  - Town of Parry Sound (April 2, 2024)
  - Municipality of McDougall Council (April 17, 2024)
- April 25, 2024 – The County of Grey passed a conditional motion of support for the Project.
- May 2024 - TC Energy provided Project briefings to Councils in the following municipalities around the Georgian Bay basin:
  - Town of Northeastern Manitoulin and the Islands (May 21, 2024)
  - Town of Collingwood Council (May 22, 2024)
  - Township of Tay Council (May 22, 2024)
- June 24, 2024 – TC Energy provided a deputation to the Town of the Blue Mountains in response to a proposed Notice of Motion opposing the Project.
- July 15, 2024 – TC Energy provided a deputation to the Town of the Blue Mountains in response to a proposed Notice of Motion opposing the Project. The Motion did not pass.
- August 8, 2024 – TC Energy provided a Project overview presentation to Meaford's PSAC.
- August 2024 – TC Energy hosted an information booth at the Association of Municipalities of Ontario Conference in Ottawa. The booth was attended by numerous elected officials and municipal staff members, including officials from across Grey County.

2025

- January 27, 2025 – TC Energy issued email notices to all municipal leaders regarding the Government of Ontario's announcement regarding the advancement of the Project.
- January 2025 – TC Energy exhibited at the Rural Ontario Municipalities Association conference in Toronto. Many local and regional elected officials came to the booth and expressed positive remarks regarding the investment in rural communities.
- April 22, 2025 – TC Energy met with elected officials and staff from the Municipality of Meaford and County of Grey to better understand the nature and motivations behind the development of Meaford's "Proposed Community Benefits Agreements By-law".

The Project Team will continue to provide regular updates to all interested municipalities. TC Energy continues to work with the Municipality of Meaford to establish a Community Benefits Agreement. TC Energy will continue to participate in discussions with Meaford staff regarding the Meaford Community Benefits Agreement, Project permitting, and other requested topics.

8.3.2 Public Engagement

TC Energy has maintained communication with the public regarding the Project since 2019. Through meaningful engagement with the local community with in-person and virtual Community Information Sessions, door-to-door canvassing, email, telephone call, conference calls, and Community Coffee Chats, the Project team has taken the time to listen to concerns of the local community and interested parties in order to incorporate comments into the design of the Project, where applicable, and for consideration within the regulatory process.

The Project Team has made substantial progress from a community engagement perspective in the Municipality of Meaford, where the majority of Project components are located. Through engagement, the Project Team was able to connect, inform and converse with thousands of residents and interested parties to share Project information, to clarify Project details, and seek feedback. These interactions also allowed TC Energy to clearly articulate Project benefits and Project need.

TC Energy has continued its comprehensive community engagement program utilizing TC Energy's community relations best practices for the Project in Meaford and surrounding municipalities.

The following provides a summary of key engagement activities with the public by year:

2019

- September 2019 – Project introductory letter distributed to landowners and businesses within 5 km of the Project site, approximately 1,000 landowners.

- December 2019 and January 2020 – Three in-person Community Information Sessions were hosted at the Meaford and St. Vincent Community Centre on December 11, 2019, January 16, 2020, and January 23, 2020. In total, the Project Team welcomed over 700 attendees and received over 200 questions from the community (approximately 120 unique questions). Based on the approximate 120 unique questions or comments received at the Community Information Sessions, the topic areas that attendees were most interested in learning more about are as follows: environmental impacts, commercial viability of the Project, potential alternatives to building the Project, and socio-economic impacts. As a result of this feedback, Project design evolved considerably, and TC Energy believes the current proposed configuration better protects the environment and reduces noise and visual impacts for residents and addresses the concerns raised from 2019 and 2020.

2020

- July 22, 2020 – A Community Information Session was held virtually on account of the COVID-19 pandemic. The virtual Community Information Session introduced a new Project design concept based on input from the previous community engagements and ongoing engineering studies. This virtual community information session featured a panel of subject matter experts who responded to questions and comments from attendees. Over 450 people registered for the virtual Community Information Session, with over 250 participants attending. TC Energy received over 100 questions, for which responses were provided on the Project website. TC Energy focused on addressing the following key areas of concern shared from the meeting:
  - Re-design considerations to address impacts to fish, turbidity, noise, and visual impacts
  - Evaluating transmission connection options that include a subsurface cable under Georgian Bay from the Project to a location near Wasaga Beach and continuing on land to the Stayner Transformer Station
  - Clean energy and climate change
- November 2020 – TC Energy distributed a Project information newsletter to interested parties. The newsletter provided information on why the Project is needed, how the Project design has changed, and information about the regulatory process.
- November 2020 – The CLC for the Project was established.

2021

- April 16, 2021 – TC Energy provided notification that it recently purchased a property in the Town of Wasaga Beach. The parcel of land is the proposed location where a potential transmission connection option via Georgian Bay would come ashore. Notices were hand-delivered and/or mailed to neighboring landowners and residents on April 16, 2021, and advertisements were published in local media outlets the week of April 19 and 26.
- October 8, 12, and 25, 2021 – TC Energy held a series of ENGOs workshops with Swim, Drink, Fish (formerly Waterkeepers Ontario), Ontario Nature, Pollution Probe, Georgian Bay Forever, Pembina Institute, Clean Energy Canada, Nature Conservancy Canada/World Wildlife Fund Canada, Ducks Unlimited and Wildlands League (CPAWS Ontario). The purpose of the workshops was to provide ENGOs with a detailed briefing on proposed re-design of the Project, approach to environmental protection, transmission connection changes, and ongoing data collection and environmental monitoring. ENGOs raised many questions regarding impacts to lake water levels, water temperature, safety, impacts to fish and fish habitat, biodiversity, ecological interconnectivity and construction techniques. TC Energy responded to questions, either in the sessions or through written responses after the discussions.
- November 15, 2021 – A community newsletter was distributed to residents and businesses within Meaford, interested parties who signed up for virtual email distribution, and to other interested parties in Wasaga Beach, Clearview Township and the Blue Mountains. The newsletter highlighted considerable re-designs of the Project, ways in which local businesses and individuals can register to receive updates on local procurement and employment opportunities, and the environmental regulatory process.
- November 25, and 30, 2021 – Two virtual Community Information Sessions were held to support communication of the re-design announcements. Over 300 people attended and over 100 questions were answered by subject matter experts. The themes questions focused on included: safety and design; environmental impacts; construction noise; dust; traffic routes; disturbances; transmission connection selection; fish and fish habitat protections; deforestation and re-vegetation plans; value of the Project; cost of the Project; relationships with potentially affected Indigenous rights-holders and Indigenous groups; and community investments and socio-economic opportunities.

- December 2, 2021 – TC Energy facilitated the first CLC meeting. At the meeting, TC Energy was able to provide updates on the Project, a review of socio-economic reports and forecasts, and an open discussion to hear the questions and concerns raised by CLC members. CLC members raised safety and dam or Reservoir design and engineering as a concern they want more information. TC Energy made a commitment to developing more opportunities to discuss Reservoir safety with the CLC members. Given the early stages of the Project, and based on input from the membership, it was decided to pause CLC meetings until more details about the Project become available.

2022

- April 1, 2022 – TC Energy took possession of a leased office space in Meaford. The intent of the office is to offer residents and interested parties an opportunity to learn more about the Project, meet directly with TC Energy representatives, and be the focal point for ongoing direct engagement with community members and interested parties. TC Energy has also run a series of print, radio and digital advertising in the Meaford and surrounding areas so residents are aware of TC Energy's presence in Meaford and have ways for their questions to be answered.
- April 4, 2022 – TC Energy committed to having an Independent Reservoir Safety Advisory Board and supporting the Project's CLC in its community and public engagement process. This commitment is in direct response to CLC members' request to have safety a priority concern to be discussed.
- April 26, 27, and 28, 2022 – TC Energy held a second round of technical briefings and workshops with ENGOs, with the Saugeen Ojibway Nation Environment Office representative in attendance. The purpose of the second round of workshops was to have further discussions on key items of interest to ENGOs that focused on creative approaches to environmental protection and management. These were fluid discussions focused on collaboration and learning about best practices and strategies to enhance environmental stewardship. Participating ENGOs included: Wildlands League, Swim Drink Fish, Pollution Probe, World Wildlife Foundation, Nature Conservancy of Canada, and Ducks Unlimited. Innovative ideas were exchanged related to biodiversity, ecological interconnectivity, land use changes, impacts on fish and aquatic habitat, and long-term monitoring and stewardship. Questions were answered, and TC Energy committed to re-visiting these strategies and ideas during the federal and provincial environmental regulatory process. Pollution Probe, Swim Drink Fish and Ducks Unlimited provided supportive quotes regarding the Project.
- May 12, 2022 – At the 2022 Ontario Provincial Election all-candidates' debate for Bruce-Grey-Owen Sound, all candidates expressed support for the Project.

- June, July, August, September, October 2022 – TC Energy hosted over 15 Community Coffee Chat sessions with over 70 residents. TC Energy responded to questions in the sessions and gathered valuable feedback from community members regarding the best approach to reach residents, how they want information to be sent and what kind of concerns are a priority to them. Based on the results of follow-up surveys provided to participants, the majority of attendees felt their voice was heard, their opinions had a direct impact in how the Project will unfold, and the sessions were very informative.
- July, August, September, October 2022 – TC Energy canvassed approximately 5,000 doors in Meaford, making residents aware of opportunities to engage directly with TC Energy and answer their questions. Questions raised at the door or in follow-up discussions largely pertain to environmental impacts, safety, and socio-economic impacts. TC Energy responded to all these questions either in-person or through follow-up discussions either over the phone or in Community Coffee Chat sessions.
- October 2022 – TC Energy distributed a Project information newsletter to interested parties. The newsletter included an update on the field studies program, announced the opening of TC Energy's office in Meaford, detailed TC Energy's commitment to preserving Georgian Bay, and reviewed the local initiatives supported by TC Energy.
- December 20, 2022 – TC Energy provided a technical briefing to Simcoe County staff regarding potential transmission routes in the County.

2023

- February 28, 2023 – TC Energy issued a media release to acknowledge the conditional support received by Meaford Council on February 27.
- April 2023 – A Notice of Spring Field Studies was issued to advise local community members that TC Energy is continuing to undertake environmental fieldwork to help guide Project design.
- June and July 2023 – TC Energy held a third round of technical briefings and workshops with ENGOs, with the Saugeen Ojibway Nation Environment Office representative in attendance. The purpose of the third round of workshops was to have further discussions on key items of interest to ENGOs that focused on creative approaches to environmental protection and management. These were fluid discussions focused on collaboration and learning about best practices and strategies to enhance environmental stewardship. Those ENGOs included Clean Energy Canada, Wildlands League, Pollution Probe, and Ducks Unlimited.

- July 10, 2023 – TC Energy issued a media release[13] following the Government of Ontario's announcement regarding their new report – Powering Ontario's Growth, which outlines next steps on how to achieve an emission-free electricity sector. As part of that announcement, the Government confirmed that the Project would move to final evaluation and a decision would be rendered by end of 2023.

2024

- January 11, 2024 – A notice was issued to all Project stakeholders regarding the Government of Ontario's direction for the Project.
- January 30, 2024 – The Winter 2024 Community Update newsletter was issued to all Project stakeholders. The newsletter provided updates on the Government of Ontario's recent direction, an update on field studies and local partnerships.
- March 14, 2024 – TC Energy provided a Project briefing to the Wasaga Beach Probus Club.
- April 12, 2024 – TC Energy hosted a local supplier forum in Owen Sound. Representatives from organizations across the region and local vendors attended the event which provided a progress update on the Project and shared information about how local businesses can participate in the Project.
- April 16, 2024 – TC Energy provided a Project briefing to the Silver C's community organization in Owen Sound.
- September 25, 2024 – TC Energy provided a Project overview presentation to Bruce Power Pensioners' Association.
- October 23, 2024 – TC Energy briefed the Great Lakes and St. Lawrence Cities Initiative about the Project, including a guided tour of the proposed location of the Project.
- November 14, 15, 2024 – TC Energy participated in a high school co-op education program with Bluewater District School Board students in Tiverton. The event focused on the construction and operational components of the Project and the need for skilled trades professionals to build and operate the energy infrastructure being planned in the area.

2025

- January 2025 – TC Energy issued email notices to the Project distribution list regarding the Government of Ontario's announcement regarding the advancement of the Project.

[13] TC Energy's Pumped Storage Project moving to final evaluation. Available online: https://www.ontariopumpedstorage.com/whats-new/news-stories/2023/07-10-2023-tc-energys-pumped-storage-project-moving-to-final-evaluation/

- March 13, 2025 – The Canadian Centre for Economic Analysis (CANCEA) provided a presentation outlining the social and economic Benefits of the Projects to Meaford's PSAC summarizing the results of their report (CANCEA 2024) which was commissioned by TC Energy.

8.3.3 Federal Department and Provincial Agency Engagement

TC Energy's engagement with various federal and provincial agencies has focussed on initial Project planning and understanding of the various permits and approval processes required to construct and operate the Project. Engagement with municipalities is covered in Section 8.3.1 and 8.3.2 above. Early engagement with agencies has focused on study methods to be employed during baseline work. TC Energy had engaged with ECCC and the MECP on baseline programs.

Key agencies engaged to date, and a summary of that engagement, includes:

- DND – TC Energy has been engaged with DND since 2016, with more structured engagement commencing in 2018. Efforts have focused on establishing a framework to advance the Project within 4 CTDC and to address any potential impacts of the Project on activities undertaken by DND within 4 CDTC. Specific milestones in this engagement include:
  - May 2019: Land Access Agreement executed between TC Energy and DND to permit access to 4 CDTC lands for the purpose of conducting field studies and engineering assessments.
  - July 28, 2021: TC Energy and DND reached an Agreement in Principle, which outlines an understanding that allows TC Energy to proceed with feasibility studies and to advance through the IA process while protecting the interests of the Canadian Armed Forces and DND.
  - 2022: DND established a Project Management Office dedicated to evaluating the operational, environmental, and financial impacts on the Canadian Armed Forces and DND lands. This group assessed preliminary potential impacts to DND infrastructure as a result of the Project, conducted a range of environmental studies, infrastructure planning, and has begun to discuss activities related to the relocation of DND infrastructure. A Steering Committee was also established. These mechanisms allow structured and ongoing dialogue and information sharing between TC Energy and DND, including an understanding of potential infrastructure relocation needs related to the Project and the concerns and interests of DND and 4 CDTC.

  - 2022-Present: Regular working group meetings are held to coordinate activities. Topics covered included the establishment of a DND-TC Energy Indigenous Engagement Working Group focusing on Indigenous engagement and consultation, as well as annual activity planning for alignment of activities and to address any emerging concerns.

- IAAC – TC Energy initiated Project-specific engagement with the IAAC in 2019 and has continued to provide regular updates on Project planning and development. Key communications focus on confirming the potential IA process, including any information requirements associated with this process, as well as coordination with other federal departments and provincial agencies.
- ECCC – TC Energy has engaged with ECCC since 2019 to provide updates on the development of the Project and to confirm the potential of SAR presence, appropriate survey methodologies, and to discuss potential mitigation measures, as appropriate. In addition, TC Energy has sought permits under SARA to facilitate field surveys within 4 CDTC where SAR may be or are known to be present, including the review of any potential mitigation measures.
- DFO – TC Energy has engaged with DFO since 2019 to provide updates on the development of the Project and to confirm regulatory requirements under the *Fisheries Act* with respect to potential impacts on fish and fish habitat associated with Project components located within Georgian Bay.
- Transport Canada – TC Energy has engaged with Transport Canada since 2023 to provide updates on the development of the Project and to confirm regulatory requirements under the *Canadian Navigable Waters Act* with respect to potential impacts on navigation associated with Project facilities located within Georgian Bay.
- CIRNAC – TC Energy has engaged with Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and Indigenous Services Canada since 2018 to advance permitting under the *Dominion Water Power Act* to access federal lands (e.g., 4 CDTC), to provide updates on the development of the Project and to confirm regulatory requirements and processes under the *Dominion Water Power Act*.
- MNR – TC Energy has engaged with MNR since 2019 to provide updates on the development of the Project and to confirm regulatory requirements under the *Public Lands Act* and *Lakes and Rivers Improvement Act* associated with Project facilities located within Georgian Bay, as well as steps associated with the RSFD Class EA.
- MECP – TC Energy has engaged with MECP since 2019 to provide updates on the development of the Project and to confirm environmental assessment requirements and process for the Project for facilities located outside of federal lands, as well as for regulatory requirements associated with *Ontario Water Resources Act*.

- Ministry of Energy and Mines – TC Energy has engaged with this Ministry to provide Project development updates and to discuss long-term commercial structure, amongst other topics.
- OEB – TC Energy has engaged with OEB since 2019 to provide updates on the development of the Project and to confirm permitting requirements of the transmission facilities associated with the Project.

8.4 Summary of Comments and Responses

The following section summarizes the key concerns that have been raised through engagement with the public, community, agencies, government officials, and other interested parties.

8.4.1 Community Comments and Concerns

The key questions and considerations that have been identified by interested parties through the engagement activities described above are summarized in 8-1.

Table 8-1: Summary of Comments and Concerns from Preliminary Public Engagement Activities

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
Clean Energy	Concerns about zero carbon energy and use of lithium-ion batteries	TC Energy believes Ontario will require a diverse approach to lowering emissions on the electrical system, while also providing a reliable, affordable and efficient energy supply is. Long duration, grid-scale storage is a solution that works with other generation and storage technologies.
	Will pumped storage consume or store only emission-free electricity?	In Ontario, baseload power sources are nuclear power and hydroelectric generation – both of which are emissions free. TC Energy anticipates that generation from these sources of energy will make up the majority of the electrical supply when in pumping mode. It is anticipated that the vast majority of power provided during pumping (i.e., filling of the Reservoir) will be from clean energy sources. Ontario's electrical system operator, IESO, is responsible for directing how electricity flows across the province's power grid. They provide reliable delivery of electricity by balancing supply and demand in real time and determining how power is dispatched through the transmission network.

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
	How long will this facility be in operation? Will the environmental impacts of construction be outweighed by how much benefit we receive with clean energy?	Pumped storage facilities are similar to hydroelectric facilities in that, with proper maintenance and design, they can be in operation for many decades. For example, the Sir Adam Beck Pumped Storage Facility in Niagara Falls began construction in 1957 and in 2016, Ontario Power Generation invested in a refurbishment program so the facility continues to be in service for another 50 years. TC Energy anticipates that the Project could be operational for the foreseeable future with proper maintenance and equipment upgrades. Once the Project begins operating, it is expected to eliminate 490,000 tonnes of CO_2 every year, as it reduces Ontario's reliance on natural gas fired generation. Replicate that performance for the next 50+ years and one can see that this Project is a major climate change solution. Construction activities, assuming they extend over a four-year period, are expected to emit less than 600,000 tonnes of CO_2 in total. Just over one year of operation will roughly negate the entire construction emission impact. TC Energy acknowledges that CO_2 emissions released during construction are not inconsequential and we are committed to limiting those emissions, but overall, the Project presents a means to enable the province to transition to a cleaner energy grid, a grid that emits fewer CO_2 emissions, and simultaneously helps Canada meet its climate change goals
Pumped Storage Technology	Are there other pumped storage facilities in Ontario?	Yes, the closest example of pumped hydroelectric energy storage is at the Sir Adam Beck Pumped Storage Facility in Niagara Falls.
	What is the project footprint?	While refinements will continue as the Project progresses through design, the Project footprint is anticipated to be less than 500 acres (~202 ha). The Reservoir is currently proposed to be approximately 135 ha in size and will have underground infrastructure that extends from the Reservoir just over 3 km into Georgian Bay. The Project, including the transmission connection to the Ontario electrical system, are still under development.

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
Jobs	My kids are in high school, and they want to stay in Meaford or Grey County for work. Will this Project offer employment to locals?	The Project is a multi-billion-dollar initiative – the single largest private-sector investment in Grey County history. The Project's "Hire & Buy Local" program aims to prioritize local employment, materials and vendors to create direct and local benefits and increases downstream spending at local businesses. Through the TC Energy's commitment to prioritize and invest in local jobs, materials, suppliers, the economic impact for local businesses across Grey County would be unprecedented. TC Energy has partnered with Georgian College to launch an online registration portal where interested vendors can provide their information and TC Energy can reach out to them to explain how the local procurement processes will unfold. TC Energy is committed to providing local opportunities including employment. TC Energy has had discussions with trade unions and Georgian College on how to seamlessly transition college diploma or certificate graduates into apprenticeships and into full employment. Also, TC Energy anticipates 20 to 30 full-time long-term employment opportunities directly associated with the Project (this does not include indirect supplier or induced employment from local service industries).
	I'm a local contractor and I want to become a sub-contractor for this Project. Will TC Energy support that local sub-contracting?	TC Energy has been working closely with supply chain and procurement specialists to develop a local procurement and employment plan. TC Energy encourages any interested vendor or supplier to register on the Project website. TC Energy will implement the Hire & Buy Local Program to facilitate the participation of local communities, Indigenous rights-holders, and Indigenous groups potentially affected by the Project through employment and contracting opportunities. Sub-contractors will be selected based on an assessment of best total value, including their qualifications, capacity, capability, safety performance, availability, and price.

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
Consultation Efforts	I'm glad TC Energy is a Canadian company investing in Canada. But, how is TC Energy investing in Meaford? Will TC Energy become part of the community or just come and go?	TC Energy has taken steps to demonstrate to the community of Meaford that TC Energy is investing in the long term and want to be good corporate citizens of the community. Earlier in 2020 and 2021, TC Energy committed to providing donations to organizations and charities that provide services in Meaford. TC Energy staff have participated in community charity events such as Wounded Warriors Ride for Mental Health, Tree Canada tree planting and Habitat for Humanity builds. In 2022, TC Energy opened a Project office in downtown Meaford where local residents and interested parties can come and speak directly to TC Energy staff about the Project. TC Energy has been hosting weekly Community Coffee Chats with members of the public at the TC Energy office in Meaford to better understand questions and concerns and also demonstrate that TC Energy wants to listen and reflect that feedback in Project designs. TC Energy continues to engage with the Municipality of Meaford regarding a Community Benefits Agreement that will outline long-term benefits and supports to Meaford.
	We get regular updates from Bruce Power and the Nuclear Innovation Institute. Is TC Energy looking at best practices of other power facilities in this area?	TC Energy has been working closely to develop relationships with the operational teams at Bruce Power and the Nuclear Innovation Institute. Both Bruce Power and the Nuclear Innovation Institute see the benefits of pumped storage to enhance the efficiency of baseload power generators like Bruce Power. Furthermore, Bruce Power and Nuclear Innovation Institute see pumped storage fitting into the clean energy frontier cluster of generators, suppliers, vendors and workforce in the area to create innovative ideas in the clean energy sector.
More Energy	How will this Project help with my utility bill?	Before the Project moves forward, TC Energy must demonstrate it is cost effective and is to the benefit of Ontario ratepayers. TC Energy will continue to advance pre-development work on the Project to further refine the capital cost estimate. TC Energy expects the Project to be a multi-billion-dollar project that will provide lasting economic impacts to local businesses and the community. Grid-scale bulk storage of baseload power will have a positive impact on electricity bills. By offering baseload power during peak demand times, Ontario will be able to avoid using imported power and natural gas generators that will charge a premium. In addition, optimization of the electrical system will result in a system that is more resilient, reliable, and efficient.

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
	This is a great concept and the Sir Adam Beck Pumped Storage Facility has been doing this since the 1950s. Will Ontario do more pumped storage?	Powering Ontario's Growth, the Ministry of Energy's report that identifies the province's plan for a clean energy future, outlines the need for pumped storage and positions the technology as a pivotal component for an efficient future energy grid for Ontarians (Government of Ontario 2023). IESO'S preliminary 2026 forecast indicates that by 2050 the overall demand for electricity will expand by 65% relative to 2026 demand (IESO 2025a)). Ontario requires a portfolio of diverse storage technologies to provide a secure, reliable and sustainable electricity grid. Long duration energy storage will help Ontario's transition to an emission free system by storing and delivering clean electricity during times of increased demand.
Other	Will TC Energy be improving roads as part of construction?	The Project will develop a detailed management plan. The plan will include traffic management and road user agreements as required with Ontario, and by local Counties and Municipalities depending on what roads would be used. Management plans including road assessments and road user agreements are common practice and TC Energy welcomes the opportunity to discuss options closer to the construction phase of the Project.
	I heard reports Ontario was not chosen by LG for a chemical plant in Windsor because our power grid could not guarantee the power. Is this accurate? Would pumped storage address this power grid issue?	Pumped storage provides bulk power, grid-scale, energy storage. The ability to store baseload emission-free power and redeploy it during periods of peak demand will enhance the reliability and affordability of the electrical system and make the electrical system more attractive for investment.
Local Environment	Concerns regarding fish and fish habitat	Protection of Georgian Bay; protection of fish and being stewards of the lands and waters are TC Energy's top priorities. TC Energy understands the importance of protecting fish and the fish habitat and have made substantial changes to the design of the Inlet/Outlet Structure through which water flows into and out of Georgian Bay to reduce potential impacts. The proposed location of the Inlet/Outlet structures in deep water, about 800 m away from the shoreline, is to avoid important fish and shoreline habitat. The conceptual design also incorporates screens and very slow water movement to reduce potential for fish to enter the structures. TC Energy has been conducting extensive seasonal aquatic studies since the fall of 2020 to establish an ideal Inlet/Outlet Structure location that reduces exposure to valuable fish habitat. As part of an Impact Statement, if required, TC Energy

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
		will outline and evaluate potential impacts to fish habitat and the measures proposed to avoid, reduce or mitigate such impacts.
	Concerns regarding impacts to Niagara Escarpment	For the past several years, TC Energy has undertaken feasibility studies to help guide Project design. These studies are critical to helping TC Energy understand the environment where the Project is proposed and will eventually inform the IA processes. As part of these studies, TC Energy has conducted geophysical surveys and subsurface geotechnical investigations to gather information on the conditions of the site soil and bedrock. Understanding the integrity of the bedrock, its permeability and its makeup, as well as the identification of rock types and rock formations, will allow TC Energy to further inform Project design. TC Energy would like to reiterate this Project remains in the conceptual stage of development. Further design and physical surveys need to be undertaken to progress the Project. For areas within the Niagara Escarpment Plan Area, as designated by the *Niagara Escarpment Planning and Development Act*, TC Energy will work with the Niagara Escarpment Commission to obtain approvals, as required. 4 CDTC lands are excluded from the Niagara Escarpment Plan Area and corresponding regulations.
	Concerns regarding near shore and lakeshore habitats including turbidity, pollutants, and heavy metals	The protection, sustainability and long-term health of Georgian Bay are threshold issues that must be achieved before TC Energy is granted permission to build the Project. The Project will be designed to pump and discharge water to and from Georgian Bay and the Reservoir without alteration or treatment. The Project is not anticipated to contribute to lakebed turbidity because its innovative design dissipates water flow through multiple, raised, deep water lakebed inlet and outlet ports at a very slow speed, similar to Georgian Bay's natural currents. The Lower Inlet/Outlet Structure siting and design, including appropriately sized screens and low-flow velocity, are anticipated to reduce potential mortality of fish during operation. The Impact Statement will include an assessment of potential effects to fish and fish habitat (including water quality) and will outline proposed mitigation measures.
	Concerns regarding nuisance noise, dust, and vibration	The facility would be built and operated in compliance with applicable regulations (federal and/or provincial). Site-specific studies and noise modeling may be a component of the Impact Statement process to confirm compliance with applicable noise regulations. The results of these studies will be publicly available as part of the upcoming assessment processes. TC Energy has conceptually placed major facilities, except the Reservoir, underground or underwater to address concerns that have been raised through community engagement. TC Energy anticipates sound would be limited to the immediate area of the

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
		Project within the restricted area of 4 CDTC. The Project will develop a detailed construction management plan including strategies to avoid and reduce construction related impacts.
	Concerns regarding transmission connection overland and Electromagnetic Fields (EMF)	The Project will require a connection to Ontario's electricity grid, and TC Energy is investigating two transmission connection option alignments. One to the Hydro One Stayner Transformer Station, the other to the Meaford Transformer Station. The transmission connection options, including routing will be subject to an EA process. The transmission connections will be designed to industry standard practices and requirements, including those related to electromagnetic fields (EMF). If required, EMF reduction methods will be considered during detailed design, and studied during the regulatory process.
	Concerns regarding water quality and quantity	The protection, sustainability and long-term health of Georgian Bay are threshold issues that will be considered by TC Energy as the Project advances. The Project will be designed to pump and discharge water to and from Georgian Bay and the Reservoir without alteration or treatment. TC Energy has been collecting data to fully understand existing conditions for over three years and will continue to do so as the Project progresses. This includes (but is not limited to) data collection on groundwater, soils, surface water quality, wildlife and wildlife habitat, aquatics, wetlands, archaeology and cultural heritage. Data collected will be provided in the upcoming assessment processes and will be reviewed by regulators. The public will be engaged throughout the IA processes to allow opportunities to provide their views on these materials and this feedback will help inform IAAC or other regulatory agencies/departments.
	Concerns regarding water temperature	Based on research to date, including on pumped storage projects elsewhere in the world, TC Energy does not anticipate substantive change to water temperature in Georgian Bay; however, this will be confirmed as the assessment of the Project progresses. Due to the short duration of water being held within the Reservoir prior to release, water temperatures in the Reservoir are not anticipated to increase substantially. Further, as Georgian Bay is large and linked to the water volume of Lake Huron, it is anticipated that releasing this water will have a minimal effect on water temperature in Georgian Bay.

