

Ontario Power Generation

Proposed Coniston Generating Station Life Extension Project

**Public and Agency Consultation
Technical Support Document**

January 2023

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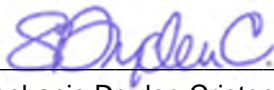
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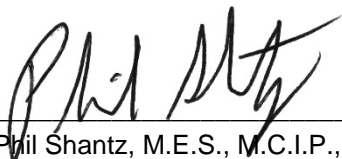
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Acronyms and Abbreviations

Class EA	Class Environmental Assessment
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
<i>EA Act</i>	<i>Environmental Assessment Act</i>
ER	Environmental Report
GS	Generating Station
MECP	Ministry of Environment, Conservation and Parks
MNRF	Ministry of Natural Resources and Forestry
MTCS	Ministry of Tourism, Culture and Sport
OPG	Ontario Power Generation
OWA	Ontario Waterpower Association
OWA Class EA	Ontario Waterpower Association Class Environmental Assessment for Waterpower Projects

Executive Summary

Ontario Power Generation (OPG) is proposing to redevelop the existing Coniston Generating Station (GS). OPG has conducted several studies over the last decade assessing the condition of the existing facility and whether the Coniston GS should be refurbished to extend operating life or redeveloped.

The proposed Project is located within the boundary of the City of Greater Sudbury. The Coniston GS is located on the Wanapitei River 16 kilometre east of the city centre of Sudbury. The Wanapitei River is a tributary of the French River and has its headwaters north of Coniston with the first large waterbody being Wanapitei Lake. Two redevelopment options were being pursued: refurbishment of the existing powerhouse, or re-development with a new intake/powerhouse, forebay and tailrace.

This Technical Support Document (TSD) assesses the public and agency consultation undertaken as part of the Class Environmental Assessment (Class EA) for the proposed Project.

The consultation program included: two sets of public open houses, the first being held in Sudbury in 2019 and a second virtual session in 2022; public notices; a project website and the provision of opportunities for on-going consultation. Generally, public interest has been low. Only thirteen individuals attended the first open house. The second open house was presented virtually and without a designated time, however only two comments were submitted.

The two open houses demonstrated that there is no public opposition to the proposed project. There was not a single individual indicating opposition to the Project. One member of the public has indicated concerns with greenhouse gas emissions associated with reservoirs and fish passage. It is our opinion that all public comments to date have or are being addressed.

Consultation with agencies has included the: Ministry of Environment Conservation and Parks (MECP); Ministry of Northern Development Mines Natural Resources and Forestry (MNDMNRF) (recently changed to only Ministry of Natural Resources and Forestry (MNRF)); Ministry of Tourism, Culture and Sport (MTCS) (the responsibility for administration of the Ontario Heritage Act (OHA) and matters related to cultural heritage was recently transferred from the MTCS to the Ministry of Citizenship and Multiculturalism (MCM) the two are used interchangeably in the Report; Department of Fisheries and Oceans (DFO); and the City of Greater Sudbury. Agency consultation events have included: tours of the site; large OPG-agency meetings and informal communications. OPG has facilitated as much consultation as requested by the government agencies.

OPG circulated the final draft ER and associated TSDs to MECP, MNRF, MCM, DFO, City of Greater Sudbury and Conservation Sudbury. Comments were received from MCM and MNRF. Those comments and the responses from OPG and Arcadis are presented in Appendix A of the Environment Report. Some of those comments have resulted in minor edits to the ER and TSDs.

Significant agency consultation will still be required following the environmental assessment with respect to specific permits and authorizations.

1 Introduction

1.1 Regulatory Framework and Environmental Assessment Process

In Ontario, proposed waterpower facilities are subject to the *Environmental Assessment Act (EA Act)*. The Ontario Waterpower Association (OWA, 2018) developed the Class Environmental Assessment for Waterpower Projects (OWA Class EA) process which was approved by the Ontario Minister of the Environment and the Lieutenant Governor in Council in 2008. The *EA Act* formally recognizes the OWA Class EA process which outlines the requirements for Environmental Assessment (EA) approval. The proposed Coniston Station Re-Development Project (CSRP) has been carried out according to the eighth edition of the OWA Class EA. While a ninth edition of the OWA Class EA was recently approved by the MECP (2022), the environmental impact assessment process, the Environmental Report and TSDs have been carried out according to the eighth edition of the OWA Class EA because OPG had been actively carrying out the project and this environmental assessment since 2019. Under the OWA Class EA eighth edition, the proposed CSRP is classified as a “Project Associated with Existing Infrastructure”.

1.2 Other Environmental Approvals

Other permits, approvals and clearances will be sought as the proposed Project moves into the construction stage. Section 7.2.4 and Table 7.2 of this Environmental Report (ER) identify a range of possible approvals required; however, specific permits and approvals will likely be required under the provincial *Lakes and Rivers Improvement Act (LRIA)*, *Environmental Protection Act (EPA)* and *Ontario Water Resources Act (OWRA)*. It is also noted that at the time of the writing of this ER both the provincial and federal governments are making changes to legislation and policy which may add, eliminate, or modify the types of permits and approvals required.

1.3 Overview of the Public and Agency Consultation Technical Support Document

This document provides a summary of the public and agency consultation undertaken as part of the EA of the construction and operation of the proposed Project. The ER associated with the proposed Project provides a description of the undertaking, summarizes the overall baseline environmental setting and anticipated environmental effects, recommends appropriate mitigation measures to minimize or obviate these effects, and describes agency, public, and First Nation and Métis consultation.

This Public and Agency Consultation report is organized into six chapters:

- Chapter 1.0 Introduction and Regulatory Framework – this section;
- Chapter 2.0 Project Description and Project Activities – describes the proposed Project in detail;
- Chapter 3.0 General Consultation – outlines the consultation plan that was prepared, databases developed and notices that were produced;

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- Chapter 4.0 Public Consultation Open Houses and Meetings – summarizes the various public consultation activities;
- Chapter 5.0 Government Agency Consultation – summarizes government agency consultation; and
- Chapter 6.0 Summary and Conclusions – outlines the summary conclusions with respect to the proposed Project and public and agency consultation.

The Appendices provide supporting documentation showing the notifications and open house materials.

2 Project Description

Ontario Power Generation (OPG) is proposing to re-develop the existing Coniston Generating Station (Coniston GS) and replace it with a new approximately 6.0 megawatt (MW) generating station with two generating units. The Project involves the demolition and removal of the existing powerhouse and construction of a new powerhouse.

The Project will be constructed by a Design Build Constructor that has not yet been retained. OPG is advised by KGS Group (the Owner's Engineer) and Arcadis (the Environmental Consultant).

2.1 Project Location

The existing Coniston GS is located within the City of Greater Sudbury about 16 km east of the city centre of Sudbury. Greater Sudbury is a large regional municipality that includes the former City of Sudbury, several former towns and villages and large rural areas. The Coniston GS is situated between and slightly south of two of these former villages, Coniston and Wahnapiatae, on the shore of the Wanapitei River (see Figure 2-1).



Figure 2-1 Location of the Coniston Generating Station

The Wanapitei River is a tributary to the French River. The headwaters of the Wanapitei River consist of a network of streams and lakes located in northeastern Ontario, north of the City of Greater Sudbury. The river has a general southward direction and is 167 km long where it drains into the French River. Its drainage area covers over 3,341 square kilometers. OPG owns the Wanapitei Control Dam (which controls outflows from Wanapitei Lake), and three generating stations on the River at Stinson, Coniston and McVittie. A fourth hydroelectric generating facility located at Moose Rapids, just south of the outlet of Lake Wanapitei, is owned by Trans-Alta.

As shown in Figure 2-1, Coniston GS is located approximately twenty-five kilometers south of the Wanapitei Dam that controls levels on Wanapitei Lake and flows down the river. The Coniston GS is situated between two other GSs. Stinson GS is operated by OPG and is located ten kilometers upstream of Coniston GS. McVittie GS is operated by OPG and is slightly over 20 kilometers downstream of Coniston south of Wanup.

The Coniston GS is located just outside the Village of Wahnapiatae and is accessed by the Trans-Canada Highway (Highway 17) and then the approximately 2-kilometer-long gravel Coniston Hydro Road. That road is gated at the OPG entrance to the Coniston GS site. If there are improvements that need to be made at the Highway this would involve a joint Ministry of Transportation/City of Greater Sudbury review. Any improvements to Coniston Hydro Road should also be brought forward to the city for discussions. OPG is of the opinion that the only road improvements required for the project are those that are internal to its property.

2.2 Existing Coniston Generating Station

2.2.1 History

Coniston GS was built by the Wahnapiatae Power Company in 1905. At the time, this station was known as the upper plant or Plant No. 1. Unit 1 was placed in service that same year, while units 2 and 3 did not come into service until 1907 and 1915, respectively. In 1913, the GS supplied the Coniston Smelter with some of its electric power. With the location of the smelter, Coniston grew from a village to a town within the Township of Neelon and Garson. In 1929, The International Nickel Company (INCO) consummated a merger with the Mond Nickel Company. The Wahnapiatae Power Company operated three generating stations (Coniston, McVittie and Stinson) and furnished power to the Mond Nickel Company at Coniston, the Treadwell Yukon Company, Falconbridge Nickel Mines and the City of Sudbury. The first hydroelectric power used by the Mond Nickel Company was supplied by this company. Power was furnished to the mine and smelter of the British American Nickel Corporation and to the Moose Mountain iron mine while those properties were operating. Control of the Wahnapiatae Power Company's properties was acquired by the Hydro-Electric Power Commission of Ontario (later Ontario Hydro) in 1929. From February 1929 until April 1930, the company continued as a joint stock company with the Commission's operating department controlling the operation of the three generating stations and transmission lines, the frequency being 60 Hz. In 1930, the Commission completed the purchase on behalf of the Provincial Government, and all the generating stations and transmission lines formerly owned by this company were included in the Sudbury area of Northern Ontario properties. Assets were transferred to OPG on April 1, 1999 (MNR, *et. al.*, 2011).

2.2.2 Existing Station

The existing GS has three double Francis units operating at a head of 16.5 m, with capacities of 0.9 MW (Unit 1 in 1905), 1.15 MW (Unit 2 in 1907) and 2.7 MW (Unit 3 added in 1915). The station has a total installed capacity of 4.75 MW, with a plant discharge flow of 44 m³/s at maximum plant flow and 33 m³/s at peak efficiency. The facility is old having been constructed in 1905 and the turbine units have reached the end of their service life. Two of the units are no longer running and the remaining unit is currently operated in a “run-to-fail” mode. The remaining unit is Unit #3 and has a capacity 2.7 MW. The Unit #1 penstock has collapsed while the Unit # 2 penstock was taken out of service due to being unsafe in its current condition based on its thickness, vibration and movement. The remaining penstock is in poor to fair condition.

