The Save Georgian Bay Association
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March 19, 2026

By email to: Nottawasaga@iaac-aeic.gc.ca

CC: MinisterEnergy@ontario.ca
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Terence Hubbard, President
Impact Assessment Agency of Canada
Place Bell Canada
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Ottawa, Ontario K1A 0H3

Re: Public Comments on the Initial Project Description — Ontario Pumped Storage Project
Canadian Impact Assessment Registry No. 89803
Proponent: TransCanada Energy Ltd. (TC Energy or TCE)
IPD Prepared by: Stantec Consulting Ltd., Project No. 123515349
IPD Date: February 24, 2026
Comment Period Deadline: April 6, 2026

Dear President Hubbard,

The Save Georgian Bay Association (SGB) submits these comments on TC Energy's (TCE) Initial Project Description (IPD) 89803, for the proposed 1,000 MW open-loop pumped storage hydropower project on the shore of Georgian Bay at the Department of National Defence's (DND) 4th Canadian Division Training Centre (4CDTC*) near Meaford, Ontario (Cape Rich area).

This submission is made on behalf of our grass roots volunteer-based organization, incorporated as a non-profit with core membership in Meaford and supporters throughout the Georgian Bay region. SGB has studied this proposal since 2019, when 70 local residents first learned of it, during an August 31, 2019 community meeting in which many questions and concerns were expressed. We have since conducted extensive research on pumped storage, energy storage and this proposal, hosted dozens of information sessions, gathered over 40,000 petition signatures on Change.org plus 3,500 local signatures, collaborated with allied organizations (Georgian Bay Association, Escarpment Corridor Alliance, Ontario Clean Air Alliance, and others), and engaged municipal officials and

Community organizations around the Bay. Eight municipalities around Georgian Bay, have passed resolutions opposing the project or demanding comprehensive, independent environmental assessments proving no harm before any advancement.

We have provided a comprehensive analysis for your review as was possible in this short comment period and subject to the limitations of a lack of project definition by the proponent. Please find enclosed our comments and recommendations to the Impact Assessment Agency of Canada ("IAAC"), which were informed by an independent review and prepared in collaboration with our environmental consultant Mark Heaton of Symbiosys Ecology Corp and our legal counsel, David Donnelly of Donnelly Law. Mr. Heaton's analysis is incorporated into this submission as are Mr. Donnelly's insights.

In closing, it is our opinion that this Initial Project Description for the proposed undertaking, regardless of missing important information and failing to define true breadth of project impacts, does demonstrate significant adverse environmental effects within federal jurisdiction and automatically qualifies as a designated project according to Section 42 (a) of the **Physical Activities Regulations (SOR/2019-285).** If not rejected, a comprehensive environmental impact assessment under the care and control of IAAC is required.

Sincerely,

Tom Buck, Pat Zita, Mike McTaggart, Gracinda Borges Maloney
Directors of Save Georgian Bay
SaveGeorgianBay.ca

* Save Georgian Bay recognizes the DND has updated the Meaford Base' name to "Canadian Training Center Central." For convenience of the reader we have used 4CDTC throughout this document. We mean no offense and all respect due to our proud Military!

Public Comments

Initial Project Description

Ontario Pumped Storage Project

Canadian Impact Assessment Registry No. 89803

Contents

1.0 Introduction - Overview of the project and summary of concerns

TC Energy Corporation (TC Energy) has proposed the construction of a 1,000-megawatt open-loop pumped storage hydropower facility on the shore of Georgian Bay, located on lands administered by the Department of National Defence at the 4th Canadian Division Training Centre (4 CDTC) near Meaford, Ontario. The project was first introduced to the Department of Defence (DND) in 2016.

In February 2026, the proponent submitted an Initial Project Description (IPD), a 252-page document that initiated the federal Initial Planning and Public Engagement phase under the Impact Assessment Act. The Impact Assessment Agency of Canada (IAAC) is currently reviewing public comments on the IPD to determine appropriate next steps in the assessment process, including whether additional studies or a full impact assessment are required.

According to the Initial Project Description, the proposed Ontario Pumped Storage Project would consist of an open-loop pumped storage hydropower facility designed to store energy by circulating water between Georgian Bay and an elevated reservoir constructed on the 4 CDTC plateau.

The project would involve withdrawing water from Georgian Bay through submerged intake structures, conveying that water via large-diameter tunnels to an upper reservoir, and releasing it back through turbines to generate electricity during periods of peak demand. During off-peak periods, electricity from the grid would be used to pump water back to the upper reservoir for storage.

Key project components noted but not well described in the IPD include open loop water intake and discharge structures in Georgian Bay, underground tunnels and powerhouse, a surface reservoir retained by an encircling dam, office facilities and switchyard location. Mentioned but not definitively described are connections to the provincial transmission grid; off base ancilliary functions including a concrete plant; relocation of 24 military facilities and functions; and a large marine dock for loading excavated waste materials and unloading construction materials. Construction would require extensive excavation, tunnelling, in water intake construction and surface works over multiple years.

The proposed facility is described as having a generation capacity of approximately 1,000 megawatts of electricity and would operate in a daily cycle, as part of Ontario's electricity system. It is estimated 1,400 megawatts of electricity are required to fill the reservoir. It is a net consumer of electricity.

1.1 Summary of Key Concerns

In SGB's view, the IPD is **materially incomplete** and does not provide IAAC—or the public—with enough information to understand the full scope, impacts, and risks of the proposed project.

In particular:

Threshold of IPD requirements

1. The IPD does not disclose design engineering with specificity. The project is described conceptually and introduces significant conditionality on key components of the proposed project, for construction and design.
2. The IPD does not provide sufficient information for IAAC to adequately define studies or determine whether and how the project may cause significant adverse effects, which is required to inform any decision on whether further assessment is warranted.
3. Baseline environmental and geotechnical conditions are inadequately characterized due to the lack of studies or with studies withheld.
4. The IPD relies on future, undefined studies and design considerations rather than providing baseline information, limiting IAAC's ability to conduct an extensive and complete assessment at this stage.