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
	Concern with light and noise, especially for residents living in close proximity to the Project	The facility would be built and operated in compliance with applicable regulations (federal and/or provincial). Site-specific studies and noise modeling may be a component of the Impact Statement process to confirm compliance with applicable noise regulations. The results of these studies will be publicly available as part of the upcoming assessment processes. TC Energy has conceptually placed major facilities, except the Reservoir, underground or underwater to address concerns that have been raised through community engagement. TC Energy anticipates that sound would be limited to the immediate area of the proposed Pumped Storage Facility within the restricted area of 4 CDTC. Lighting is expected to be required to mark navigation hazards and to light areas such as the switchyard. TC Energy will install lighting, where required, for workplace safety. TC Energy has previously constructed switchyards that employ strategic lighting to reduce light stray. TC Energy will work with the community to understand concerns so they may be incorporated into the lighting design.
	Concern regarding drinking water	The protection, sustainability and long-term health of Georgian Bay are threshold issues that will be considered by TC Energy as the Project advances. The Project will be designed to pump and discharge water to and from Georgian Bay and the Reservoir without alteration or treatment. TC Energy is conducting engineering and environmental studies to better understand the potential effect that the Project could have on the waters of Georgian Bay. The objective is to transfer water while reducing adverse effects. The potential for project-related impacts on drinking water will be considered as part of the IA process.
	Acknowledging and honouring original land use of 4 CDTC property, settlers and farmers from before establishment of 4 CDTC during the Second World War	TC Energy is not proposing to purchase the land from DND, rather they intend to lease the land for the duration of the Project. DND operations at 4 CDTC will continue. Archaeological and cultural heritage studies are and continue to be conducted on 4 CDTC and will be expanded to include the footprint of Project components and work areas to identify potential heritage sites including historic homesteads.

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
Technology	Concerns that pumped hydroelectric storage is an old technology	In 1907, Switzerland became the first country in the world to store excess energy. That's more than 100 years that pumped storage has been operating successfully. But just as with computers, phones and cars, pumped storage technology has advanced substantially, and the Project is implementing and using advanced state-of-the-art technology that is virtually unrecognizable from its predecessors. Several nations, including Canada, continue to develop and incorporate pumped storage into their energy solutions due to its highly reliable, long-life storage benefits, and its effectiveness as a large-scale, long-duration electricity storage solution.
	Won't pumped storage be obsolete in a decade with lithium-ion batteries taking big steps forward?	As Ontario continues to transition to a cleaner electricity grid, TC Energy believes diversity in storage technologies is prudent. Batteries will have an important role in Ontario's electricity system; however, when it comes to long duration energy storage at scale, pumped hydro storage is an optimal solution. The cost and environmental footprint to replicate TC Energy's Project using batteries would be substantially higher when the overall lifecycle impact is contemplated (mining, manufacturing, installation, replacement, and disposal).
	Need to consider alternative locations where a closed-loop system may be possible, notably abandoned mine and quarry sites identified by Australian Renewable Energy Mapping Infrastructure, and produce an independent detailed report comparing the best alternative options with the least environmental impacts to the Georgian Bay site	As part of the rigorous regulatory reviews necessary for the Project, TC Energy must establish the need for the Project and document alternative approaches that it has considered. TC Energy is evaluating the potential for a closed loop lower water source. Studies are continuing to refine TC Energy's knowledge of the site and to inform design.

Topic	Comments and Concerns Raised During Engagement	TC Energy Response
	Need for a detailed decommissioning plan, including provision of a decommissioning bond or other payment mechanism, to ensure the site is restored to its original condition at the end of the Project's lifespan	Pumped Storage Projects, such as the Project are envisioned to be able to operate for the foreseeable future with proper maintenance and equipment upgrades. As an example, the Sir Adam Brock Pumped Storage Facility, which was constructed in 1957, underwent refurbishments to extend the facility life for another 50 years. The end state of the site after decommissioning will be determined through engagement with affected stakeholders/landowners, including DND as the end land user, rightsholders, and in accordance with applicable regulations as required at the time.

8.4.2 Influence of Public Engagement on Project Planning and Design

In direct response to community feedback, and respecting Georgian Bay's environment, TC Energy developed an innovative design approach to protect Georgian Bay's environment – fish and fish habitat, reduced visual impacts and noise impacts, and disruptions to lakebed sediment. This design was initiated in direct response to many of the concerns identified by the community, including protection of the environment, the local economy and way of life. Table 8-2 provides a summary of the top concerns and how the Project Team addressed comments through Project design.

Table 8-2: Project Design Changes to Address Public Concerns

Concerns	How the Project Design Changed to Address Concerns
Impacts to Fish	• Substantial re-design of Lower Inlet/Outlet Structure • Moved infrastructure deeper offshore and underground • Directionally drill or tunneling of transmission connection under near shore habitat
Impacts to Georgian Bay	• The Lower Inlet/Outlet Structure will be tunneled in deep water using a raised placement to avoid bottom-dwelling aquatic organisms and turbidity, as currently proposed • In the current design, the Lower Inlet/Outlet Structure will be placed away from the shoreline resulting in no shoreline or near shoreline structures and no visible in-water infrastructure • Tunnels installed beneath the lakebed will access deep water based on the current design, avoiding sensitive near-shore fish habitat • In the current design, the Lower Inlet/Outlet Structure will be raised off the lakebed to avoid bottom dwelling aquatic organisms and the potential to create turbidity

Concerns	How the Project Design Changed to Address Concerns
Protection of Land and the Niagara Escarpment	• The current Project design has key Project components including the Powerhouse, Headraces, and Tailraces underground • TC Energy is assessing the potential to use tunneling and mining technology to avoid or reduce impacts to the Niagara Escarpment • Avoid disturbing the land (animals, plants, habitat) • For areas within the Niagara Escarpment Plan Area, as designated by the *Niagara Escarpment Planning and Development Act*, TC Energy will work with the Niagara Escarpment Commission to obtain approvals, as required. The 4 CDTC lands are excluded from the Niagara Escarpment Plan Area and corresponding regulations.
Protection of Archaeology	• Underground facilities reduce land disturbance that could impact archaeological sites
Reduction in Noise and Reduction in Visible Shoreline Structures	• Moving infrastructure underground reduces potential noise emissions • The Powerhouse will be located below ground away from the shoreline. With the major components deep underground, noise output from the pumping and generating equipment during operations are expected to be imperceptible and the visibility of the Project facilities from off the base, and particularly from the water, has been substantially reduced or eliminated

8.5 Plans for Future Engagement

As TC Energy continues to undertake engagement, the list of interested parties will continue to grow. TC Energy intends to maintain proactive engagement throughout the Project with all interested parties. Plans for future engagement include meetings, information sharing via discussion and Community Information Sessions (in-person, virtual), and participation at community events.

8.5.1 Objectives of Engagement and Participation

TC Energy will continue engaging with a variety of interested parties and communities surrounding the Project. Engagement is driven by regulatory requirements, and TC Energy's commitment to build mutually beneficial relationships and trust with local communities. TC Energy has identified the following objectives to guide engagement:

- Keep community residents informed and updated on the Project and its progress through the regulatory and permitting process in a timely manner
- Provide transparent and meaningful avenues for community members to communicate feedback and concerns regarding the Project
- Receive feedback on the Project to understand, reduce, and mitigate potential impacts of the Project and provide benefits to local communities and the broader region

8.5.2 Engagement and the Regulatory Process

The Project will require various federal and provincial permits, approvals and authorizations. TC Energy will be conducting engagement required by regulatory processes by soliciting feedback and providing updates on information regarding the Project as it moves through various regulatory phases. TC Energy will continue to be guided by its Stakeholder Engagement Commitment Statement[9] which outlines the guiding principles for the Project's engagement program.

The IA process overseen by IAAC includes five phases of assessment. TC Energy's proposed engagement activities and responsibilities are outlined in Table 8-3. IAAC will also have engagement responsibilities, which are not listed below, but will be coordinated, where possible, to reduce engagement fatigue, recognize potential capacity limitations and provide a singular path of feedback and input for the Project.

Table 8-3: Impact Assessment Planned Engagement Activities

IAA Phase	Engagement Activities
Phase 0 – Orientation and Process (on-going)	• TC Energy has and will continue to proactively update and engage interested parties prior to the planning phase (submission of the IPD). Engagement activities are both virtual and in-person. • During Orientation and Process, TC Energy will brief parties regarding the anticipated phases of the IA process; the timelines associated with each phase; the level of detail and content associated with each phase; the tactics TC Energy will use to collect feedback, advice, questions and respond to parties; and provide an update regarding the latest in data collection and existing conditions study findings. • The goal of Pre-Phase 1 engagement is to inform interested parties so they are accurately briefed on the anticipated process that will be undertaken, as well as to obtain an initial understanding of potential concerns to be considered in early planning and design.
Phase 1 – Planning	• During engagement on the IPD (posted to the Canadian Impact Assessment Registry for review), TC Energy will provide virtual and in-person engagement activities to collect feedback and facilitate review of the IPD. • Continue information-sharing and feedback-gathering throughout the Planning Phase. • TC Energy will document any engagement activities and responses to questions, concerns and comments. • During this phase, TC Energy will request feedback on preferred engagement methods, to tailor future engagement activities. • TC Energy will also participate in IAAC-led engagement, as needed.

IAA Phase	Engagement Activities
Phase 2 – Impact Statement	• During development of the Impact Statement, TC Energy will continue engagement and public participation activities, incorporate feedback, and concerns, on the Project into the analysis and assessment in the Impact Statement. • TC Energy will notify the public prior to submission of the Impact Statement. • TC Energy will also participate in IAAC-led engagement, as needed.
Phase 3 – Impact Assessment	• TC Energy will engage in IAAC led public participation activities, and respond to questions, comments or feedback. • TC Energy will continue to provide Project updates to the public throughout this phase.
Phase 4 – Decision Making	• During this phase, the IA Report and Crown consultation outcomes inform the Minister or Governor in Council on whether the Project's adverse impacts are in the public interest. • TC Energy will continue to provide Project updates to the public throughout this phase. • TC Energy will participate in IAAC-led engagement, as needed.
Phase 5 – Post Decision	• During this phase, IAAC will verify compliance with Decision Statements and will correct any non-compliance activities. • TC Energy will explain to interested parties how conditions will be met and provide detailed information about follow-up and monitoring programs. • TC Energy will provide opportunities for Indigenous rights-holders and Indigenous groups and community participation with respect to follow-up and monitoring programs.

It is anticipated that the Project will require two Class Environmental Assessments (Class EAs) for the following components of the Project:

- RSFD Class EA for the Lower Inlet/Outlet Structure, lakebed transmission connection option (if applicable), and potential Marine Access in Georgian Bay (if applicable)
- Class EA for TF for the transmission connection[14]

Both require the issuance of public notices, public review periods, and incorporating public feedback into the submissions. Similar to the federal IA process, TC Energy will engage and notify the public of the submission and the planned review period. During the review period TC Energy will provide opportunities for virtual and in-person engagement to collect feedback and respond to questions and comments.

[14] Applicable to the transmission component of the Project off of federal lands only.

TC Energy will also conduct engagement activities not required by the regulatory processes to build relationships with communities, solicit feedback, and provide information regarding the Project. TC Energy-led engagement activities may overlap, or be coordinated with, activities required by regulators, and TC Energy may initiate additional engagement efforts as requested or required.

8.5.3 Ongoing TC Energy Social Initiatives

TC Energy undertakes various programs within the communities and regions in which they operate, supporting multiple education and training, community investment, and contracting and employment opportunities. While these opportunities may not be specific to the Project, they are intended to build social capital, to give back to areas where TC Energy operates. These opportunities are described below.

2021

- November 18, and 19, 2021 – Over 20 volunteers from TC Energy and Saugeen Ojibway Nation built homes for families in the community.
- December 17, 2021 – TC Energy provided end of year grants and donations to many charitable and service organizations in the Meaford area including the Meaford Food Bank.

2022

- May 30, 2022 – TC Energy, along with other ENGOs and volunteers, planted over 250 cedar saplings in Meaford, in coordination with Tree Canada and the Bruce Trail Conservancy.
- August 20, 2022 – TC Energy organized and led over 40 cyclists in a Meaford-specific Ride for Mental Health, as part of the national Wounded Warriors campaign to raise awareness and funds for veterans and their families.
- September 9, 10 and 11, 2022 – TC Energy participated in the Nuclear Innovation Institute's annual SWERVE event in Southampton. SWERVE is a hands-on experience for kids and young adults who are interested in the future of energy and technology.
- September 14, 15, 2022 – Based on great success at the Habitat for Humanity build in November 2021, TC Energy, in collaboration with Habitat for Humanity Grey Bruce, participated in a two-day build initiative in Chippewas of Saugeen First Nation. Over 20 TC Energy, First Nation Members and other volunteers helped build homes in the community.

2023

- May 17, 2023 – TC Energy planted 125 trees just outside of Meaford through a partnership with Tree Canada.
- August 9, 2023 – As part of TC Energy's partnership with Pollution Probe and the Council of the Great Lakes Region, a community event was held at the Meaford marina to spread awareness about the Great Lakes Plastics Cleanup initiative, which uses innovative technology to capture and remove plastics from the environment and waterways throughout the Great Lakes, including Georgian Bay.
- August 19, 2023 – TC Energy organized and led over 15 cyclists in a Meaford-specific Ride for Mental Health, as part of the national Wounded Warriors campaign to bring awareness to the unique mental health needs of Canadian Armed Forces members, Veterans, First Responders, and their families. November 8, 2023 - Project team members participated in a Habitat for Humanity build initiative in Saugeen First Nation. Team members painted, built stairways and installed trim in three different homes.

9 Physical Environment

9.1 Air Quality

9.1.1 Environmental Setting

Air quality is an important contributor to the overall health of humans, wildlife, and the broader environment and it is a measure of how clean or polluted the air is.

Federal air quality criteria are published in the Canadian Ambient Air Quality Standards (CAAQS). The CAAQS were developed through a collaborative process involving the federal, provincial, and territorial governments and interested parties, as directed by the Canadian Council of Ministers of the Environment (CCME 2012). The CAAQS are outdoor air quality objectives for pollutant concentrations in the air. CAAQS are intended to protect human health and the environment and to drive continuous improvement in air quality across Canada.

Project-related air emissions are addressed through the Guidance for Evaluating Human Health Effects in Impact Assessment: Air Quality (Health Canada 2023a) for federal impact assessments. This Guidance document provides a methodology for determining potential impacts or health risks related to project-related changes in ambient air quality for major resource and infrastructure projects. The Health Canada Air Quality Guideline assesses both acute and chronic exposures in reference to the CAAQS and other appropriate air quality standards.

In Ontario, air standards and criteria are outlined and administered by the Ministry of Environment, Conservation and Parks (MECP) to provide protection against adverse effects on health or the environment. These include:

- Ontario Regulation 419/05 Air Pollution – Local Air Quality
- Ambient Air Quality Criteria (AAQC)
- Screening Levels (SLs)
- Upper Risk Thresholds (URTs)

These criteria are outlined in the MECP's "Air Contaminants Benchmarks List – Standards, Guidelines and Screening Levels for Assessing Point of Impingement Concentrations of Air Contaminants" (MECP 2023), which includes Benchmark 1 values (Standards and Guidelines) and Benchmark 2 values (Screening Levels). Modelled concentrations of chemicals that are below published screening levels are considered to be insignificant. URTs are maximum concentrations that are not to be exceeded anywhere off-property.

9.1.2 Baseline Work Completed to Date and Planned Future Work

Baseline air quality for the area will be established through a desktop study using available long-term air quality measurements data.

Ambient air quality monitoring is conducted by the National Air Pollution Surveillance Program (NAPS) operated by ECCC in populated regions of Canada. The NAPS program continuously measures sulphur dioxide, nitrogen dioxide, ozone, fine particulate matter, and carbon monoxide. Measurements of metals and volatile organic compounds from NAPS stations are also conducted at selected monitoring locations. For the characterization of existing conditions, NAPS network data will be assessed for the relevant contaminants at the monitoring sites nearest or most representative of the Project. Available NAPS data will be assessed for the most recent five-years of available data.

In addition, the location of sensitive receptors (e.g., residences and other locations on 4 CDTC as determined based on use) within the vicinity of Project components will be identified.

9.1.3 Results

While Project-specific existing condition air quality studies have not been advanced, air quality in the area is expected to have relatively low concentrations of air contaminants given land uses in the region. The Project area is largely rural/suburban residential and agricultural, and there are few industrial emitters. Existing primary sources of air emissions include vehicle exhaust and dust from agricultural activities.

9.1.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to air quality. Concerns identified through engagement activities that relate to air quality are also identified along with preliminary approaches to mitigate these potential Project related effects.

9.1.4.1 Potential Effects of the Project on the Environment

Project construction activities have the potential to affect local air quality. Construction-related emissions may include dust from vehicle travel on unpaved roads, earthworks and wind erosion of stockpiles, and exhaust gases emitted from stationary equipment (e.g., generators, pumps, etc.), light and heavy vehicles, and construction equipment. Potential air quality effects related to construction, and measures typically employed to reduce potential effects during construction are well understood by TC Energy and construction contractors.

The Project will be operated using electricity from Ontario's electrical system and is not expected to create substantive air emissions as a result of its operation. Incidental activities associated with the operation and maintenance of the Project, such as vehicle emissions, will occur but are not expected to adversely influence local or regional air quality. TC Energy's corporate GHG Emissions Reduction Plan includes transitioning their fleet to electric vehicles and developing strategies to reduce the carbon intensity of driving (TC Energy 2021). With the increasing trend toward electrification and alternative fuel sources for vehicles and equipment, it is anticipated that incidental sources of air emissions during operation will decrease over time.

Table 9-1 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to air quality.

Table 9-1: Potential Effects of the Project on Air Quality

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in air quality	• Air contaminant emissions from equipment and vehicles burning hydrocarbon fuel during construction activities	C	C	C
	• Dust generated during soil stripping and grading, site infrastructure construction, and through vehicle and equipment movement on the construction footprint and unpaved roads	C	C	C

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

9.1.4.2 Preliminary Comments Received and Preliminary Mitigations

Table 9-2 provides a summary of air quality related concerns identified during early engagement with Indigenous rights-holders, Indigenous groups, the public, and government agencies and presents preliminary measures taken to address, or to further study the issue. The predominant concerns raised regarding air quality during early engagement included construction-related air emissions, particularly dust.

Table 9-2: Preliminary Comments Related to Air Quality

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns about the amount of dust that will be generated during construction activities	• Change in air quality	• As part of pre-construction planning, TC Energy will develop management plans that incorporate industry-standard and Project-specific mitigation measures.

9.2 Noise and Vibration

9.2.1 Environmental Setting

Noise

Noise is defined as unwanted sound, and the difference between sound and noise depends on the listener and the circumstances. Construction and operational related noise will need to be considered from the Project, as it may impact noise sensitive areas of the 4 CDTC, surrounding residences and the existing environment.

Both construction and operational noise is addressed through the Guidance for Evaluating Human Health Effects in Impact Assessment: Noise (Health Canada 2023b) where federal jurisdiction applies (i.e., for federal impact assessments and/or where work will be undertaken or where Project components are constructed on federal lands). The Health Canada Noise Guideline provides a methodology for determining potential impacts or health risks related to levels and/or types of noise exposure for major resource and infrastructure projects. The Health Canada Noise Guideline assesses both long-term construction (longer than one year) and operational noise based on community annoyance, as well as sleep disturbance as applicable to projects.

Under provincial jurisdiction, where work and/or where Project components are constructed on non-federal lands, noise is regulated under the *Environmental Protection Act*. This is administered through the MECP. Construction noise is addressed through their Noise Pollution Control (NPC) guidelines, which regulate construction equipment noise level (NPC-115, NPC-

118, NPC - 119). For operational noise, the MECP adopts NPC-300 which identifies the noise level limits to be adhered to at surrounding residences.

Municipal noise by-law that regulates noise levels either through noise limits and/or construction time restrictions. Works and/or Project components located off of 4 CDTC and within municipal boundaries may need to comply with municipal noise by-laws.

Federal and provincial guidelines pertaining to noise are used to identify where thresholds may be exceeded, or residents may reach a threshold of annoyance or sleep disturbance where mitigation may be necessary.

Vibration

Vibration occurs when particles in a material (e.g. soil in the ground) move back and forth or up and down quickly, transferring vibration energy from its source (e.g. pile driver) to a receiver (e.g. a building).

Blasting vibration (and associated overpressure) is of concern due to its annoyance (at large distances), or its potential to damage buildings (at close distances). For components and activities under provincial jurisdiction, this is addressed through the NPC-119 guideline. Technical standards (International Organization for Standardization [ISO] 2631), is a widely accepted standard adopted to assess the vibration impact on people. It is generally applied when there is potential for low-level vibrations through activities such as tunneling and is used as a metric of assessing disturbance or annoyance to people. It can be applied for works within federal or provincial lands.

9.2.2 Baseline Work Completed to Date and Planned Future Work

The current ambient environment is expected to be dominated by human made sounds, such as car traffic during the daytime and by natural sounds during the nighttime. In addition, the area may be influenced by activities on 4 CDTC, such as military live fire training, other training exercises, vehicle traffic, or helicopter flights.

The existing conditions for noise and vibration can be established through a literature review, review of land uses and/or baseline monitoring. In addition, the location of sensitive receptors (e.g., residences, day cares, and other locations on 4 CDTC as determined based on use) within the vicinity of Project components will be identified.

9.2.3 Results

While Project-specific existing conditions noise and vibration studies have not been completed, ambient noise levels are expected to be generated by activities at 4 CDTC, including human made sounds (e.g., military exercises and car traffic during the daytime) and by natural sounds during the nighttime.

9.2.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/ or operation of the Project could have on the environment, specifically potential effects to noise and vibration. Concerns identified through engagement activities that relate to noise and vibration are also identified along with preliminary approaches to mitigate these potential Project related effects.

9.2.4.1 Potential Effects of the Project on the Environment

It is expected that Project construction will generate noise from vehicle traffic and the operation of equipment, as well as and tunneling/blasting. During operation, the Project is not expected to produce substantive environmental noise as most sound-generating infrastructure, including the Powerhouse and associated infrastructure, will be located underground. It is expected that the main sources of noise once the Project is operational will be related to ventilation shafts and the Switchyard.

In the case of vibration for this Project, two types of vibration are considered, including vibration in the ground (ground-borne vibration) or in a structure (structural vibration). When there is vibration, there is a concern with the potential to cause damage (at high vibration levels) or being disturbing and annoying (at low vibration levels).

Vibration may be generated during Project construction as a result of blasting (e.g., to excavate the Reservoir) or from tunneling (e.g., to install the Water Conveyance Structures). Measures employed to reduce potential noise and vibration during construction are well understood and will be incorporated into the design and construction of the Project as it progresses. Tunneling operations involve removing materials such as bedrock or soil (e.g., with tunnel boring machine), which could generate vibration in the ground that may disturb or annoy people.

Table 9-3 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to noise and vibration.

Table 9-3: Potential Effects of the Project on Noise and Vibration

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in existing sound levels	• Noise emissions from equipment and vehicles used to construct the Project	C	C	C
	• Noise emissions from blasting	C	-	-
	• Noise emissions from operation of the Project	O	-	O
Change in existing vibration levels	• Vibration emissions from stationary construction equipment (e.g., piling)	C	-	C
	• Vibration emissions from mobile construction equipment	C	C	C
	• Vibration emissions from construction blasting and tunneling for underground components	C	-	-

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

9.2.4.2 Preliminary Comments Received and Preliminary Mitigations

Through engagement efforts to-date with Indigenous rights-holders, Indigenous groups, the public, and government agencies, TC Energy has heard that Project-related noise and vibration is a concern. The feedback was used to make Project design enhancements that included locating the Powerhouse and associated infrastructure underground to reduce noise. Table 9-4 provides a summary of concerns and presents potential measures to be taken to address or to further understand each concern.