While OPG intends to extend the life of the power production component of the Coniston GS, most of the other features and equipment at the site pertaining to water management will remain as is. Figure 2-2 below shows an aerial image of the Coniston GS and key surrounding features.

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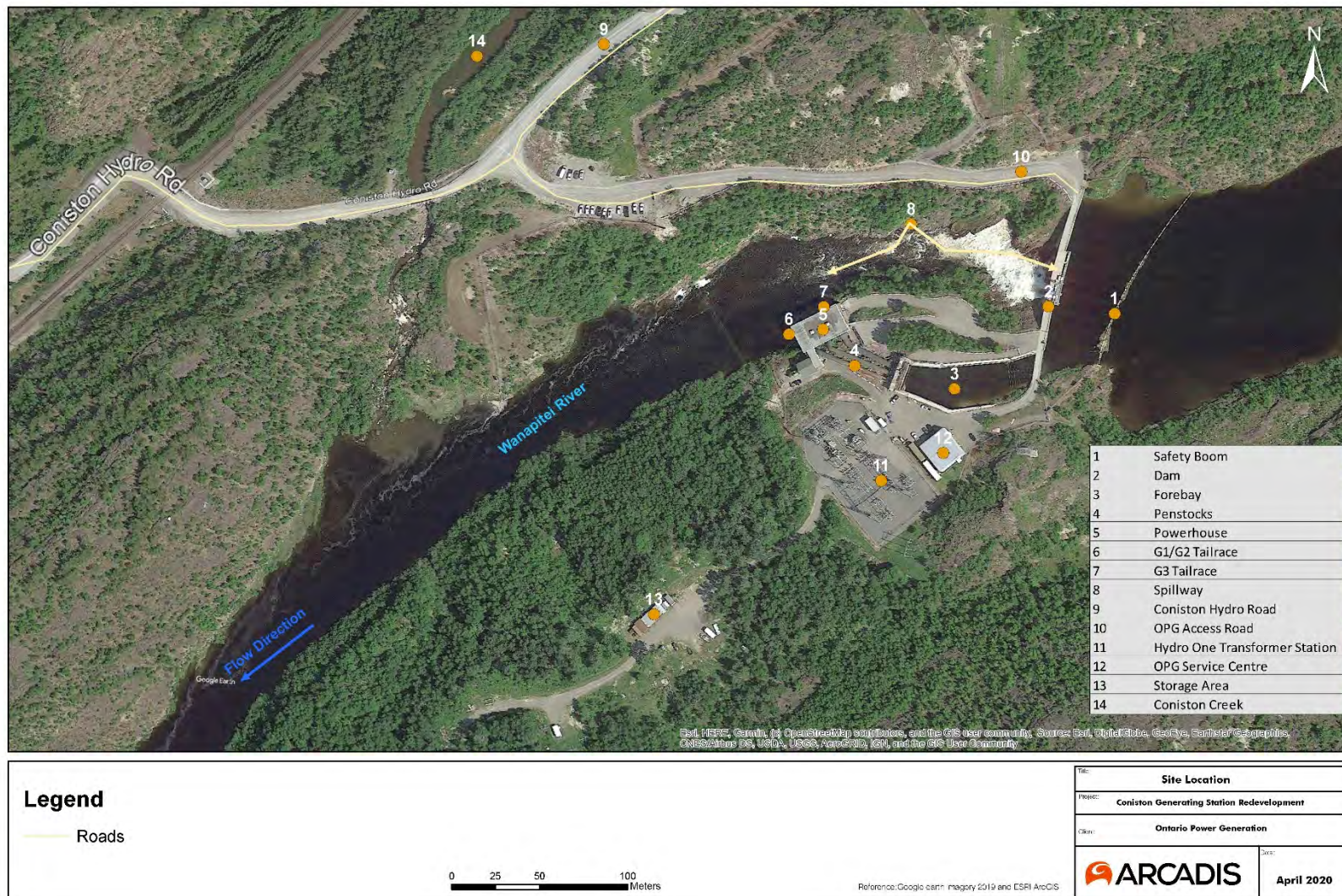


Figure 2-2 Coniston Generating Station Site Location Features and Facilities

The various features and facilities at the Coniston Generating Station are described below and depicted on Figure 2-2.

- #1 – Upstream Safety Boom;
- #2 – Main Dam;
- #3 – Forebay;
- #4 – Penstocks;
- #5 – Powerhouse;
- #6 – G1/G2 Tailrace;
- #7 – G3 Tailrace;
- #8 – Spillway;
- #9 – Coniston Hydro Road;
- #10 – OPG Access Road;
- #11 – Hydro One Transformer Station (currently has been decommissioned and removed);
- #12 – OPG Service Centre;
- #13 – Storage Area;
- #14 – Coniston Creek.

With respect to the existing facility the following is a short description of some of the key features.

Water-retaining structures include a main dam with sluiceway (total five bays) and inlet to the forebay canal, north forebay wall and head works for the powerhouse. The station is controlled from the Ontario Power Generation, Northeast Control center in Timmins. The concrete dam comprising of five sluiceways was constructed in 1938 and rehabilitated in 1955 and 1992. There are two mechanical gates and three stop log sluices. Each sluice has an individual discharge capacity of 88.3 m³/s, for a total dam discharge capacity of 441.5 m³/s. OPG will be reviewing the IDF capacity of the main dam as part of its overall dam safety assessment program.

The inlet and bridge structure was constructed in 1938 and consists of two bridge spans with a central pier. The centre pier is constructed on rock and divides the water passage into 2 sections temporarily. The bridge is currently load restricted and requires repair.

A coarse trashrack is located upstream of the bridge for removal of large logs. The concrete is original and new handrails have replaced the existing timber wheel guards.

The forebay canal walls were originally constructed in 1905 of ashlar masonry. A new concrete liner for the walls was constructed in 1982. Repairs to the headworks structure were also undertaken at the same time. A concrete cap, head walls, piers, base slab and gains were constructed upstream of the existing ashlar masonry headworks. The headworks structure now consists of four (4) outlets that are equipped with gates and hydraulically operated hoists (WSP, 2016).

The penstocks are original to the station and consist of riveted steel plates supported by concrete saddles. The Unit 1 penstock collapsed in February 2013 while dewatering due to a vacuum created in the penstock caused by the freezing of its air vent. It is no longer in service. Unit 2 is fed by a single penstock and Unit 3 is fed by two (2) penstocks that converge into a single penstock just downstream of the headworks. The Unit 2 penstock was taken out of service due to unacceptable thickness of the material, vibrations and movement. Each penstock has vertical air vents mounted at the upstream end of the penstocks, downstream of the headworks (WSP, 2016).

The powerhouse is the oldest structure at the site, constructed in 1905. A major repair to the powerhouse superstructure that included the replacement of the original timber pitched roof with a concrete flat roof was completed in 1954 (WSP, 2016). The existing generating units are double camelback Francis units that utilize a combined maximum flow of 44.3 m³/s. Unit 1 and Unit 2 have an installed capacity of 0.9 MW and 1.15 MW, respectively. Unit 3 has an installed capacity of 2.7 MW.

The new Coniston GS will be located across the road from the new 44 kV switchyard which is connected to Hydro One 44 kV M1 Feeder. The original HONI 22 kV switchyard was decommissioned in 2019. The 44 kV switchyard contains new equipment including Main Output Transformer and other 44 kV equipment, which will be retained. The new Coniston GS will be connected to this switchyard.

The Coniston Production Centre, constructed in 2005, is a pre-engineered steel building comprised of metal siding, insulation and liner. The building houses offices, a lunchroom, a locker room and a mezzanine level over top. The remaining space is an open area used for maintenance purposes.

The site access roads have precast jersey barriers installed in 2013 to prevent vehicles from veering off-course.

2.2.3 Operations

The Wanapitei River Water Management Plan (WRWMP) describes the operational requirements for the Coniston GS. As per the WRWMP (MNRF *et al*, 2011), the Wanapitei River is operated to optimize flood mitigation, recreation and aquatic needs as the highest priorities within the watershed. Power generation occurs as a secondary benefit. As part of the development of WMP, operating limits were established for each control and power generation facility in the watershed.

OPG owns the Wanapitei Control Dam (which controls outflows from Wanapitei Lake), and three generating stations on the River at Stinson, Coniston and McVittie. A fourth hydroelectric generating facility located at Moose Rapids, just south of the outlet of Lake Wanapitei, is owned by Trans-Alta. Except for Wanapitei Lake, there is very little water storage capability on the Wanapitei River and specifically in the reservoirs above each of the four GSs. As such, the Wanapitei River's four GSs operate in a cascade form of a system where water isn't retained for long above each facility but quickly passed on to the next (when there is sufficient water). The WRWMP does refer to the system as a run-of-the-river system (Figure 5-3 of the WRWMP) and defines the term, although the term can be interpreted differently. Flows on the Wanapitei River are generally controlled by the operation of the Wanapitei Lake Dam, which regulates water levels on Wanapitei Lake. The operation goal for the dam is to maintain proper balance between power production and impacts of flooding downstream with the effects of upstream high-water levels on lake residents. In general, the dam is opened gradually over the winter to lower the lake level in anticipation of the spring thaw. At the onset of the freshet, flow through the dam is closed off. The dam is reopened once inflows to the lake and river have subsided. Monthly average and maximum flows are shown on Figure 2-3

below. This data is generally reflective of the Wanapitei Dam operating strategy described above. During the winter months, flows are fairly steady as the dam is opened to draw the lake level down. The average flow for April drops notably compared to winter flows, as the dam is closed to prepare for the freshet. Largest flows occur in May and June as freshet flows pass through the system. The lowest flows occur in the late summer and early fall as water is held in Lake Wanapitei for recreational purposes (KGS, 2022).

For Coniston, the legal flow requirement is for 3 m³/s (calculated as a daily average). The control dam at Lake Wanapitei (which is also operated by OPG) is also required to maintain the 3 m³/s. It is OPG’s understanding that the minimum flow requirement of 3.0 m³/s exists at the Coniston GS as a recommendation from MECP. This 3.0 m³/s daily average minimum flow is in place to dilute the metal concentration of inflows from Coniston Creek, downstream of Coniston GS (MNR, *et. al.*, 2011). The current operating regime at Coniston GS does not have any seasonal limits.

Coniston also has legally required water ranges upon which it manages through the reach of the river above the facility. The minimum lower limit is 236.62 CGD (Canadian Geodetic Datum) and a maximum upper limit of 237.17 CGD.