Habitat and environmental risks

1. Fish and the Fish habitat are not adequately addressed in the IPD. Entrainment and impingement are mentioned without complete studies, modelling or mitigations.
2. Migratory Birds are not adequately addressed in the IPD including the presence of specific species, habitat destruction and impacts of the reservoir in operation.
3. Limited SARs are mentioned, an incomplete list, without implications or mitigations.
4. The IPD does not adequately assess long-term environmental and human health risks, limiting IAAC's ability to evaluate the project's effects over its full operating life.

Site Suitability

1. The IPD does not address how site suitability criteria applied to other major infrastructure proposals at 4 CDTC relate to the proposed pumped storage project, leaving unresolved questions about land-use compatibility, in a time of greater focus on military readiness and defence.
2. Important ancillary infrastructure is excluded from the project scope.
3. Cumulative effects are not assessed in a meaningful way.

Dam Risk

1. The IPD does not assess credible failure scenarios or associated downstream consequences, preventing IAAC from evaluating potential risks to nearby communities habitats and infrastructure.
2. The IPD does not assess dam construction in detail, construction effects, or downstream inundation risk, leaving IAAC unable to evaluate potential consequences to surrounding communities and Georgian Bay.
3. The IPD does not explain how construction and operation of a large industrial reservoir on karst terrain meets safety and suitability standards that would otherwise restrict similar development in comparable escarpment settings.

Comparators, alternatives, and context

1. Known real-world comparators and documented impacts are not included or addressed.
2. The IPD does not meaningfully assess impacts documented at the Ludington Pumped Storage Plant, the most relevant open-loop comparator, limiting IAAC's ability to evaluate the risk of fish entrainment and aquatic habitat disruption.
3. The IPD represents an unsolicited proposal, presented to the Independent Electricity System Operator (IESO), and the IPD does not include a meaningful comparison with alternative energy storage options, limiting IAAC's ability to evaluate the competitiveness and necessity of the proposed project.

In summary, based on a review of the Initial Project Description and associated materials, Save Georgian Bay concludes that the proponent has not provided sufficient information for the Impact Assessment Agency of Canada to determine whether the proposed project may cause significant adverse environmental effects under the factors set out in section 22 of the Impact Assessment Act. As currently presented, the IPD does not enable IAAC or the public to fully understand the scope, risks, or potential impacts of the proposal. Save Georgian Bay therefore submits that the IPD requires further definition and disclosure before it can be meaningfully evaluated.

2.0 Introduction to Save Georgian Bay

Save Georgian Bay Association (SGB) is a volunteer-based, non-profit organization with a core membership in Meaford and supporters throughout the Georgian Bay region. The organization was formed in 2019 following early public disclosures of TC Energy's proposed Ontario Pumped Storage Project and has since focused on understanding the project and sharing information with residents, municipalities, and decision-makers.

In July 2019, residents in the Meaford area became aware of the proposal through meetings with TC Energy representatives. At that time, the proponent indicated that the conceptual design for the proposed facility would be similar to the open-loop pumped storage plant at Ludington, Michigan. Following these discussions, community members undertook their own review of the proposal and relevant background information on pumped storage projects.

As part of that review, members of the community visited the Ludington Pumped Storage Plant and its surrounding area. Information gathered from publicly available sources and site observations identified a number of documented characteristics associated with the Ludington facility, including operational impacts to the nearshore environment, large-scale transmission infrastructure connecting to the power grid, and long-term operational and refurbishment costs. Community members also noted that the Ludington site differs significantly from the proposed Meaford location in terms of population density, topography, and surrounding land use.

These early findings prompted broader community engagement. In August 2019, a public meeting was held in Meaford to discuss the proposed project and its potential implications. Participants expressed concerns regarding environmental effects, proximity to residential areas, and the suitability of the 4th Canadian Division Training Centre (4 CDTC) site for a project of this scale. Following this meeting, interested residents organized formally as Save Georgian Bay to continue reviewing the proposal and to facilitate informed public discussion.

Since its formation, Save Georgian Bay has focused on reviewing publicly available project materials, engaging with subject-matter experts, meeting with proponent representatives and sharing information with the public and municipal representatives. Volunteers with the organization include individuals with experience in energy systems, engineering disciplines, geology, environmental sciences, electrical engineering, aquatic biology, communications, and community planning, and many long-term residents of the Georgian Bay region.

Save Georgian Bay's most significant concerns early in this study process included the open loop intake system and fish entrainment, disruption of the military mission, the potential spread of contaminants known and unknown on 4CDTC, and the placement of a high tension line transmission corridor on the escarpment.

Between 2019 and the present, Save Georgian Bay has:

- hosted public information meetings in communities around Georgian Bay;
- engaged with municipal councils and staff in multiple jurisdictions;
- met with provincial and federal leaders;
- prepared and circulated background research materials outlining environmental and community considerations associated with the proposed project; and
- collaborated with other organizations with an interest in environmental protection and regional planning.

This submission to the Impact Assessment Agency of Canada reflects that ongoing review and engagement and is intended to assist IAAC in evaluating whether the Initial Project Description provides sufficient information to assess the proposed project and determine appropriate next steps under the Impact Assessment Act.