Table 9-4: Preliminary Comments Related to Noise and Vibration

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns about construction-related noise, particularly for those living near the Project site Concern about noise during operation from the pumps, water going through the tunnels, and if noise will be the same as the tank range	• Change in existing sound levels	• TC Energy will adhere to applicable regulations (federal and/or provincial), guidance, and industry standards during construction and operation. • TC Energy has conceptually placed major facilities, except the Reservoir, underground or underwater to address concerns that have been raised through community engagement. TC Energy anticipates sound would be limited to the immediate area of the Project within the restricted area of 4 CDTC. • TC Energy will develop a detailed construction management plan including strategies to avoid and reduce construction related impacts. This will include reasonable measures to manage construction-related noise near residential areas. • Site-specific studies and noise modeling may be a component of the Impact Statement process to confirm compliance with applicable noise regulations. The results of these studies will be publicly available as part of the upcoming assessment processes.
Concerns about construction-related vibration, particularly for those living near the Project site	• Change in existing vibration levels	• TC Energy will adhere to applicable regulations (federal and/or provincial), guidance, and industry standards during construction and operation. • As part of pre-construction planning TC Energy will develop management plans that incorporate industry-standard and Project-specific mitigation measures. This will include reasonable measures to manage construction-related vibration near residential areas.

9.3 Visual Setting

9.3.1 Environmental Setting

Visible attributes of landscapes often hold value for residents and other land users, often for the quality of life benefits they provide. Although the value placed on these landscapes is inherently subjective and contextual, alterations to the landscape may affect that value, particularly if those changes are inconsistent with the visual character of the landscape and the expectations of those who can see them. Therefore, the effect of Project on the visual landscape is dependent on both the visual character of the area and how well the Project's design fits within the aesthetic of the landscape.

The *Niagara Escarpment Planning and Development Act*, regulates development on the Niagara Escarpment (within an area referred to as the Niagara Escarpment Plan Area), which includes requirements related to views of the Escarpment (NEC 2025). The 4 CDTC lands (where the majority of the Pumped Storage Facility components are proposed) are excluded from the Niagara Escarpment Plan Area and corresponding regulations.

9.3.2 Baseline Work Completed to Date and Planned Future Work

Existing conditions work has not been completed to document the visual setting; however, the presence of the Niagara Escarpment, a prominent topographical feature including areas of ecological importance, is acknowledged. Digital tools to identify and establish existing viewsheds and associated scenic resources, may be used to establish existing conditions. Documentation could include photographic documentation of the Project site, from pre-identified viewpoints that address or otherwise represent views from locations such as, but not limited to, public roads, Georgian Bay, public lands, and the Bruce Trail. Additional existing conditions information may include an inventory of designated scenic resources or other areas of presumed visual sensitivity within either the defined viewshed or a simple radius of the Project and identification of local/provincial/federal laws, ordinances, or other regulations applicable to scenic resources or visual quality that at express aesthetic values and preferences in the Project's vicinity.

9.3.3 Results

The Project is situated on Georgian Bay, in an area visually characterized by rocky shoreline, beaches, lakeside cottages, marinas, and a number of small and large communities. Based on a preliminary review of desktop information, 4 CDTC is the source of existing lighting and skyglow, as are several other surrounding communities (e.g., Municipality of Meaford, City of Owen Sound, Town of Collingwood) (Stare n.d.). Inland from the bay, the landscape near the Project transitions into a patchwork of agricultural, rural communities, and other rural properties interspersed with natural areas. The Niagara Escarpment is known for its scenery and recreational opportunities, attracting residents and visitors. Within 4 CDTC, the Niagara Escarpment consists of shale cliffs rising from the shoreline of Georgian Bay (Chapman and Putnam 1984).

As indicated above, existing conditions visual studies have not been completed at this time.

9.3.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to the visual setting. Concerns identified through engagement activities that relate to the visual setting are also identified along with preliminary approaches to mitigate these potential Project related effects.

9.3.4.1 Potential Effects of the Project on the Environment

Typically, the effect of development on the visual environment scales with two parameters: the size of the development and its distinctiveness within the landscape. In recognition of these potential effects and the importance of landscape views in the region, the current Project design locates many Project components underground, specifically the Headraces, Tailraces, and Powerhouse. The position of the Reservoir within an elevated plateau would reduce its visibility from some surrounding, lower areas. While one of the transmission connection options may be visible along its route, including on the Niagara Escarpment, TC Energy is considering this important landscape feature in conceptual design. Transmission design will be subject to the outcomes of the IESO and Hydro One processes.

Even in consideration of design and location factors, the Project has the potential to influence the existing visual setting during both construction and operation. These effects include alterations to valued scenic landscapes as well as nighttime ambient light conditions.

Table 9-5 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to visual environment.

Table 9-5: Potential Effects of the Project on the Visual Setting

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in existing visual landscape	• Construction equipment and machinery will temporarily interrupt the visual landscape	C	C	C
	• Some Project components will be visible within the landscape for the life of the Project	O	-	O
Change in ambient nighttime light conditions	• Lighting required for safety and security has potential to be experienced as a new source of nighttime light in some locations	C/O	C	C

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

9.3.4.2 Preliminary Comments Received and Preliminary Mitigations

Through engagement efforts to-date with Indigenous rights-holders, Indigenous groups, the public, and government, TC Energy heard concerns about the Project's potential impact on the visual environment. These concerns are summarized in Table 9-6, which also includes potential measures to be taken to address or to further understand each concern.

Table 9-6: Preliminary Comments Related to the Visual Setting

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
• Concerns about the visual impact, or change in the view • Concerns regarding the visibility of the Reservoir	• Change in existing visual landscape	• In 2020, TC Energy modified the initial conceptual design of key Project components based on feedback received during early engagement. Many key components, such as the Headraces, Tailraces, and Powerhouse are proposed to be located underground to avoid impacts to the visual environment.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
		• Surface components of the Project, including the Reservoir and Switchyard, will be partially or fully screened from view by existing trees and vegetation, which will be left in place to the greatest extent possible around the Project footprint. The Project is further obscured from view by being atop the escarpment and within the military base. Most residences in the surrounding area are topographically below the escarpment, and the view is obscured by elevation and vegetation/trees.
• Concerns about Project-related light issues, particularly for those living near the Project site	• Changes to ambient nighttime light conditions	• Lighting will be installed in accordance with applicable building codes or occupational health and safety standards and will be screened from view by vegetation or perspective relating to elevation and landform obstruction where possible. • Lighting is expected to be required to mark navigation hazards and to light areas such as the Switchyard. TC Energy will install lighting, where required, for workplace safety. TC Energy has previously constructed Switchyards that employ strategic lighting to reduce light stray. TC Energy will work with the community to understand concerns so they may be incorporated into the lighting design. • Project specific mitigation measures to address potential light pollution associated with Project components will be incorporated into management plans and designs, where feasible.

9.4 Terrain, Geology, and Soils

9.4.1 Environmental Setting

Broadly, regional terrain, geology and soils are protected by federal and provincial regulations as they relate to vegetation communities and wildlife habitat (see Sections 10.2 and 10.3) and water resources (see Sections 9.5cand 9.6). The Canadian Environmental Quality Guidelines provide science-based goals for the quality of aquatic and terrestrial ecosystems, which includes soil. Soil movement (e.g., excess soils) is regulated provincially under the *Environmental Protection Act*. For areas within the Niagara Escarpment Plan Area, as

designated by the *Niagara Escarpment Planning and Development Act*, approvals may be required for certain types of development. The 4 CDTC lands (where the majority of the Pumped Storage Facility components are proposed) are excluded from the Niagara Escarpment Plan Area and corresponding regulations.

9.4.2 Baseline Work Completed to Date and Planned Future Work

TC Energy has initiated studies to gather information on existing conditions of the specific terrain, geology, and soils with which the Project construction and operation will interact. This includes ongoing geotechnical investigation programs which were initiated in 2020, as well as the collection of surficial soil samples from the Reservoir area in 2021.

Data collection is ongoing to support the Project design, construction and execution. These data will also be used to understand potential Project interactions with the landscape, soil, and rock, and to support Project permitting. Additional planned activities include the drilling of additional boreholes for the collection of soil, bedrock, and groundwater data. These data will be used to characterize existing conditions. Samples will also be analyzed for physical and chemical properties.

9.4.3 Results

The regional landscape has been formed by millions of years of geological processes, through the last glacial period that ended over 13,000 years ago. With the retreat of the Laurentide Ice Sheet approximately 11,500 BCE, lake water levels progressively dropped, exposing a terrain marked by a series of steep slopes and terraces. The local terrain is part of a physiographic region identified by Chapman and Putnam (1984) as the Cape Rich Steps, which is part of the Niagara Escarpment landform, defined by a sequence of five topographic steps that run roughly parallel to the shore of Georgian Bay, marked by gently sloping terraces and steep bluffs and escarpments that cut into the underlying bedrock.

The upper step of this region is associated with the Niagara Escarpment. Elevations in the vicinity of the Project range from 176 metres above sea level (mASL) at the shore of Georgian Bay to 350 mASL in the vicinity of the Reservoir. The surficial geology at the Project includes a thin, discontinuous layer of sand and clay, with exposed bedrock in places. Soils are also thin and range in texture from clays to sandy soils. The bedrock in the area consists of a sequence of Silurian to Ordovician age limestone and shale rock units that sit in a sub-horizontal arrangement that dips gently to the west, which influences localized westward sloping terrain in the vicinity of the Project.

The portion of the Stayner Transformer Station transmission connection option, where it comes ashore in Georgian Bay to the Hydro One Stayner Transformer Station, is located in the Nottawasaga River basin, with low-lying terrain at the shore of Georgian Bay. Overburden and derived soils include glacial deposits and modern beach sands.

Geotechnical drilling conducted for the Project, at three locations within the vicinity of Project components indicated that surficial soils on-site and in the vicinity of the site are shallow, ranging from 0.9 m to 3.0 m, however additional sampling will be required to confirm depths across the entirety of the Project footprint as the Project progresses (Stantec 2020). The overburden was reported to be primarily sand and gravel with silt and organics (topsoil) and bedrock fragment. The underlaying bedrock was observed to be weathered, consisting of fractured fossiliferous dolostone overlying limestone with occasional shale interbeds and shale of the Clinton-Cataract group. The Clinton-Cataract Group overlies shale with interbedded limestone of the Queenston Formation. These bedrock formations extended to a depth of 30 m in the boreholes. Karst conditions are known within the local dolostone and limestone. The location and extent of any karst features need to be further identified and reviewed to confirm existing conditions.

Within the Reservoir footprint, surficial soil samples (i.e., less than 0.5 m from surface) showed that the dominant soil type consist of silt and clay. Given the current and historical use of 4 CDTC lands for military activity, there is potential for soil contamination, which has been documented and will be further evaluated as the Project progresses.

9.4.4 Potential Project Effects and Proposed Preliminary Mitigations

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to terrain, geology and soils. Concerns identified through engagement activities that relate to terrain, geology and soils are also identified along with preliminary approaches to mitigate these potential Project related effects.

9.4.4.1 Potential Effects of the Project on the Environment

The Project will interact with terrain, geology and soils during construction.

Terrain stability may be impacted by excavations, drilling, and land clearing (vegetation removal, topsoil, and/or organics stripping), existing geohazards (e.g., karst), or occurrence of new ones (e.g., landslides, slope erosion and potential for ground and rock instability).

The removal of vegetation cover during construction exposes soil to erosion from precipitation and sheet flow. If it is not promptly covered or revegetated, soil can also erode once it is

stockpiled and immediately after replacement. Soil erosion can also result in the loss of soil chemical parameters such as total soil organic matter.

There is potential for changes to soil quality due to compaction that can occur from vehicle traffic, especially during wet conditions, and on soils with finer textures and imperfect, poor and very poor drainage. Compaction results in changes to soil bulk density with accompanying alterations in soil structure. Further, admixing of cover soil and subsurface layers may result in changes in soil chemistry (i.e., soil organic matter, carbonates) or physical parameters (i.e., texture) that can lead to a reduction of fertility. There is potential for changes to soil quality resulting from movement and interaction with potentially contaminated soils that may be present within 4 CDTC.

Table 9-7 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to terrain, geology and soils.

Table 9-7: Potential Effects of the Project on Terrain, Geology and Soils

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Effect of the Project on the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in terrain conditions	• Terrain stability issues resulting from ground disturbance (e.g., at locations of excavations) • Potential water erosion and sediment delivery following vegetation clearing and exposure of surficial materials to erosive factors	C	C	C
Change in soil quality/ quantity	• Compaction, rutting, admixing or loss of soil structure through vehicle and equipment movement	C	C	C
	• Soil loss through wind and water erosion following vegetation clearing and grading	C	C	-
	• Disturbance of pre-existing contamination (if discovered)	C	C	C

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

9.4.4.2 Preliminary Comments Received and Preliminary Mitigations

Through engagement efforts to date with Indigenous rights-holders, Indigenous groups, the public, and government agencies, TC Energy heard concerns about the Project's potential impacts related to terrain, geology, and soils. These concerns are summarized in Table 9-8 and Table 9-9, as well as potential measures to be taken to address or to further understand each concern. TC Energy will develop management plans that incorporate industry-standard and Project-specific mitigation measures to address potential adverse effects to the terrain, geology and soils.

Table 9-8: Preliminary Comments Related to Terrain, Geology and Soils

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns that Project infrastructure may affect the Niagara Escarpment	• Change in terrain conditions • Change in soil quality	• Project components and works within the Niagara Escarpment Planning Area will be subject to the *Niagara Escarpment Planning and Development* and the policies of the Niagara Escarpment Plan. TC Energy will work with the Niagara Escarpment Commission to obtain approvals for work in this area, as required. It is noted that, the 4 CDTC lands are excluded from the Niagara Escarpment Plan Area and corresponding regulations. • Infrastructure (i.e., the Headraces, Tailraces, and Powerhouse) along the slope between the Reservoir and Georgian Bay will be predominantly underground. • In early construction, soils will be systematically removed from the Reservoir footprint and appropriately handled until reused for the Project or removed to an appropriate disposal site in accordance with applicable regulations. • Studies of local geology, terrain, and soils are continuing and will support ongoing design and construction planning which will inform the soil management strategy during construction. • The Reservoir will be constructed on competent bedrock, which will be assessed to understand stability and inform design. • TC Energy will develop management plans that incorporate industry-standard and Project-specific mitigation measures. This will include soil-related mitigation, reclamation for areas disturbed during construction, and contingency measures.

Table 9-9: Indigenous Concerns Related to Terrain, Geology and Soils

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding potential effects to soil resulting from long-term water storage	• Change in soil quality	• The Reservoir will be constructed by removing overburden and near-surface weathered rock to reach competent bedrock. Topsoil is planned to be conserved for reuse or storage, where feasible. Other materials excavated on site will be used for construction depending on conditions; otherwise imported material may be necessary. The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure.

9.5 Groundwater

9.5.1 Environmental Setting

Water carries a profound cultural and spiritual importance to Saugeen Ojibway Nation, forming an integral part of identity, stewardship responsibilities, and the interconnectedness between people, the land, and all living beings. Groundwater supports terrestrial and aquatic ecosystems and is a source of drinking water in the vicinity of the Project. Groundwater is recharged by infiltration from precipitation and surface water. It discharges at lower elevations as seeps to wetlands and as baseflow into local streams. In the Project vicinity, groundwater generally drains towards Georgian Bay.

The federal government has legislative power for groundwater management on federal lands, including 4 CDTC. Environmental quality guidelines under the *Canadian Environmental Protection Act* and the Guidelines for Canadian Drinking Water Quality are inclusive of groundwater resources. In Ontario, under provincial jurisdictions, groundwater is regulated by the MECP under the *Ontario Water Resources Act* and the *Environmental Protection Act*.

Groundwater that supports surface water resources and ecosystems may also be subject to related legislation (e.g., *Fisheries Act* where groundwater discharges to fish-bearing watercourses).

9.5.2 Baseline Work Completed to Date and Planned Future Work

Groundwater information has been collected as part of geotechnical investigations conducted at 4 CDTC from 2020 through 2022, which included the installation of groundwater monitoring wells in the areas of the Reservoir, Powerhouse and Water Conveyance Structures.

Groundwater studies focused on characterizing existing groundwater quantity and quality, as well as the interaction between groundwater and surface water. To investigate the groundwater at 4 CDTC, eight monitoring wells were installed. Groundwater samples have been collected and analyzed at an environmental laboratory for chemical constituents, and groundwater levels have been monitored. The groundwater information collected to date has supported the understanding of:

- Hydraulic properties of the soil and bedrock units that will interact with the Project
- Existing groundwater quantity conditions, including variability between seasons and years
- Existing groundwater quality conditions, including spatial variability across the Project footprint
- Groundwater interactions with surface water

A summary of groundwater studies completed to date is provided in Table 9-10. Field data will be used to support Project design and permitting.

Table 9-10: Groundwater Studies Completed on 4 CDTC to Date

Study	Methods	Year	Season
Preliminary Geotechnical Investigation	Borehole drilling and groundwater monitoring well installation at six locations in the Reservoir and Headrace alignment area, including, observations of groundwater units, in-situ testing of hydraulic properties, and standard laboratory analysis parameters (groundwater quality)	2020	Winter
Supplementary Geotechnical Investigation	Borehole drilling and groundwater monitoring well installation at two locations in the chamber area, including, observations of groundwater units, in-situ testing of hydraulic properties, and standard laboratory analysis parameters (groundwater quality)	2021	Fall
Groundwater Quality and Quantity Monitoring	Groundwater monitoring and sampling at eight monitoring wells (as available), including, in-situ testing, and standard laboratory analysis parameters (groundwater quality), groundwater level measurements (manual and automated), and single-well response tests (groundwater quantity)	2021, 2022	Fall (2021, 2022) Winter (2022)

9.5.3 Results

MECP well records indicate a number of wells in the Project area, some of which are used to supply drinking water (i.e., domestic water use) (MECP 2024).

Reported results are predominantly focused on groundwater quality analytics. In general, preliminary groundwater quality results were compared to Table 1: Full Depth Background Site Condition Standards for groundwater in all types of property uses, presented in the soil, ground water and sediment standards for use under Part XV.1 of the *Environmental Protection Act* (MECP 2021) to characterize existing conditions. Baseline characterization will be further refined as additional field work is completed and groundwater quality will be compared to applicable federal and/or provincial quality guidelines and requirements.

9.5.4 Potential Project Effects and Preliminary Mitigations

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to groundwater. Concerns identified through engagement activities that relate to groundwater are also identified along with preliminary approaches to mitigate these potential Project related effects.

9.5.4.1 Potential Effects of the Project on the Environment

Construction and operation of Project components, specifically those that are underground, will occur on and within groundwater-bearing soils and bedrock formations.

During construction, changes in infiltration rates from building roads, the Reservoir, and installing underground infrastructure may affect groundwater recharge, influencing its quantity, location, and flow. This could lead to potential impacts, like loss of water and increased turbidity, to the limited number of private local water wells in close proximity to 4 CDTC.

Drilling and dewatering for the installation of infrastructure during the construction period has the potential to alter groundwater levels and flow paths, with groundwater being redirected to the dewatering locations where it can be collected and treated, if necessary, prior to discharge to the environment. Further, during operations, the Reservoir (Ring Dam, stored water) may affect underlying groundwater levels.

During construction, the potential movement of potentially contaminated soil (previously affected by historical activities) could decrease groundwater quality by increasing loadings of contaminants to the environment. Mitigation will be employed if it is determined that these conditions exist.

Table 9-11 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to groundwater.

Table 9-11: Potential Effects of the Project on Groundwater

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Interactions of the Project on the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facility**	**Transmission Connections**
Change in groundwater quality or quantity	• Disturbance to soil and parent material above or below the water table may change physical hydraulic properties (e.g., change in infiltration rates and locations and flows)	C	C	C
	• Alteration of groundwater levels or flow rates through drilling of extraction wells, dewatering, horizontal directional drilling (HDD), or operation of the Reservoir	C/O	-	C
	• Disturbance of pre-existing contamination (if discovered)	C	C	C

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

9.5.4.2 Preliminary Comments Received and Preliminary Mitigations

Through engagement efforts to date with Indigenous rights-holders, Indigenous groups, the public, and government agencies, TC Energy heard concerns about the Project's potential impact on groundwater. These concerns are summarized in Table 9-12 and Table 9-13, as well as potential measures to be taken to address or to further understand each concern.

Table 9-12: Preliminary Comments Related to Groundwater

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concern about potential effects, or damage, to well water including increased sedimentation	• Change in groundwater quality or quantity	• The Reservoir will be constructed on competent bedrock. The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure and will be assessed to understand the potential interactions with surface and groundwater quality to inform management strategies to protect local water resources.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
		• In 2020, TC Energy initiated groundwater studies at 4 CDTC to characterize existing groundwater conditions. Field data will be used to develop models to evaluate current conditions and potential Project-related effects. • Groundwater use is regulated in Ontario and water takings required for Project construction (e.g., excavation dewatering) within provincial jurisdiction will be subject to regulations, and potential permitting. • As part of pre-construction planning, TC Energy will develop management plans that incorporate industry-standard and Project-specific mitigation measures. This will include reasonable measures to manage potential construction related effects on groundwater.
Concerns about the potential effects on groundwater quality	• Change in groundwater quality or quantity	• In 2020, TC Energy initiated groundwater studies at 4 CDTC to characterize existing groundwater conditions. Field data will be used to develop models to evaluate current conditions and potential Project-related effects. • As part of pre-construction planning, TC Energy will develop management plans that incorporate industry-standard and Project-specific mitigation measures. This will include reasonable measures to manage potential construction related effects on groundwater and surface water quality. • The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure. Potential interactions with surface and groundwater will be assessed to inform management strategies to protect local water resources.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concern that the water in the Reservoir could interact with groundwater via limestone in the Escarpment	• Change in groundwater quality or quantity	• The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure. Potential interactions with surface and groundwater will be assessed to inform management strategies to protect local water resources. • In 2020, TC Energy initiated groundwater studies at 4 CDTC to characterize existing groundwater conditions. Field data will be used to develop models to evaluate current conditions and potential Project-related effects.
Concern about the weight of water in the Reservoir affecting groundwater or aquifers	• Change in groundwater quality or quantity	• In 2020, TC Energy initiated groundwater studies at 4 CDTC to characterize existing groundwater conditions. Field data will be used to develop models to evaluate current conditions and potential Project-related effects, which will include interactions between the Project and groundwater quantity (e.g., levels and aquifers).
Concern regarding drinking water	• Change in groundwater quality	• The protection, sustainability and long-term health of Georgian Bay are threshold issues that will be considered by TC Energy as the Project advances. The Project will be designed to pump and discharge water to and from Georgian Bay and the Reservoir without alteration or treatment. • TC Energy is conducting engineering and environmental studies to better understand the potential effect that the Project could have on the waters of Georgian Bay. The objective is to transfer water while reducing adverse effects. Project-related impacts on drinking water will be considered as part of the IA process.

Table 9-13: Indigenous Concerns Related to Groundwater

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding potential effects to groundwater quality resulting from long-term water storage.	• Change in groundwater quality or quantity	• The slope and surfacing of the Ring Dam will be engineered for stability and to control surface water runoff related to the structure. Potential interactions with surface and groundwater will be assessed to inform management strategies to protect local water resources.

9.6 Surface Water

9.6.1 Environmental Setting

Surface water is an important resource that contributes to the health and stability of the broader aquatic environment as well as local communities and carries profound cultural and spiritual importance to Saugeen Ojibway Nation. Surface waters in the Project area include Nottawasaga Bay, a sub-bay of Georgian Bay, as well as watercourses and wetlands. Georgian Bay provides a source of drinking water to numerous municipalities within the area, including the Municipality of Meaford. Surface water is an integral part of the local environment, providing habitat for fish and other aquatic species, vegetation, and contributes to local socio-economic drivers.

Water use and its quantity and quality are regulated by multiple departments within the Environment and Natural Resources sector of the Government of Canada. Federal legislation relevant to the Project's use of water includes the *Canada Water Act*, *Canadian Navigable Waters Act*, *Dominion Water Power Act*, *Fisheries Act*, and the *Canadian Environmental Protection Act*. The Guidelines for Canadian Drinking Water Quality will inform water quality requirements. Provincially, water use and its quantity and quality are regulated by the MECP under the *Ontario Water Resources Act* and *Environmental Protection Act*.

Project-related impacts on drinking water and water used for recreation are addressed through the Guidance for Evaluating Human Health Effects in Impact Assessment: Drinking and Recreational Water Quality (Health Canada 2023c) for federal IAs. This Guidance document provides a methodology for determining potential impacts or health risks related to project-related contaminants affecting drinking water and recreational water quality for major resource and infrastructure projects. The Health Canada Drinking Water and Recreational Water Quality Guideline assesses the risks associated with exposure to drinking or recreational water for water quality parameters and applicable standards.

9.6.2 Baseline Work Completed to Date and Planned Future Work

The Great Lakes, and more specifically Georgian Bay, have been extensively studied and managed by the Government of Canada through the Great Lakes Protection Initiative and by the United States Great Lakes National Program Office, which coordinates efforts between the two countries under the Great Lakes Water Quality Agreement. While the lake-wide studies under these programs provide a breadth of information on the Great Lakes system, Project-specific interactions require more detailed and site-specific studies. To support this, TC Energy initiated a baseline study program, as summarized in Table 9-14. This work incorporates the review of existing data, field data collection (in conjunction with aquatic resource studies), and computer modeling to evaluate the Project's interaction with the surface water environment for a range of operational scenarios, environmental conditions, and effects from construction.

TC Energy is continuing to study the surface water system and the potential effects of the Project. The requirements outlined in federal, provincial, and local regulations for water taking, use, and transfer are being considered and incorporated into the surface water studies. Through the IA process, relevant federal agencies and MECP will be consulted and may inform the ongoing scope of these studies. The models will then be used to study the Project-specific interactions under a variety of meteorological conditions and operational scenarios.

Table 9-14: Surface Water Studies Completed to Date and Ongoing

Study	Methods	Year
Water Quality Sampling	In conjunction with fish and fish habitat studies in Georgian Bay at 4 CDTC and where the Stayner transmission connection option comes ashore, in situ measurements of dissolved oxygen and temperature, and laboratory analysis of routine parameters, nutrients, and metals	Fall 2020, Spring, Summer, Fall and early Winter 2021-2023; ongoing
Aquatic Field Studies	Acoustic Doppler Current Profiler: currents, water pressure and temperature in Nottawasaga Bay near 4 CDTC Water Quality Sondes: temperature, dissolved oxygen, conductivity, pH, turbidity, chlorophyll, and pressure in Nottawasaga Bay near 4 CDTC	Summer Fall 2022
In-Lake Modeling	Regional Model, Local Model, Withdrawal Model looking at surface water quantity in Georgian Bay	Ongoing
Watershed Modeling	Quantity modeling for watersheds in vicinity of the Project looking at hydrology, flooding. Modeling of water quality within watershed.	Ongoing

9.6.3 Results

Several streams and headwater features originate at the higher elevation areas in the vicinity of the Reservoir. There is a more prominent unnamed tributary that originates north of the Reservoir and traverses through a valley east of the proposed Powerhouse across (above) the Tailraces, eventually flowing into Georgian Bay. Several other small unnamed tributaries originate on top of the Niagara Escarpment, which drain away from the Project generally north or east to Georgian Bay.

