REGISTRATION PURSUANT TO CHAPTER E-14.2

OF THE ENVIRONMENTAL PROTECTION ACT, SNL 2002

ENVIRONMENTAL ASSESSMENT

FOR THE DEMOLITION OF THE EXISTING BRIDGE AND CONSTRUCTION OF A NEW BRIDGE ON HUMBER CANAL AT THE TAILRACE AT DEER LAKE

ROUTE 1 KM 643.2

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PROPONENT:

i. Name of Corporate Body

Department of Transportation and Infrastructure
Government of Newfoundland & Labrador

ii. Address

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iii. Chief Executive Officer

Sean Dutton
Deputy Minister
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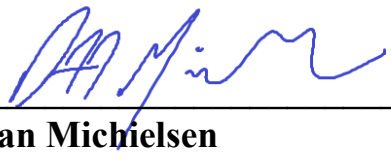
iv. Approval for Environmental Assessment Submission



Dan Michielsen
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May 6th , 2025
Date

v. Principal Contacts for the Purpose of Environmental Assessment

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The Undertaking:

(i) Name of the Undertaking

This submission is for the construction of a new bridge on Humber Canal over the tailrace at the power station outlet on Route 1 and the demolition of the current deteriorated bridge. There will be some road realignment at both ends of the bridge. Its location falls along the southwestern edge of Deer Lake and is part of a scheduled salmon river – Humber River (see Appendix).

(ii) Nature of the Undertaking

The construction of a permanent bridge on Route 1. The new bridge will be constructed immediately adjacent downstream of the existing bridge which will be left opened to traffic during construction. Once the new bridge is constructed and associated roadwork opened to traffic the existing bridge will be removed.

(iii) Purpose / Rationale / Need for the Undertaking

The purpose of this project is to replace the aged and deteriorated bridge at the tailrace of the power station on Route 1.

Geographic Location

The project location is on Route 1 at the crossing of Humber Canal adjacent to the power station at km 643.2. The coordinates are Northing: 5446489.96 m, Easting 468169.46 m.

There are no additional routing alternatives to replacing the bridge. It is an essential link on Route 1 and any alternative would not be feasible. The current bridge is a concrete slab-on-girder consisting of three-simple spans supported on concrete abutments and piers that are presumably founded on bedrock. The bridge carries two lanes of traffic and spans approximately 93.5 m. It is 9.8 m wide

Physical Features.

The outlet of Humber Canal is a tailrace from the power plant. The discharged water empties directly into Deer Lake and is part of the Humber River system - a scheduled salmon river. Detailed design work and existing environmental conditions determine the type of structure which will be required and what modifications will be incorporated into the structure to allow for fish habitat. The existing environment at the site consists of deep riffle habitat emanating from the outflow of the power station. There is no migration possible upstream of this site and the salmon may only be holding here temporarily to take advantage of cold temperatures and oxygenation. The site of the crossing was previously disturbed with the installation of the original bridge and is a popular salmon fishing spot. It empties into Deer Lake.

Environment.

The environment is part of the Western Newfoundland Forest Ecoregion, Corner Brook subregion. Local variation in the geology of the Western Newfoundland Forest ecoregion has affected its geography and biology. This ecoregion experiences warm summers and cold winters and is considered one of the most climatically favorable regions for plant growth on the island. Its mountainous terrain leads to high rainfall amounts, and winds off the Gulf of St. Lawrence drop their moisture when they ascend the slopes. The high humidity contributes to the

favorable growing conditions. The Long Range Mountains also provide protection from cold northeasterly winds, which gives this ecoregion the longest frost-free periods on the Island.

This subregion is characterized by forested, rolling hills, and an underlying limestone geology.