3.0 Environmental Stewardship and Public Engagement

3.1 Environmental Stewardship

The proposed Ontario Pumped Storage Project would be located on lands managed by the Department of National Defence (DND) at the 4th Canadian Division Training Centre (4 CDTC), an area with recognized environmental sensitivities and longstanding military use. Both DND and TC Energy have publicly stated commitments to environmental protection and stewardship. From DND directive **Environmental Protection and Stewardship (DAOD 4003-0)**:

> *"The DND and the CAF are accountable for the impact that defence activities have on the environment."* They must *"respect the environment, exercise environmental stewardship, and protect…assets held in trust."*

And TC Energy states:

> *"We are committed to protecting the environment. Not just because we have to, but because we want to."*

From an impact assessment perspective, the relevant question is whether the project documentation provides sufficient information to evaluate how those commitments would be upheld in practice. Based on a review of the Initial Project Description (IPD), Save Georgian Bay finds that the project documentation does not yet provide enough detail to assess the extent to which environmental impacts to land, water, fish, wildlife, and Species at Risk would be avoided, mitigated, or managed.

Publicly available records and information cited in the IPD indicate that the 4 CDTC lands support numerous Species at Risk identified by COSEWIC, in addition to other sensitive ecological features. The IPD acknowledges the presence of these features but does not provide sufficient baseline data, habitat impact analysis, or mitigation details to support an assessment of potential effects arising from reservoir construction, water withdrawal and discharge, tunnelling, and long-term operation of an open-loop pumped storage facility.

3.2 Site Suitability and Consistency with Military Land Use

Recent decisions by DND regarding other proposed infrastructure at the Meaford Tank Range provide relevant context for assessing site suitability. In public statements concerning the military Arctic Over-the-Horizon (OTH) Radar program, DND identified environmental sensitivity, challenging terrain, and the operational demands of maintaining a high-tempo training facility as factors limiting the suitability of the Meaford site for major installations.

The IPD does not explain how these same site characteristics have been evaluated in relation to the proposed pumped storage project, which would involve multi-year industrial-scale construction, permanent alteration of landforms, and ongoing commercial operation on the base. The duration, intensity, and spatial footprint of the proposed pumped storage project exceed those associated with a fixed radar installation. IAAC should seek an explanation of why DND is choosing a commercial project over a military one. A changed focus has occurred in the military mission in the last year. New priorities in readiness and effectiveness have been established. IAAC should require DND to provide an updated assessment of whether 4CDTC Meaford remains available for non-military industrial use given the changed defence environment.

From an impact assessment perspective, this raises unresolved questions about how land-use compatibility, environmental sensitivity, geological constraints, and military operational requirements are being applied to different types of infrastructure on DND lands. The IPD does not provide a clear explanation of how suitability criteria have been evaluated for the proposed project or how potential conflicts with current and future military operations would be addressed.

3.3 Authentic Public Participation

Save Georgian Bay recognizes that IAAC is responsible for facilitating public participation during the planning phase of the impact assessment process. In this case, significant public interest was demonstrated through high attendance at the February 2026 information session.

However, with respect, the timing, notice period, and duration of the comment window limited the ability of the public, municipalities, and civil society organizations to review a 252-page IPD and identify deficiencies. The scheduling of the comment period over statutory holidays and weekends further constrained the available time for substantive review.

From an assessment standpoint, meaningful public participation depends on adequate time and access to information. Where baseline data and key project details remain undefined or deferred to future studies, the ability of the public to provide informed input is necessarily limited.

These structural process limits reduce public engagement. This is also reflected in other actions in the community: Meaford Council voting to cancel the Pumped Storage Advisory Committee days before the comment period opened. This committee was comprised of members who had studied the project diligently for two years and were charged with facilitating a community benefits agreement and assisting the municipality with citizen concerns and needs relevant to the project. They represented an official voice in the municipality for comment on the IPD.

3.4 Indigenous Rights, Knowledge, and Voices

The proposed Ontario Pumped Storage Project is located on federal land and within the Georgian Bay watershed, an area of long-standing Indigenous presence, stewardship, and responsibility. The Impact Assessment Act requires early and meaningful consideration of Indigenous rights, Indigenous knowledge, and impacts on the exercise of those rights. In this case, however, Indigenous perspectives have been referenced procedurally but not apparent in project definition, site selection, or early decision-making.

Publicly available statements, correspondence, and long-standing concerns expressed by Indigenous communities in the Georgian Bay and Lake Huron region emphasize the central importance of water as a living entity, the cumulative impacts of industrial development on fish populations and aquatic ecosystems, and the obligation to protect water quality for future generations. These perspectives are rooted in Indigenous law, knowledge systems, and relationships to place that pre-date and continue alongside federal and provincial regulatory regimes. They are not contingent on the completion of future technical studies.

The absence of clearly articulated Indigenous perspectives within the IPD also limits the ability of IAAC and the public to understand whether potential impacts to Indigenous rights — including fishing, cultural practices, and relationships to water — have been adequately identified. Without this information, the Agency cannot determine whether proposed studies, mitigation measures, or consultation plans are proportionate to the nature and scale of those impacts.

3.5 Process Alignment and Regulatory Sequencing

In addition to concerns regarding meaningful public participation and Indigenous engagement, the planning-phase process has also proceeded in the absence of alignment with independent energy system planning authorities. As discussed later in relation to project need and alternatives, the proposal has received negative determinations from Ontario's Independent Electricity System Operator with respect to ratepayer value and system necessity. The continued advancement of the project despite these findings raises questions about regulatory sequencing and whether subsequent assessments risk being shaped by institutional momentum and sunk costs, rather than by demonstrated public benefit.

Independent investigative reporting has also highlighted broader public concerns regarding regulatory governance, transparency, and the influence of large energy proponents on government decision-making processes in Canada (Matt Simmons, The Narwhal, *"Leaked TC Energy recording prompts B.C. to probe claims of outsized lobbying influence on government,"* June 26, 2024).