Water quality sampling in Georgian Bay, specifically Nottawasaga Bay near 4 CDTC and where the Stayner transmission connection option comes ashore, indicates extremely low concentrations of nutrients and very low suspended sediments/turbidity. The level of dissolved oxygen is at or near saturation throughout the water column. A thermocline develops in early summer and persists until fall, with warm surface waters gradually extending to depths of 20 or 30 m.

Surface water currents measured near the proposed Lower Inlet/Outlet Structure location were between 0.001 metres per second (m/s) to 0.330 m/s and were measured at the lake bottom at 0.000 m/s to 0.0125 m/s. Water temperature for these locations ranged from 21 ℃ at the surface to 6 ℃ on the bottom during data collection from August to November 2022. Dissolved oxygen saturation was higher on the bottom, with an average of 103%, and lower on the surface, with an average of 101%.

Water quality and quantity modeling is currently underway. Regional modeling looking at hydrodynamics, thermal, and wave action, as well as local models looking at flooding, are being developed. Once completed, modeling will be used to inform future works including design and potential effects assessments.

9.6.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects on surface water (quality and quantity). Concerns identified through engagement activities that relate to surface water are also identified, along with preliminary approaches to mitigate these potential Project-related effects.

9.6.4.1 Potential Effects of the Project on the Environment

There will be interactions with surface water during the construction and operation of the Project.

During construction, in the absence of mitigation, the Project has the potential to affect surface water quality through erosion and sedimentation from site preparation and ground disturbance, including clearing and grubbing, which can result in sediment entering watercourses. Installation of the Lower Inlet/Outlet Structure and potential Marine Access may disrupt the lakebed, resulting in increased turbidity.

The construction of the Reservoir or other temporary or permanent surface facilities may change some local drainage patterns, which may have an effect on nearby watercourses. Similarly, the transmission connection option is likely to be close to watercourses.

During operation, interactions will primarily relate to water withdrawal and discharge at the Lower Inlet/Outlet Structure.

Table 9-15 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as they relate to surface water.

Table 9-15: Potential Effects of the Project on Surface Water

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in surface water quality	• Increased sediment concentrations and transport in surface water due to in-water construction, vegetation clearing, increased erosion on the Project footprint, or release of water from the Project	C/O	C	C
Change in surface water quantity	• Construction changes to natural flow patterns	C	C	C
	• Change in flow patterns near Lower Inlet/Outlet Structure	O	-	-

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

9.6.4.2 Preliminary Comments Received and Preliminary Mitigations

The Project's potential effect on the waters of Georgian Bay has been raised as a concern throughout early engagement with Indigenous rights-holders, Indigenous groups, the public, and government agencies. TC Energy has and continues to modify the conceptual design with a focus on reducing potential impacts to Georgian Bay and the associated surface water environment. Table 9-16 provides a summary of concerns and presents preliminary measures to be taken to address taken to address, or to further study the issue.

Table 9-16: Preliminary Comments Related to Surface Water

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/Potential Effect
Concerns that potential existing contaminants in lakebed sediments could be stirred up by Project construction and operation	• Change in surface water quality	• Preliminary designs of the Lower Inlet/Outlet Structures raise the structure above the lakebed, with flows being directed on the horizontal plane to reduce the mobilization of lakebed sediment. • Laboratory analysis of lakebed sediments sampled for the aquatics program will be used to inform assessment of potential effects and design as the Project progresses. • TC Energy will prepare construction management plans that include low-impact construction techniques and isolation measures to reduce potential disturbance and/or spread of lakebed sediment. A water quality monitoring program will be developed and followed during both construction and operations.
Concerns that there could be existing contaminants from the Reservoir area that could be transferred to Georgian Bay as a result of Project construction and operation	• Change in surface water quality	• TC Energy conducted preliminary soil investigations in the area identified for the Reservoir to understand current conditions and to inform the future development of soil management plans for construction. Additional studies, including soil, geological, and ongoing hydrogeological investigation, will expand TC Energy's understanding of the existing potential for contaminants of concern. • During construction of the Reservoir, soil and overburden will be removed until bedrock is encountered; stripped materials will be stored in an appropriate location on-site, or disposed offsite, in accordance with relevant federal or provincial regulations. Materials will only be re-used on site if deemed suitable (e.g., free of contaminants). • The Reservoir will be constructed on competent bedrock and assessed for potential contaminants of concern that could be mobilized through direct contact or groundwater/surface water interaction.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/Potential Effect
Concerns that intake and discharge of water from the Reservoir during operation will result in changes to water quality in Georgian Bay, including temperature	• Change in surface water quality	• TC Energy is conducting engineering and environmental studies to better understand the potential effect that the Project could have on the waters of Georgian Bay. The objective is to transfer the water while reducing adverse effects. • The Project does not require water for cooling or heating. Water in the reservoir originates from Georgian Bay and is held for a short period of time before being released back to its source. As such, temperature variations are anticipated to be minimal and would rapidly dissipate within the receiving waters of Georgian Bay. • Operational manoeuvring to circulate water in the Reservoir can be employed to avoid excessive heating, if required. Once released, the circulation and extreme volume of Georgian Bay will rapidly dissipate the water reducing potential thermal effects. • Computer modeling for a number of operational and extreme case scenarios will be undertaken to demonstrate temperature and water quality change potential.

10 Potential Changes to Biological Environment

10.1 Fish and Fish Habitat

10.1.1 Environmental Setting

Fish and fish habitat, and the productivity of the fisheries that they support, are valued by Indigenous rights-holders, Indigenous groups, the public, and other interested parties and are protected in Canada. Fish and fish habitat provide cultural, economic, recreational, and aesthetic values to the surrounding communities, contribute to biodiversity, and are indicators of aquatic ecosystem health. TC Energy recognizes the importance that fish and fish habitat provide to a healthy aquatic environment, and as part of the ecosystem as a whole. Preliminary engagement with Indigenous rights-holders, Indigenous groups and the public highlighted the importance placed on fish and fish habitat.

In Canada, fish and fish habitat are protected under the *Fisheries Act*; federally regulated aquatic SAR are protected under the SARA. In Ontario, provincially regulated aquatic SAR are currently protected by the *Endangered Species Act* (ESA)[15]. Protection of SAR is important for maintaining biodiversity within natural environments. SAR are those species that have been assessed and identified by either the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or the Committee on the Status of Species at Risk in Ontario (COSSARO) as being at risk of disappearing from Canada or Ontario, respectively. Where species have been identified as being Threatened or Endangered, they are often afforded both individual and habitat protection under the following:

- Federal SARA (Schedule 1)
- Provincial ESA (SAR in Ontario [SARO] List)[1]

10.1.2 Baseline Work Completed to Date and Planned Future Work

In fall 2020, TC Energy initiated aquatic studies in Georgian Bay to better understand existing conditions and to support Project design and planning.

[15] The ESA was recently amended by the Government of Ontario and will be replaced with the *Species Conservation Act* (SCA). While the SCA is not yet in effect, species protections in the proposed SCA would not apply to SARA protected aquatic species.

Studies were conducted during open water seasons (early and late fall 2020; spring, summer, fall and early winter in 2021, 2022, 2023; and spring 2024). Aquatic studies were conducted from within Georgian Bay adjacent to 4 CDTC and adjacent to where the Stayner transmission connection comes ashore at Wasaga Beach. Surveys were completed between the shoreline and waters up to 40 to 60 m in depth.

To date, various investigations have been conducted in Georgian Bay within the vicinity of proposed Project component locations, including aquatic habitat mapping, hydroacoustic surveys (to estimate the size and relative abundance of fish in the water column), larval and adult fish sampling, water quality sampling, thermal profiling, sediment quality sampling, and collection of phytoplankton, zooplankton and benthic invertebrates. Hydroacoustic studies and fish sampling were conducted both daytime and nighttime. A summary of sampling completed to date is provided in Table 10-1.

Planning of aquatic studies was conducted in collaboration with the Saugeen Ojibway Nation Environment Office. Personnel from the Great Lakes Management Unit of the MNR reviewed sampling plans and provided their input, and the sampling was conducted under licence from the MNR. Meetings were held with DFO in 2019, 2020 and 2023 to discuss the Project, the anticipated design and operation, and some of the challenges associated with sampling for deep water species. Sampling in the shoreline environment was conducted in coordination with the Saugeen Ojibway Nation Coastal Waters Monitoring Program (CWMP) to provide comparable data at other sites monitored by the CWMP.

Aquatic studies in the Project area to date have focused on strengthening TC Energy's understanding of the:

- Aquatic environment in proximity of Project components
- Potential for spawning areas or other sensitive aquatic habitat in proximity to the Project components
- Distribution, relative abundance and size of fish present in the water column during both day and night to support a design of the Lower Inlet/Outlet Structure that reduces fish entrainment
- Species composition of fish in the vicinity of Project components, with emphasis on species important to commercial and Indigenous fisheries (e.g., Lake Whitefish) and age classes vulnerable to entrainment (e.g., larval and juvenile fish)

Table 10-1: Aquatic Resource Studies Completed to Date

Study	Methods	Location	Year	Season
Aquatic Habitat Mapping	Echo sounder, side-scan sonar, benthic substrate sampling, visual observation, underwater camera survey	Georgian Bay off of 4 CDTC and where the Stayner transmission connection option comes ashore	2020, 2021, 2022	Summer (where the Stayner transmission connection option comes ashore), fall (4 CDTC)
Hydroacoustic Survey for Fish	Echo sounder and split-beam transducer	Georgian Bay off of 4 CDTC	2020, 2021, 2022, 2023, 2024	Fall 2020, spring, summer, fall, early winter (pre-ice) 2021-2023, spring 2024
Larval and Juvenile/Adult Fish	Broadscale gillnet, large mesh gillnet, hoop/fyke net, pelagic trawl, beam trawl, neuston net	Georgian Bay off of 4 CDTC and where the Stayner transmission connection option comes ashore; stream flowing from 4 CDTC (2023 only spring and summer)	2020, 2021, 2022, 2023, 2024	Fall 2020, spring, summer, fall, early winter (pre-ice) 2021-2023, spring 2024
Water Quality, Phytoplankton and Zooplankton	In situ and standard laboratory analysis parameters (water quality), zooplankton net, Wisconsin net (mysids)	Georgian Bay off of 4 CDTC and where the Stayner transmission connection option comes ashore	2020, 2021, 2022	Fall 2020, spring, summer, fall, early winter (pre-ice) 2021-2023
Sediment Quality, Benthic Invertebrates	Kicknet, petite ponar sampler	Georgian Bay off of 4 CDTC and where the Stayner transmission connection option comes ashore	2021, 2022	Fall 2021 and 2022
Stream survey	Backpack electrofisher, meter stick, dip nets, etc.	Lower reach of stream flowing from 4 CDTC to Georgian Bay	2023	Spring and summer

10.1.3 Results

The Project is located on and within portions of Georgian Bay and includes several small tributaries flowing eastward in 4 CDTC, as well as tributaries that may be crossed by the proposed transmission connection. Over 100 fish species reside in Georgian Bay and its tributaries, including more than 20 introduced species, several of which have substantially transformed the natural ecosystem. Indigenous commercial operations and recreational anglers target a variety of species, including Lake Whitefish, Yellow Perch, Lake Trout and various introduced salmon and trout. Fish that are not targeted in a fishery are still essential to the ecosystem because they provide food for other fish and contribute to the balance of the food chain (the succession of organisms eating other organisms).

Fish Habitat

The lakebed at the proposed Lower Inlet/Outlet Structure is quite steep and exposed to wave action. Coarse cobble and gravel substrates are found along the shoreline to water depths of approximately 2 m. As water depth increases, the cobble and gravel become interspersed with an increasing proportion of sand. At approximately 20 m of depth, the substrate transitions to fine silts. The area where the Stayner transmission connection option comes ashore is more sheltered with a gradually sloping lakebed and generally finer substrate in the nearshore. Invasive Dreissenid mussels are very common on the lakebed across Georgian Bay.

The lake-based portion of the Stayner transmission connection option spans the deep waters of Georgian Bay, and the substrate is predominantly fines.

Fish Species

Fish species protected under federal or provincial legislation known to be present (based on a desktop review) in Georgian Bay, more specifically Nottawasaga Bay, and tributary rivers that may be affected by the Project are listed in Table 10-2. Lake Sturgeon and Deepwater Sculpin have been captured during field sampling conducted for the Project. Northern Brook and Silver Lamprey have been recorded from a few locations in watercourses flowing into Georgian Bay.

Table 10-2: Aquatic SAR

Species	SARA, Schedule 1	COSEWIC	COSSARO	ESA, O. Reg. 230/08[16]	Comment
Lake Sturgeon	Under consideration	Threatened	Endangered	Endangered	Great Lakes/Upper St. Lawrence River population present in Georgian Bay, potential interaction with Lower Inlet / Outlet Structure and Stayner transmission connection options
Northern Brook Lamprey	Special Concern	Special Concern	Special Concern	Special Concern	In rivers, potential interaction with land-based transmission connection options
Silver Lamprey	Special Concern	Special Concern	Special Concern	Special Concern	In rivers, potential interaction with land-based transmission connection options
Deepwater Sculpin	Special Concern	Special Concern	N/A	N/A	In deep waters of Georgian Bay (Nottawasaga Bay) from 4 CDTC to where the Stayner transmission connection options comes ashore

According to aquatic SAR mapping (DFO 2025), Silver Lamprey are known to occur along the shoreline of Georgian Bay to the north of the Project. However, this species was not observed at this location during the field investigations.

Forty fish species have been captured to date during Project-related surveys in waters off 4 CDTC and the area where the Stayner transmission connection option comes ashore. The majority of these have been smaller fish species (less than 150 millimetres [mm] in length). At 4 CDTC, Round Goby, Rainbow Smelt, Yellow Perch, Spottail Shiner and Lake Chub are among the most abundant species present. A few Deepwater Sculpin, a species of Special Concern, were captured in nets set in deeper waters, but the waters near 4 CDTC are generally shallower than the typically very deep water that this species prefers. Small numbers of adult and juvenile sport fish were captured, including Lake Trout, Rainbow Trout, Chinook Salmon, and

[16] O. Reg 230/08 has recently been revoked by the Government of Ontario and will be replaced with the SCA. However, while the SCA is not yet in effect, species protections in the proposed SCA would not apply to these SARA protected aquatic species.

Smallmouth Bass. A single juvenile Lake Sturgeon was captured in 2022. Adult Lake Whitefish were not captured until 2022, when large mesh nets set in depths greater than 25 m captured several large adults.

Spring-spawning species such as Lake Chub, Rainbow Trout and Longnose Sucker were captured in spawning or post-spawning condition. Suitable spawning habitat for Lake Chub and Longnose Sucker is found in shallow water habitat, while the Rainbow Trout likely spawn in nearby streams, though specific spawning locations are not known. Sampling of fall-spawning species conducted in early winter found Round Whitefish and Lake Trout in spawning and post-spawning condition, suggesting these species may also spawn in the vicinity of the Project. Sampling for drifting larval fish was conducted in early spring 2021, 2022, 2023 and 2024 with the intention of capturing emerging larval Lake Whitefish. Few larvae were collected in waters off 4 CDTC suggesting limited numbers of Lake Whitefish spawning in the vicinity of the Project.

The fish community in the area where the Stayner transmission connection option comes ashore is generally similar to that found offshore at 4 CDTC. However, juvenile Lake Sturgeon were consistently captured in low numbers.

Data collection and analysis of hydroacoustic survey results are on-going, but preliminary results indicate that there are seasonal differences in fish abundance in the vicinity of the Lower Inlet/Outlet Structure. Fewer fish were detected in spring and early winter when the water column is cold and not stratified, with greater numbers detected during summer and early fall when water is warmer and thermally stratified. Hydroacoustic surveys have detected higher numbers of fish in the water column at night than during the day with the majority being smaller fish (less than 150 mm estimated total length), consistent with the results of fish surveys described above.

Initial surveys were conducted on a prominent watercourse flowing from the north of the Reservoir in a southeasterly direction to Georgian Bay, which transects the general area of the Pumped Storage Facility. The stream is predominantly a high gradient waterway with a rocky substrate. Adult and juvenile Rainbow Trout were present in the lower reaches, and adults were observed spawning at sites downstream of 4 CDTC.

10.1.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to fish and fish habitat. Concerns identified through engagement activities that relate to fish and fish habitat are also identified along with preliminary approaches to mitigate these potential Project related effects.

10.1.4.1 Potential Effects of the Project on the Environment

The construction of Project components has the potential to result in changes to fish and their habitat. Specifically, the construction of the Lower Inlet Outlet Structure, potential Marine Access, and the portion of the Stayner transmission connection option proposed along the lakebed have the potential to negatively affect fish and their habitat. Additionally, the construction of various Project components (e.g., Powerhouse, Water Conveyance Structures, and transmission connection) have the potential to directly or indirectly affect several mapped watercourses (e.g., creeks and streams that may provide fish habitat) or their baseflow contributions. As noted above, Northern Brook Lamprey and Silver Lamprey have been recorded at a few locations in watercourses flowing into Georgian Bay, which could be affected through the construction of the transmission connection. Watercourses and associated fish habitat on 4 CDTC may similarly be affected, including identified Rainbow Trout populations. Operation of the Project, specifically the movement of water in and out of the Lower Inlet/Outlet Structure has the potential to affect fish and their habitat.

From a regulatory perspective, review of the Project by DFO under the *Fisheries Act* is expected. If DFO determines that the Project will result in the death of fish or the Harmful Alteration, Disruption or Destruction (HADD) of fish habitat, an Offsetting Plan and *Fisheries Act* authorization will be required. Offsetting Plans address the residual effects resulting from a Project. Indigenous rights-holders and Indigenous groups will be engaged during the development of this Offsetting Plan.

Table 10-3 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to fish and fish habitat.

Table 10-3: Potential Effects of the Project on Fish and Fish Habitat

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in fish habitat (including habitat for SAR)	• In-water construction resulting in the loss of habitat	C	-	C
	• In-water construction resulting in changes to habitat structure (e.g., substrate, banks, aquatic vegetation)	C	-	C
	• Construction activity on land adjacent to watercourses resulting in changes to bank stability, temporary loss of riparian vegetation, sedimentation, or in increased erosion potential	C	C	C
	• Change to water quality that have the potential to affect fish or fish habitat	C/O	C	C
	• Changes in water temperature during Reservoir filling and release	O	-	O
	• Changes to surface and groundwater flow patterns that has the potential to affect fish or fish habitat	C/O	C	C
Change in fish mortality risk	• Mobilization and transport of sediment resulting in fish mortality from gill abrasion and/or limited foraging ability, or mortality of fish eggs	C	C	C
	• Change in timing, duration and frequency of flow (including during Reservoir filling and release), resulting in fish mortality by stranding, entraining or impinging fish (Lower Inlet/Outlet Structure), or by preventing access to spawning areas (watercourses)	C/O	-	-
	• Destruction of fish and/or eggs during in-water work	C	-	C
	• Lethal or sub-lethal effects on fish due to blasting or vibrations	C	-	C

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

10.1.4.2 Preliminary Comments Received and Preliminary Mitigation

Through engagement efforts to-date with Indigenous rights-holders, Indigenous groups, the public, and government agencies, TC Energy has heard that Project's potential effects to fish and fish habitat, and to the waters of Georgian Bay are a concern. Table 10-4 provides a summary of concerns identified and presents potential measures to be taken to address or to further understand each concern. Concerns raised during engagement with Indigenous rights-holders and Indigenous groups are further discussed in Section 7 and are summarized in Table 10-5.

TC Energy values the feedback received, and in 2020 dramatically modified the initial conceptual design of key Project components with the specific intent of avoiding or reducing potential effects to fish and fish habitat. TC Energy will continue to identify and address concerns through optimized design and environmental management plans that will detail mitigation measures, and/or monitoring programs.

Table 10-4: Preliminary Concerns Related to Fish and Fish Habitat

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns that operation of the Project could kill fish and permanently reduce fish populations in Georgian Bay	• Change in fish habitat (including habitat for SAR) • Change in fish mortality risk	• The preliminary Lower Inlet/Outlet Structure siting and design includes inlet/outlet ports that incorporate flow dispersion measures and screens, which are anticipated to reduce potential mortality of fish during operation. • Aquatic studies will continue to inform design and operational parameters, which may be refined, as necessary and feasible, to increase protective measures. Studies focussing on the distribution and abundance of small fish (including both small-bodied species and the larvae and juveniles of large-bodied species) will support refinement of the design of the Lower Inlet/Outlet Structure to reduce entrainment of these organisms, if feasible.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Important habitat, such as spawning areas, could be impacted by the Project	• Change in fish habitat (including habitat for SAR)	• Direct effects to potential nearshore spawning habitat will be reduced, to the extent practical, through the siting and design of the Lower Inlet/Outlet Structure and potential Marine Access. Given the early stage of design, numerous construction methods are being considered for the Lower Inlet/Outlet Structure, including but not limited to: tunnel boring; in-water construction; other forms of drilling; and prefabrication. Construction methodologies for the transmission connection option will be confirmed as the Project design and discussions with IESO/Hydro One progresses. Selection of the ultimate construction methodologies used for in-water works will consider avoiding interaction with higher value spawning habitat along the shoreline. Where impacts cannot be avoided, appropriate mitigations will be proposed. • Fisheries studies conducted since fall 2020 have not identified suitable spawning habitat for species such as Lake Whitefish and Lake Trout in the immediate vicinity of the Lower Inlet/Outlet Structure. However, Spring-spawning species such as Lake Chub, Rainbow Trout and Longnose Sucker were captured in spawning or post-spawning condition. Suitable spawning habitat for Lake Chub and Longnose Sucker is found in shallow water habitat, while the Rainbow Trout likely spawn in nearby streams, though specific spawning locations are not known
Concerns about Lake Whitefish population decline in Georgian Bay, as well as those in Lake Huron more broadly	• Change in fish habitat (including habitat for SAR) • Change in surface water quality/quantity • Change in fish mortality	• Project field studies to date have found that adult Lake Whitefish are generally only present in water depths greater than 25 m; the Lower Inlet/Outlet Structure is planned in water depths of approximately 20 m. Adult Lake Whitefish are at low risk of impingement and entrainment at the screened ports based on their size and their ability to swim free of the Lower Inlet/Outlet Structure. Larval studies 2021-2024 have identified very few larval Lake Whitefish in the vicinity of the Lower Inlet/Outlet Structure. Lake Whitefish spawning and larval emergence appear to occur to the south of the Project along shoals off of Meaford and Thornbury. • The issues influencing declining Lake Whitefish populations in Lake Huron are complex and not fully understood, although data from ongoing Project and independent studies may contribute to a better understanding of this issue.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns the Lower Inlet/Outlet Structure could interfere with commercial and recreational fishing activities	• Change in fish habitat (including habitat for SAR) • Change in surface water quality/quantity • Change in fish mortality	• The Lower Inlet/Outlet Structure proposed within Georgian Bay is subject to an existing Notice to Mariners (identified as area CYD501) issued by the Canadian Coast Guard and is associated with DND's operation at 4 CDTC. The Lower Inlet/Outlet Structure will be located on or below the lakebed, which will reduce potential effects on commercial and recreational fishing • It is expected that the Project will have to provide markers, likely lighted buoys, consistent with Transport Canada requirements for any structures that present a risk to navigation
Concerns cables used for the lake-based portion of the Stayner transmission connection option will increase water temperature affecting the distribution of aquatic invertebrates and fish	• Change in surface water quality • Change in fish habitat (including habitat for SAR)	• While substantive effects are not anticipated, TC Energy is investigating the potential for temperature effects associated with the lake-based portions of the Stayner transmission connection option and are evaluating Project-specific variables such as size and type of cables, voltage, burial depth, and anticipated substrate types. As Project planning progresses, TC Energy will identify if potential thermal effects are possible and will recommend mitigations, if necessary.
Potential changes to fish behaviour from exposure to electromagnetic fields associated with the cables used for the lake-based transmission connection	• Change in fish mortality risk	• The underground circuits (e.g., cables) will be designed to industry standard practices and requirements, including those related to EMFs. If required, EMF reduction methods will be considered during detailed design, and studied during the regulatory process.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns about Project development, construction and operation impacting SAR	• Change in fish habitat (including habitat for SAR) • Change in surface water quality • Change in surface water quantity • Change in fish mortality risk	• The Lower Inlet/Outlet Structure siting and design, including appropriately sized screens and low-flow velocity, are anticipated to reduce mortality of fish during operation. • Aquatic studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures. Studies focussing on the distribution and abundance of small fish (including both small-bodied species and the larvae and juveniles of large-bodied species) will support refinement of the design of the Lower Inlet/Outlet Structure to reduce entrainment of these organisms if feasible.