Hydrologic data for Coniston Generating Station was provided by OPG. The flow and water level data consisted of daily averaged headwater levels, tailwater levels, and inflows between 1951 and 2017. The recorded tailwater levels were used to generate a tailwater rating curve for the plant. Figure 2-3 below displays the monthly minimum, 10th percentile, 50% percentile, 90th percentile and maximum average flows for 1951 to 2017.

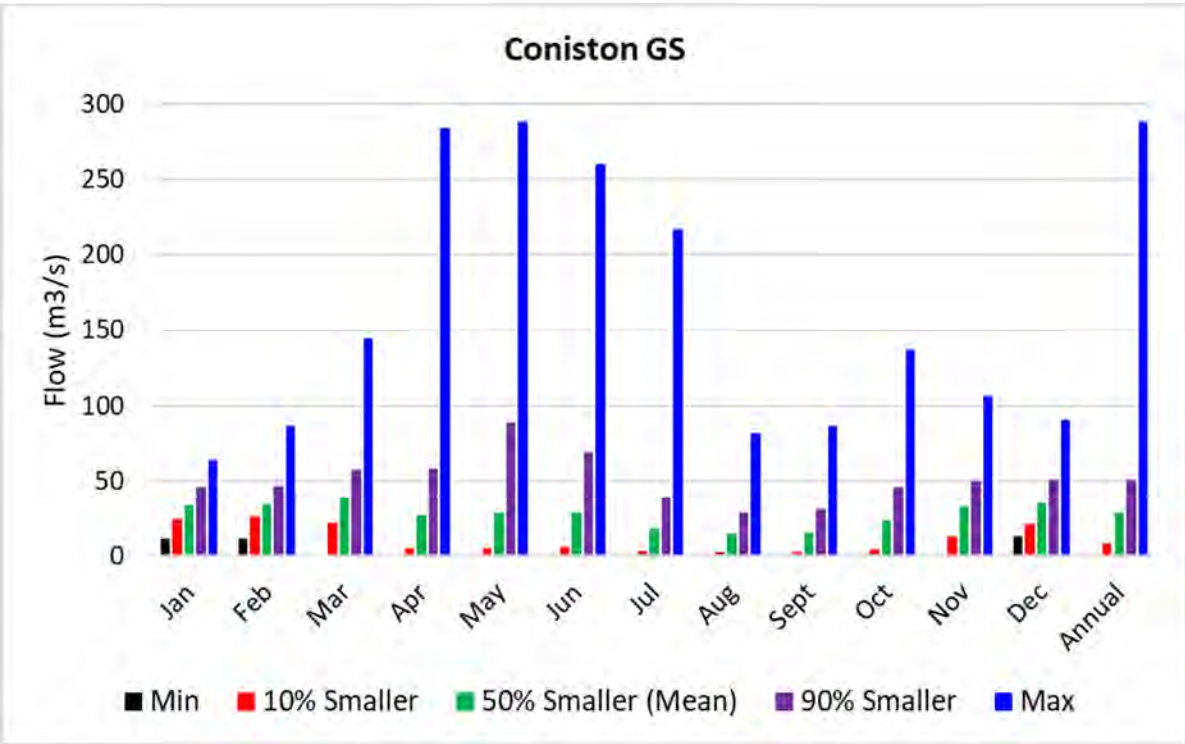


Figure 2-3 Monthly Flows at Coniston GS (KGS Group 2022)

OPG tries to operate its generators within the plant at peak efficiency thereby producing the greatest amount of hydro-electricity with the flows available. However, throughout the year, flows in the river may not be enough to operate the generators efficiently and the facility may vary flows through the unit(s), but a daily 3 m³/s average is maintained. This may result in minor fluctuations of downstream flows over a relatively short period of time. OPG attempts to maintain a continuous flow throughout the day. At times, it may be necessary to shut down all turbines during very low flows, but a daily 3 m³/s average is maintained. The existing WRWMP rules are always followed. The operating rules were set up recognizing the ecological conditions of the river and were the culmination of a multi-year planning process involving numerous stakeholders and government agencies examining various conditions and issues on the river.

2.3 Alternatives Analysis

OPG examined three alternatives for the life extension of the Coniston GS.

2.3.1 Alternatives

The following were the alternatives considered.

2.3.1.1 Alternative 1 – Redevelopment of Site with a New Powerhouse

Under this alternative an entirely new station would be constructed, likely just upstream of the existing powerhouse in the vicinity of the existing intake structure and penstocks. The existing powerhouse, intake structure and penstocks would be demolished. The new station would have two vertical units that are expected to produce just over 6 MW. Implementation of this alternative would involve the following components.

- Construction of a new powerhouse, with all new water-to-wire equipment and an integrated intake structure.
- Removal of all existing power equipment and demolition of the existing powerhouse.
- Demolition of the existing intake structure and penstocks.
- Partial reconstruction of the intake canal to facilitate tie in of the new structure and minor rehabilitation of the remaining intake repair any deficiencies.
- Removal and replacement of the existing forebay bridge.
- Connection to existing substation.

2.3.1.2 Alternative 2 – Refurbishment of the Existing Powerhouse

Under this alternative, major modification and civil work would occur within the powerhouse to replace the current units with two new units in two of the existing bays. The existing intake structure and penstocks would be replaced. The upgraded station will have two units that would be expected to produce approximately 5.5 to 6.0 MW. Implementation of this alternative would involve the following components.

- Excavation and civil work to remove existing units and expand two of the existing bays to accommodate new units.
- Installation of new turbine/generator equipment into the existing powerhouse, including all new electrical and balance of plant equipment.
- Modifications to the powerhouse superstructure to allow for new units, including removal of mezzanine, construction of hatches in the existing roof to lift in new equipment and alteration of wall openings where penstocks enter the building.
- Demolition of existing intake structure and penstocks and replacement with new.
- Partial reconstruction of the intake canal to facilitate tie in of the new structure and minor rehabilitation of the remaining intake repair any deficiencies.
- Removal and replacement of the existing forebay bridge.
- Connection to existing substation.

2.3.1.3 Alternative 3 – Overhaul of the Units in the Existing Powerhouse

This alternative would involve like for like replacement of end-of-life equipment in the station to extend the life of the Unit 3 and bring Units 1 and 2 back into service. The existing intake structure and penstocks would be replaced. The upgraded station would restore the capacity of the station back to the original 4.75 MW. Implementation of this alternative would involve the following components.

- Replacement of end-of-life equipment including turbine runners, generators and most electrical and balance of plant equipment.
- Demolition of existing intake structure and penstocks and replacement with new.
- Partial reconstruction of the intake canal to facilitate tie in of the new structure and minor rehabilitation of the remaining intake repair any deficiencies.
- Removal and replacement of the existing forebay bridge.
- Connection to existing substation.

2.3.2 Alternatives Selection

OPG's Engineer, KGS Group, completed conceptual designs and high-level cost estimates for the alternatives. OPG financial evaluation of the alternatives was undertaken and included consideration of construction costs, operating and maintenance costs, energy produced and station life. The analysis showed that Alternative 3 was not a feasible option, as it was inferior in terms of lifecycle cost per energy produced and service life of the asset as compared to the other two alternatives. Alternatives 1 and 2 were both deemed to be feasible.

A qualitative analysis was completed for the two remaining options, comparing the benefits and risks of the redevelopment and refurbishment alternatives. The assessment considered twenty-two qualitative factors, grouped into 3 broad categories: (1) Environmental Considerations, (2) Operations and maintenance benefits, and

(3) Construction advantages and risks. While Alternative 2, Refurbishment, did provide some environmental advantages in that the footprint of the construction may be slightly smaller (and retention of the original powerhouse), overall Alternative 1, Redevelopment, scored better in the assessment. In particular, constructing a new generating station eliminates the construction risks associated with modifying a building that is greater than 100 years old. It also enables the design to incorporate many operational and maintenance benefits that will improve energy generation, safety and water management for the life of the new station. As a result, Alternative 1 was identified as the preferred alternative.

2.4 General Layout and Description

2.4.1 Characteristics

As already explained the GS will have an effective capacity of approximately 6 megawatts with two turbines. The re-developed GS will have the following characteristics (these could change slightly depending on the final Turbine-Generator selected):

- Effective Capacity of 6 MW;
- Estimated Annual Energy Generation of 30 MWh (P50);
- Number of Units – 2;
- Station Flow – 43.5 m³/s;
- Minimum Operating Flow – 8.7 m³/s;
- Minimum Operating Flow per unit – 5 m³/s;
- Average Annual Flow – 30 m³/s; and
- Average Head of 16.5 m (range of head from 13 m to 17.5 m).

2.4.2 General Layout – Site Plan

The proposed site plan for the new GS is shown below in Figure 2-4. This site plan labelled as General Arrangement Plan Final Conditions shows what the re-developed Coniston Generating Station will look like following the completion of the construction.

The existing access road, **Coniston Hydro Road** will still be used for access. There are various points available for parking near the entrance of the site before Coniston Hydro Road crosses the Main Dam.

The existing **Main Dam and Sluiceway** will be largely unaltered. A **New Bridge** south of the Main Dam will be built in the alignment of the existing bridge. The centre pier and other submerged features will be removed. The coarse trash rack at the upstream extent will be removed.

The existing **Work Centre** and **Switchyard** which are depicted in the southeast corner of the site exist today and will not be impacted by the re-development.

A new **Powerhouse** (which contain the equipment to generate power) will be constructed approximately 30 metres from the existing Powerhouse. That old powerhouse will be demolished and removed as its area will become part of the tailrace/river. The tailrace area will be excavated to the existing river and the existing tailrace channel beyond the old powerhouse will be excavated or dredged to remove debris which has accumulated since original construction.

Some work will be required on the intake canal, specifically **New Channel Walls** and a **New Intake Structure** are required where water enters the powerhouse. Excavation will be required within the canal and alongside its southern bank as well as upstream of the bridge to provide suitable velocities for fish in the vicinity of the bridge structure where the existing channel geometry is narrowest. This will also require the removal of the existing bridge pier and submerged concrete trashrack sills.

To facilitate the construction of the new powerhouse, excavation, fill, rock stabilization and new **Retaining Walls** will need to be constructed. Access to the new powerhouse will be made north of the intake channel and will require placement of fill and the construction of retaining walls to suit the new powerhouse location.

Access roads on the south side of the intake channel will be improved to permit construction access to the existing parking and **Parking, Storage and Turnaround** area created from the decommissioned HONI 44 kV substation.

The existing **Communications Tower** and **Safety Boom** will remain in their current conditions and locations.