Wildlife in this ecoregion is among the most diverse on the Island. Moose, snowshoe hare, muskrat, otter, mink, black bear, red fox, beaver, otter, and lynx occur throughout this subregion. Caribou belonging to the Middle Ridge herd can be found in this subregion occasionally. Part of the range of the largest remaining population of threatened Newfoundland marten is located in this subregion, in the old-growth forests just west of Grand Lake. At rare occasions caribou from the Sandy Lake/Gray River herd from the western Maritime Barrens sections also appear in this region. Other mammals can be seen in the area as well, such as little brown bat, eastern chipmunk, masked shrew, meadow vole and red squirrel. The disturbed, commercial environment at this location does not provide much terrestrial habitat for most of these species of wildlife.

Fish species within the ecoregion may include Atlantic salmon, brook trout, arctic char, rainbow smelt, mummichog, and banded killifish. three-spined stickleback, three-spined stickleback, black-spotted stickleback and American eel. The banded killifish has been designated as special concern in Newfoundland, meaning it is at risk because of low numbers. The habitat at the project location is of very rapid flows which preclude any habitat requirements of the Banded Killifish. The velocities and turbulence found at the outflow of the powerhouse allowing only those species of fish that can withstand the constant energy output from the flows. Those species are the Atlantic salmon, arctic char and brook trout.

Birds found within this subregion include a variety of finches (i.e.: purple finch and pine siskin) and warblers (i.e.: black-and-white warbler, magnolia warbler, American redstart, and Tennessee warbler). Yellow-bellied flycatcher, tree swallow, solitary vireo, and thrushes (Swainson’s thrush and veery, for example) also occur. As the site is adjacent to a powerhouse, highway, and popular fishing spot, favorable habitat of these birds doesn’t exist therefore it is not expected to be of high value to these birds.

The green frog, an introduced species inhabits small quiet ponds and marshes, but it is not widespread, and populations are small. The American toad, wood frog, striped chorus frog, and northern leopard frog (all introduced to the Island) have been recorded in extremely low numbers, and mostly in the Corner Brook area. No reptiles have been recorded for this subregion.

The area needing to be cleared has been previously disturbed and now consists of a mix of young regenerating deciduous and coniferous trees and other herbaceous plants. The reach of the stream is a holding corridor located at the existing bridge location. The substrate consists of pebbles, cobble, rubble, and boulders within a deep 133-metre channel emptying into Deer Lake immediately downstream of the crossing.

The Department of Transportation and Infrastructure (DTI) will consult with the Water Resources Division of the Department of Environment and Climate Change to ensure that the best available data is utilized to design the bridge. The Water Resources Division's Environmental Guidelines for work around watercourses will be used during the design and construction phases.

The bridge will be designed and constructed in consultation with Fisheries and Oceans Canada (DFO). The bridge will be designed and constructed to have increased flow capacity and minimal impact on fish and fish habitat and in accordance with:

- DFO's Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador (1998);
- DFO's Measures to avoid causing harm to fish and fish habitat (http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html) and fish passage guidelines and other applicable guidelines and Fact Sheets

Potential receptors are residents of Deer Lake as the project site is within the town limits at the western boundary. Receptors include all travelers on Route 1 Trans Canada Highway as well as all the communities in the vicinity of Deer Lake such as Pasadena, Nicholsville, Saint Judes. The interchange with Route 430 is approximately 2.4 km entrance to Deer Lake Regional Airport is approximately 3.88 km. Both are to the east of the project site.

Public Concerns:

A public meeting was held on March 27, 2025 in Deer Lake. At this meeting several concerns were brought forward all of which were mitigated in the construction plan. Some of the main concerns are underlined below with their corresponding solutions:

The new bridge should be wider. The new bridge will be 16m versus the width of the current bridge at 9.8m and will also include sidewalks.

Will there be a loss of angling area? The new bridge will be inside the current "No Fishing" zone with no impact on the current fishing area.

Access to the fishing area and park. A new parking lot and accessible trail will be constructed to access the fishing area and park. The intersection with Route 1 will be safer than what is there now with improved accessory lanes and sight distances.

Feedback was positive with all attendees agreeing the bridge needs to be replaced.