4.0 Environmental and Community Impacts

4.1 Site Conditions, Contamination Risk, and Construction Impacts

The proposed Ontario Pumped Storage Project (PSP) is located on lands administered by the Department of National Defence (DND) at the 4th Canadian Division Training Centre (4 CDTC), within the Niagara Escarpment region and directly upslope of established residential communities along Georgian Bay. This location combines environmental sensitivity, complex geology, legacy contamination concerns, and proximity to human settlement.

4.1.1 Legacy Contamination and Incomplete Site Characterization

The 4 CDTC has been in continuous military use since the early 1940s. Historic activities at the site have included live-fire training, fuel handling, equipment maintenance, and disposal practices that predate modern environmental monitoring and reporting requirements. Public registries, including Treasury Board records, identify contaminated areas both within the base and in the vicinity of the proposed reservoir footprint. There are known sites of cultural heritage where artifacts have been found, site of significance to the local population. Their significance is not adequately treated in the IPD.

Public registries, including Treasury Board records, identify numerous contaminated areas both within the base and in the vicinity of the proposed reservoir footprint. Some of these areas are classified as active and some are identified as stable for current use. Stable for current use, requires new studies for new uses.

While the proponent states that the reservoir lies outside designated military “impact zones,” these operational boundaries do not represent comprehensive environmental contamination limits. The absence of systematic contaminant tracking for much of the site’s operational history means that unknown or undocumented contamination remains a credible risk. The geology of the site enables groundwater flow in ways not seen on the surface. Heavy metal contaminants have been shown to leach deep into soils and clays which may underlay the proposed reservoir location.

The Initial Project Description (IPD) does not provide a comprehensive assessment of known or potential contaminants, nor does it meaningfully evaluate how excavation, tunnelling, dewatering, or long-term hydraulic cycling could mobilize contaminants into groundwater or Georgian Bay. Information regarding study methods, sampling locations, and full results has not been provided, limiting the ability to assess downstream environmental and public-health risks.

4.2 Fish Habitat and Species at Risk

4.2.1 Fish and Aquatic Habitat

The project's intake and discharge structures are located near submerged shale terraces known as the "Cape Rich Steps," an area that provides critical spawning habitat for Lake Trout and Lake Whitefish. These species depend on clean, silt-free rocky shoals for successful reproduction.

The IPD does not address the spread of contaminants through toxins absorbed in fish migration or the fish habitat.

The IPD does not meaningfully assess how water withdrawal, discharge, entrainment, or sediment disturbance would affect spawning success or long-term population viability, particularly for Lake Whitefish, which are already experiencing recruitment decline in southern Georgian Bay.

4.2.2. Species at Risk

The 4 CDTC lands contain documented habitat for 33 COSEWIC-listed Species at Risk, including endangered, threatened, and special-concern species. Several of these species occupy wetlands, woodlands, and wildlife habitats overlapping the proposed project footprint.

Migratory birds are present on the site. The language in the IPD includes "Sequencing of construction activities to reduce potential interactions . . . " and continues on to appear to minimize impacts on important bird habitats and their life cycle. What schedule they are planning, days in a week, hours in a day is not disclosed in the IPD. Neither is where the birds are in the total footprint or how they would be avoided at "breeding or migratory periods." Far from "minimal" or "short-term" effects, the project's contribution to cumulative habitat fragmentation, pollution, and mortality in Canada's migratory flyways will measurably exacerbate population declines in vulnerable SARA-protected species and other migratory birds, demanding rigorous, enforceable avoidance and offsetting measures rather than unsubstantiated assurances of no significant impact.

The IPD does not provide sufficient habitat-level analysis to assess compliance with protections under the federal Species at Risk Act, particularly for habitat located on federal land. The IPD does not provide information on projected bird habitats and migration as a result of the presence of the reservoir.

4.3 Construction-Phase Impacts on Nearby Communities

Construction of the PSP would require years of intensive activity, including drilling, blasting, underground tunnelling, excavation, dewatering, and heavy vehicle transport. These activities would generate sustained air emissions, noise, vibration, and potential water quality impacts.

While the IPD acknowledges construction impacts in general terms, it does not include site-specific modelling of:

- noise and vibration propagation through escarpment geology,
- particulate dispersion affecting downslope communities, and entering the Bay
- water-quality impacts linked to runoff, discharge, or sediment disturbance.

The IPD also does not commit to real-time monitoring tied to enforceable thresholds or clearly defined contingency measures. Treating these impacts as temporary or generic does not account for the cumulative effects of prolonged construction in a sensitive escarpment setting.

4.4 Insurance, Property Security, and Indirect Economic Effects

Inquiries with property insurers indicate that insurance availability, exclusions, and premium impacts cannot be assessed until the facility is constructed and operational. The IPD does not address the potential loss of insurability or increased insurance costs for properties located downslope of the project.

Loss of insurability or significant premium escalation could affect property values, mortgage eligibility, and financial security for affected residents. This has a foreseeable outcome of affecting the well-being of residents local to the project. This would have a disproportionate effect on seniors in the community. The IPD does not acknowledge this risk, evaluate its likelihood, or identify mitigation or compensation mechanisms. As a result, economic risk would be borne entirely by the surrounding community rather than the proponent.

4.5 Military Operations and Site Compatibility

Previous discussions with DND property managers indicated that disruption to military operations would be a critical factor in evaluating the suitability of commercial projects at 4 CDTC. The PSP would require relocation of base facilities, changes to training activities, enhanced security procedures, and the long-term presence of a large civilian workforce on an active military base.

The IPD does not assess how these operational impacts would interact with military training requirements or evolving defence priorities, nor does it indicate whether prior suitability assessments have been updated in light of changed operational demands.

Clarification of the site's continued availability and compatibility for non-military industrial use is necessary to assess the feasibility of the proposed project.

4.6 Development Controls and Escarpment Risk Standards

Local authorities have imposed strict development controls along the Meaford Escarpment to protect public safety and environmental integrity. Recent decisions have restricted small-scale residential rebuilding due to hazard sensitivity and downstream risk.