Table 10-5: Preliminary Indigenous Concerns Related to Fish and Fish Habitat

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns that operation of the Project could kill fish and permanently reduce fish populations in Georgian Bay	• Change in fish habitat (including habitat for SAR) • Change in fish mortality risk	• The Lower Inlet/Outlet Structure siting and design, including appropriately sized screens and low-flow velocity, are anticipated to reduce mortality of fish during operation. • Aquatic studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures. Studies focussing on the distribution and abundance of small fish (including both small-bodied species and the larvae and juveniles of large-bodied species) will support refinement of the design of the Lower Inlet/Outlet Structure to reduce entrainment of these organisms if feasible.
Concerns regarding changes to water quality, water turbidity and water temperature	• Change in surface water quality	• The Project does not use water for cooling or to produce steam; the water will be moved between Georgian Bay and the Reservoir without treatment or alteration. • The normal operation of the Project water is expected to be moved in and out of the Reservoir on a regular and frequent basis. Based on research to date, including on pumped storage projects elsewhere in the world, TC Energy does not anticipate substantive change to water temperature in Georgian Bay, however; this will be confirmed as the assessment of the Project progresses.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
		• Potential effects to water temperature, especially temperature changes based on depth (thermocline), will be investigated and will inform Project design. • The Project is not anticipated to contribute to lakebed turbidity because the inlet/outlet ports are envisioned to incorporate flow dispersion measures. • As Project design progresses, flow rates and potential impacts will be further assessed, with appropriate mitigations to be proposed in an environmental management plan.
Concerns regarding impacts of the Project and development on the long-term sustainability of animal, including fish, populations	• Change in fish habitat (including habitat for SAR) • Change in surface water quality/ quantity • Change in fish mortality	• TC Energy will work with Indigenous rights-holders, Indigenous groups, regulators, and the public to collaboratively develop approaches to avoid or reduce effects on fish and fish habitat. This may include design or siting optimization to reduce interaction with fish and fish habitat. • Fish and fish habitat studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures.
Concerns regarding disturbance to the lake shoreline, lakebed and aquatic habitat resulting from tunneling/drilling	• Change in fish habitat (including habitat for SAR)	• Construction of the Water Conveyance Structures is anticipated to be undertaken through a combination of excavation of vertical shafts, drilling, blasting and/or tunneling. • Given the early stage of design, numerous construction methods are being considered for the Lower Inlet/Outlet Structure, including but not limited to tunnel boring, in- water construction, other forms of drilling, and prefabrication. • Siting of the potential Marine Access will be confirmed based on the findings of further field studies and Project planning. Siting and design of the potential Marine Access will consider means to limit interactions with fish and fish habitat, where feasible. • TC Energy will prepare environmental management plans that include low-impact construction techniques and isolation measures to reduce potential disturbance and/or spread of lakebed sediment. Management plans will include water quality monitoring at the Lower Inlet/Outlet Structure during both construction and operations. • All construction activities will be conducted in compliance with a project-specific Environmental Protection Plan that will detail the necessary environmental protections, practices and mitigation measures that will be developed as an outcome of the IA and current best management practices for construction.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding potential effects to SAR	• Change in fish habitat (including habitat for SAR) • Change in fish mortality risk	• Sequencing of construction activities will be planned to reduce potential interactions with aquatic SAR to the degree possible. Mitigation measures will be developed to address potential impacts and reduce negative effects including design considerations for the Lower Inlet/Outlet Structure. • Where the potential to affect SAR exists, the mitigation hierarchy of avoidance, mitigation and offsetting will be applied. Where impacts cannot be fully avoided, a SARA permit and / or approval from DFO, as applicable, will be sought to allow mitigation to be implemented under the terms of the permit. • Aquatic SAR are included in the efforts to reduce effects through design and siting. Data are being gathered to identify possible presence and the mitigation hierarchy will be applied. Appropriate permits or approvals will be obtained.

10.2 Vegetation and Vegetation Communities

10.2.1 Environmental Setting

The natural landscape is often classified by vegetation patterns, referred to as community types, which include forests, grasslands, and wetlands, as well as communities influenced by anthropogenic activities, such as agriculture and urban areas. Within southern Ontario vegetation communities are influenced by the underlying natural conditions, including soil types, local climate and seasonal effects, as well as human activities, such as land clearing and draining of wetlands for agriculture, businesses and residences, and abandonment of marginal farmlands.

The vegetation communities on 4 CDTC are characterized by regenerated former agricultural lands and natural areas typically dominated by undisturbed and second-growth forests, with a few wetland communities. The land-based portion of the transmission connection options would traverse rural, predominantly agricultural areas, and associated infrastructure including roads and highways.

Wetland vegetation communities in 4 CDTC require consideration of the Federal Policy on Wetland Conservation (Government of Canada 1991). Wetlands in provincial jurisdiction of the Project may be regulated by the relevant Conservation Authority (Grey Sauble or Nottawasaga Valley) under the provincial *Conservation Authorities Act* or by the Niagara Escarpment Commission under the *Niagara Escarpment Planning and Development Act* (when within the Niagara Escarpment Plan Area). In addition to the protections afforded to

wetland communities, some species of vegetation and their habitat are protected under the federal SARA and/or the provincial ESA (or SCA once enacted).

10.2.2 Baseline Work Completed to Date and Planned Future Work

In fall 2020, TC Energy initiated terrestrial ecosystem studies in to better understand existing conditions and to support Project design and planning. Studies were completed at 4 CDTC and where the Stayner transmission connection option comes ashore. A summary of terrestrial ecosystem studies completed to date is provided in Table 10-6. Terrestrial ecosystem studies are ongoing to better characterize the vegetation communities and the vegetation species throughout around the Project, including vegetation SAR or other designated species, and culturally important species.

Planning of terrestrial ecosystem studies was conducted in collaboration with the Saugeen Ojibway Nation Environment Office. TC Energy has also engaged with ECCC and the Canadian Wildlife Service, as well as the MECP regarding study methods and potential concerns these regulatory agencies may have relative to the Project.

Table 10-6: Terrestrial Ecosystem Studies Completed to Date

Study	Methods	Year
Description of Vegetation Communities	Ecological Land Classification (ELC) System for Southern Ontario – including visual surveys and soil auger investigations at 4 CDTC and where the Stayner transmission connection option comes ashore	2020[1], 2021[2], 2023[3]
Vegetation Inventory	Visual observations across three seasons (spring, summer fall) at 4 CDTC and where the Stayner transmission connection option comes ashore	2020[1], 2021[2], 2023[3]
SAR	Inventory and Butternut Health Assessment of Butternut trees within the proposed Reservoir footprint	2023

Notes:

[1] Surveys in 2020 commenced in the fall at 4 CDTC with a site reconnaissance survey and initial community description by ELC.

[2] In 2021, vegetation community and vegetation inventories were completed across three seasons (spring, summer and fall) where the Stayner transmission connection option comes ashore but only two seasons (summer and fall) at 4 CDTC due to access restrictions.

[3] In 2023, vegetation community and vegetation inventory studies were completed in spring at 4 CDTC.

10.2.3 Results

At 4 CDTC, woodland vegetation community types are the most common. Maple forest communities are predominant on the upper and middle plateaus of the Niagara Escarpment, with Oak forests also being present. On the lower plateau near to the Georgian Bay shoreline, upland ash forest, deciduous swamp communities, and mixed White Cedar forests are prevalent. Culturally influenced vegetation communities are the second most common, including meadows, thickets, savannahs, and woodlands. These areas are affected by prior human use and are in various states of natural succession. Wetlands were also documented within the area, but less prevalently than other vegetation community types. Wetland community types include treed swamps, shrub thicket swamps and marsh communities. Wetland communities were not identified in the preliminary Reservoir location. The presence of wetland communities was more prominent on low-lying areas closer to Georgian Bay and along the lower plateau (in the vicinity of the Powerhouse). A small coastal marsh (a community type considered rare in Ontario [MNR 2021b]) was identified along the shoreline of Georgian Bay.

To date, 397 species of vascular plants have been identified at 4 CDTC. Of these, 131 have been identified by the Saugeen Ojibway Nation Environment Office as species of importance, with 18 being common/fairly common but of notable interest, and seven described as uncommon to rare by the Saugeen Ojibway Nation Environment Office. One plant with very limited known occurrences in Ontario, Pathfinder (*Adenocaulon bicolor*), was observed in forested communities nearer the Georgian Bay shoreline. This species is not listed on Schedule 1 of SARA, has not been listed by COSEWIC, and is not on the SARO list. SAR vegetation species identified to date are discussed in Section 10.2.3.1

Three ELC community types were identified where the Stayner transmission connection option comes ashore, near the Georgian Bay shoreline, which is dominated by a mixture of upland forest and wetland communities containing poplar and eastern white cedar. To date, 138 species of vascular plants have been identified where the Stayner transmission connection option comes ashore. Of these, 58 have been identified by the Saugeen Ojibway Nation Environment Office as species of importance, with three being common/fairly common but of notable interest to Saugeen Ojibway Nation.

10.2.3.1 Vegetation Species at Risk

Two vegetation SAR were identified within the Project area during studies completed to date, Butternut *(Juglans cinerea)* and Black Ash (*Fraxinus nigra*).

Butternut are listed as Endangered on Schedule 1 of the SARA and on the SARO list under the ESA. Butternut were identified within 4 CDTC, where the majority are on the upper plateau associated with the proposed Reservoir location. One Butternut was also identified where the Stayner transmission connection option comes ashore.

Black Ash is listed as Threatened by COSEWIC and remains under consideration for addition to Schedule 1 of SARA. This species is also designated as Endangered on the SARO list under the ESA. However, the Municipality of Meaford and Town of Wasaga Beach are not included within O. Reg. 6/241 of the ESA and as such no legislation protects Black Ash within these municipalities. Black Ash were observed within swamp communities both in 4 CDTC and where the Stayner transmission connection option comes ashore, but have not been recorded within the Reservoir footprint on 4 CDTC.

10.2.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to vegetation and vegetation communities. Concerns identified through engagement activities that relate to vegetation and vegetation communities are also identified along with preliminary approaches to mitigate these potential Project related effects.

10.2.4.1 Potential Effects of the Project on the Environment

The construction and operation of the Project has the potential to result in effects to vegetation and vegetation communities. Construction and operation activities have the potential to result in direct and indirect effects. Potential effects may include vegetation clearing, ground disturbance, weed introduction (including spread of weeds from vehicle and equipment movement), or possible changes in hydrological regime that could influence vegetation communities (e.g. wetlands). Project design is currently under development with a focus on optimizing siting and/or identifying low impact installation methods to reduce potential impacts to the extent practical. With regards to potential wetland losses, TC Energy will follow the mitigation hierarchy approach by first optimizing siting of infrastructure to avoid interaction with wetlands, implement mitigation measures if avoidance is not possible, or develop and implement a wetland offsetting plan in accordance with the applicable federal and provincial policies, if required.

Table 10-7 identifies potential Project interactions and corresponding effects likely to occur from key Project components as it relates to vegetation and vegetation communities.

Table 10-7: Potential Effects of the Project on Vegetation and Vegetation Communities

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in vegetation communities and species	• Direct loss and/or alteration of native vegetation communities or plant species of concern (including SAR) arising from clearing and ground disturbance	C	C	C
	• Indirect change in vegetation communities or species (e.g., dust, weed introduction and/or spread from vehicle and equipment movement)	C/O	C	C
Change in wetlands	• Alteration or loss of wetland vegetation arising from vegetation clearing and ground disturbance	C	C	C
	• Change in hydrological regime, storage capacity or overall function	C/O	C	C

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

10.2.4.2 Preliminary Comments Received and Preliminary Mitigation

Through engagement efforts to-date with Indigenous rights-holders, Indigenous groups, the public, and government agencies/departments, TC Energy has heard that the predominant concerns raised during early engagement include affects of deforestation resulting from vegetation clearing for the Project, as well as the associated habitat loss. Table 10-8 and Table 10-9 provide a summary of terrestrial ecosystem related concerns and presents potential measures to be taken to address or to further understand each concern.

Table 10-8: Preliminary Comments Related to Vegetation and Vegetation Communities

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns about the amount of deforestation required to construct the Project	• Change in vegetation communities and species	• The construction of Project infrastructure has a potential to result in the removal of vegetation, including forests. The Project's design is currently under development with a focus on optimizing siting and/or identifying low impact installation methods to reduce potential impacts to the extent practical. For instance, major underground components (e.g., Powerhouse Headraces, and Tailraces) are anticipated to be constructed through a combination of excavation of vertical shafts, drilling, blasting and/or tunneling to limit surface disturbance to the extent feasible. • In addition, TC Energy is completing terrestrial ecosystem studies to further characterize existing conditions and better assess potential effects. The results of these studies will inform the design and include potential mitigation measures, as required.
	• Change in wetlands	• With regards to potential wetland losses, TC Energy will follow the mitigation hierarchy approach by first optimizing siting of infrastructure to avoid interaction with wetlands, implement mitigation measures if avoidance is not possible, or develop and implement a wetland offsetting plan in accordance with federal policies, if required.

Table 10-9: Preliminary Indigenous Concerns Related to Vegetation and Vegetation Communities

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding impacts of the Project on the long-term sustainability of plant populations, including plants of importance to Saugeen Ojibway Nation	• Change in vegetation communities and species	• TC Energy will work with Indigenous rights-holders, Indigenous groups, federal departments and provincial agencies, and the public, as well as through Saugeen Ojibway Nation guidance and participation in terrestrial field studies, to collaboratively develop approaches to avoid or reduce effects on vegetation. This may include design or siting optimization to reduce interaction with vegetation. • Terrestrial ecosystem studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures, including potential terrestrial habitat offsets.
Concerns regarding potential effects to SAR	• Change in vegetation communities and species	• Where the potential to affect SAR exists, the mitigation hierarchy of avoidance, mitigation and offsetting will be applied. Where impacts cannot be fully avoided, a SARA permit and/or approval (registration) under the Ontario *Species Conservation Act* (once enacted), as applicable, will be sought to allow mitigation to be implemented under the terms of the permit.

10.3 Wildlife and Wildlife Habitat, including Species at Risk and Migratory Birds

10.3.1 Environmental Setting

The wildlife found in the Project area include birds, mammals, amphibians, reptiles, and invertebrates. Some wildlife species are protected federally under the SARA and/or *Migratory Birds Convention Act,* and/or provincially under the ESA[17]. Though some species are considered habitat generalists (i.e., found in a wide range of habitats), others are closely associated with a specific habitat, and their distribution and abundance depends on the availability of their habitat. The vegetation communities described in Section 10.20, provide an understanding of the types of habitats that are found in the Project area.

Protection of SAR is important for maintaining biodiversity within natural environments. SAR are those species that have been assessed and identified by either COSEWIC or COSSARO as being at risk of disappearing from Canada or Ontario, respectively. Where species have been identified as being Threatened or Endangered, they are often afforded both individual and habitat protection under the following:

- Federal SARA (Schedule 1)
- Provincial ESA/SCA (SARO list)[3]

Many SAR are known to occur in the Project area, including Eastern Milksnake (*Lampropeltis triangulum*), Bobolink (*Dolichonyx oryzivorus*), Eastern Meadowlark (Sturnella magna), Golden-winged Warbler (*Vermivora chrysoptera*), Grasshopper Sparrow (*Ammodramus savannarum*), Eastern Wood-pewee (*Contopus virens*), Wood Thrush (*Hylocichla mustelina*), Barn Swallow (*Hirundo rustica*), Eastern-Whip-Poor-Will (*Antrostomus vociferus*), Western Chorus Frog (*Pseudacris triseriata*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Tri-coloured Bat (*Perimyotis subflavus*), Eastern Small-footed Myotis (*Myotis leibii*), Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Silver-haired Bat (*Lasionycteris novtivagans*), Monarch (*Danaus plexippus*), and Yellow-banded Bumblebee (*Bombus terricola*).

[17] The ESA was recently amended by the Government of Ontario and will be replaced with the SCA. While the SCA is not yet in effect, species protections in the proposed SCA would not apply to migratory bird species protected under the *Migratory Birds Convention Act*.

10.3.2 Baseline Work Completed to Date and Planned Future Work

In Fall 2020, TC Energy initiated wildlife studies to better understand existing conditions and support Project design and planning. Wildlife studies have been undertaken across all seasons to characterize wildlife use at 4 CDTC and where the Stayner transmission connection option comes ashore. A summary of studies completed to date is provided in Table 10-10. Wildlife studies are ongoing to fully characterize the wildlife and wildlife habitats across each aspect of the Project, including wildlife SAR or other designated species, as well as culturally important species as identified by representatives for the Saugeen Ojibway Nation Environment Office.

Wildlife studies were planned and conducted in collaboration with the Saugeen Ojibway Nation Environment Office, including the development of objectives, themes, timing, methodologies, and equipment deployment, as well as participation in field work. TC Energy has also engaged with ECCC, the Canadian Wildlife Service, and the MECP regarding study methods and concerns these regulatory agencies may have regarding wildlife and wildlife habitat in the area.

Table 10-10: Wildlife Studies Completed to Date

Study	Methods	Year
Site reconnaissance survey	General reconnaissance survey to observe wildlife within 4 CDTC	Fall 2020
Winter wildlife surveys	Transect surveys noting wildlife and signs of their presence; visual scans of near shore environments for waterfowl at 4 CDTC and where the Stayner transmission connection option comes ashore	Winter 2022, Winter 2023
Amphibian Call Count Surveys	Auditory surveys using both in person and autonomous recording units at 4 CDTC and where the Stayner transmission connection option comes ashore	Spring1 2021, 2022, 2023
Snake visual encounter surveys	Roadside and transect visual encounter surveys; inspection of artificial cover objects2 at 4 CDTC	Spring1, Fall 2021, 2022, 2023
Breeding bird surveys	Point counts and transect surveys; nightjar surveys during the dusk/evening periods at 4 CDTC and where the Stayner transmission connection option comes ashore	Spring, Summer 2021, 2023
Bat surveys	Bat habitat assessment to document suitable maternity roost features; acoustic monitoring using ultrasound detectors to identify species of bat present at 4 CDTC and where the Stayner transmission connection option comes ashore	Spring, Summer 2021, 2022, 2023
Trail camera	Trail cameras placed in the near shore environment of 4 CDTC	Winter, Spring, Summer, Fall 2022, 2023

Notes

[1]Due to access restrictions in 2021 and 2022, May amphibian surveys and late May/early June snake visual encounter surveys were not completed at 4 CDTC. These surveys were completed in 2023.

[2]Artifical cover objects (i.e., coverboards) were deployed in Fall 2021.

10.3.3 Results

4 CDTC supports numerous wildlife species. General observations of wildlife species observed during the studies to date are described below by species group.

Ten species of amphibian and six species of snake were recorded at 4 CDTC. Wildlife studies observed movements of numerous Spotted Salamanders (*Ambystoma maculatum*) to breeding areas within roadside ditches. Western Chorus Frog (*Pseudacris triseriata*), a federally listed SAR, was also recorded. Most wetland habitats have been identified below the upper plateau, closer to Georgian Bay; as a result, there are few amphibian breeding areas identified within the proposed Reservoir footprint, with only one area confirmed to contain breeding amphibians, including Western Chorus Frog.

Ninety-five species of breeding birds were recorded during studies to date. The variety in species relates to the availability of diverse habitats in the area, including the woodlands that are common throughout the landscape, the open grasslands and shrub thickets commonly encountered on the upper and lower plateaus (see Section 10.1.3), and the wetlands near the shore of Georgian Bay (CWS 2014). Of the species observed, seven are both federally and provincially listed SAR. Several bird species identified by the Saugeen Ojibway Nation Environment Office as being of importance to Saugeen Ojibway Nation were observed during the breeding season, including Bald Eagle (*Haliaeetus leucocephalus*); however, no evidence of nesting by this species was found within the area.

Bat maternity roosting habitat is widely available within the large extent of woodlands present at 4 CDTC. All eight species of bats known to occur in the province of Ontario were recorded during the studies including seven SAR, three that are both federally and provincially listed, three that are federally listed, and one that is provincially listed. Trail cameras identified several large mammals, including Fisher (*Pekania pennanti*), Coyote (*Canis latrans*), White-Tailed Deer (*Odocoileus virginianus*), and Black Bear (*Ursus americanus*). The Black Bear is a species identified by the Saugeen Ojibway Nation Environment Office as being of importance to Saugeen Ojibway Nation. Winter wildlife surveys confirmed winter deer yarding is occurring in the woodlands along the lakeshore, and several other species of mammals and birds were also recorded.

Several species of invertebrate have also been identified, including butterflies, bees, and terrestrial crayfish. Two federally and provincially listed SAR, Monarch (*Danaus plexippus*) and Yellow-banded Bumblebee (*Bombus terricola*), were identified in the area.

The location where the Stayner transmission connection option comes ashore is in Wasaga Beach, between two residential developments. Since the extent of wildlife habitat is limited, the diversity of species in the area is also limited. Given the general absence of suitable habitat features for important life processes, wildlife studies such as targeted species surveys were not conducted in this area. Instead, general species surveys were completed. Species guilds

observed at this location are consistent with those common to coexisting with humans. One species of snake, forty-one species of breeding birds, and eight species of bats were recorded. Though some wetland habitats are present in this area, no amphibians were observed. One federally and provincially listed bird SAR, the Eastern Wood-pewee (*Contopus virens*) was identified. Similar to 4 CDTC, seven bat SAR were identified, three that are both federally and provincially listed, three that are federally listed, and one that is provincially listed.

10.3.3.1 Wildlife Species at Risk

As noted in Sections 10.3.2, several wildlife SAR were identified within the Project area during studies completed to date and are summarized in Table 10-11.

Table 10-11: Wildlife SAR Identified to Date

Species		Status		Observations		
Common Name	**Scientific Name**	**SARA Schedule**	**COSEWIC**	**SARO List**	**ESA, O.Reg. 230/08[1]**	**Comment**
Bobolink	*Dolichonyx oryzivorus*	Threatened	Special Concern	Threatened	Threatened	A few occurrences of this species were encountered in 4 CDTC within open areas that provide suitable breeding habitats.
Eastern Meadowlark	*Sturnella magna*	Threatened	Threatened	Threatened	Threatened	Several occurrences of this species were encountered in 4 CDTC within open areas that provide suitable breeding habitats.
Golden-winged Warbler	*Vermivora chrysoptera*	Threatened	Threatened	Threatened	Threatened	Several occurrences of this species were encountered in 4 CDTC within open areas near woodlands that provide suitable breeding habitats below the upper plateau.
Canada Warbler	*Cardellina canadensis*	Threatened	Special Concern	Special Concern	Special Concern	One singing male was recorded within suitable breeding habitat near the shoreline of Georgian Bay in 4 CDTC.
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern	Special Concern	Special Concern	Special Concern	Several occurrences of this species were encountered in 4 CDTC within open areas that provide suitable breeding habitats.

Species		Status		Observations		
Common Name	**Scientific Name**	**SARA Schedule**	**COSEWIC**	**SARO List**	**ESA, O.Reg. 230/08[1]**	**Comment**
Eastern Wood-pewee	*Contopus virens*	Special Concern	Special Concern	Special Concern	Special Concern	Several occurrences of this species were encountered at 4 CDTC within all wooded areas that provide suitable breeding habitats, and a single observation was made in suitable breeding habitat where the Stayner transmission connection option comes ashore.
Eastern-Whip-poor-will	*Antrostomus vociferus*	Threatened	Threatened	Special Concern	Special Concern	Eastern-Whip-poor-will were observed at 4 CDTC within suitable breeding habitat southeast of the proposed Powerhouse.
Wood Thrush	*Hylocichla mustelina*	Threatened	Threatened	Special Concern	Special Concern	Several occurrences of this species were encountered in 4 CDTC within all wooded areas that provide suitable breeding habitats.
Barn Swallow	*Hirundo rustica*	Threatened	Special Concern	Special Concern	Special Concern	One structure within 4 CDTC was found to contain nests of this species.
Eastern Milksnake	*Lampropeltis traingulum*	Special Concern	Special Concern	N/A	N/A	One individual of this species was encountered in 4 CDTC under an artificial cover object within suitable habitat.
Western Chorus Frog	*Pseudacris triseriata*	Threatened	Threatened	N/A	N/A	Several occurrences of this species were encountered in 4 CDTC within suitable breeding habitats primarily east of, but also within, the proposed Reservoir.

Species		Status		Observations		
Common Name	**Scientific Name**	**SARA Schedule**	**COSEWIC**	**SARO List**	**ESA, O.Reg. 230/08[1]**	**Comment**
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered	Endangered	Endangered	This species has been commonly recorded at both 4 CDTC and where the Stayner transmission connection option comes ashore. Woodland communities at these locations provide suitable conditions for roosting/maternity roosting.
Northern Myotis	*Myotis septentrionalis*	Endangered	Endangered	Endangered	Endangered	This species was recorded in low numbers at both 4 CDTC and where the Stayner transmission connection option comes ashore. Woodland communities at these locations provide suitable conditions for roosting/maternity roosting, though low recorded numbers suggest roosting may not be common in these areas.
Tri-coloured Bat	*Perimyotis subflavus*	Endangered	Endangered	Endangered	Endangered	This species was recorded in low numbers at both 4 CDTC and where the Stayner transmission connection option comes ashore. Woodland communities at these locations provide suitable conditions for roosting/maternity roosting, though low recorded numbers suggest roosting may not be common in these areas.

Species		Status		Observations		
Common Name	**Scientific Name**	**SARA Schedule**	**COSEWIC**	**SARO List**	**ESA, O.Reg. 230/08[1]**	**Comment**
Eastern Small-footed Myotis	*Myotis leibii*	N/A	N/A	Endangered	Endangered	This species has been commonly recorded at both 4 CDTC and where the Stayner transmission connection option comes ashore. Woodland communities at these locations provide suitable conditions for roosting/maternity roosting.
Eastern Red Bat	*Lasiurus borealis*	N/A	Endangered	N/A	N/A	This species has been commonly recorded at both 4 CDTC and where the Stayner transmission connection option comes ashore. Woodland communities at these locations provide suitable conditions for roosting/maternity roosting.
Hoary Bat	*Lasiurus cinereus*	N/A	Endangered	N/A	N/A	This species has been commonly recorded at both 4 CDTC and where the Stayner transmission connection option comes ashore. Woodland communities at these locations provide suitable conditions for roosting/maternity roosting.
Silver-haired Bat	*Lasionyvteris noctivagans*	N/A	Endangered	N/A	N/A	This species has been commonly recorded at both 4 CDTC and where the Stayner transmission connection option comes ashore. Woodland communities at these locations provide suitable conditions for roosting/maternity roosting.

Species		Status		Observations		
Common Name	**Scientific Name**	**SARA Schedule**	**COSEWIC**	**SARO List**	**ESA, O.Reg. 230/08[1]**	**Comment**
Monarch	*Danaus plexippus*	Endangered	Endangered	Special Concern	Special Concern	Several Monarch adults and some larvae were observed within suitable nectaring and breeding habitat within 4 CDTC.
Yellow-banded Bumblebee	*Bombus terricola*	Special Concern	Special Concern	Special Concern	Special Concern	Single individual was observed within suitable nectaring and breeding habitat within 4 CDTC.

Note:

[1] O. Reg 230/08 has recently been revoked by the Government of Ontario and will be replaced with the SCA. However, while the SCA is not yet in effect, species protections in the proposed SCA would not apply to migratory bird species protected under the Migratory Birds Convention Act.

10.3.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to wildlife and wildlife habitat. Concerns identified through engagement activities that relate to wildlife and wildlife habitat are also identified along with preliminary approaches to mitigate these potential Project related effects.

10.3.4.1 Potential Effects of the Project on the Environment

The construction and operation of the Project has the potential to result in effects to wildlife and wildlife habitat, including SAR and migratory birds. Construction activities, primarily the clearing of vegetation and ground surface disturbance, have the potential to result in direct and indirect changes to wildlife habitats or the use of those habitats by wildlife species. Physical barriers, sensory disturbance, or vegetation removal (i.e., gaps in forested habitat) may also change wildlife movement patterns. Changes in wildlife mortality may occur from site preparation, vehicular traffic, and trapped wildlife. During operations sensory disturbance and Project vehicles may affect wildlife habitat, movement patterns, and mortality as a result of vehicle movement, building strikes or human-wildlife interactions.