Construction:

The existing structure was built in 1963 and is a three-span, pre-stressed concrete girder structure on concrete abutments and piers all with shallow foundations as substructure. There are two piers in the river. The width of the existing travel way is 7.3m. The structure is located on Route 1, at the western edge of the town of Deer Lake. The intent of this project is to replace the existing bridge with a new one immediately downstream.

The new bridge width will be 15.9m wide continuous 96m two span bridge constructed from three trapezoidal steel-box girders that act compositely with a 225 mm thick reinforced concrete deck supported on integral abutments and a centre pier. Driven steel piles and augured concrete caissons act as deep foundations to support the abutments and pier respectively. The abutments will be out of the water, so we would expect minimal instream work to occur. The new bridge has been designed to accommodate a 1:100-year flood including climate

change effects with 1m freeboard. There is no anticipation that floating debris will be at this site due to the presence of the power station 60 m upstream. There are no large trees upstream of the bridge.

The Contractor shall submit a demolition plan for the old bridge to the Resident Engineer/Senior Environmental Planner for review and approval prior to commencing demolition work. Demolition and removal of the existing structure shall be carried out such that no significant debris enters the river. Busting of the existing structure while in place shall not be permitted. The Contractor shall ensure that all waste material from the bridge demolition is disposed of in accordance with the Environmental Protection Act, SNL2002 CHAPTER E-14.2 and prior approval by the Department of Environment and Climate Change. The Contractor's Demolition Plan shall clearly demonstrate that there is compliance with all environmental requirements for the project and adhere to the Contractor's Responsibilities – Regulatory Agencies Section 805.

All work under this item will be in accordance with Section 919.04 of the Departments Specifications Book, MAINTENANCE OF TRAFFIC, except where superseded by the requirements of this or another Supplementary General Conditions.

Fording or moving equipment through the river, or across any other watercourse, will be strictly prohibited. Temporary culverts or temporary bridging are preferred at such locations where frequent fording would be required.

Bridge construction will meet S6-19, Geometric Design Guideline for Canadian Roads 2019 standards and the design load is CSA S6-19. The Department of Transportation and Infrastructure will be improving upon the hydrology of this crossing by increasing the opening (end area) of the new permanent structure to allow for 100-year flooding projections. It will be performed by contract forces. The various phases will involve:

(a) field surveys;
(b) new crossing installation;
(c) demolition of old bridge
(d) clean-up and rehabilitation.

The potential sources of pollution during construction would be limited to the possible siltation of the river during subgrade construction. To prevent siltation within the river during construction the Contractor shall use the mitigation in the Specification book, Sections 815 Protection of Watercourses and Water Bodies, 816 Silt Fence, 817 Check Dam Sediment Trap, 818 Floating Silt Curtain/Turbidity Barrier and 845 Equipment Operation and Prevention of Erosion and Siltation (https://www.gov.nl.ca/ti/hdc/highway-specification-book/division-8/). In addition, the potential exists for hydrocarbon spillage from temporary fuel storage facilities. Contractors will be advised of the environmental requirements for stream crossings and for hydrocarbon spill reporting and the necessity of strict compliance. Flow regime protection and shoreline stabilization will be a priority of DTI.

Owner's Policy (Division 8, General Specifications Book, 2011):

To ensure protection of the environment, the work at all times shall be subject to inspection by the staff of relevant municipal, provincial and federal agencies. Normally, all inspections other than by the Engineer will be arranged in advance through the Engineer. Any specific matters relating to environmental protection will be dealt with between the Contractor and the Engineer.

Any violations of environmental permits or authorizations or any environmental related incidents which are observed by inspectors representing regulatory agencies are to be reported by them prior to leaving the site to the Engineer. Except in emergency situations, environmental protection measures required by other agencies must be approved by the Engineer prior to implementation by the Contractor.

It is Owner's policy to protect the environment along the route of the project, in areas adjacent the route, and in associated work areas such as pit or quarry sites. DTI is committed to cost-effective environmental protection measures that will prevent serious or irreversible environmental damage through the planning and implementation phases of the project.