The proposed PSP would introduce substantially greater geotechnical, environmental, and safety risks than those associated with residential development, including long-term hydraulic loading, extensive blasting, and large-scale excavation. The IPD does not explain how risk standards and siting criteria applied to ordinary landowners are being applied—or not applied—to a major industrial project located above the same downstream communities.

4.7 Karst Terrain and Escarpment Stability

The project is proposed on karst limestone characteristic of the Niagara Escarpment, a geological setting associated with fractured bedrock, subsurface voids, sinkhole formation, and complex groundwater flow pathways. These conditions are widely recognized as sensitive and subject to development restrictions under escarpment protection policies.

Although 4 CDTC lands are exempt from certain environmental land-use controls due to federal ownership and military function, that exemption exists to support defence training—not to establish geotechnical suitability for permanent commercial infrastructure.

The IPD does not explain how a large, long-term water-retaining reservoir, extensive excavation, or underground tunnels would be safely constructed and operated in karst terrain, nor how risks related to stability, seepage, or groundwater migration would be managed over the life of the project.

4.8 Groundwater and Radiological Concerns

Environmental monitoring has identified that uranium is widely present across the 4 CDTC Meaford site at levels frequently exceeding Health Canada's Drinking Water Quality Maximum Acceptable Concentration of 20 µg/L. While evidence suggests this uranium is of natural origin, stemming from the regional shale and limestone bedrock, the concentrations regularly exceed federal aquatic life and provincial standards. The construction and operation of a large-scale pumped storage facility may disturb these geological formations or alter hydrogeological flow patterns, potentially increasing the mobilization of these naturally occurring radionuclides into the surrounding environment and aquatic habitats.

The IPD does not assess how excavation, hydraulic cycling, or reservoir operation could affect groundwater movement or contaminant mobilization, nor does it model potential consequences for drinking-water sources or aquatic ecosystems.

4.9 Cumulative Effects and Piecemealing

The IPD excludes associated transmission infrastructure, relocated military facilities, and off-site ancillary functions from assessment. This piecemealed approach prevents a holistic evaluation of cumulative environmental effects across terrestrial and aquatic systems.

Without assessment of all project components as an integrated whole, the full scope of habitat loss, contamination risk, and landscape-level disturbance cannot be evaluated.

4.10 Alternative Technologies and Project Need

Independent System Planning and Ratepayer Value

Publicly available records indicate that the Independent Electricity System Operator (IESO), Ontario's statutory electricity system planner, has twice determined that the proposed Ontario Pumped Storage Project does not provide sufficient value to Ontario ratepayers under prevailing and forecast system conditions. These determinations were grounded in cost-effectiveness, system need, and comparative evaluation of alternatives, and concluded that the project did not meet the criteria required for procurement or advancement within Ontario's electricity system.

This finding is material to the Impact Assessment Agency of Canada's consideration of project need and public interest. It indicates that, even before environmental, Indigenous land-use, or cumulative risks are considered, the project has failed to demonstrate a compelling justification from an energy-system and ratepayer perspective. In this context, assertions that the project is required to support grid reliability or energy security must be treated with caution, and the burden of justification for further advancement is correspondingly higher.

The IPD characterizes the project as energy generation rather than energy storage and does not provide a complete comparative analysis with contemporary alternative storage technologies. Realistically hydro pumped storage experiences rising costs for a technology that is almost 100 years old and consumes electricity at rate of 1.4 units to 1 unit produced. Information in the IPD reflects outdated competitive information, does not include reduction in cost of alternative technologies, greater efficiency, sourcing within Ontario, shorter build timelines and Ontario's engagement with battery storage. Publicly available information from the IESO indicates that other storage options are available at lower cost and shorter build timelines.

The IPD does not provide cost-per-unit comparisons or demonstrate why this specific project is necessary relative to alternatives with fewer environmental risks.

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4.11 Dam Safety and Failure Scenarios

The proposed project includes an estimated 4.5 kilometer ring dam retaining approximately 26 million cubic meters of water at significant elevation above Georgian Bay and over hundreds of families, homes and farms. The IPD does not include dam safety analysis, failure scenarios, inundation mapping, or emergency response planning.

Without this information, IAAC cannot assess downstream risk or evaluate the potential consequences of structural failure in a geologically and environmentally sensitive setting.

Summary Environmental and Community Impacts

Taken together, uncertainties related to contamination, geology, construction impacts, ecological sensitivity, military compatibility, insurance risk, risks to families and their homes, excluded infrastructure, impacts experienced in other pumped storage plants, noise, dust, contaminant spread, drinking water impacts and well-being represent cumulative effects that are not adequately addressed in the IPD. Our impression is that it would have been difficult to bring forward a conceptual project with more adverse impacts, with a more diverse list of adverse impacts than this project proposal by TC Energy. These issues prevent a full assessment of land-use compatibility, environmental risk, and public safety and require further evaluation before the project can be responsibly considered.

5.0 Incomplete and Inaccurate Initial Project Description

5.1 Incomplete, Inadequate, and Unsubstantiated Evidence

Save Georgian Bay's review indicates that the Initial Project Description (IPD) does not provide sufficient, validated information to allow the Impact Assessment Agency of Canada (IAAC) to assess the potential effects of the proposed project.

Throughout the IPD, fundamental project elements are described using conditional and future-tense language, with key design decisions, mitigation measures, and impact analyses deferred to later stages. Common phrases such as *"may," "is being evaluated," "will be confirmed,"* and *"under consideration"* appear frequently in relation to core components of the project.