The **Construction Laydown Area** will be reclaimed and revegetated if the area is not needed. A portion of the laydown area will likely remain as it exists now providing storage for OPG equipment.

Other smaller improvements will be made to the site which may include relocation of the existing diesel generator to a new location onsite, construction of small ancillary buildings, construction of duct banks and overhead power/communication lines, and improvements to drainage and road safety onsite.

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Figure 2-4 Proposed Site Plan for the Coniston GS – Permanent Facilities

Figure 2-5 shows the Site Plan with the permanent and construction stage features. This Site Plan labelled as the General Arrangement Plan Construction Conditions shows the re-developed Coniston Generating Station but also shows where some temporary construction features are required, and temporary construction works will occur.

In front of the **Forebay Bridge** and downstream of the **Powerhouse**, **Cofferdams** will be required to hold back water while construction is undertaken in predominantly dry conditions. The cofferdams are important features to allow safe construction of the project. The cofferdams will allow the Intake and tailrace Channels to be dewatered and excavated during construction as well as allow the demolition of existing structure in the dry.

In the middle of the drawing and around the existing and proposed powerhouses the area will need to be extensively excavated and regraded to ensure the stability of the area. Rock excavation will need to occur in the riverbed to allow for construction of the tailrace and is contemplated to be completed from behind a cofferdam. The existing powerhouse will be demolished in the dry behind the cofferdam to allow for construction of the new powerhouse to occur in the dry. Some rock excavation will need to occur in the existing riverbed behind the cofferdam to allow for construction of the Tailrace. All work in the river and on the site will be done according to required permits and approvals and all necessary legislation. On site environmental management will be a key requirement for the construction period. In the southwest corner of the site there will be a large temporary **Construction Laydown and Material Stockpile** area for the constructor to temporarily store materials, equipment, trailers and other items required for construction. This area is already used for this purpose but may be expanded during construction. Areas not needed in the future will be re-vegetated.

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Figure 2-5 Proposed Site Plan for the Coniston GS – Permanent and Construction Stage Features

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Figure 2-6 shows the General Arrangement of the New Powerhouse and two units with the Final Access Road. The figure also shows the Grading Plan and Profile. Elevations of various features are provided. Water is conveyed to these two units from the existing canal which will have new canal walls near the powerhouse. A new bridge will be constructed over the widened canal. Temporary cofferdams will need to be constructed immediately upstream of the main dam and downstream of the existing powerhouse as shown in Figure 2-7. Vehicular access to the powerhouse will be from a newly constructed access road on the new south side of the building. New retaining walls will be constructed.

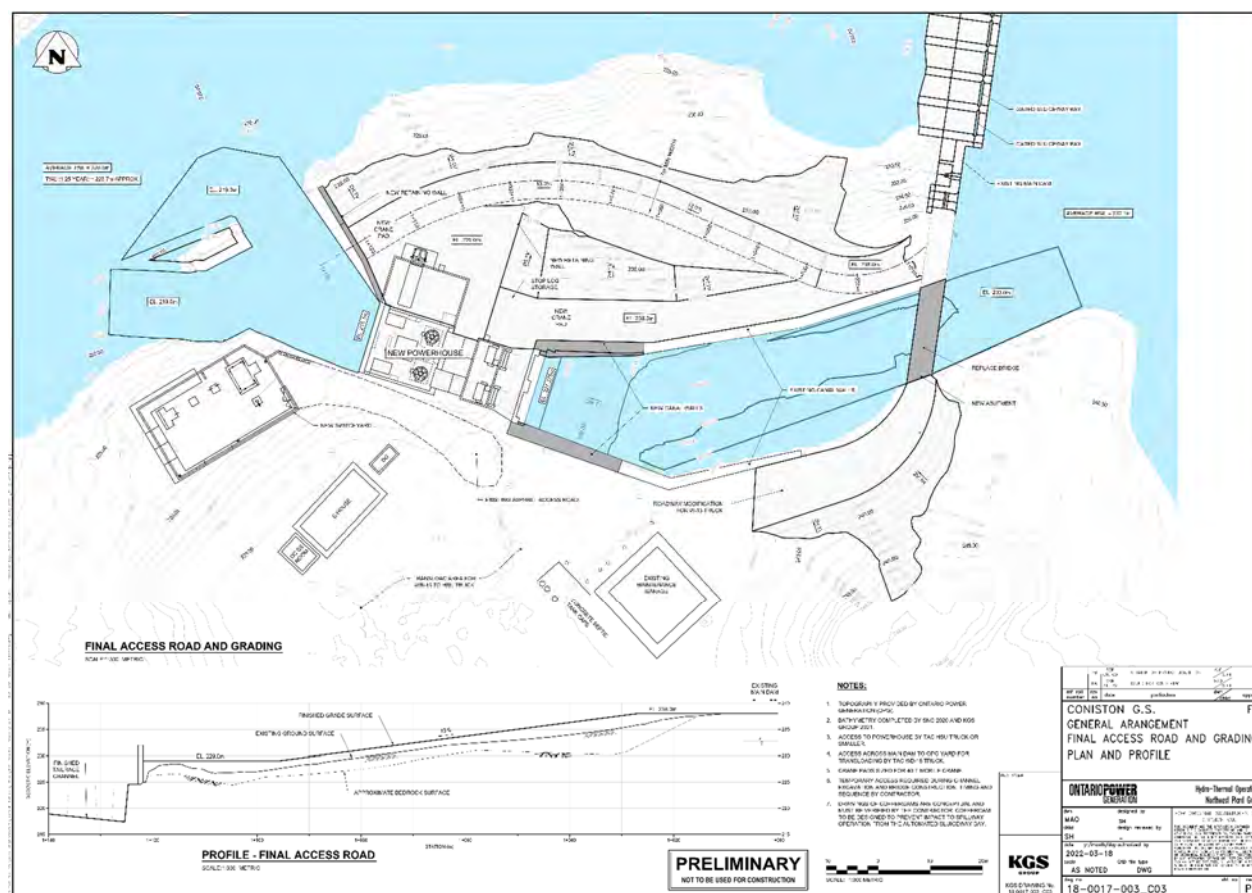


Figure 2-6 Proposed Powerhouse Arrangement Final Access Road and Grading Plan and Profile

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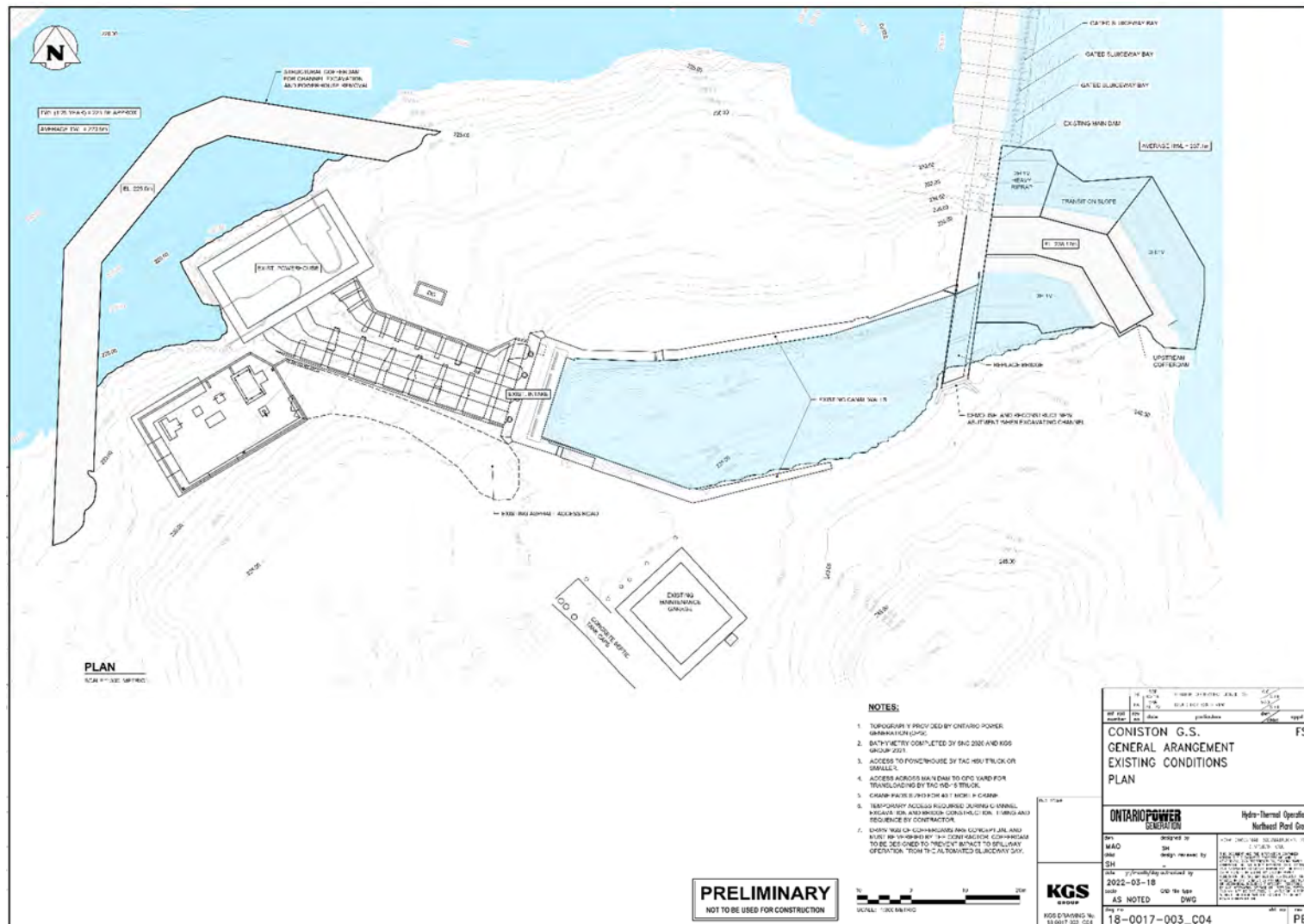


Figure 2-7 Existing Conditions and Cofferdam Arrangements

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Figure 2-8 shows the Proposed Powerhouse Arrangement for the Intake and the Powerhouse at a plan level above 228 metres above sea level (MASL). From right to left, the Drawing shows the trashracks, stoplogs, intake gates and hoist house, turbines, the powerhouse floorplan and equipment at this level staircases and draft tube gates. The figure also shows the access doors into the powerhouse and the crane in the upper left corner of the drawing.