TC Energy will work with Indigenous rights-holders, Indigenous groups, federal departments and provincial agencies, and the public, as well as through Saugeen Ojibway Nation guidance and participation in terrestrial field studies, to collaboratively develop approaches to avoid or reduce effects on wildlife-supporting ecosystems. This may include design or siting optimization to reduce interaction with wildlife and wildlife habitat, such as reducing habitat loss by reusing existing disturbances or constructing using minimal surface disturbance techniques (e.g., trenchless installation), where appropriate.

Table 10-12 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to wildlife and wildlife habitat.

Table 10-12: Potential Effects of the Project on Wildlife and Wildlife Habitat

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Potential Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change to habitat	• Direct loss or alteration of habitat from vegetation removal and ground disturbance	C	C	C
	• Indirect loss or alteration of habitat effectiveness through sensory disturbance	C/O	C	C
Change in wildlife movement	• Alteration or impediment of wildlife movement due to physical barriers, sensory disturbance, or vegetation removal (i.e., gaps in forested habitat)	C/O	C	C
Change in mortality risk	• Ground disturbance and vegetation clearing resulting in physical destruction of key habitat features (e.g., nests, dens, hibernacula)	C	C	C
	• Vehicle-wildlife collisions and ground disturbance, including accidental mortality of small, less mobile species or individuals (e.g., small rodents, amphibians, reptiles, juvenile birds)	C/O	C	C
	• Collisions with Project buildings (e.g., windows) or infrastructure	O	C	O
	• Trapped wildlife (e.g., excavation areas)	C	-	-
	• Wildlife-human conflict	C/O	C	C/O

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

10.3.4.2 Preliminary Comments Received and Preliminary Mitigation

Table 10-13 and Table 10-14 provide a summary of wildlife related concerns identified during early engagement and presents potential measures to be taken to address or to further understand each concern. During early engagement with Indigenous rights-holders, Indigenous groups, the public, and government agencies/departments predominant concerns raised included affects to species of cultural importance (e.g., Bald Eagle, Black Bear) and SAR, as well as how wildlife will interact with the Reservoir.

Table 10-13: Preliminary Comments Related to Wildlife and Wildlife Habitat

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Will the Reservoir attract wildlife	• Change to habitat • Change in wildlife movement	• While it is possible that mobile wildlife such as birds may temporarily land within the Reservoir, waters within the Reservoir do not pose a risk to wildlife. The design of the Reservoir is not expected to provide wildlife suitable conditions for extended use due to the anticipated coarse and unvegetated surfacing and frequently fluctuating water levels during operation. TC Energy will develop and implement environmental management plans that will incorporate industry-standard and Project specific mitigation measures to reduce the potential for wildlife related interactions.
Concerns about Project development, construction and operation impacting SAR	• Change to habitat • Change in wildlife movement • Change in mortality risk	• TC Energy will conduct habitat clearing outside of the migratory bird nesting and bat roosting periods wherever possible to avoid effects on nesting birds or roosting bats and comply with avoidance guidelines and other provisions of *the Migratory Birds Convention Act,* and SARA. • TC Energy will develop protocols and specific mitigations to reduce potential for interactions with wildlife, especially SAR. Where there is the potential to affect SAR, the mitigation hierarchy of avoidance, mitigation and offsetting will be applied. Where impacts cannot be fully avoided, a SARA permit and/or approval under the SCA, as applicable, will be sought to allow mitigation (including offsetting) to be implemented under the terms of the permit.

Table 10-14: Preliminary Indigenous Concerns related to Related to Wildlife and Wildlife Habitat

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concern that the Project will result in habitat destruction, fragmentation, and access restrictions that would alter wildlife movement patterns	• Change to habitat	• Sequencing of construction activities will be planned to reduce potential interactions with wildlife to the degree possible. Mitigation measures will be developed to address potential impacts and reduce negative effects. • TC Energy will conduct habitat clearing outside of the migratory bird nesting, migratory bat, and bat roosting periods wherever possible to avoid effects on nesting birds or roosting bats and comply with avoidance guidelines and other provisions of *the Migratory Birds Convention Act* and SARA. • Where construction activities are initiated during breeding or migratory periods, appropriate surveys will be conducted in advance and appropriate avoidance measures will be evaluated in the event of the identification of a wildlife feature. • TC Energy will work with Indigenous rights-holders, Indigenous groups, federal departments and provincial agencies, and the public, as well as through Saugeen Ojibway Nation guidance and participation in terrestrial field studies, to collaboratively develop approaches to avoid or reduce potential effects on wildlife-supporting ecosystems. This may include design or siting optimization to reduce interaction with wildlife and wildlife habitat. • Wildlife studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures, including potential terrestrial habitat offsets.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding impacts of the Project and development on the long-term sustainability of animal and plant populations	• Change to habitat • Change in wildlife movement • Change in mortality risk	• TC Energy will work with Indigenous rights-holders, Indigenous groups, federal departments and provincial agencies, as well as through Saugeen Ojibway Nation guidance and participation in terrestrial field studies, and the public to collaboratively develop approaches to avoid or reduce effects on wildlife and vegetation. This may include design or siting optimization to reduce interaction with vegetation, wildlife and wildlife habitat. • Wildlife and vegetation studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures, including potential terrestrial habitat offsets.
Concerns about Project construction and operation impacting wildlife and specifically, Black Bears, Bald Eagles, and other wildlife species which are of importance to Saugeen Ojibway Nation	• Change to habitat • Change in wildlife movement • Change in mortality risk	• TC Energy will work with Indigenous rights-holders, Indigenous groups, federal departments and provincial agencies, as well as through Saugeen Ojibway Nation guidance and participation in terrestrial field studies, and the public to collaboratively develop approaches to avoid or reduce effects on wildlife-supporting ecosystems. This may include design or siting optimization to reduce interaction with wildlife and wildlife habitat, such as reducing habitat loss by reusing existing disturbances or constructing using minimal surface disturbance techniques (e.g., trenchless installation), where appropriate. • Wildlife studies will continue to inform design and operational parameters which may be refined, as necessary and feasible, to increase protective measures, including potential terrestrial habitat offsets.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding potential effects to SAR	• Change to habitat • Change in wildlife movement • Change in mortality risk	• Sequencing of construction activities will be planned to reduce interactions with wildlife to the degree possible. Mitigation measures will be developed to address potential impacts and reduce negative effects. • TC Energy will conduct habitat clearing outside of the migratory bird nesting, migratory bat, and bat roosting periods wherever possible to avoid effects on nesting birds or roosting bats and comply with avoidance guidelines and other provisions of *the Migratory Birds Convention Act, 1994* and SARA. • Where construction activities are initiated during breeding or migratory periods, appropriate surveys will be conducted in advance and appropriate avoidance measures will be evaluated in the event of the identification of a wildlife feature. • Where the potential to affect SAR exists, the mitigation hierarchy of avoidance, mitigation and offsetting will be applied. Where impacts cannot be fully avoided, a SARA permit and/or approval under the, as applicable, will be sought to allow mitigation to be implemented under the terms of the permit.

11 GHG Emissions

Understanding the contributions of GHG emissions from project activities is an increasingly important consideration of environmental regulation. Global GHG emissions are a primary cause of global climate change and the Government of Canada has made international commitments, such as the Paris Agreement, to limit emissions of GHGs from anthropogenic sources.

In 2021, the Government of Canada committed to achieving net-zero emissions by 2050 in Canada's *Net-Zero Emissions Accountability Act*. The Act established Canada's 2030 greenhouse gas emissions target at 40% to 45% below 2005 levels, with an interim objective of 20% below 2005 levels by 2026. Based on the most recent projections reported in the 2023 Progress Report, Canada is on track to exceed the previous 30% target below 2005 levels by 2030 and 20% emissions reductions below 2005 levels by 2026. In accordance with Canada's *Net-Zero Emissions Accountability Act*, the Government of Canada is required to set progressively more ambitious GHG emissions targets for 2035, 2040 and 2045 (ECCC 2023).

Because each GHG acts on the atmosphere differently, the total GHG emissions from the Project are presented on a CO_2e basis. Each GHG's global warming potential (GWP) relates the mass of GHG released to the equivalent mass of CO_2 that would be released to cause the same warming effect. The GWPs that will be applied to the Project are the same as those used in Canada's National Inventory Report.

One of the factors to be considered through the IA process is the extent to which the Project can hinder or contribute to the Government of Canada's ability to meet its commitments with respect to climate change. The *Strategic Assessment of Climate Change* (SACC) (ECCC 2020) describes the information required for the Project and explains how IAAC, with support from ECCC, will review, comment on, and complement this information.

The construction phase of the Project is expected to generate GHG emissions primarily released from hydrocarbon fuel combustion that occurs during the operation of vehicles and construction-related equipment. The principal GHG's expected to be emitted include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). In addition, GHG emissions are anticipated to be released because of removing/clearing of vegetation and soil, which release GHG emissions as the carbon that was stored in the vegetation and soil are oxidized for carbon dioxide. Other GHGs, such as those used as refrigerants or electrical insulation, are not currently planned to be used.

During operation, the Project will not directly release GHG emissions during electricity production. Indirectly, electricity taken from the Ontario electrical system during low demand to pump water to the Reservoir may have GHG emissions associated with its production, noting that the Ontario electricity system to be relied upon for electricity is more than 90% emissions-free (IESO 2023b). The Project will store this low GHG emission intense energy and redistribute it to the Ontario electrical system in times of demand, reducing the need for other electrical peaking generation that is typically provided by higher GHG-emitting generators, such as natural gas generation under the current Ontario electrical system. As such, the Project will produce lower GHG emission intensity energy than would be expected to be generated through fossil fuel sources. Over time, the Project, once operational, will facilitate a reduction of GHG emissions from the generation of electrical power in Ontario by allowing for increased reliance on intermittent power sources (e.g., wind) by building resilience into the Ontario electrical system.

While the facility itself is not anticipated to be an emitter of GHGs, nominal GHG emissions will result from maintenance activities from the combustion of hydrocarbon fuels as needed throughout the Project lifetime.

11.1 Preliminary GHG Estimates

An accurate estimation of construction related GHG emissions requires a robust understanding of the details of construction planning that will become available as Project design and engineering advance. Early engagement raised questions about the amount of construction GHG emissions; however, details needed for a Project-specific estimate were not available. Recognizing this recurrent engagement question, a preliminary high-level estimate of potential construction GHG emissions was prepared using very early Project assumptions.

The preliminary estimate was developed by scaling the reported construction GHG emission estimates for two large development projects: the Site C Dam on the Peace River in British Columbia and the East-West Tie Transmission Line in northern Ontario. Both developments filed construction GHG estimates as part of their regulatory processes. The Site C Dam represents a large hydroelectrical development not dissimilar in terms of civil construction activities to the early concept for the Project. The East-West Tie, while substantially larger than the initial concept for the Project, provided an example of a scalable linear transmission line project.

The estimate of GHG emissions from Project construction was made by comparing the workforce (indicative of the use of vehicles and equipment) and land clearing for the two example projects to the preliminary predicted workforce and land clearing for the Project. The result of this comparison provides estimated annual GHG emissions of 108,755 tonnes (t) CO_2e per year of construction, based on global warming potentials of 1 (CO_2), 25 (CH_4), and 298 (N_2O). Assuming a conservative five-and-a-half-year construction period, the preliminary

estimate of total construction GHG emissions from the Project is 598,153 t CO_2e over the five-and-a-half-year period.

In comparison, initial analysis of the Project's operations shows that the Project has the potential to reduce Ontario's electricity system CO_2 emissions by approximately 490,000 t/year, on average (Navigant 2020).

Planning of the Project continues to progress, including construction design, materials and methods, and operation parameters. An updated inventory will be developed and Project-specific GHG emissions estimates for construction will be prepared. The updated inventory and emissions estimate will follow the guidance described in the SACC (ECCC 2020).

11.2 Preliminary Comments Received

Through engagement efforts to-date with Indigenous rights-holders, Indigenous groups, the public, and government agencies, TC Energy has heard that potential GHG emissions from construction of the Project are a concern. The largest contribution to construction GHG emissions is expected to be related to the Reservoir construction. Table 11-1 and Table 11-2 provide a summary of concerns and presents potential measures to be taken to address or to further understand each concern.

Table 11-1: Preliminary Concerns Related to GHG Emissions

Concern Raised During Engagement	Potential Effect	Existing Knowledge or Preliminary Response
Concern that construction activities (such as fuel for equipment and trucks and concrete production) and operational GHG emissions, will create more GHG emissions than the Project will offset over its operating lifespan.	• Change to GHG Emissions	• TC Energy acknowledges that construction of a major infrastructure project will result in GHG emissions. A preliminary coarse estimate of construction GHG emissions was prepared by scaling calculations for the Site C Dam and the East-West Tie Transmission Project, as outlined in this document. This very conservative estimate indicated that construction could result in approximately 598,153 t CO_2e over the five-and a half year period. • During operations, the Project is anticipated to offset approximately 490,000 t CO_2e annually. • Based on the coarse preliminary construction GHG emissions estimate, operation of the Project is expected to fully offset construction GHG emissions within about one year. Every subsequent year of operation would result in an overall reduction of GHG emissions from the Ontario electrical system. While system operation scenarios are expected to change over time, the complete elimination of natural gas-fired generation is not expected before 2035 based on recent IESO studies (IESO 2022a).

Concern Raised During Engagement	Potential Effect	Existing Knowledge or Preliminary Response
How will TC Energy manage methane, carbon dioxide and other problematic GHG emissions that will be produced by the Reservoir	• Change to GHG Emissions	• The first stage of construction of the Reservoir will include clearing of timber and other vegetation, stripping of soils and subsoils, and ultimately excavation into bedrock. The Reservoir will effectively be a rock basin without vegetation; no decomposition of organic materials to form GHG emissions (particularly methane) is expected. • Water in the Reservoir will be cycled on a regular basis during operation (i.e., typically once every 24 hours). Given this relatively short residency period in the Reservoir, it is not likely to support substantive aquatic vegetation growth and production of methane, carbon dioxide, or other GHGs as by-products of organic matter decomposition.

Table 11-2: Indigenous Concerns Related to GHG Emissions

Concern Raised During Engagement	Potential Effect	Existing Knowledge or Preliminary Response
How will the Project contribute to lower GHGs	• Change to GHG Emissions	• The electricity required to move water into the Reservoir during operation is expected to be the excess energy from the Ontario electrical system generated during low-demand periods. Most of this energy would come from existing wind, hydroelectric or nuclear power generation, which have lower GHG emission intensities compared to hydrocarbon-powered power generation. • When needed to meet peak demand, the water in the Reservoir is released through turbines to produce electricity without the need for hydrocarbon fuel combustion. In this way, the excess energy that would other otherwise be exported or wasted is returned to Ontario to meet the province's electricity needs. • Instead of consuming hydrocarbons using natural gas generation to meet peak demand as the province currently does, the Project would reduce this need for gas peaking generation, reducing Ontario's reliance on hydrocarbon fuels during high demand periods. The Project is anticipated to reduce an average of 490,000 t of CO_2e emissions per year (Navigant 2020).

12 Socio-Economic Context

12.1 Social Context

The Project is located primarily in Grey County, which is an area known for its rolling farmlands and scenic views of Georgian Bay. Grey County is located approximately 160 km northwest of Toronto and has a population of approximately 100,000 people and a density of 22.4 people per square kilometre. The County is predominantly a rural area with a strong agricultural sector and a suite of recreational opportunities. The area is a popular tourist destination and offers visitors and residents recreational cottages, hotels, restaurants, wineries and orchards, galleries, retail outlets; recreational activities such as boating, fishing, hiking, biking, and skiing; and recreational attractions including national, provincial, and regional parks, rural gardens, museums, and commercial resorts.

The City of Owen Sound (population 21,600) is the largest urban center within Grey County and the Municipality of Meaford is the urban area located closest to the Project (Statistics Canada 2021). The Municipality of Meaford (population 11,500) has various amenities including an arena and community centre, swimming pool, community hall, library, museum, parks and trails, a downtown shopping district, and beaches (Municipality of Meaford 2023).

Grey County also hosts DND's 4 CDTC, located on the shores of Georgian Bay northwest of Meaford. 4 CDTC is an active Canadian Forces Base that is primarily used for training, with multiple training ranges and a Garrison that acts as a central living and working area. The 4 CDTC Garrison is located immediately west of the Reservoir and includes buildings and other infrastructure including administrative and maintenance buildings, classrooms, support services (including a daycare), and temporary and permanent residential facilities. A drinking water intake in Georgian Bay provides 4 CDTC with potable water. The Garrison is publicly accessible, while other areas of the base have restricted access. 4 CDTC permanently employs 347 personnel and conducts training for an additional 600 soldiers in any given week (DND 2025). There are three permanent accommodation buildings with approximately 100 beds at the Garrison, with temporary accommodations (including heated tents) for another 1,000 beds and 11 bivouac sites capable of supporting an additional 200 personnel (DND 2025).

Project components are also proposed within Simcoe County, which is immediately east of Grey County and approximately 120 km north of Toronto. Including the City of Barrie and City of Orillia, Simcoe County has a population of approximately 533,000 people with a density of 110.6 people per square kilometer (Statistics Canada 2021). The Town of Wasaga Beach (population 24,800), the community in Simcoe County where the Stayner transmission connection option is proposed to come ashore, has amenities including an arena, community centre and library as well as Wasaga Beach Provincial Park. The Township of Clearview (population 14,800) is the community where the Stayner transmission connection option is

proposed to tie into Hydro Ones Stayner Transformer Station, has amenities including community halls, tourism and heritage centre, libraries, arenas, curling rinks, parks and sports fields.

The combined regional population is approximately 634,000 with the majority (85%) located in Simcoe County and the remaining 15% in Grey County. The regional population grew at a faster rate than the province as a whole (10% versus 5%, respectively) between 2016 and 2021. This growth trend is higher in Simcoe County (11%) and lower in Grey County (7.5%) but still above the provincial average. The Municipality of Meaford was one of the slower growing communities within Grey County, having increased by 4.5% between 2016 and 2021. Communities located near the southern edge of the region have experienced higher growth rates, influenced by people relocating from the Greater Toronto Area to communities in the broader area still within commuting distance.

The region has a diverse mix of ethnic and cultural backgrounds as it has consistently attracted immigration from different parts of the world. In terms of ethnic origin, the region is strongly represented by the United Kingdom, with 93% of the Municipality of Meaford, 87% of Grey County, and 68% of Simcoe County residents indicating having English, Irish or Scottish ancestry as part of their ethnic origin (Ontario average 45%). The region in general has a population that is older than the provincial average. The average age in the Municipality of Meaford is 48.8 years, Grey County 45.4, and Simcoe County 42.6. The average age in Ontario is 41.8 (Statistics Canada 2021).

In terms of regional infrastructure and services, Grey County provides healthcare, emergency and fire services, and garbage and recycling collection to residents. Grey County has advanced healthcare services and supports operated by the Brightshores Health System (Brightshores) (Grey County 2023). Brightshores services are further discussed in Section 13. Grey County offers public transportation and specialized transit services for people with mobility needs as well as regular road and sidewalk maintenance. Police services are provided by the Ontario Provincial Police including a detachment in Meaford, and the Canadian Coast Guard patrols the coastline. The Bruce Nuclear Generating Station is located approximately 83 km from the Project.

Simcoe County provides residents and visitors with similar services. The County of Simcoe Paramedic Services provides paramedic services throughout the County, while the South Georgian Bay Community Health Centre offers an array of health services to Wasaga Beach and neighbouring areas. Regional transit services include Wasaga Beach Transit, Simcoe County LINX, and Barrie Transit. Simcoe County also partners with organizations to provide assisted transportation to seniors and people with disabilities for non-urgent medical appointments.

The region has a variety of visitor accommodations, including hotels and motels, resorts, bed and breakfast accommodations, campgrounds and RV parks.

The Municipality of Meaford and Wasaga Beach provide potable water and water treatment services for residents, while most rural properties in the region are serviced by private wells and septic systems.

12.2 Economic Context

The regional economy is diverse, ranging from agriculture and commercial fishing operations to advanced manufacturing. Other sectors include tourism and retail/commercial services for residents, including part-time cottagers. The region attracts visitors throughout the year through recreational activities such as boating, fishing, hiking, biking, and skiing.

The top sectors of employment in the region include retail, construction, manufacturing, health care and social assistance. These four sectors represent nearly half of the region's labour force and reflect relatively more share to total employment than the provincial average for each of these sectors. Similar to other Canadian communities, construction in the region employs mostly men+[18] while health care jobs are predominantly filled by women+ (Statistics Canada 2021).

Grey County, including the Municipality of Meaford, is an agri-tourism and cultural destination known for its local food agri-production, including apples, garlic, hops, herbs, honey, maple syrup as well as wineries, breweries, and cideries. The Municipality of Meaford is focusing on the development of its waterfront to support revitalization of its downtown commercial core, attracting commercial developments to its harbour area and developing new residential condominiums (Municipality of Meaford 2018). Other economic development priorities include building a business-friendly and ready-to invest community, with focus on sustainable investment. Community projects are financed through government revenue. Industries of focus in Simcoe County include advanced manufacturing, aerospace, life sciences, agribusiness, and tourism (Simcoe County 2023).

Unemployment rates in the region vary by community, as identified in the 2021 Federal Census: Municipality of Meaford (10.2%), Grey County (9.2%) and Simcoe County (9.2%) (Statistics Canada 2021). More recent employment statistics are available by economic regions. As of June 2025, the reported unemployment rate by economic regions was 4.3% in the Bruce Peninsula economic region, which encompasses Grey County and the Municipality of Meaford, and 6.4%, in the Kitchener–Waterloo–Barrie economic region, which includes Simcoe County. The provincial unemployment rate in June 2025 was 7.8% (Statistics Canada 2025).

[18] The "+" sign reference with women and men is a new gender definition used in the 2021 Federal Census whereby the category is inclusive of cis, transgender and some non-binary people within each gender.

Despite lower unemployment, median incomes in the region are lower compared to the Ontario average with the exception of Simcoe County. The median total income for all individuals in 2020 was $39,600 in the Municipality of Meaford, $39,200 in Grey County, $41,600 in Simcoe County, compared to a median income of $41,200 in Ontario. In all instances, men+ had higher median income compared to women+. The income differential between men+ and women+ in Grey County (25%) including the Municipality of Meaford is similar to the provincial average (24%), while the differential in Simcoe County is higher (30%). The prevalence of low income (individuals, all age groups) in the region is: 10.7% in the Municipality of Meaford, Grey County (12.1%), Simcoe County (8.1%) compared to Ontario (10.1%) and nationally (11.1%). Low-income prevalence is also more common among women+ than men+ in all geographies, although the rate of low-income women+ in Simcoe County is below the men+ provincial average (Statistics Canada 2021).

The Municipality of Meaford is generally considered an affordable place to live in comparison to larger urban centres in Ontario, such as Toronto. However, the median house price in the Municipality of Meaford is $600,000. The development of attainable housing is one of the Municipality's priorities. Housing in the region is relatively more affordable than the provincial average. The proportion of households (renters and owners) spending more than 30% of income on housing costs in the region includes: Municipality of Meaford 19%, Grey County 19%, Simcoe County 23%; the provincial average is 24% (Statistics Canada 2021).

The two counties in the region and the Municipality of Meaford report stable financial positions. Grey County reported annual revenues of $159 million in 2022, with the majority of revenues coming from government transfers (44%) and taxation (41%). Total expenses for the year were $146 million, allowing the County to increase its total accumulated surplus to $278 million (Grey County 2023). Simcoe County reported annual revenues of $501 million in 2021, with the majority of revenues coming from government transfers (40%) and taxation (37%). Total expenses for the year were $477 million. The County reported an annual surplus of $23 million and an accumulated surplus of $984 million (Simcoe County 2023). The Municipality of Meaford reported annual revenues of $30.7 million in 2022, with the majority coming from taxation (57%) and fees/user charges (26%). The Municipality reported an annual surplus of $5.4 million and an accumulated surplus of $106 million (Municipality of Meaford 2023).

12.3 Baseline Work Completed to Date and Planned Future Work

In conjunction with area organizations, TC Energy established the CLC to identify and develop further understanding about potential social and economic issues of concern as well as opportunities the Project presents to local communities and how to best implement manage/address issues and enhance opportunities. As identified in Section 8, the CLC has been put on pause as TC Energy follows the Municipality of Meaford's request to engage the public through PSAC. The CLC membership is diverse and includes representatives from Saugeen Ojibway Nation, the Municipality of Meaford, Sunnyside Cottager Association, and Brightshores, among others. See Section 8.2.1 for details on this group. To date, CLC/PSAC engagement regarding the Project has identified community member's priority concern of safety in engineering and design of the Project.

The CLC/PSAC will continue to provide a forum for regular information exchange between key organizations, and TC Energy will continue to work with the committee to address potential Project-related issues (See Section 8 for additional details).

Other work undertaken by TC Energy related to Project economic impacts include a study to determine the Project economic contributions and social value of Project investments, focusing on both monetary and well-being impacts, as well as the net economic benefit of the Project (CANCEA 2024). Further, TC Energy undertook a study of potential Project effects to the cost of electricity for Ontario ratepayers (Navigant 2020).

In addition to forming the CLC (and participating in the PSAC), TC Energy has initiated discussions with the Municipality of Meaford on a Community Benefits Agreement, as directed by Municipal Council. The intent is for the Agreement to serve as a mechanism for TC Energy to have a meaningful positive impact on Meaford and area residents. TC Energy will continue engaging with the Municipality of Meaford to work out the details of what is included in the agreement. TC Energy also plans to continue studying the availability of appropriate construction labour in the region to inform ongoing workforce sourcing and accommodation strategy development. Additionally, through planning the Project, TC Energy has already generated short- and long-term economic growth opportunities for local vendors, suppliers, and workers, and has contributed to and participated in community and charitable organizations and events.

12.4 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to the socio-economic environment. Concerns identified through engagement activities that relate to socio-economic conditions are also identified along with preliminary approaches to mitigate these potential Project related effects.

12.4.1 Potential Effects of the Project on the Environment

The construction and operation of the Project has the potential to result in changes that have effects on local and regional infrastructure and services, land or resource use, and employment and economy. The temporary influx of construction workers may create increased demand for accommodation, social and physical infrastructure and utilities. The Project is expected to create in the order of 20 to 30 permanent full-time operations jobs. The population effect associated with employment of this scale is not expected to affect regional infrastructure and services.

The Project will require lands within 4 CDTC, under lease for the duration of the Project, which has potential to impact 4 CDTC activities. Prior to initiation of construction activities, certain 4 CDTC facilities in the footprint of Project components will require relocation, however relocation of 4 CDTC facilities is being assessed under a separate federal process and is not considered part of the Project. Transmission connections both within and outside of 4 CDTC are not expected to interfere with current land uses, although easements may be required to facilitate construction and ongoing maintenance. Should Temporary Construction Facilities be required, TC Energy may acquire property(ies), potentially resulting in a change in land use depending on the use of the land at the time of acquisition. There will be temporary impacts to resource use such as commercial and recreational fishing during construction and potentially into operations.