This reliance on conditionality is evident in areas including, but not limited to:

- Engineering design and layout: IPD Section 9.6 – "Modeling is currently underway… Once completed, modeling **will be used to inform future works**…" Modeling should have been completed and included to inform the IPD.
- Environmental mitigation and measures: IPD Section 10.3 – "The Project **has the potential to result in effects** to wildlife…". These poor effect and impacts are known by the proponent as they have conducted studies and have access to DND and SON studies. This conditionality appears to be used as an escape from having to present mitigation plans.
- Construction methods and sequencing; IPD Section 12 – "TC Energy **may acquire property(ies)**…". This is likely known by the proponent as within the progress of the 10 year history of the project they would have examined options for nearby properties, have talked with property owners, perhaps even have contracts in place. They very likely have plans in mind for location of materials and equipment staging and concrete production and more on land outside the fence of the 4CDTC.
- Shoreline impacts: Section 6.2.7 – "TC Energy is **evaluating the possibility** of using potential Marine Access . . "
  Conditionality allows proponent to escape description of how it would avoid harm and mitigate damage to the near shore habitats in the IPD.
- Georgian Bay impacts: Section 8 – "TC Energy **does not anticipate substantive change** to water temperature; however, this will be confirmed as the assessment of the Project progresses." No modeling, no research from other PSP's, no expert analysis provided.

See Appendix B, Figure 5.2 for a list of 60 examples. As stated above, the IPD has over 1,000 phrases reflecting conditionality. As a result, the IPD does not provide a sufficiently defined project description to enable IAAC or the public to evaluate the scale, scope, or potential impacts of the proposal.

Deferring this level of information to future stages prevents meaningful assessment at the IPD phase and limits the effectiveness of public engagement.

5.2 Mischaracterization of Environmental Impacts

In section 2.2 of the IPD, the proponent states that pumped storage has a lower environmental footprint over its lifecycle compared to other grid-scale energy storage options citing a published study with this reference, "(Simon et al., 2023)". The cited study, however, examines **closed-loop pumped storage systems**, not open-loop systems that rely on continuous interaction with natural water bodies. Interesting, the title of the article is "Life Cycle Assessment of **Closed-Loop Pumped Storage** Hydropower in the United States,"

This study provides value establishing US-specific GHG benchmarks for closed-loop pumped storage. However, the TC Energy proposal is for **open loop** pumped storage. TCE is building underground structures not contemplated by the study, it will cause fish mortality from intake structures, impacts on the Georgian Bay aquatic ecosystem, water quality, geological risks entirely outside this study's scope, and the study did not include decommissioning.

Because the proposed Ontario Pumped Storage Project is an **open-loop** facility drawing directly from Georgian Bay, the cited study is not directly applicable. The IPD does not provide a lifecycle assessment specifically addressing open-loop systems or explain how impacts observed at comparable open-loop facilities were included.

5.3 Piecemealing and Cumulative Effects

The exclusion of proposed electricity transmission infrastructure, 4CDTC infrastructure relocations, staging and concrete production areas from the current assessment introduces the risk of "piecemealing," a practice that can mask the true scale of a project's environmental footprint. By treating the pumped storage facility and its required transmission lines, 4CDTC function relocations and off base facilities as separate entities, the Initial Project Description fails to account for the **cumulative effects** on the forests, wetlands, species at risk habitats and fish habitats within in a broader landscape. For instance, while the reservoir itself impacts significant woodlands and wildlife habitats, unseen terrestrial transmission corridors would likely require further large-scale clearing of forest and wetlands supporting additional species-at-risk. Should lake-bed transmission lines be contemplated, more aquatic habitats could be impacted than what is currently in scope. Without a holistic evaluation of the proposed facility and its required relocation and servicing infrastructure, the "aggravated migration" of site contaminants—such as metals and energetic materials—could be compounded by additional soil disturbances across a much wider geographic area than currently disclosed.

5.4 Deferral of Project Components

The IPD also excludes or defers assessment and apparent delay in decision making of several components that are integral to the construction and operation of the project, including transmission infrastructure, relocation of existing military facilities, and off-site support functions. This delay masks the full environmental impact of the project and prevents assessment of design effects. Information necessary to understand how these design elements specifically interact and contribute to overall impacts is not provided.

6.0 Primary Recommendations

Taken together, the conditional nature of the project description, the deferral of critical analyses, the apparent reliance on less relevant independent studies and the exclusion of essential components demonstrate that the IPD does not meet the level of definition required for meaningful assessment under the Impact Assessment Act.

It is our opinion that this Initial Project Description for the proposed undertaking, regardless of missing important information and failing to define true breadth of project impacts, does demonstrate significant adverse environmental effects within federal jurisdiction and automatically qualifies as a designated project according to Section 42 (a) of the **Physical Activities Regulations (SOR/2019-285).**

If not rejected, a comprehensive environmental impact assessment under the care and control of IAAC is required and therefore we will proceed to provide our Recommendations, based on the deficiencies identified above and elsewhere in this submission:

Recommendation 1

There is nothing in this project proposal to give us confidence the project should proceed with the material presented, therefore, proceeding to an Impact Assessment is **not** warranted. The IPD should be returned to the proponent for further definition, validation, and disclosure, and denied advancement until proponent provides an IPD meeting the requirements for full and complete entry into the IAAC Process

Recommendation 2

If the project advances, we propose the Minister of Environment and Climate Change establish a Panel Review assessment, the membership of which would include stakeholders of various expert disciplines, representation of municipalities and environmental organizations around the Bay, including First Nations. The Minister, would require a comprehensive Impact Assessment, expressed through comprehensive terms of reference, that addresses all project components, cumulative effects, alternatives, construction, operation, ratepayer costs, military disruption and cumulative site-specific risks as identified here and in other comment submittals to the IAAC.