Protection of Vegetation and Wetlands:

The Contractor shall be made aware that the work required in and around water crossings shall be performed with due care and caution to prevent undue disturbance to adjacent vegetation and the environment from construction activities and off Right-Of-Way (ROW) travel (Section 850). Immediately following and during some construction activities, the Engineer may identify areas requiring seeding/sodding or stabilization by a method to prevent erosion. Damage or disturbance of vegetation and/or wetlands outside the ROW shall be re-vegetated and/or restored to the satisfaction of the Resident Engineer at the Contractor's expense (Section 855).

Storage and Handling of Fuels and Other Hazardous, Toxic, or Dangerous Material:

Typically, fuel is brought in when needed and storage tanks aren't used. If used, all storage tank systems must be registered under and in compliance with Newfoundland Regulation 58/03, The Storage and Handling of Gasoline and Associated Products Regulations, 2003 before commencing operation. Registration does not apply to storage tank systems of a capacity less than 2500 litres that are connected to a heating appliance. Contractors shall supply verification of storage tank registration to the Engineer prior to the commencement of work (Section 820).

There is no treated wood waste at the site of the old bridge but if any is to be found it will be subject to the Treated Wood Waste Disposal guidance document - https://www.gov.nl.ca/ecc/files/env-protection-waste-guidancedocs-gd-ppd-075.1treated-wood-waste-disposal-.pdf In the case any is found, sampling and analysis of creosote-treated wood and excavated soil would be provided to ECC prior to any approval for disposal of the waste at a regional waste management facility. Sampling and analyses of any excess soil removed - to treatment if there are exceedances of CCME soil quality guidelines for industrial sites- or to disposal to landfill or for reuse at any other site, will be provided to ECC for approval to either reuse or dispose.

Excavated soils, concrete rubble and dredged materials will all be dealt with under the guidance document https://www.gov.nl.ca/ecc/files/env-protection-waste-guidancedocs-excsoilsconcreterubbledredgedmaterials.pdf

Contractor Environmental Mitigation Plan:

A Contractor Environmental Mitigation Plan (CEMP), completed by the Contractor and approved by DTI before work commences, is required for this project.

Elements required in a CEMP are:

- Pre-construction planning, including the identification project-environmental interactions (e.g., Valuable Ecosystem Components including: public and worker safety, wildlife, habitat, plants, resource users, etc.);
- Detailed environmental mitigation measures to avoid negative or irreversible environmental impacts;
- Contingency plans for unplanned events;
- List of DTI and Contractor contacts and reporting numbers; and
- Decommissioning Plan that includes site rehabilitation measures.

The potential for adverse environmental impacts during construction will be minimized as all construction activities will be undertaken in accordance with the environmental requirements of the Department of Transportation Specification Book for transportation projects.

Prohibitions:

The following are directives for the Owner and Contractor in carrying out this project. Reference is also provided to the Section where this prohibition is located in Division 8.

- Contractors, subcontractors and their personnel shall not harass wildlife or waterfowl or unduly disturb fish (Section 805);
- No pesticides or other products shall be used without prior approval of the Owner and the Department of Environment and Climate Change (Section 810);
- The Contractor shall not wash equipment or containers, nor dump herbicides in or near any fresh or saltwater bodies, or at any location where the herbicide may enter a body of water (Section 810);
- No person shall discharge into a body of water any sewage or effluent (Section 815);
- The use of equipment or machinery in a watercourse or water body is not permitted (Section 815);
- The Contractor shall not ford a watercourse without prior approval from the Resident Engineer (Section 815);
- Silted or muddy water is not permitted to be released into any watercourse or water body or into any ditch or areas that leads directly to a watercourse or waterbody (Section 815.07);
- Smoking shall be prohibited within 10 m of a fuel storage area or during refueling operations (Section 820.03);
- Fueling or servicing of mobile equipment shall not be allowed within 100 m of a watercourse, water body, or designated wetlands (Section 820.03);
- The Contractor shall ensure that no servicing or washing of heavy equipment occurs adjacent to watercourses and designated wetlands. Fueling, servicing or washing of equipment shall not be allowed within 100 m of a watercourse (Section 820.04);
- No waste material shall be deposited in any watercourse or wetland (Section 825.01);
- There shall be no open burning of waste material, slash or grubbing material onsite. Rubber tires, waste oil, or similar material shall not be used to ignite slash or used to maintain the burning operation (Section 835);
- Unnecessary cutting of trees is to be avoided. Care will be taken during construction to prevent damage to trees and shrubs adjacent to the flagged clearing limits which are to remain after construction (Section 850);