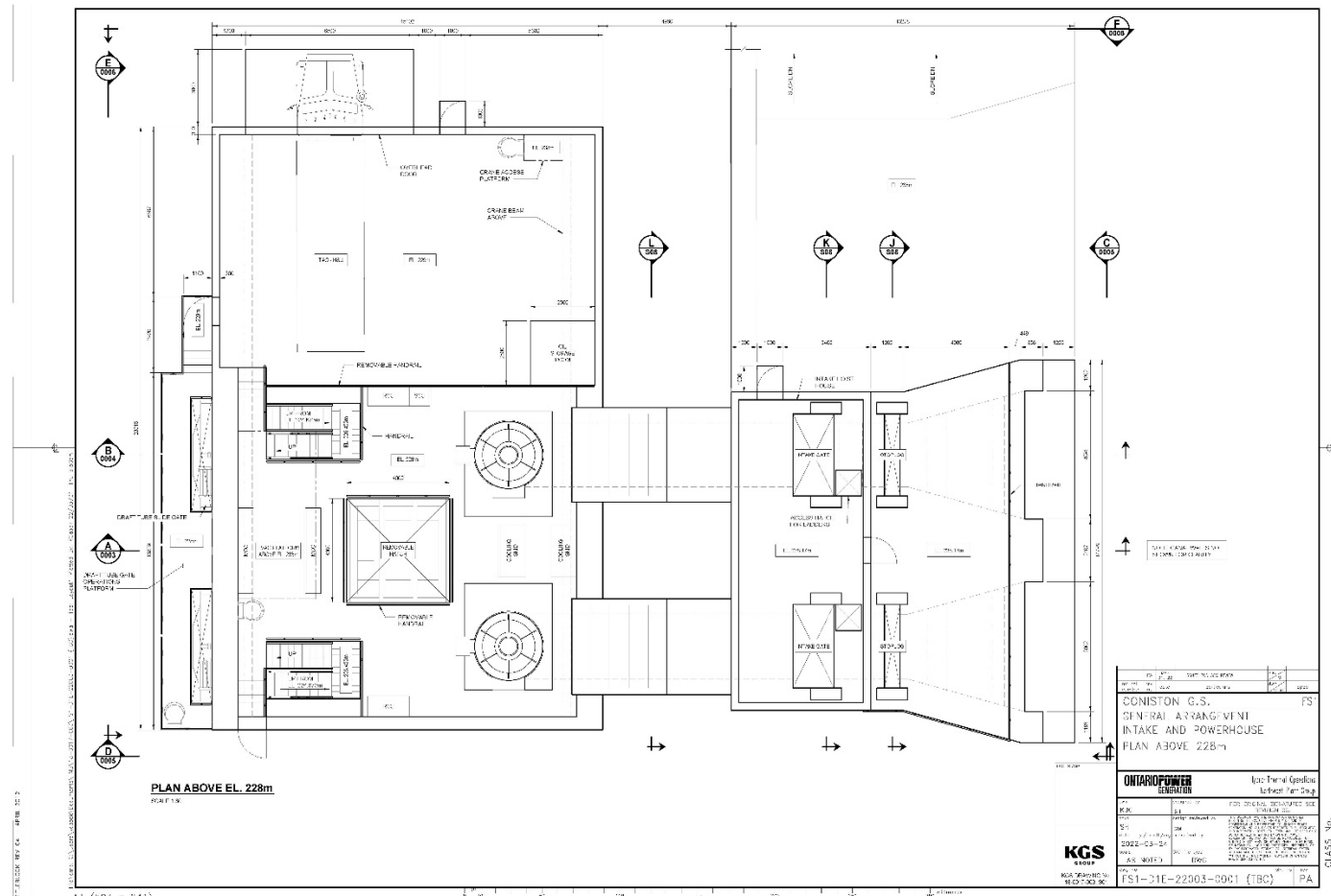


Figure 2-8 Proposed Powerhouse Arrangement for Intake and Power at Plan Level Above 228 MASL

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Figure 2-9 shows a longitudinal section for the Intake and Powerhouse Section through the centre of the station through the Sump Pits. These pits will contain the equipment to safely dewater the equipment for maintenance as well as include an oil water separator to process station drainage and spills to prevent environmental contamination.

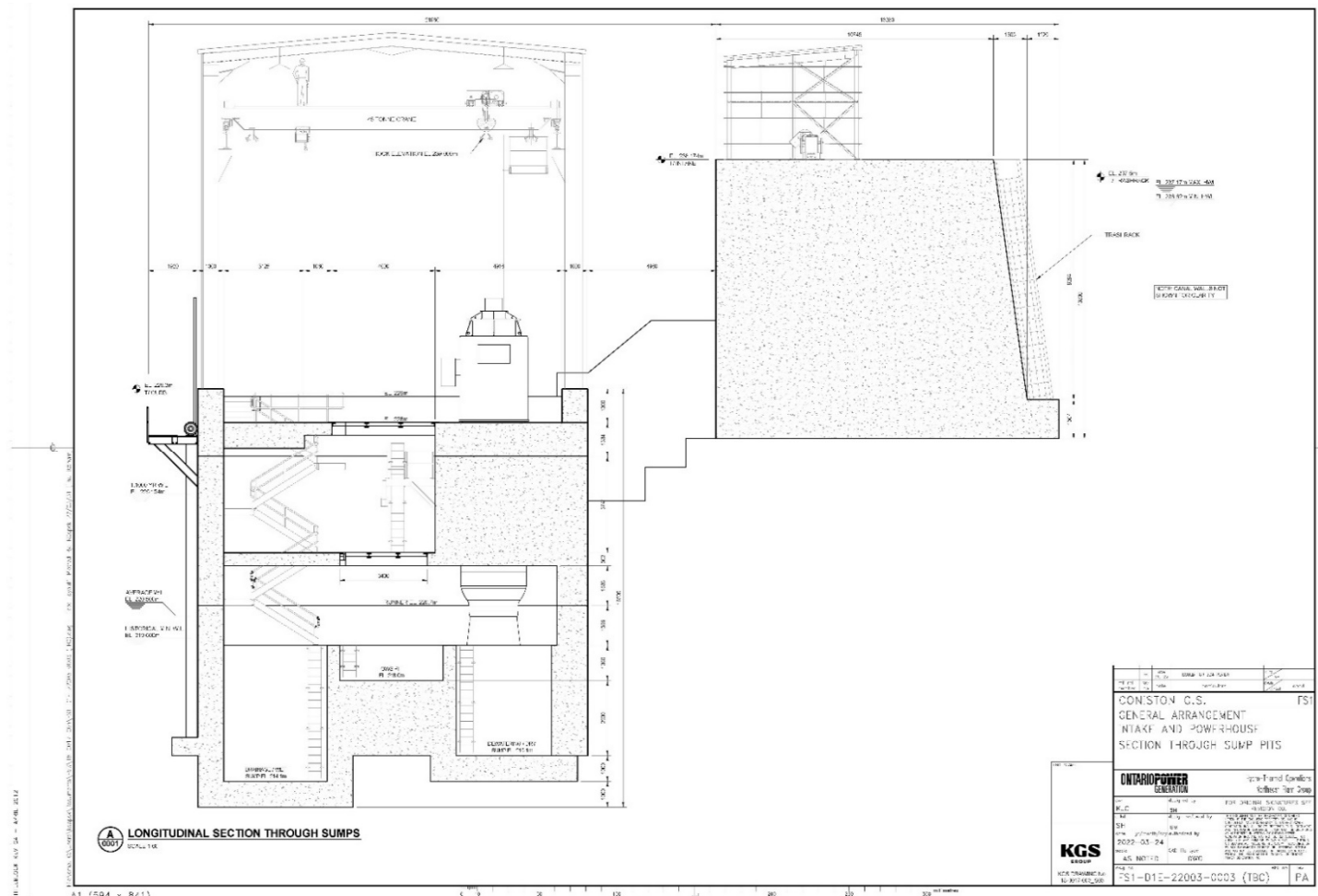


Figure 2-9 Proposed Powerhouse – Longitudinal Section for Intake and Powerhouse through the Sump Pits

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Figure 2-10 shows the longitudinal section of the Intake and Powerhouse through one of the units. From right to left it shows the inclined trashracks, stoplogs, intake gate and hoist house, the turbine, water passage, access arrangement for all levels and the draft tube gate. It also shows the crane and a general concept of the powerhouse superstructure.

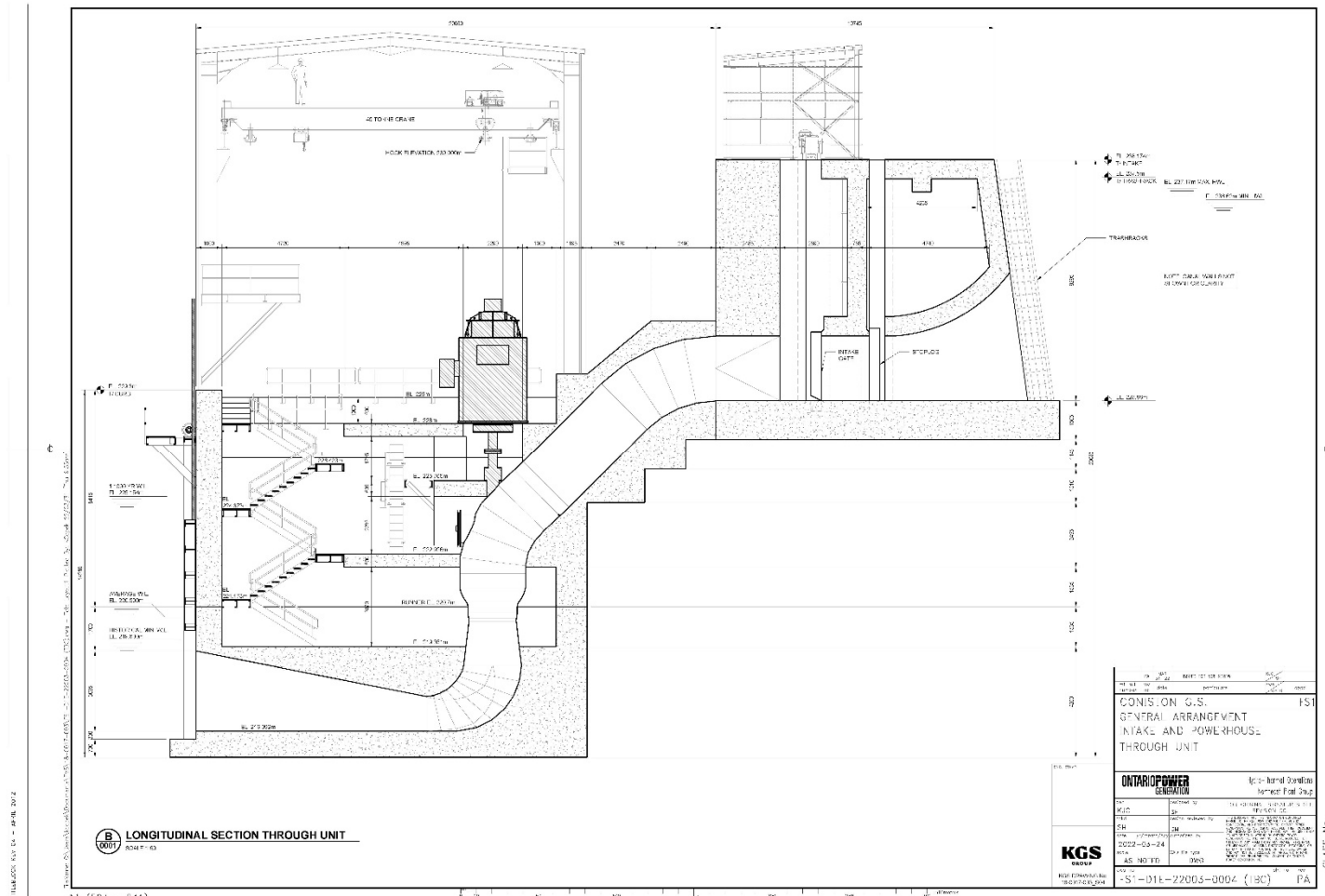


Figure 2-10 Proposed Powerhouse Longitudinal Section of Intake and Powerhouse Thorough Unit

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Figure 2-11 shows various exterior elevations of the intake and powerhouse. The elevations for the intake show the trashracks with 50 mm clear spacing.