Recommendation 3

If the project advances without a Panel Review, IAAC, should require a comprehensive Impact Assessment that addresses all project components, cumulative effects, alternatives, construction, operation, ratepayer costs, military disruption and cumulative

site-specific risks, including those assessment areas described in Section 7.0. IAAC would implement a comprehensive Impact Assessment, expressed through comprehensive terms of reference, that addresses all project components, cumulative effects, alternatives, construction, operation, ratepayer costs, military disruption and cumulative site-specific risks as identified here and in other comment submittals to the IAAC.

Recommendation 4

The current public comment period is insufficient given the size and complexity of the IPD. A minimum 60-day review period is needed for projects of this scale to allow meaningful public participation. A further suggestion is the comment period be based on the scale of the proponent project or the estimated cost of the development. In addition, IAAC needs to examine how to more completely and effectively communicate with the public audience touched by development projects. In the case of TC Energy's proposal, Georgian Bay waters, air and fish are touched by communities all around Georgian Bay, and in fact mix with Lake Huron's waters. See Figure 6.1. Ratepayers throughout Ontario will be impacted by the project. SGB communication efforts elevated the awareness of the public beyond the nominal effort of IAAC. The communications of the Agency need to be more expansive.

7.0 Areas Requiring Assessment by Panel Review/IAAC

The Initial Project Description is fundamentally deficient in baseline data, project definition, and effects analysis. Before any determination can be made on whether the project may cause significant adverse environmental effects under section 22 of the *Impact Assessment Act*, or before any advancement to a full impact assessment, the following comprehensive, independent, third-party, peer-reviewed studies must be required. Each study must be conducted with clearly defined Terms of Reference developed through public and Indigenous engagement, and all raw data, modelling assumptions, and reports must be publicly released in advance of any further comment periods. A Review Panel should include stakeholders representing residents, ratepayers, municipalities, Indigenous, environmental groups and shoreline associations.

Importantly, there is no comparable pumped storage project of this scale and open-loop design in Ontario or Canada (Sir Adam Beck pumped storage is less than 1/5 the capacity, built over 80 years ago). Existing federal and provincial regulations (including the *Fisheries Act*, *Migratory Birds Convention Act*, *Species at Risk Act*, Dominion Water Power Regulations s. 44, and Canadian Dam Association Guidelines) were not written for a facility of this magnitude on karst terrain directly above Georgian Bay and on an active military base. The Agency must therefore require TC Energy to demonstrate explicitly how these regulations will be applied and whether they are sufficient to protect the receiving environment. Further, developers are often observed working to the minimum requirements of regulations and laws. The scale and risks of this project demand that minimums are not enough. Overlapping risks increase the probability for incidents of calamity. Failures in project systems with this complexity, with this long list of hazards and environmental impacts are due to not one factor going wrong, it is multiple factors going wrong.

The Agency must require TC Energy to complete, at minimum, the following studies:

1. **Detailed Fish Entrainment, Impingement, and Aquatic Habitat Study** (*Fisheries Act*, s. 34.4(1) and s. 35(1)) – Hydrodynamic and computational fluid dynamics (CFD) modelling of daily withdrawal and discharge of 26 million cubic meters of water through the 1.5 km ring of 24 intakes in the Cape Rich Steps transition zone, including seasonal field sampling of fish populations, turbine mortality rates, sediment disturbance, and long-term effects on Lake Trout and Lake Whitefish spawning and recruitment.
2. **Full Migratory Bird Habitat and Population Impact Assessment** (*Migratory Birds Convention Act*) – Baseline surveys and modelling of direct habitat loss, disruption of migration corridors, and operational effects of the reservoir and transmission lines on migratory bird populations.
3. **Full Species at Risk Act Critical Habitat and Population Viability Assessment** (*Species at Risk Act*) – Comprehensive field surveys and habitat suitability modelling for all 33 COSEWIC-listed Species at Risk documented on or near the 4 CDTC site.
4. **Phase III Environmental Site Assessment and Contaminant Fate/Transport Modelling** – Site-wide hydrogeological modelling of legacy military contamination and naturally occurring uranium, including mobilization risks from excavation, tunnelling, dewatering, and hydraulic cycling.

5. **GHG Assessment** – The proponent's Green House Gas analysis is dated. The project design has not been presented in the IPD, reflecting that materials usage, construction activities and concrete production are not yet defined, the carbon cost of the project is not able to be calculated beyond rough estimates. As the carbon cost and the potential carbon reduction is considered, the impact of drawing energy to the proposed PSP and away from foreign jurisdictions who then turn to coal and gas for energy, must be in the assessment to determine the public interest. The loss of vegetation on the total footprint of the project and the potential GHGs produced from the construction and operation of the PSP must also be in the assessment.
6. **Project Cost Assessment** – IESO has declined the proposal at least two times based on poor ratepayer value. The IPD does not include comprehensive financial elements of cumulative construction cost with all project elements including 4CDTC relocation, transmission corridor, ancillary facilities, decommissioning, anticipated system updates, maintenance, as well as the operating pro forma.
7. **Karst Terrain and Escarpment Stability Study** – Detailed geotechnical and hydrogeological investigation of fractured bedrock, subsurface voids, sinkhole risk, and seepage pathways beneath the 400-acre reservoir and 4.5 km ring dam.
8. **Water Quality Assessment –** Potential disturbance of sediment and affect of water contact with concrete and other materials used in the construction and operation and of the PSP must be assessed.
9. **Dam Safety and Failure Analysis** (Dominion Water Power Regulations s. 44 and Canadian Dam Association Guidelines) – Probabilistic risk assessment, breach modelling, inundation mapping, and emergency preparedness planning for the ring dam and reservoir (26 million tons of water at 174 m elevation).
10. **Health and Well-Being Assessment.** Residents and families with farms and homes within 5 kilometers of the project would potentially suffer the greatest human impacts from the project's construction and operation. Those closest would suffer the most. This comprehensive assessment must determine what the effects would be and whether they can be avoided or mitigated and what those actions would be.
11. **Business Impact Assessment.** Business impact study for opportunity readiness, scaling and then reduction when business volumes drop at end of construction with identification of planning and management processes needed to manage growth and business erosion.
12. **Construction-Phase Impact Assessment** – Site-specific modelling of noise, vibration, air emissions, particulate dispersion, and water-quality impacts from multi-year blasting, drilling, tunnelling, dewatering, and heavy-vehicle/barge traffic.
13. **Drinking Water and Municipal/Private Intake Assessment** – Hydrodynamic, thermal, and contaminant transport modelling of effects on all municipal and private drinking-water intakes along southern Georgian Bay.
14. **Quagga Mussel Fouling and Antifouling Assessment** – All components and environmental impact of any proposed treatment or clearing measures must be assessed.
15. **Transmission Infrastructure and Piecemealing/Cumulative Effects Study** – Full route analysis and environmental assessment of the 80 km high-tension transmission lines, integration of DND facility relocations, off-site staging/concrete plant, in-water construction, and marine dock, with landscape-scale cumulative effects modelling.
16. **Military Operations, Defence Readiness, and Site Compatibility Assessment** – Updated DND evaluation of land-use compatibility on an active training base, incorporating Canada's