Positive economic effects from the Project include direct hiring as well as expenditures on goods and services and spin off activities generated in the regional economy during both the construction and operations phases. TC Energy, through its “Hire & Buy Local” program aims to prioritize local employment, materials and vendors to create direct and local benefits and increases downstream spending at local businesses. The Project will also contribute to the provincial gross domestic product, as well as increasing provincial and federal government tax revenue, that in turn, supports the delivery of public programs and services. The Project also increases the generative capacity and flexibility of the Ontario electrical system to help meet peak demand periods.

Effects to community well-being, including to residents and 4 CDTC personnel, in the form of nuisances (noise, dust, traffic, visual) are expected to occur during the construction phase but are expected to be negligible once operations begin. The Project is expected to provide social value benefits to Ontario residents including benefitting those living in rural areas, reducing affordability challenges, and inducing a high well-being impact for all Ontarians (CANCEA 2024).

Table 12-1 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to the socio-economic environment.

Table 12-1: Potential Effects of the Project on Socio-economics Environment

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in Infrastructure and Services	• Potential effects to local commercial accommodations capacity	C	C	C
	• Potential effects to services within 4 CDTC	C/O	C	-
	• Potential population effects to the region	C	C	-
	• Potential effects to local housing market	C	-	-
	• Potential change in transportation and traffic	C	C	C
	• Potential change in demand to social infrastructure and utilities	C	C	C
	• Potential changes to the Ontario electrical system	O	-	-
Change in Land or Resource Use	• Potential effect to commercial and recreation fishing	C/O	-	C
	• Potential change in land tenure	C	C	C
Change in Employment and Economy	• Potential changes in employment	C	-	-
	• Potential changes in Project expenditures on goods and services	C/O	-	C
	• Potential changes to gross domestic product	C/O	-	C
	• Potential changes to labour income	C/O	-	C
	• Potential changes in federal, provincial and local taxes	C/O	-	-
	• Potential changes in access to training resources and opportunities	C/O	-	-

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change to Community Well-being	• Potential well being effects on nearby residents, land users, and 4 CDTC personnel (noise and dust nuisance, workforce interaction, perceived safety and health effects, etc.)	C/O	C	C/O
	• Potential benefit to social value	C/O	-	C

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

12.4.2 Preliminary Comments Received and Preliminary Mitigations

Through engagement efforts to date with Indigenous rights-holders, Indigenous groups, the public, and government agencies, TC Energy heard concerns about the Project's potential socio-economic effects. Table 12-2 provides a summary of socio-economic-related concerns identified during early engagement and presents preliminary measures taken to address or to further understand each concern.

Primary concerns focus on the potential construction impacts of the Project including presence of the workforce, impacts to local and regional infrastructure and nuisance impacts like traffic and noise. Other interests include vendor and job opportunities and potential impacts to utility rates, property values and contributions to the regional tax base.

Table 12-2: Preliminary Comments Related to the Socio-Economic Environment

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns about the construction workforce accommodations: • Where will the construction workforce live/be housed • Effects to community life from location and long-term use of workforce accommodations (if any is constructed for the Project)	• Change in Infrastructure and Services • Change in Land or Resource Use	• TC Energy continues to evaluate labour market capacity and projected Project labour demand. TC Energy will work to hire qualified workers for both construction and operation phases of the Project from local communities. TC Energy continues to evaluate whether potential temporary workforce accommodations will be required for the construction phase. • TC Energy will continue discussing with affected communities and the public regarding potential workforce accommodation options and potential mitigation measures to address potential adverse effects and enhancing the positive spending effects from workers in the region. • An accommodation strategy will be developed and communicated to potentially affected or interested parties. • Construction contractors and TC Energy employees will follow Project policies and procedures on health and safety, environmental protection and local supplier participation to mitigate potential adverse effects. • As part of mitigating any potential GBA Plus effects from the Project, TC Energy and its contractors will follow legislated requirements on Occupational Health and Safety, Harassment-Free Workplace, and create a Project Code of Conduct on ethics and behaviour expectations for all construction workers. If the TC Energy determines a temporary workforce accommodation facility is required, it will implement policies and practices already developed by the company that demonstrate an awareness of GBA Plus interests from diverse groups.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concern that construction related traffic will increase traffic levels and damage local roads	• Change in Infrastructure and Services • Change to community well-being	• TC Energy will implement a traffic management plan with standard and Project- specific mitigation measures. • Ongoing engagement with the public and government officials responsible for transportation, emergency and policing services will continue to identify potential issues and mitigation measures and will inform the Project's traffic management plan. • Construction contractors will follow Project policies and plans related to traffic management including, but not limited to, Motor Vehicle Operation Certification, Code of Conduct, Alcohol and Drug Policy, and Safety Plan.
Concern that construction workforce will create adverse effects to community life	• Change to community well-being	• TC Energy will facilitate the participation of local Indigenous rights-holders and Indigenous groups potentially affected by the Project through employment and contracting opportunities. TC Energy is working to establish a socio-economic agreement with Saugeen Ojibway Nation, including employment opportunities. • Engagement with local communities and the public will continue to identify potential issues related to community's well-being and socio-cultural conditions and build mitigation for potential adverse effects. • TC Energy established the CLC with the participation of local government representatives and local community services to address potential issues. Engagement efforts are being continued through the PSAC, per the Municipality of Meaford's request.
Interest in the economic benefits for the local communities, and potential increased economic prosperity	• Change in Employment and Economy	• TC Energy will work to hire construction workers from local communities to improve positive economic benefits and mitigate potential adverse effects. • The Project's "Hire & Buy Local" program aims to prioritize local employment, materials and vendors to create direct and local benefits and increases downstream spending at local businesses. • Creation of the CLC through the participation of local government and community services representatives, to identify and address potential issues. Engagement efforts are being continued through the PSAC, per the Municipality of Meaford's request. • Engagement with local communities and the public will continue to identify positive economic opportunities related to employment, contracting and procurement of local and Indigenous suppliers.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concern with capacity of local infrastructure and services to handle influx of construction workforce. Should new infrastructure or services be required, concern about who would pay for it	• Change in Infrastructure and Services	• Engagement with local communities and the public will continue to identify potential issues related to community infrastructure and services and build mitigation for potential adverse effects. • TC Energy's creation of the CLC through the participation of local government and community services representatives, to identify and address potential issues. Engagement efforts are being continued through PSAC, per the Municipality of Meaford's request. • Construction contractors will follow Project policies and plans related to traffic management including but not limited to Motor Vehicle Operation Certification, Code of Conduct, Alcohol and Drug Policy, Harassment-Free Workplace Policy, and Safety Plan.
Concerns about how the Project would affect property values	• Change in Infrastructure and Services	• The Project is not expected to have a material effect on property values. Project design features will reduce environmental and visual impacts once construction is complete. The region is expected to remain a desirable place to live and a popular destination for tourists.
Concerns about the value and cost of the Project to Ontario's ratepayers	• Change to community well-being	• The Project will generate positive effects to the local economy such as an increase to the provincial gross domestic product, provincial and federal tax revenues, contracting opportunities, and employment and income benefits. The Project is also expected to improve the stability and supply of electricity in the province. • The Project represents material benefit to Ontario electricity ratepayers through optimization of the existing and future electricity system. By capturing, storing, and redeploying surplus baseload and intermittent power at times when it is needed, the Project will use generated power to offset some of the need for additional power generation from sources like natural gas during peak usage times with the subsequent reduction of power generation costs across Ontario's electric system. Furthermore, enhancing the reliability, affordability and sustainability of the Ontario electrical system will support industrial load growth, an important feature for the growth of business in the province.
Concern the Project may increase utility rates	• Change to community well-being	• The Project is not expected to increase utility rates. For residential and small business customers that buy electricity from their utility, there are two different types of rates (also called prices here). The OEB sets both. Prices are reviewed once a year, on Nov 1, and if necessary, and adjusted (OEB 2023).

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
If most of the Project is on federal land, local communities won't collect taxes, how will local communities benefit	• Change in Employment and Economy	• TC is working with the Municipality of Meaford in developing a Community Benefits Agreement. The Agreement will outline the key long-term benefits the Municipality will receive in relation to the Project, including economic, employment and infrastructure stimuli and supports. Additionally, through planning the Project, TC Energy has already generated short- and long-term economic growth and opportunities for local vendors, suppliers, and workers, and has contributed to and participated in community and charitable organizations and events. • Engagement with local communities and the public will continue to identify positive economic opportunities related to employment, contracting and procurement of local and Indigenous suppliers. The Project is estimated to provide over $1.7 billion in taxation revenue for the federal and provincial governments (CANCEA 2024). • Allocation and application of taxes collected federally and provincially are at the discretion of those governments, however it is possible that some revenue from Project taxes would be applied locally. The Project may generate taxes for the portion of the Project located off of federally owned lands.
Concern about the Project not contributing to the local economy	• Change in Employment and Economy	• A portion of the required workers will need to come from elsewhere in Ontario or Canada to fill specialized roles or supply the large workforce needed during peak construction. However, TC Energy will work to create employment opportunities for residents of Meaford and nearby communities. TC Energy will also work to procure goods and services from local businesses. Construction workers from outside the region will increase spending in local businesses, contributing to the local economy through indirect and induced spending. • TC Energy has engaged labour organizations and Georgian College to leverage apprenticeship and employment opportunities on the Project and to help identify the local available workers. • TC Energy and the Municipality of Meaford are currently negotiating a Community Benefits Agreement. The Agreement will outline the key long-term benefits the Municipality will receive in relation to the Project, including economic, employment and infrastructure stimuli and supports. Additionally, through planning the Project, TC Energy has already generated short- and long-term economic growth and opportunities for local vendors, suppliers, and workers, and has contributed to and participated in community and charitable organizations and events. • The Project's "Hire & Buy Local" program aims to prioritize local employment, materials and vendors to create direct and local benefits and increases downstream spending at local businesses.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concern about job opportunities and supply of local jobs associated with the construction and operation of the Project	• Change in Employment and Economy	• TC Energy will work to hire qualified workers for both construction and operation phases of the Project from local communities to improve positive economic benefits and mitigate potential adverse effects, where possible. • A portion of the required workers will need to come from elsewhere in Ontario or Canada to fill specialized roles or supply the large workforce needed during peak construction. However, TC Energy will work to create employment opportunities for residents of Meaford and nearby communities. TC Energy will also work to procure goods and services from local businesses. Construction workers from outside the region will increase spending in local businesses, contributing to the local economy through indirect and induced spending. • Employment opportunities will be publicized in advance to allow the local workforce to prepare and apply for available jobs. • TC Energy will work with local institutions to enhance training and development opportunities to increase skill and employment benefits to local communities. • TC Energy will encourage access to employment and business opportunities for people with diverse backgrounds (e.g., workers, women, youth, Indigenous people, visible minorities, and members of the 2SLGBTQI+ community).

Table 12-3: Preliminary Indigenous Concerns Related to the Socio-Economic Environment

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding restrictions on access to Project area for recreational use (e.g., hiking, recreational fishing, camping).	Change in Land or Resource Use	• TC Energy acknowledges the Project would occur on lands and waters with a history of Indigenous and non-Indigenous use and occupation. • The Project infrastructure is largely located within 4 CDTC, which is federal land subject to access restrictions and on privately owned lands. Specifically, the Reservoir, Upper Inlet/Outlet Structure, Water Conveyance Structures, and Powerhouse will be within 4 CDTC. While the Lower Inlet/Outlet Structures and associated tunnels will be on and under the adjacent lakebed of Georgian Bay which is provincial Crown land, they will be located within an area subject to an existing Notice to Mariners (identified as area CYD501) issued by the Canadian Coast Guard and is associated with DND's operation at 4 CDTC. The area where the Stayner transmission connection option comes ashore and transmission connections will likely be on private land and along existing roads and rights-of way, or private lands. Where possible and appropriate, siting of surface infrastructure will avoid identified interests. The Project will not privatize existing Crown lands.

13 Human Health

13.1 Human Health Context

The Grey Bruce County has advanced healthcare services and supports operated by the Brightshores, serving approximately 175,000 residents (GBPH 2022). Brightshores operates six hospitals (in Meaford, Markdale, Owen Sound, Southampton, Wiarton, and Lion's Head), all of which offer 24/7 emergency departments (Brightshores 2025). The largest of the six hospitals is in Owen Sound where full range of specialty and diagnostic services are offered. This hospital is approximately 27 km from the Project. Meaford is part of Brightshores and has its own hospital with a wide range of primary and ambulatory services and a 24/7 emergency department, which is located approximately 9km from the Project. Brightshores facilities provide medical and health services including digital health, Mental Health and Substance Use, Indigenous Health, Environmental Health, End of Life Care/Palliative Care, Home and Community Care, Community Care licensing and Healthy Living support.

Residents of the region (i.e., serviced within Brightshores) rate their perceived health as good or very good with 92.6% of residents aged 12 and older stating they are satisfied or very satisfied with life in 2019/2020, which is comparable to other Ontarians (GBPH 2022).

The Municipality of Meaford has a Community Well-Being score of 82, which is higher than the national average of 78.7 for non-Indigenous populations. This score is based on Indigenous Services Canada's Community Well-Being Index, which measures the socio-economic well-being of individual communities across Canada (ISC 2024).

In 1948, the World Health Organization defined health as “a state of complete physical, social and mental wellbeing, and not merely the absence of disease or infirmity” (WHO 1948). In order to achieve this definition of health, the WHO notes, as defined in the 1st International Conference on Health Promotion, Ottawa, 1986, that "an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment”. IAAC, as well as Health Canada, recognizes this broad definition of health.

Health Canada released its *Interim Guidance Document for the Health Impact Assessment of Designated Projects under the Impact Assessment Act* (Health Canada 2022), which was prepared to support the use of Health Impact Assessment (HIA) in IA, where required.

Health Canada also provides general guidance for assessing human health effects in IA (as required), including guidance for human health risk assessment, country foods, noise, air quality, and drinking and recreational water quality (Health Canada 2023a-e). Additional resources assist to incorporate other elements, such as GBA Plus and social determinants of health, into the overall determination of health impacts for a project (IAAC 2020, IAAC 2021, Salerno et al. 2021).

While this section currently focuses on the health based services and supports, consideration of other components, including air quality (Section 9.1), noise (Section 9.2), groundwater (Section 9.5), and surface water (Section 9.6), are also considered when addressing health impacts of a Project.

13.2 Baseline Work Completed to Date and Planned Future Work

Typically baseline work to characterize human health is collected through other technical disciplines such as acoustics (noise and vibration), atmosphere (air quality), climate change, surface water (water quality), socio-economic (social and economic determinants), Indigenous interests, soil and terrain (soil quality), and terrestrial environment (country foods and environmental health). As the Project progresses, data from these technical disciplines will be used to inform Project assessments, as necessary, and additional scoped baseline data associated with health may be collected that focuses on developing community health profiles and identifying biophysical and social determinants of health. This information would be collected from a variety of sources, including local health administrator (e.g., Brightshores) and would be informed by concerns raised from the community, as well as guidance from IAAC and other relevant agencies.

Preliminary engagement to date has included formation of the CLC, which includes representation from groups surrounding the Project, including Brightshores. The CLC provides members with the opportunity to ask questions and raise concerns on various topics of interest, including health. While the CLC has been put on pause, TC Energy will continue to engage the PSAC and Brightshores, as needed.

13.3 Potential Project Effects and Preliminary Mitigation

The following section describes the potential effects that construction and/or operation of the Project could have on the environment, specifically potential effects to health. Concerns identified through engagement activities that relate to health are also identified along with preliminary approaches to mitigate these potential Project related effects.

13.3.1 Potential Effects of the Project on the Environment

Health is defined by the World Health Organization as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. The Project has the potential to affect the health of nearby residents and communities, including the 4 CDTC Garrison, both during construction and operation phases. However, given the location and nature of the Project, there is limited opportunity for human health interactions. The majority of the Project is located on lands with restricted access and many major components will be underground, which substantially reduces potential interactions with Indigenous people or the

general public, such as those that would otherwise potentially be using these lands for hunting or gathering country foods. This restricted access and separation from nearby houses or other receptors also provides a buffer that reduces potential effects from air and noise emissions. Potential effects to the 4 CDTC Garrison will continue to be evaluated and options for management and mitigation will be discussed with DND. Given the low anticipated emissions during operations (i.e., limited to the operation of maintenance vehicles), potential air quality impacts on health are expected to be negligible.

Table 13-1 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to human health.

Table 13-1: Potential Effects of the Project on Human Health

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Interactions with the Environment**	**Pumped Storage Facility**	**Temporary Construction Facilities**	**Transmission Connections**
Change to human health	• Potential effect from electromagnetic field from the transmission connection options	-	-	O
	• Potential effect from soil movement and dust generated during soil stripping and grading, site infrastructure construction, and through vehicle and equipment movement on the construction footprint and unpaved roads	C	C	C
	• Potential effect from air quality contaminants as a result of combustion from vehicular traffic	C/O	C	C
	• Potential effect from noise as a result of Project activity	C/O	C	C
	• Potential effect to social well-being	C/O	C	C/O

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

13.3.2 Preliminary Comments Received and Preliminary Mitigations

Table 13-2 provides a summary of human health related concerns identified during early engagement with Indigenous rights-holders, Indigenous groups, the public, and government agencies and presents preliminary measures taken to address, or to further study the issue.

Table 13-2: Preliminary Comments Related to the Human Health

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Questions and concerns about the potential effect of electromagnetic fields (EMF) from transmission connection	• Change in human health	• TC Energy is evaluating route options for the transmission connection option. • Circuits will be designed to industry standard practices and requirements, including those related to EMF. If required, EMF reduction methods will be considered during detailed design, and studied during the regulatory process. • Health Canada's position is that "The potential health effects of extremely low frequency EMF has been studied extensively. While some people are concerned that long term exposure to extremely low frequency EMF may cause cancer, the scientific evidence does not support such claims" (Government of Canada 2022). In addition, Health Canada suggests "there is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those located just outside the boundaries of power line corridors" (Health Canada 2012).
Concerns about water quality in Georgian Bay and groundwater and the potential effect to community and private well water quality	• Change in human health	• The Reservoir will be constructed on competent bedrock, which will be assessed to understand the potential interactions with surface and groundwater quality and will inform the management strategies to protect local water resources.
Concern about construction related dust	• Change in human health	• As part of pre-construction planning TC Energy will develop management plans that incorporate industry-standard and Project-specific mitigation measures. These plans will incorporate mitigation measures to reduce dust, to the extent practical.
Concern regarding drinking water	• Change in human health	• The protection, sustainability and long-term health of Georgian Bay are threshold issues that will be considered by TC Energy as the Project advances. The Project will be designed to pump and discharge water to and from Georgian Bay and the Reservoir without alteration or treatment.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
		• TC Energy is conducting engineering and environmental studies to better understand the potential effect that the Project could have on the waters of Georgian Bay. The objective is to transfer water while reducing adverse effects. Project-related impacts on drinking water will be considered as part of the IA process.

14 Archaeology and Cultural Heritage

14.1 Environmental Setting

Archaeological and cultural heritage resources are the material, spatial, and landscape expressions of human history and long-standing relationships with place. These resources connect people to the land and hold particular cultural, spiritual, and ancestral importance to Indigenous peoples. They connect people to the land and are highly valued by many non-Indigenous people as an indicator of history and evidence of past human activities on the landscape. Archaeological resources include artifacts and archaeological sites. Artifacts are objects or landscape features created or modified by past human activity, and archaeological sites consist of one or more artifacts as well as the contextual relationships that tie them together. Cultural heritage resources may include landscapes of cultural, sacred, spiritual, and religious significance, as well as built heritage features including residential buildings, farms, industrial or commercial facilities, waterways and water management systems, and streetscapes. The Project is in an area of archaeological potential, characterized by post-glacial shorelines and proximity to water sources that are contributing factors in the distribution and location of indigenous archaeological sites.

Archaeological and cultural heritage resources are protected by a variety of legislation, policies, and standards of practice at both federal and provincial levels. Federal protections for these resources are found in the IAA and the *Cultural Property Export and Import Act*. The management and protection of archaeological and cultural heritage resources on federal lands rests with the department or agency responsible for the subject lands. Guidance for federal land stewards can be found in the Parks Canada *Standards & Guidelines for the Conservation of Historic Places in Canada*, *Guidelines for the Management of Archaeological Resources*, and *Archaeological Heritage Policy Framework*. *The Archaeological Heritage Policy Framework* clearly identifies the federal government's commitment to archaeology:

> *"As our archaeological heritage is a source of inspiration and knowledge, it is the policy of the Government of Canada to protect and manage archaeological resources.... By protecting and managing this resource through policy, legislation and programs, the Government will achieve a general symmetry with international standards and provincial measures."*

Provincial protections for archaeological and cultural heritage resources reside in the *Ontario Heritage Act* and a variety of related legislation, regulations, and policy including the EAA*, R.S.O.*, the *Cemeteries Act, R.S.O.* and the *Funeral, Burial and Cremation Services Act, S.O., c. 33*. The MCM regulates the management of archaeological and cultural heritage resources

respectively. The MCM provides standards and guidelines for the practice of archaeology and cultural heritage management including the *Standards and Guidelines for Consultant Archaeologists*, *Engaging Aboriginal Communities in Archaeology*, the *Standards and Guidelines for Conservation of Provincial Heritage Properties*, and the *Ontario Heritage Toolkit*. Saugeen Ojibway First Nation provides additional standards and guidelines when conducting archaeology assessments within their traditional territory (SON 2025).

14.2 Baseline Work Completed to Date and Planned Future Work

TC Energy is conducting archaeological and cultural heritage studies of lands, both terrestrial and lakebed, that will potentially be impacted by the Project. These studies have been planned and are being executed in collaboration with the Saugeen Ojibway Nation Environment Office.

Studies on 4 CDTC are in federal jurisdiction. There is no designated federal agency providing oversight of archaeological and cultural heritage investigation on federal lands not managed by Parks Canada. To practice sound methods and to maintain symmetry with provincial measures, the archaeological and cultural heritage assessment processes employed for the Project are informed by Parks Canada guidelines and the standards of practice outlined by the Ontario MCM. Studies outside 4 CDTC are within provincial jurisdiction and are conducted in compliance with MCM standards of practice. Georgian Bay falls within provincial jurisdiction under the regulatory responsibility of MCM. Archaeological and culture heritage programs conducted for the Project are informed by process and standards of Saugeen Ojibway Nation.

An Archaeological Overview Assessment (AOA) is the first step in Parks Canada's archaeological assessment process and is equivalent to a provincial Stage 1 Background Study. An AOA of the Project footprint on 4 CDTC was completed in 2022 (ERM 2022). The AOA reviewed the landscape and history of the Project area, assessed its archaeological potential, and identified a strategy for further archaeological study. The AOA identified areas of archaeological potential within the Project area on 4 CDTC to be investigated through an Archaeological Impact Assessment (AIA, equivalent to provincial Stage 2 Property Assessment).

The AIA on 4 CDTC commenced in fall of 2022 and will continue until existing conditions work is completed. The AIA involves test pit survey within areas of archaeological potential. Preliminary findings identified archaeological sites that will require further evaluation.

In 2022, a review of high-resolution bathymetry data collected as part of geotechnical investigations identified three potential shipwrecks using non-intrusive side-scan sonar. These locations have been noted by the Project Team and will be avoided by the routing of the potential transmission connection option. An underwater archaeological assessment will be completed for all marine based Project components, such as the Lower Inlet/Outlet Structure, Marine Access, and lake-based transmission connection (if required).

14.3 Results

The AOA (ERM 2022) on 4 CDTC identified historical buildings, including farmsteads, outbuildings, foundations, and a cooper's shop, within the vicinity of Project. Cemeteries were also identified near but not in conflict with the Project, including the Boyle Family Cemetery which is located north of 9th Line within 4 CDTC. The AOA identified areas of archaeological potential requiring further assessment.

Archaeological work will continue in accordance with appropriate assessment process as the Project design progresses. Studies on 4 CDTC will continue and will be expanded to include the footprint of Project components on 4 CDTC. Additional archaeological studies will be completed for lands impacted by the Project off 4 CDTC in accordance with provincial archaeological requirements.

Cultural heritage studies for the land-based Project components, including the 4 CDTC and the transmission connections will be conducted, specifically a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment.

14.4 Potential Project Effects and Preliminary Mitigation

14.4.1 Potential Effects of the Project on the Environment

Project construction activities have the potential to impact archaeological and cultural heritage resources both on land and under water. These impacts may be direct, such as the removal of the resource or disturbance of sediments in which the resource resides, or indirect, such as impacts from vibrations or soil erosion.

Table 14-1 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to archaeology and cultural heritage.

Table 14-1: Potential Effects of the Project on Archaeology and Cultural Heritage

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change to archaeological resources	• Removal or disturbance of archaeological site or resources	C	C	C
Change to cultural heritage resources	• Removal or disturbance of cultural heritage site or resources	C	C	C

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

14.4.2 Preliminary Comments Received and Preliminary Mitigations

Table 14-2 provides a summary of archaeological and cultural heritage related concerns identified during early engagement with Indigenous rights-holders, Indigenous groups, the public, and government agencies and presents preliminary measures taken to address, or to further study the issue.

Table 14-2: Preliminary Comments Related to Archaeology and Cultural Heritage

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns about structural remains and possible cemeteries associated with the settlement period on 4 CDTC have been raised	• Change to archaeological resources • Change to cultural heritage resources	• TC Energy initiated archaeological assessments on 4 CDTC in 2020 in accordance with relevant federal processes and in collaboration with Saugeen Ojibway Nation. When applicable, provincial standards for archaeological studies are also being applied (refer to Section 14.1). Studies on 4 CDTC will continue and will be expanded to include the footprint of Project components on 4 CDTC. Additional archaeological studies will be completed for lands impacted by the Project off 4 CDTC in accordance with provincial archaeological requirements. • TC Energy will initiate a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment to

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
		document existing cultural heritage resources. These studies will help identify previously unknown archaeological and cultural heritage resources, and if warranted, further work will be undertaken to either avoid the resource or manage it through systematic recovery in consultation with Indigenous rights-holders, Indigenous groups and relevant authorities. • During construction, TC Energy will implement an archaeological chance find protocol, to be developed in collaboration with Indigenous rights-holders and Indigenous groups, to manage previously unknown resources, if found. • TC Energy plans to install substantial components (i.e., Headraces, Tailraces, and Powerhouse etc.) as well as most near-shore infrastructure (e.g., Stayner transmission connection option) using low disturbance techniques (e.g., tunneling, HDD) which will reduce surface disturbances, but may put archaeological and cultural heritage resources at risk. Where possible and appropriate, siting of surface infrastructure will avoid identified archaeological resources.