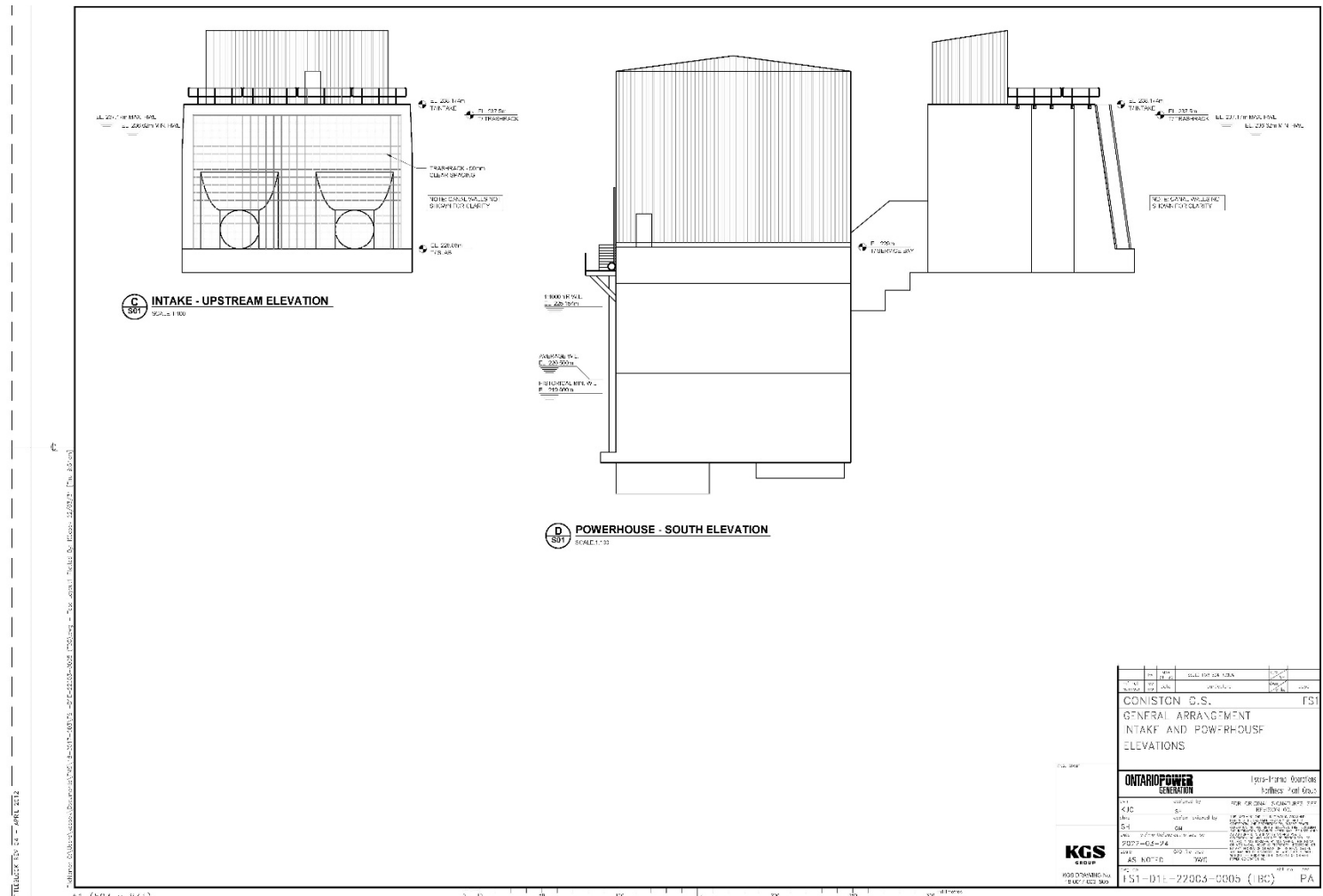


Figure 2-11 Proposed Intake and Powerhouse Various Elevations

2.4.3 Construction Sequencing

While a DBC has not been retained at this time, OPG and KGS are of the view that the construction of the new GS will be undertaken sequentially in the following general stages as shown below.

Stage #1

The first stage of the work will involve preparing the site for construction.

Vegetation will be removed on all areas to be constructed on including laydown areas. This clearing will be outside of the breeding bird and bat seasons (clearing to occur between October 1st to April 1). Merchantable timber belongs to the Crown, although the amount of such material is minimal on site. Should the MNRF be amendable, wood and plant resources will be offered to WFN or other local First Nations for their use.

Any access improvements (road and parking upgrades) required at the site will be undertaken.

Erosion and sediment controls (including turtle exclusion fencing) will be established on the site.

Construction facilities such as trailers will be brought and established on site. Laydown areas will be set up, and trailers, equipment and materials organized into appropriate areas. Establishing laydown areas may mean placing temporary fill material on certain areas.

The upstream cofferdam will be constructed to allow for work on the canal to occur in the dry. This will include building a short access road to facilitate construction of the cofferdam.

A structural cofferdam will be constructed downstream of the proposed powerhouse and tailrace to permit demolition of the powerhouse and excavation of the tailrace in the dry. The downstream cofferdam will be constructed at periods of low river flow while respecting in water work restriction. The existing equipment within the powerhouse will be removed as will the existing penstocks and intake structure.

Stage #2

Stage #2 will involve major excavation and grading at the site in order to ensure proper site conditions for the construction of the powerhouse and any ancillary facilities. The existing intake bridge and pier would be removed. A temporary bridge structure will be constructed to allow channel rock excavation and construction work to be carried out. A permanent bridge would then be constructed and the temporary bridge structure removed.

Water infiltration into the worksite from the cofferdam, overland runoff and seepage through the rock will be managed by the Contractor per their approved sediment control plan. This will include monitoring and treatment of the water from excavations to remove suspended sediments to an acceptable level prior to discharge to the water course.

During this time the existing intake, penstock and portions of the canal walls would be demolished, and the major excavation would be carried out to permit construction of the new powerhouse, intake, canal walls and all retaining walls.

Stage #3

Stage #3 will involve construction of the new powerhouse, intake structure and other structures. Once the powerhouse and intake structure are completed, a significant portion of site regrading would be completed to permit access to the structures. Once access is complete the superstructure of the powerhouse would be completed followed by construction of the interior features and installation of the equipment.

Channel excavation would continue at this time in the Intake Channel and Tailrace. Once all Intake Channel excavation outside of the cofferdam footprint has been completed a rock pad will be constructed to permit blasting under and behind the upstream cofferdam where the new Channel overlaps with the cofferdam.

Stage #4

Stage #4 will involve final installation of all the powerhouse and intake equipment to prepare the station for commissioning and service. Specifically, the draft tube gates for the powerhouse and the stoplogs in the intake will be installed.

Once the intake gates and stoplogs are installed the intake canal will be watered up in a controlled fashion and the remaining Intake Channel blasting completed from the constructed rock pad in the wet. Mitigation measures will be implemented to protect fish and the newly constructed structures. Following blasting the upstream cofferdam will be removed in the wet.

The downstream excavation within the tailrace would also be completed during this stage. Following completion of the excavation the Tailrace will be watered up in a controlled fashion and the downstream cofferdam removed.

Final site grading work would be completed.

Stage #5

Stage #5 would involve the commissioning of the powerhouse and its associated equipment and placing the station into service to generate power. During this time the final clean-up of the site including removal of all temporary construction features and equipment would occur.

Areas planned for re-vegetation will be either re-planted and seeded once the areas have been stabilized, temporary materials such as fill are removed, and overburden/topsoil is replaced.

2.4.4 Major Components

2.4.4.1 Forebay, Bridge Canal and Intake

The existing canal will be dewatered during the construction period to allow the construction of the new powerhouse and intake in the dry. As well, the existing bridge needs to be replaced and the existing bridge pier and concrete trash rack sills removed. As such, a large cofferdam as shown in Figure 2-5 will be constructed. This cofferdam may incorporate a temporary access road during construction while the existing bridge gets removed and replaced. The cofferdam shown is concept only and could be constructed of granular materials or potentially a steel pile and sheet pile arrangement.

Once the cofferdam is constructed the canal will be dewatered (and fish transferred out). The area immediately upstream of the proposed intake will be excavated. Most of the canal walls will be reused and refurbished while canal walls at the intake will be rebuilt.

Further channel excavation will also be carried out upstream of the bridge and in the vicinity of the channel.

A new intake structure will be constructed and tied into the existing canal walls.

The intake channel consists of bedrock and vertical concrete walls. Upstream of the bridge there is a submerged excavated bedrock channel leading to the forebay which currently has some wood debris accumulation due to the concrete trashrack sill present at the bridge. The area has not been investigated in full to date, but this work is planned and should give OPG a better idea on substrate in this area before construction is initiated.

Following construction, the intake canal will remain a bedrock and concrete lined channel. The area upstream of the bridge as shown on Figure 2-6 will be reprofiled for hydraulics and consists of a slightly wider and deeper channel excavated in bedrock. The existing wood debris accumulation and sediment would be removed but is anticipated to develop over time.