changed defence posture since the project was first introduced in 2016. Include examination of alternative use by the property on 4CDTC by the military in service to its mission. Examine DND's commitment and practices to "be a good neighbor "in military base operations. Examine DND's commitment to the environment and provide an analysis of whether the use by this proposed project is consistent.

17. **Robust Alternatives Analysis and Updated Economic/Cost-Benefit Study** – Independent, full-lifecycle comparison of open-loop pumped storage versus battery energy storage systems and other options.
18. **Overlapping Risks Assessment** – Overlapping risks increase the probability for incidents of calamity. Failures in project systems with this complexity, with this long list of hazards and environmental impacts are due to, not one factor going wrong, it is multiple factors going wrong. A comprehensive multi-discipline assessment is required to assess the overlapping risks, consequences, potential problem analysis and preventive and contingent actions.
19. **Decommissioning and Lifecycle Assessment** – Credible engineering plans, cost estimates, and financial assurance mechanisms for removal or safe abandonment of all infrastructure.
20. **Indigenous Knowledge, Cultural Heritage, and Transboundary Great Lakes Study** – Full incorporation of Indigenous expertise and binational water-quality modelling under the Great Lakes Water Quality Agreement and Boundary Waters Treaty.
21. **Willing Host** – The concept of willing host must be examined in this process. It is vitally important that the residents support development. All residents to be touched by a project in whichever way that would evolve. This requires complete and transparent developer disclosure and a willingness to accept a NO if residents are not in accord. Referendums of all Georgian Bay communities should be considered including Indigenous communities.

All studies must follow best-practice methodologies and be subject to independent peer review with meaningful public and Indigenous participation. All inquiries and studies should be defined with Terms of Reference, public engagement with input, supplemental independent studies for especially critical areas including water quality, SARs, air quality, private wells/intakes and fish habitats. Clarification of how these criteria are applied, and whether they are applied consistently across projects, is central to assessing the suitability of the 4 CDTC site. A multi-stakeholder Panel Review process is appropriate.

8.0 Municipal and Community Context

Eight municipalities throughout the Georgian Bay region have adopted resolutions opposing the project or calling for comprehensive, independent environmental assessment prior to any advancement of the proposal. See Appendix A. These resolutions cite concerns related to environmental risk, water quality, fish and wildlife habitat, project cost, and ratepayer value. Even the two resolutions from the municipalities of Meaford and Owen Sound, municipalities hoping to gain jobs and benefits, stated an expectation of environmental assessments. In the IPD the proponent admits to completing studies , yet has not released them to the public.

While these resolutions reflect local perspectives, they also underscore the level of concern regarding the adequacy of the information currently available to assess the project. This project touches the water and habitat of Georgian Bay on a scale greater than any other project proposed for many decades, perhaps ever. Most of the proponent's public engagement has been centered in Meaford. All municipalities around the Bay, all the communities around the Bay, should have an opportunity to choose whether the Georgian Bay region is a willing host.

The province and federal governments are relying on a vote by Meaford's Municipal council members to determine whether this community is a willing host. In Meaford's case, not only was the council vote split, the community had much disagreement. IAAC should examine and contribute to redefinition of willing host requirements, for projects of scale.

9.0 Conclusion

Based on 7 years of experience studying the project, probable impacts, energy storage and the interests of the Georgian Bay Community, Save Georgian Bay concludes that the Initial Project Description does not provide sufficient information for IAAC to determine whether the proposed project may cause significant adverse environmental effects under section 22 of the Impact Assessment Act. Key project components remain undefined, baseline environmental and geotechnical conditions are inadequately characterized, and cumulative effects are not addressed in a meaningful way. Without further definition and disclosure, neither IAAC nor the public can fully evaluate the proposal.

Save Georgian Bay has studied the project to protect public health and well-being, to protect the birds, the bats, the western chorus frogs, the sturgeon and the trout. To protect ratepayers across Ontario as well.

Citizens around the Bay are dismayed at the lack of detail. All residential participants who have studied the project were waiting for clear answers, a complete design, clarity around the problems, and for the solutions TC Energy was offering to avoid harm. We found it to be a document empty of details and full of ambiguity. Opaque instead of transparent.

Save Georgian Bay therefore submits that the IPD requires further development and clarification before any determination is made regarding the project's advancement, and that a comprehensive Impact Assessment with a Panel Review process is warranted should the project proceed.

Appendix (submitted separately)

- Appendix A - Municipal Resolutions
- Appendix B - Selected Correspondence for Contextual and Reference
- Appendix C - Comparable Facility Context
- Appendix D – Environmental References & Survey for Endangered Bats