Table 14-3: Preliminary Indigenous Concerns Related to the Archaeological and Cultural Heritage Environment

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
Concerns regarding impacts to archaeology, heritage, cultural and/or spiritual sites and burial sites and the need to prioritize and assess areas of archaeological potential, particularly areas of high indigenous potential (e.g., areas in proximity to post-glacial shorelines or water sources).	• Change to archaeological resources • Change to cultural heritage resources	• TC Energy initiated archaeological assessments on 4 CDTC in 2020 in accordance with relevant federal processes, and in collaboration with Saugeen Ojibway Nation, including the identification of priority areas for further assessment. Studies on 4 CDTC will continue and will be expanded to include the footprint of associated Project components. Additional archaeological studies will be completed for lands impacted by the Project off 4 CDTC in accordance with provincial archaeological requirements. • Identifying burials, archaeological sites and historical features is an important aspect of the studies undertaken as part of Project development. Burials are considered the most sensitive of cultural sites and avoidance will be a priority.

Concern Raised During Engagement	Potential Effect	Preliminary Approach to Address Concern/ Potential Effect
		• Studies to date have not identified settlement period burials within the Project footprint. Burials are considered unlikely within the Reservoir footprint, considering the very shallow soils over bedrock. Nevertheless, in addition to ongoing archaeological assessment, TC Energy will continue to engage interested Indigenous rights-holders and Indigenous groups to obtain Indigenous knowledge regarding the potential for historical burials. During construction, TC Energy will implement an archaeological chance find protocol, to be developed in collaboration with Indigenous rights-holders and Indigenous groups, to manage previously unknown resources, if found. This will include specific protocol if human remains are identified. • In the event previously unknown burial sites are identified, all activities will immediately be ceased. If unknown burial sites are identified within 4 CDTC, notifications will follow an established protocol including notifying appropriate DND personnel, Saugeen Ojibway Nation, and then law enforcement and the Registrar of the Bereavement Authority of Ontario (if remains do not have a forensic interest). In the situation where human remains are associated with archaeological resources outside of 4 CDTC (i.e., within provincial jurisdiction), the police or coroner and MCM will be notified. TC Energy will work with applicable Indigenous rights-holders and Indigenous groups to determine culturally appropriate measures, where possible.

15 Indigenous Interests

This section of the IPD is based on information that is available to the public or derived from TC Energy's engagement undertaken with Indigenous rights-holders and Indigenous groups potentially affected by the Project (as described in Section 3).

15.1 Indigenous Context

The Project is located within the core territories of Saugeen Ojibway Nation (Figure 1-2), the historic boundaries of the Southern Ontario Treaties (1764-1862). The Project is also located within or near the areas of interest (e.g. Georgian Bay) to First Nation signatories to the Williams Treaties (1923), the Robinson-Huron Treaty (1850), and one non-treaty First Nation (Table 7-1). The Project is also in the areas of interest to the Historic Saugeen Métis and Métis Nation of Ontario.

The Project infrastructure is largely located within 4 CDTC, which is federal Crown land subject to access restrictions, as well as on privately owned lands (see Table 4-1). Specifically, the Reservoir, Upper Inlet/Outlet Structures, Powerhouse and Water Conveyance Structures will be within 4 CDTC. The Lower Inlets/Outlet Structure and associated tunnels, as well as the submarine portion of the Stayner transmission connection, will be on and under the adjacent lakebed of Georgian Bay, which is provincial Crown land. The land-based portions of the transmission connections will be on private land and/or within a right-of-way. Project components are described in further detail in Section 3.

The Project does not intersect reserves under the *Indian Act*, Treaty Land Entitlement lands, lands subject to comprehensive or specific claims, other lands to which a First Nation seeks reserve designation under the Policy on Additions to Reserve and Reserve Creation, or established Métis harvesting areas or settlement lands, as applicable. TC Energy is not aware of lands under known or asserted protective notation, management or land use plans administered by potentially affected Indigenous rights-holders and Indigenous groups that may be impacted by the Project.

Table 15-1 provides the approximate distance from the Project to reserves and communities of Indigenous rights-holders and Indigenous groups (Figure 15-1).

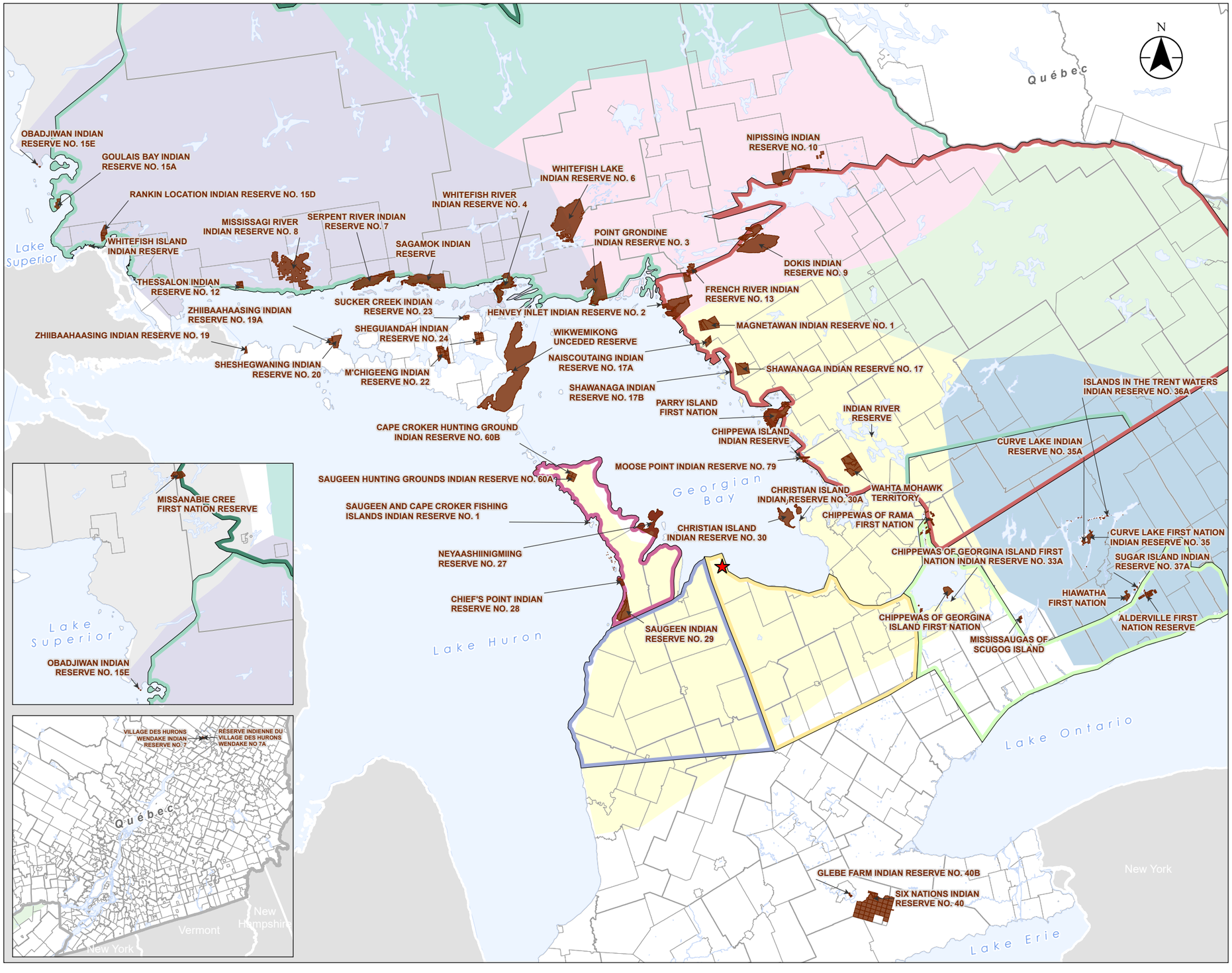
Table 15-1: Proximity of the Project to Indigenous Land Bases[19]

Indigenous Rights-holders and Indigenous Group	Land Base	Pumped Storage Facility (km)[1]
Alderville First Nation	Alderville First Nation Reserve[20]	206
	Sugar Island Indian Reserve No. 37A	205
Atikameksheng Anishnawbek	Whitefish Lake Indian Reserve No. 6	178
Aundeck-Omni-Kaning	Sucker Creek Indian Reserve No. 23	177
Batchewana First Nation	Goulais Bay Indian Reserve No. 15A	377
	Obadjiwan Indian Reserve No. 15E	395
	Rankin Location Indian Reserve No. 15D[20]	348
	Whitefish Island Indian Reserve	354
Beausoleil First Nation	Chippewa Island Indian Reserve	66
	Christian Island Indian Reserve No. 30[20]	35
	Christian Island Indian Reserve No. 30A	43
Chippewas of Georgina Island First Nation	Chippewa Island Indian Reserve	66
	Chippewas Of Georgina Island First Nation[20]	98
	Chippewas Of Georgina Island First Nation Indian Reserve No. 33A	114
Chippewas of Nawash Unceded First Nation	Cape Croker Hunting Ground Indian Reserve No. 60B	86
	Neyaashiinigmiing Reserve No. 27[20]	36
	Saugeen And Cape Croker Fishing Islands Indian Reserve No. 1	53
Chippewas of Rama First Nation	Chippewa Island Indian Reserve	66
	Chippewas Of Rama First Nation[20]	98
	Indian River Reserve	97
Curve Lake First Nation	Curve Lake First Nation Indian Reserve No. 35[20]	180
	Curve Lake Indian Reserve No. 35A	178
	Islands In The Trent Waters Indian Reserve No. 36A	169
Dokis First Nation	Dokis Indian Reserve No. 9	156
Henvey Inlet First Nation	French River Indian Reserve No. 13	142
	Henvey Inlet Indian Reserve No. 2[20]	125
Hiawatha First Nation	Hiawatha First Nation[20]	198
	Islands In The Trent Waters Indian Reserve No. 36A	169
M’Chigeeng First Nation	M'Chigeeng Indian Reserve No. 22	170
Magnetewan First Nation	Magnetawan Indian Reserve No. 1	117
Missanabie Cree First Nation	Missanabie Cree First Nation Reserve	475
Mississauga First Nation	Mississagi River Indian Reserve No. 8	247
Mississaugas of Scugog Island First Nation	Islands In The Trent Waters Indian Reserve No. 36A	169
	Mississaugas Of Scugog Island[20]	148
Moose Deer Point First Nation	Moose Point Indian Reserve No. 79	64

[19] There are no defined populated centers administered by Métis Nation of Ontario Region 7.
[20] Closest populated Indigenous land base to Project component.

Indigenous Rights-holders and Indigenous Group	Land Base	Pumped Storage Facility (km)[1]
Nation Huronne-Wendat (Huron Wendat Nation)	Réserve Indienne Du Village Des Hurons Wendake No 7A	761
	Village Des Hurons Wendake Indian Reserve No. 7[20]	762
Nipissing First Nation	Nipissing Indian Reserve No. 10	191
Sagamok Anishnawbek First Nation	Sagamok Indian Reserve	196
Saugeen First Nation	Chief's Point Indian Reserve No. 28	51
	Saugeen And Cape Croker Fishing Islands Indian Reserve No. 1	53
	Saugeen Hunting Grounds Indian Reserve No. 60A	86
	Saugeen Indian Reserve No. 29[20]	51
Serpent River First Nation	Serpent River Indian Reserve No. 7	218
Shawanaga First Nation	Naiscoutaing Indian Reserve No. 17A	109
	Shawanaga Indian Reserve No. 17[20]	95
	Shawanaga Indian Reserve No. 17B	95
Sheguiandah First Nation	Sheguiandah Indian Reserve No. 24	164
Sheshegwaning First Nation	Sheshegwaning Indian Reserve No. 20	221
Six Nations of the Grand River	Glebe Farm Indian Reserve No. 40B	174
	Six Nations Indian Reserve No. 40[20]	174
Thessalon First Nation	Thessalon Indian Reserve No. 12	277
Wahta Mohawks	Indian River Reserve	97
	Wahta Mohawk Territory[20]	76
Whitefish River First Nation	Whitefish River Indian Reserve No. 4	172
Wikwemikong Unceded Territory	Point Grondine Indian Reserve No. 3	144
	Wikwemikong Unceded Reserve[20]	132
Wuasauksing First Nation	Parry Island First Nation	71
Zhiibbaahaasing First Nation	Zhiibaahaasing Indian Reserve No. 19[20]	260
	Zhiibaahaasing Indian Reserve No. 19A	224

Note:
[1] measured from centroid of Project at 4 CDTC



Stantec

Project Location

Base Features

- First Nations Reserve
- Provincial Boundary
- United States
- Waterbody
- Municipal Boundary - Upper Tier
- Municipal Boundary - Lower or Single Tier

Métis Harvesting Areas

- Abitibi / Temiscamingue
- Georgian Bay
- Historic Sault Ste. Marie
- Kawartha
- Mattawa / Lake Nipissing
- Michipitcoten
- Ottawa River

Ontario Treaties (from Morris 1931)

- Treaty No. 18, October 17th, 1818 (Chippewa)
- Treaty No. 45½, August 9th, 1836 (Saugeen)
- Treaty No. 61, Robinson, Huron, September 9th, 1850 (Ojibwa)
- Treaty No. 72, October 30th, 1854 (Chippewa)
- Treaty No. 9, James Bay 1905, 1906 (Ojibway and Cree)
- Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
- Williams Treaty, October 31st, 1923 (Chippewa)

0 25 50 km

1:2,000,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 Statistics Canada Lambert
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2023.
3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.
4. First Nations Reserves © Government of Canada Open Data (https://open.canada.ca/data/en/dataset/522b07b9-78e2-4819-b736-ad9208eb1067)

Project Location
Meaford, ON

160901072 REV6
Prepared by atarli on 2025-12-17
echnical Review by AW on 2025-07-30

Client/Project
TC ENERGY ONTARIO
ONTARIO PUMPED STORAGE PROJECT

Figure No.
15-1

Title
Proximity of the Project to Indigenous Land Bases

Indigenous rights-holders and Indigenous groups in the region generate economic activity through leasing of lands for cottage properties, as well as revenues to Indigenous-operated parks, camping and wilderness destination businesses and support services such as gas, food and sundries.

Indigenous Services Canada's Community Well-Being Index, an indicator that aggregates data on education, housing, income, and labour force activity, indicate Saugeen First Nation and Chippewas of Nawash Unceded First Nation score slightly higher than the average of Ontario First Nations, but markedly lower than nearby non-Indigenous populations (ISC 2024). Indigenous health data are not broken out in the above sources, but these factors are important pre-determinants of health, implying that, while Saugeen First Nation and Chippewas of Nawash Unceded First Nation provide an array of healthcare services for their members, these communities experience more health challenges than neighbouring non-Indigenous populations.

15.2 Baseline Work Completed to Date and Planned Future Work

As identified in Section 7, TC Energy commenced its formal Project engagement in September 2019 with a Project notification letter and accompanying project overview factsheet that was sent to Indigenous rights-holders and Indigenous groups potentially affected by the Project.

TC Energy works with each potentially affected Indigenous group to identify areas of interest and opportunities for engagement in Project activities, which may include gathering of Indigenous knowledge, education and training, community investment, and contracting and employment. These opportunities are described in Section 7.1.2 and include the collection of Indigenous knowledge and the conduct of Project-specific studies with interested Indigenous rights-holders and Indigenous groups.

The collection of Indigenous knowledge with interested Indigenous rights-holders and Indigenous groups is intended to:

- Identify and consider potential impacts of the Project on Indigenous rights-holders and Indigenous groups rights and interests
- Incorporate Indigenous knowledge in Project planning
- Identify concerns about the Project
- Propose measures to avoid, mitigate or otherwise manage potential adverse Project effects on Indigenous interests

At the time of IPD preparation, TC Energy has received Project-specific reports from Métis Nation of Ontario. All Indigenous knowledge shared with TC Energy will be reviewed and considered and TC Energy will demonstrate how comments or feedback received from the Indigenous rights-holders and Indigenous groups will be considered in Project planning,

including the IA, as appropriate. Information shared with TC Energy that is considered confidential will not appear on the public record (as described in Section 7.3.2). As each Indigenous group may have different processes or means of gathering and sharing Indigenous knowledge, TC Energy will tailor its approach to meet a group's specific needs by seeking feedback from the contributing Indigenous group on how Indigenous knowledge has been described when informing Project planning.

15.2.1 Results

Reserve lands of Saugeen First Nation and Chippewas of Nawash Unceded First Nation, together Saugeen Ojibway Nation, are in closest proximity to the generation component of the Project. Both the Pumped Storage Facility and the transmission connection are within their traditional and Treaty territory. Saugeen Ojibway Nation are signatories to Treaty 45 ½ and Treaty 72, comprising an area of 809,371 ha (2 million acres) that includes the Saugeen Peninsula[21] and lands south from Lake Huron to Nottawasaga River, and south to Highway 109. The construction and operation of the Project may have potential effects on fish and fish habitat, which are of high value to Saugeen Ojibway Nation food, social and ceremonial fishing rights as well as their right to commercially harvest fish in the waters of Georgian Bay (R. v. Jones 1993). Furthermore, the Project has potential to affect harvesting methods or opportunities within their traditional territory.

Chippewas of Georgina Island First Nation, Chippewas of Rama First Nation, and Beausoleil First Nation, together as the Chippewa Tri-Council, may be potentially affected by the transmission connection of the Project as it is situated within the boundary of Treaty 18.

The Mississauga Williams Treaties First Nations, including Curve Lake First Nation, Hiawatha First Nation and Mississaugas of Scugog Island First Nation, have indicated an interest in the Project, including archaeological and environmental resources. Alderville First Nation has indicated that the Project is not located within their traditional territory.

While the terms of Treaty 18, Treaty 45 ½ and Treaty 72 are primarily focused on land surrenders, protections and annuities, signatory First Nations maintain their harvesting rights were guaranteed as solemn promises at the time of treaty (Saugeen First Nation v. The Attorney General of Canada 2021). Recognition of this treaty understanding was realized through the 2018 Williams Treaties Settlement Agreement, which reaffirmed the inherent harvesting rights of the signatories, which include the three Chippewa Tri-Council member First Nations. In the instance of Saugeen Ojibway Nation, recognition of the First Nations' inherent jurisdiction and rights to food, social and ceremonial fishing in the waters of Georgian Bay was established through the noted case law.

[21] Saugeen Peninsula used in place of Bruce Peninsula per request by Saugeen Ojibway Nation.

The Project is located within the western extent of the Huron Wendat Nation's *Wendake Sud* historical occupation, which dispersed in the 1650s after a series of armed conflicts with the Haudenosaunee (Heidenreich 2018). As shared with TC Energy, the Huron Wendat Nation's interest in the Project is primarily related to the potential effects on cultural heritage and archaeology, including the possibility of artifacts or human remains in the area.

Six Nations of the Grand River, a signatory to the Nanfan Treaty 1701 (or Treaty of Albany 1701), has confirmed to TC Energy no interest in the Project as they do not assert claims in the Saugeen Peninsula, the treaty area of Saugeen First Nation and Chippewas of Nawash Unceded First Nation.

Missanabie Cree First Nation is a signatory to Treaty 9, which is also known as the James Bay Treaty. Treaty 9 covers almost two-thirds of the area that became northern Ontario (Morrison 1986). The land covered by Treaty 9 is north of the Project; the southernmost boundary of Treaty 9 is approximately 100 km north from the shores of Georgian Bay and Lake Huron. First Nation signatories to Treaty 9 retain the rights to hunt, trap and fish the lands covered by the treaty.

The Project is in the overlapping asserted regional territories of two Métis groups consisting of Historic Saugeen Métis and Métis Nation of Ontario. Historic Saugeen Métis asserts harvesting rights in the region since the early 1800s, within an area that spans over 275 km of shoreline from Tobermory to south of Goderich, and includes the counties of Bruce, Grey and Huron (Historic Saugeen Métis 2023). The Métis Nation of Ontario's Region 7 includes the Georgian Bay, Great Lakes, Barrie-South Simcoe, and Moon River Community Councils. Their asserted rights are understood to be that of harvesting and gathering (see Section 7). The Historic Saugeen Métis and the Métis Nation of Ontario's Region 7 assertions may be affected by the transmission connection component of the Project.

In addition to those Indigenous rights-holders and Indigenous groups identified in Section 7.2, TC Energy remains available to engage with other Indigenous rights-holders and Indigenous groups should interest in the Project be identified.

15.3 Potential Effect of the Project on the Environment and Preliminary Mitigations

Based on publicly available information and information shared by interested Indigenous rights-holders and Indigenous groups, TC Energy understands that potentially affected Indigenous rights-holders and Indigenous groups have historically used and currently use accessible lands and waters in the Project area for hunting, trapping, fishing, plant gathering, travel, habitation, and cultural or spiritual activities. It is anticipated that the Project has the potential to impact established and asserted Indigenous or Treaty rights and interests recognized and affirmed by Section 35 of the *Constitution Act.*

Measures will be taken to avoid, reduce or mitigate the impact of Project activities on identified Indigenous interests. Mitigation measures and appropriate management plans, including consideration of appropriate offsetting measures where avoidance is not feasible, will be developed through engagement with interested Indigenous rights-holders and Indigenous groups through the IA process.

Positive effects on Indigenous interests are also anticipated. As described in Section 1.2, TC Energy continues to meaningfully advance the foundations of a prospective partnership with Saugeen Ojibway Nation. Should a commercial partnership between Saugeen Ojibway Nation and TC Energy be established, the own-source revenue generated from the Project, will support both Saugeen First Nation and Chippewas of Nawash Unceded First Nation First Nation governments. TC Energy is committed to formalizing economic participation terms with Saugeen Ojibway Nation and Chippewa Tri-Council and to discuss with interested Indigenous rights-holders and Indigenous groups the potential for Project-related economic opportunities.

Table 15-2 identifies the potential Project interactions and corresponding effects likely to occur from key Project components as it relates to Indigenous interests.

Table 15-2: Potential Effects of the Project on Indigenous Rights-holders' and Indigenous Groups' Interests

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
Change in physical and cultural heritage [22]	• Potential loss or disturbance of archaeological, heritage or cultural sites	C	C	C
	• Potential sensory disturbances	C/O	C	C/O
Change in current use of traditional lands, waters and resources	• Potential loss or change to land or water harvesting methods or opportunities	C/O	C	C
	• Potential loss or change to the use or access to preferred land or water harvesting or cultural areas	-	C	C

[22] TC Energy understands that changes to physical and cultural heritage and structures, sites or things of historical, archaeological, paleontological, or architectural significance consider all elements of cultural and historical importance to Indigenous rights-holders and Indigenous groups, in addition to provincial heritage legislative requirements. TC Energy also understands that there are tangible and intangible elements of physical and cultural heritage such as Indigenous language, place names, sacred, ceremonial or culturally important places and cultural landscapes.

Potential Effects of the Project on the Environment		Project Component		
Potential Effect	**Interactions with the Environment**	**Pumped Storage Facility[1]**	**Temporary Construction Facilities**	**Transmission Connections**
	• Potential loss or change to harvested terrestrial and aquatic species or resources	C/O	C	C
Change to any structure, site or other item of historical, archaeological, paleontological or architectural importance	• Potential loss or disturbance of sites	C	C	C
Changes to the health, social and economic conditions of Indigenous rights-holders and Indigenous groups	• Potential changes in the real or perceived quality of harvested foods	C/O	C	C/O
	• Potential for the disruption of subsistence-based livelihoods	C/O	C	-
	• Potential for increased demands on community services (e.g., urban centres)	C	C	C
	• Potential for changes to resource-based Indigenous businesses, such as guiding and fishing	C/O	C	C
	• Potential economic effects and opportunities such as employment and training	C/O	C	C

Notes:

C – Potential effect during construction

O – Potential effect during operation

C/O – Potential effect during construction and operation

[1] Pumped Storage Facility includes the Reservoir, Powerhouse, Water Conveyance Structures, Lower Inlet/Outlet Structures, Switchyard and Offices, and Access

It is expected that Table 15-2 may be expanded or modified through ongoing engagement with interested Indigenous rights-holders and Indigenous groups during the IA process. It is also expected that the Project may interact with the interests of Indigenous rights-holders and Indigenous groups to varying degrees, based on the Project component, component location and the interests identified. As such, the assessment of Indigenous interests will be tailored to and reflective of the interests of each potentially affected Indigenous group, as appropriate, based on location of the Project component, the nature of the interests potentially affected by

Project component and the feedback of Indigenous rights-holders and Indigenous groups shared with TC Energy. The assessment of Indigenous interests will be undertaken in accordance with IAAC guidance or following other assessment methods developed in collaboration with interested Indigenous rights-holders and Indigenous groups. Where available, the assessment will describe the ways in which potential Project effects may be disproportionally experienced by Indigenous populations.

15.4 Preliminary Comments Received

The development of the Project is influenced by TC Energy's engagement with potentially affected Indigenous rights-holders and Indigenous groups. Key Project planning and design changes undertaken by TC Energy to date are summarized in Section 7.5.

TC Energy values the feedback received, and in 2020 modified the initial conceptual design of key Project components with the specific intent of avoiding or reducing potential effects to fish and aquatic resources. TC Energy will continue to identify and address as many concerns raised as possible through optimized design, mitigation measures, and/or monitoring programs.

The involvement of Makwa-Cahill, a business partnership of Chippewas of Nawash Unceded First Nation, on the Inlet-Outlet Structure design has brought unique expertise and Saugeen Ojibway Nation perspective to the process. TC Energy, the Saugeen Ojibway Nation Environment Office, TC Energy's lead designers, and Makwa-Cahill as the lead fabricator continue to participate in the Lower Inlet/Outlet Structure design process. Further refinements to the design will aim to reduce potential effects on fish and fish habitat.

In addition to the above, Table 7-2 provides a consolidated summary of the topics, key information, including Indigenous knowledge, and concerns shared by potentially affected Indigenous rights-holders and Indigenous groups through engagement with TC Energy. Table 7-2 also summarizes the influence that the outcomes of this engagement had on the Project to date and outlines how these items will be considered moving forward. The information presented in Table 7-2 is integrated throughout this IPD, as applicable, as these engagement outcomes will inform the development of the Impact Statement detailed design, permitting, and associated follow-up and monitoring programs.

Table 7-2 provides a consolidated summary of the topics, key information, including Indigenous knowledge, and concerns shared by potentially affected Indigenous rights-holders and Indigenous groups through engagement with TC Energy. Table 7-2 also summarizes the influence that the outcomes of this engagement had on the Project to date. The information presented in Table 7-2 is integrated throughout precedent sections of this IPD, as applicable, as these engagement outcomes inform the scope of the IA and will be considered in the assessment of each related valued component as well as in the assessment of Indigenous interests.

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