The new powerhouse intake will be integrated with the new powerhouse and will be constructed of reinforced concrete. The intake will be equipped with trashracks, suitably sized and with bar spacing to mitigate in as much as possible, fish entrainment. The trashracks will cover the complete area of the turbine water passage intakes. The new trashrack bar spacing will remain consistent with the trashrack spacing at the existing Coniston GS, with 50 mm clear space between the trashrack bars. The new trashracks will be periodically cleaned with rakes as well as using mobile equipment, with space provided on the intake deck for a future trash rack cleaning machine, however, a trash rack cleaning machine will not be provided at this time. Stoplog slots will be provided downstream of the trashracks to provide a means to perform periodic inspections and eventual repairs and servicing of the downstream emergency closure gates in the future. The intake will also include emergency close vertical lift intake gates operated from the intake deck. The intake and the trashrack of the new powerhouse have been designed to minimize potential entrainment of fish with a trashrack velocity of less than 0.9 m/s (at a distance of 75 mm in front of screen).

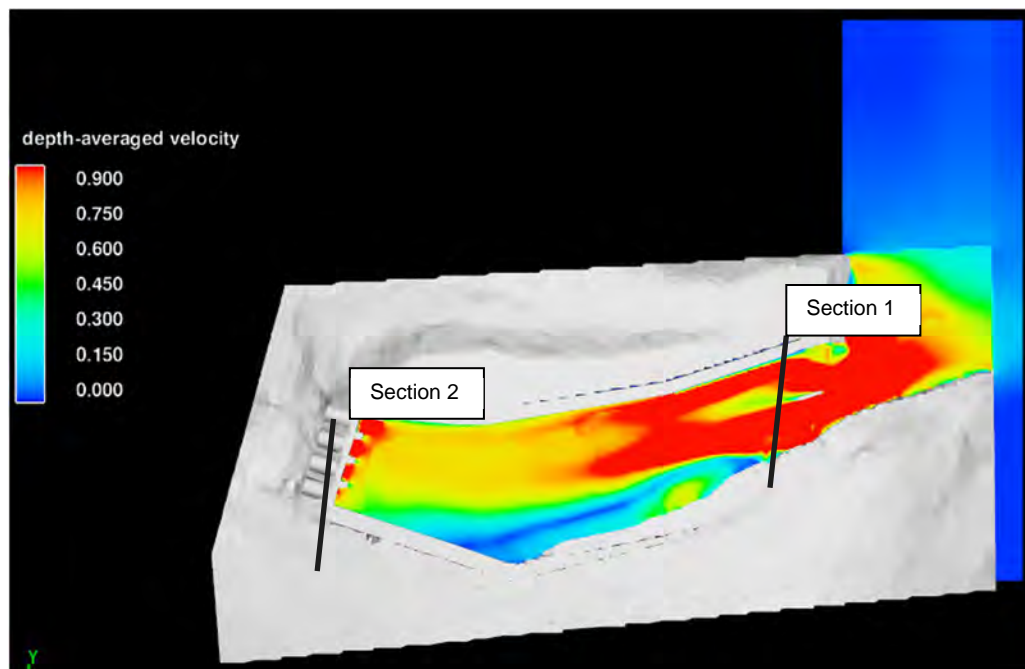
2.4.4.1.1 Approach/Intake Velocities

For the purposes of design, OPG gives direction to its OE and DBC in order to minimize impacts on the aquatic environment.

Trashracks will be designed for a maximum approach velocity (velocity measured 75 mm upstream of the trashracks) of 0.9 m/s at the normal minimum reservoir level.

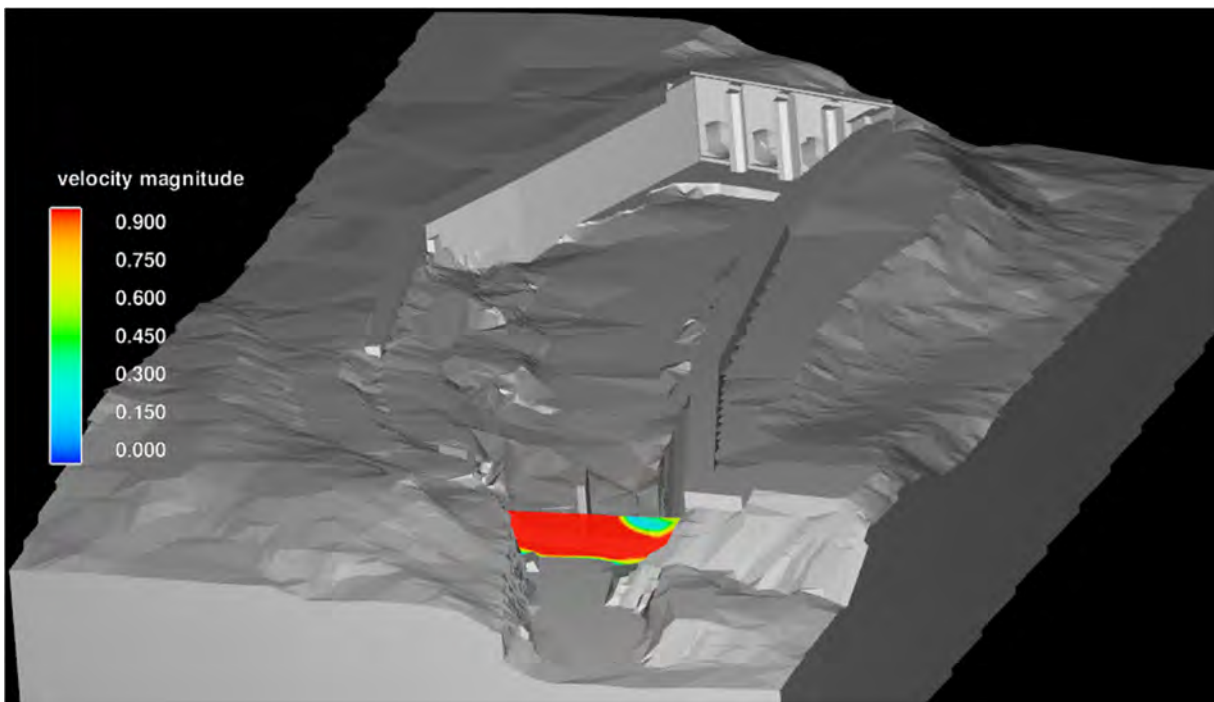
The target average velocity for the Forebay Canal must be less than 0.9 m/s at the lowest level of the reservoir in conjunction with the greatest possible rate of release through the turbines, to ensure that during operation potential ice present in the channel or frazil ice accumulation will not significantly increase head losses in the channel. Increase to the target velocity may only be revised provided that hydraulic, environmental and economic analysis proves that a higher limit is acceptable to OPG. Any proposed increases to the target velocity for the Forebay Canal will be reviewed with OPG for acceptance.

The following Figure 2-12 shows the depth averaged velocity in the existing intake canal operating at 44.3 m³/s (existing station capacity) at the lowest operational water level of 236.62 m. The figure shows average velocity at or greater than 0.9 m/s in the vicinity of the upstream bridge and no acceptable slower portions of the flow path connecting the intake channel to the forebay area. Based on Figure 2-13, which shows flow velocities upstream of the bridge and trashrack sill, it was determined that channel modification would be required to prevent the entrainment of fish into the forebay channel and that there is currently no escape path for fish in the vicinity of the existing intake bridge. This will require removal of the existing bridge pier, removal of the submerged concrete trashrack sill and rock excavation to widen and deepen the channel through the bridge and upstream to remove the channel constrictions. Additionally, some reprofiling of the canal downstream of the bridge is required.



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

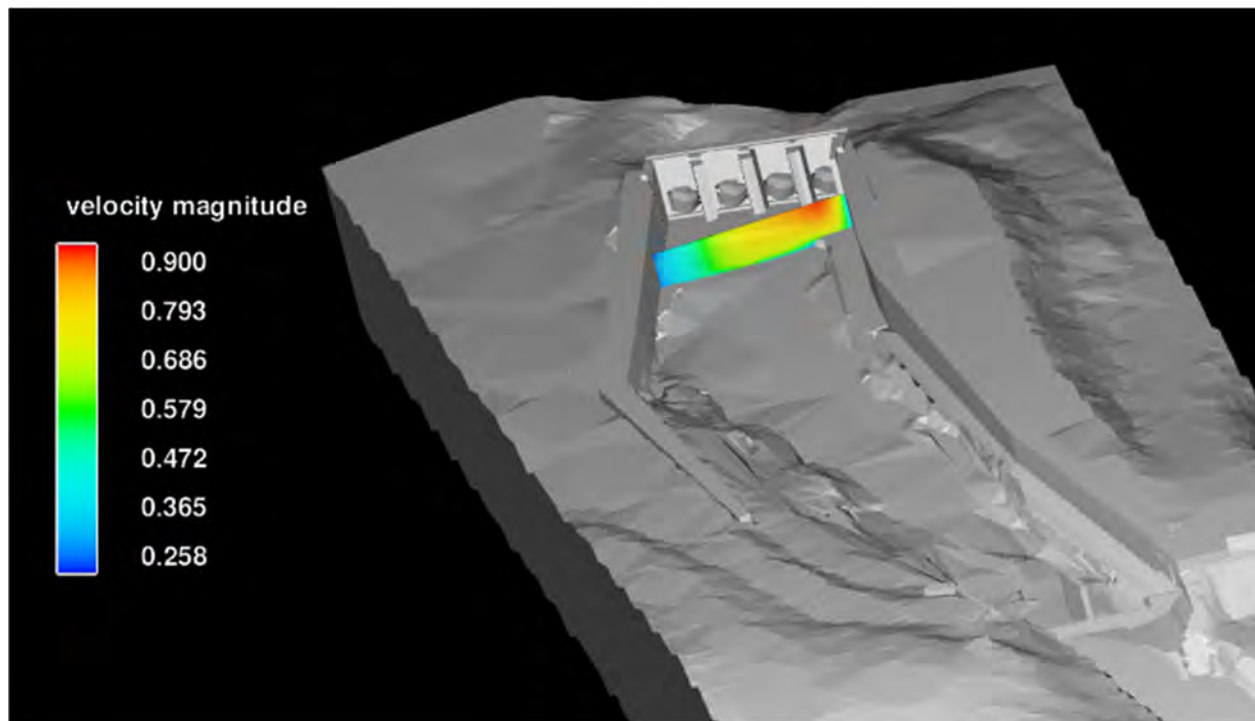
Figure 2-12 Depth Averaged Velocity of Existing Approach Canal



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

Figure 2-13 Existing Flow Conditions Under Bridge (Section 1 Figure 2-12)