- The Contractor shall not use living trees as survey marks and shall not cut blazes or otherwise mark live trees except with removable surveyor's tape and/or tags (Section 850);
- The Contractor shall limit equipment travel to the surveyed right-of-way and existing municipal and provincial roads. Use of equipment of any type is not permitted outside the clearing limits of the right of way without prior approval (Section 850); and
- Should any archaeological remains be encountered, such as stone, bone or iron tools, concentrations of bone, fireplaces, house pits and/or foundations, work in the area of the find shall cease immediately in accordance with the Historic Resources Act (RSNL1990 CHAPTER H-4) (Section 860).

Operation:

The bridge is a permanent operation. Winter maintenance will consist of snow clearing and the application of sand and salt for ice control.

The current bridge will serve to allow traffic to continue during the construction of the new bridge. It will be removed once the new bridge is open to traffic.

Occupations:

The various types of occupations anticipated for this project include:

(a) Civil Engineers; 2130
(b) Structural Engineers; 2231
(c) Engineering Technicians; 2231
(d) Road Surveyors; 2154
(e) Heavy Equipment Operators; 7521
(f) Drillers and Blasters; 7372
(g) Carpenters; 7271
(h) Heavy Equipment Mechanics; 7312
(i) Labourers; 7621

(j) Truck Drivers; 7511
(k) Concrete Finishers; 7282
(l) Concrete Technicians; 7282
(m) Material Technicians and Engineers; 2231
(n) Steel Erectors. 7236
(o) Senior Environmental Planner 2121

Contract completion is expected to be July 31, 2027. There is an estimate of approximately 50-100 general construction workers during building. Specialties may include 1-2 welders (2 weeks estimated), 5-10 rebar tiers (1 month estimated), 1-2 crane drivers (2 months estimated). All of the above could change depending on the Contractor and when tender is awarded. Numbers and duration of employment of individuals can't be determined as the winning bidder, the Contractor, has the responsibility of choosing their own employees. This occurs after the project goes to tender which takes place only after the project receives approval from the EA process.

Project-related Documents:

- Contractor Environmental Mitigation Plan.
- Department of Transportation and Infrastructure Specifications Manual
- NL DTI Deer Lake Tailrace Bridge Geotechnical Report.

Approval of the Undertaking:

The following is a list of the permits, licenses, or approvals that may be necessary for this project:

MAJOR REGULATORY APPROVALS BY TYPE AND AGENCY

Type of Permit	Agency
Stream crossing approvals	Dept. of Fisheries & Oceans
Stream crossing approval	Water Resources Division
Fuel storage & handling	Government Service Centre
Solid waste disposal	Government Service Centre
Commercial Cutting	Fisheries, Forestry, and Agriculture
Environmental Assessment	Environment and Climate Change

Schedule:

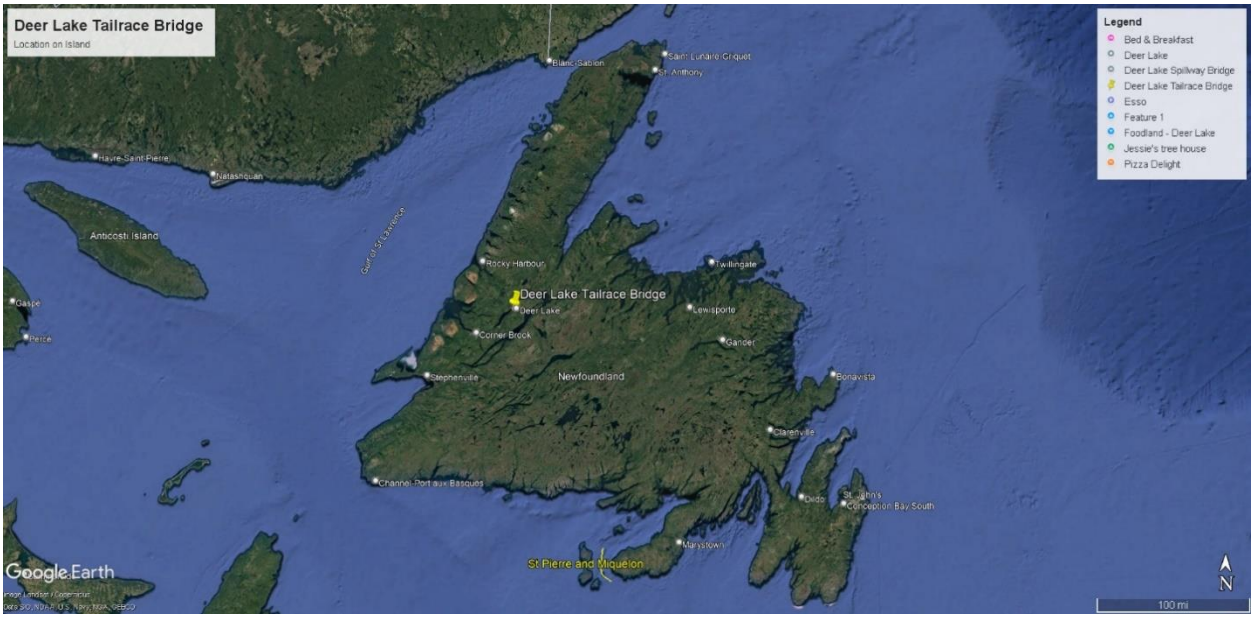
The Department of Transportation and Infrastructure would like to complete the requirements of the Environmental Assessment Act and seek approval for the project by 2025 07 31. A tender call could take place in early spring of 2026 with construction starting shortly after.

Funding:

Due to the tendering process and competition between Contractors with the costs involved the Department of Transportation and Infrastructure isn't in the position to reveal the potential cost of the project.

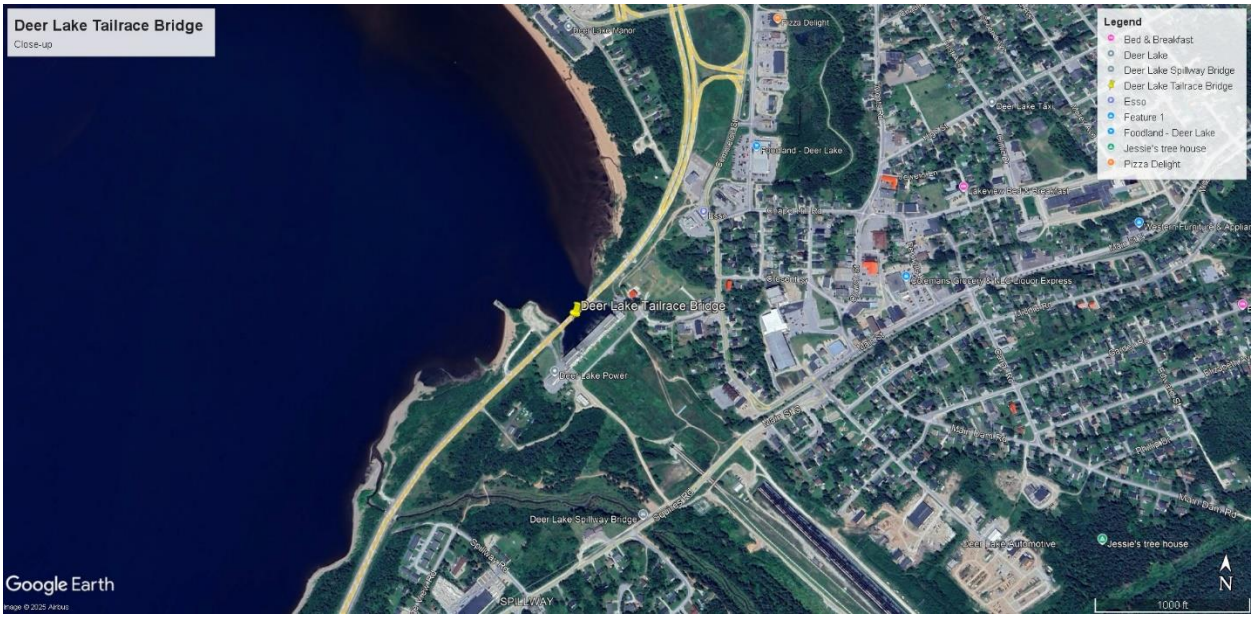
Appendix

General Project Details



Map 1: Location on Island

Map 2: Broad view of site



Map 3: Location of Bridge Site in Deer Lake

Map 4: Close-up of Bridge Site

Photo 1: Downstream

Photo 2: Upstream

Photo 3: Street View Looking Northeast

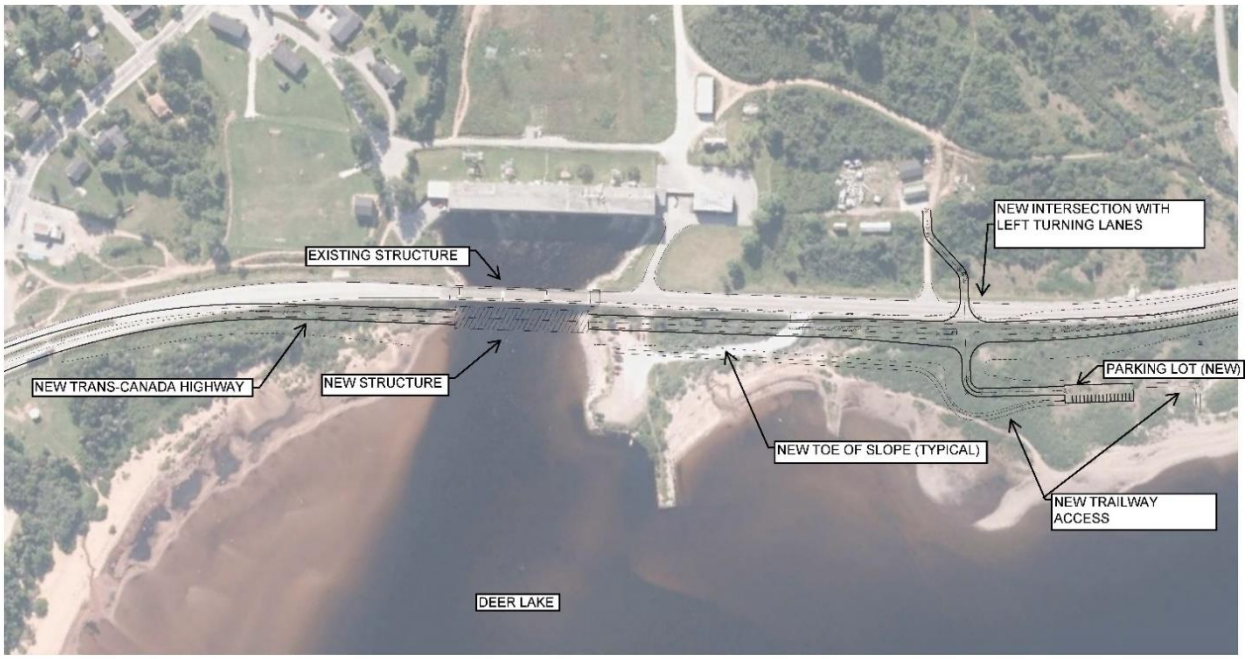


Fig 1: Drawing of New Location and Approaches