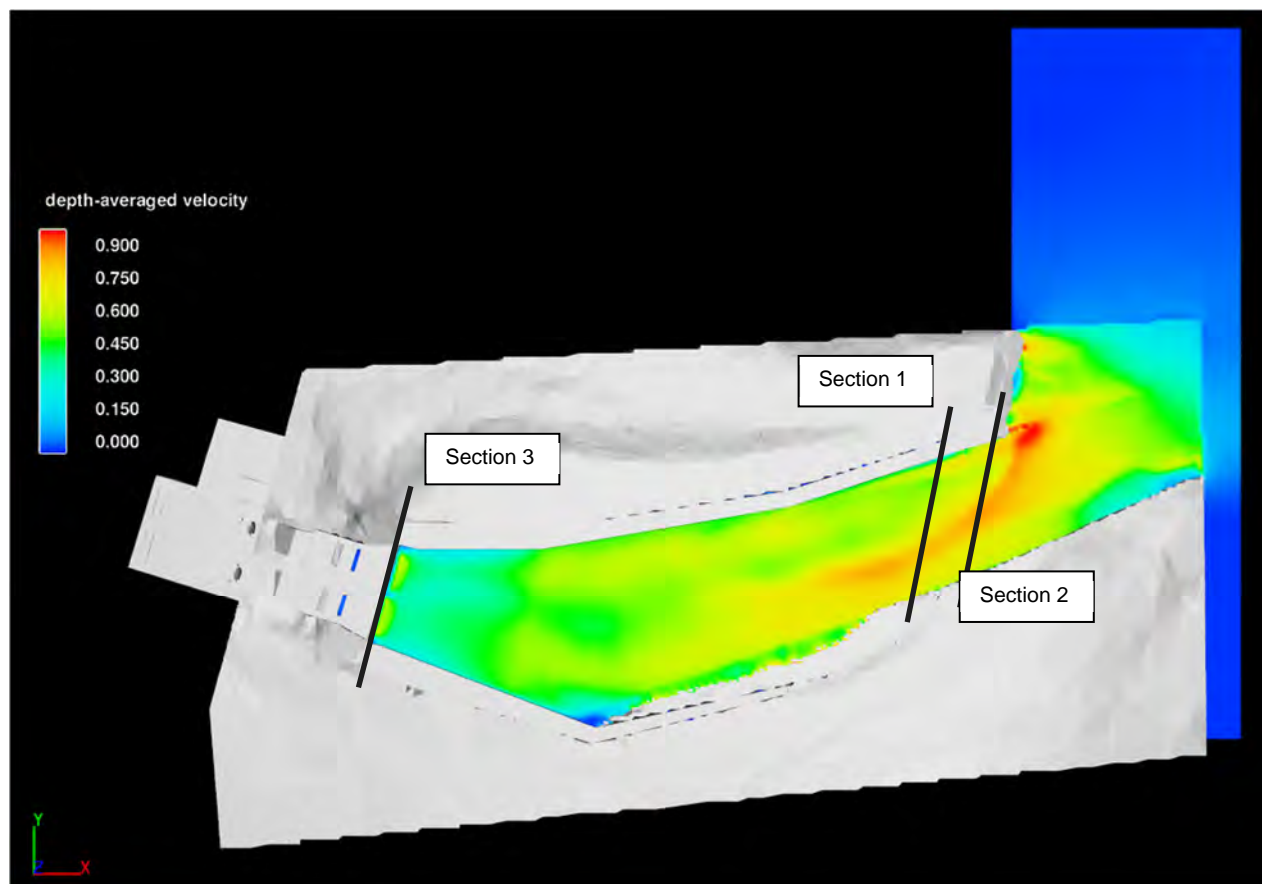
Figure 2-14 shows the velocity in front of the existing intake structure and shows velocity ahead of the trashrack is generally less than 0.9 m/s but is approaching higher velocity near the surface towards the right of the canal for the intakes to the existing G3 with its higher inflows.



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

Figure 2-14 Flow Conditions Near Existing Intake (Section 2 – Figure 2-12)

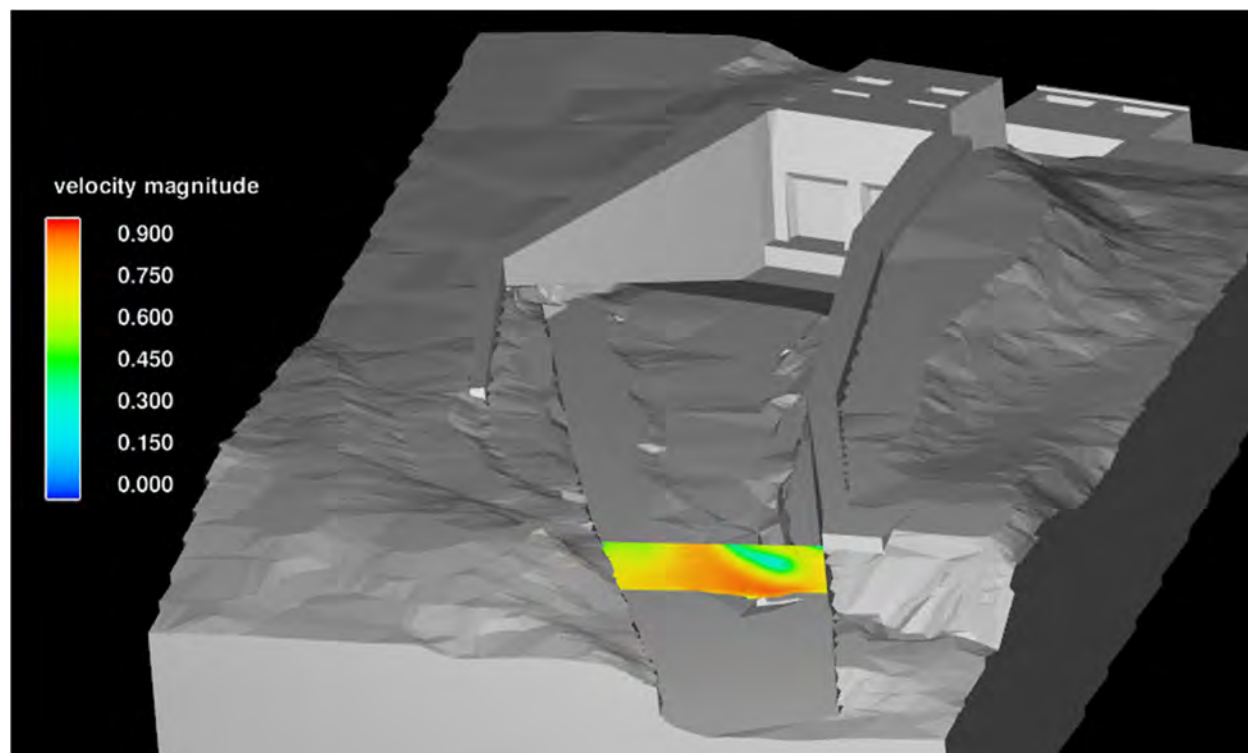
Figure 2-15 shows the depth averaged velocity in the modified intake channel operating at $44.3 \text{ m}^3/\text{s}$ (note existing capacity was maintained for modeling and the proposed station capacity is slightly lower at $43.5 \text{ m}^3/\text{s}$) at the lowest operational water level of 236.62 m. The canal contains the new intake structure and local excavation at its entrance and reprofiling of the channel in the vicinity of the bridge as well as downstream. The figure shows average velocity is overall below 0.9 m/s with the exception of some concentrated velocities at the northern side of the canal at the north bridge abutment.



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

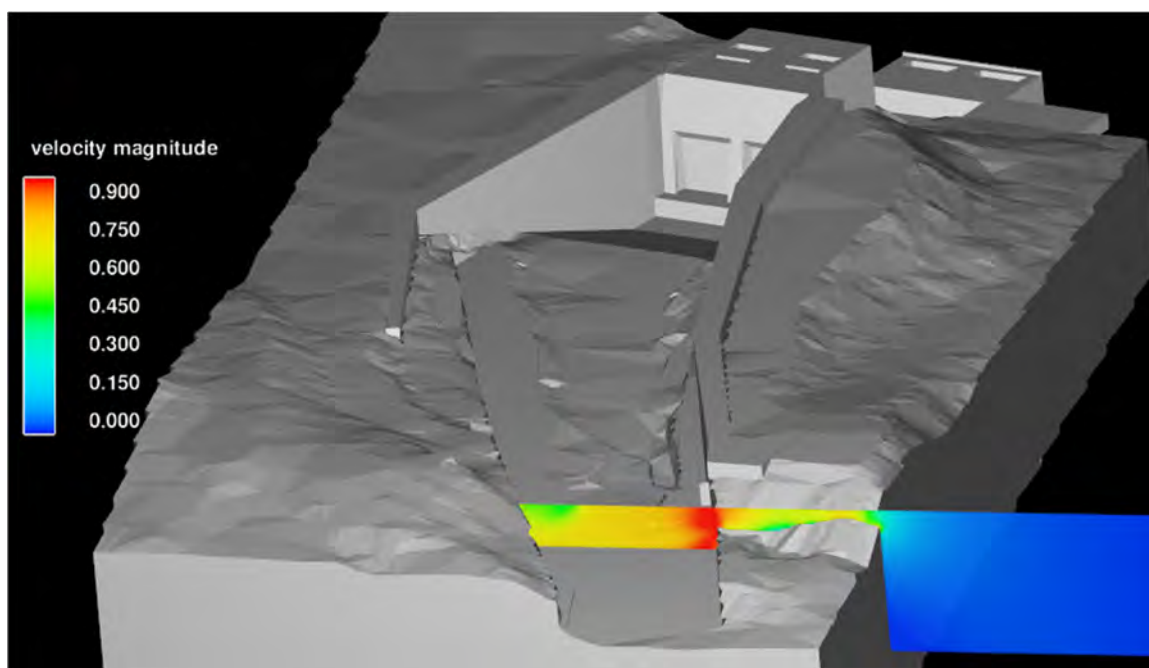
Figure 2-15 Depth Averaged Velocity of New Approach Canal

Figure 2-16 shows the velocity profile under the bridge location and through the upstream channel following the channel modification and indicates that velocities are less than 0.9 m/s. Figure 2-17 shows flow conditions just upstream of the existing bridge following the new tailrace excavation. The section is cut in the vicinity of the higher velocities shown in Figure 2-15 and shows the higher velocity shown concentrated along the north of the canal and shows that the majority of the excavated canal is still below 0.9 m/s and provides an escape path for fish in the canal. At the average operating level in the reservoir conditions would be further improved.



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

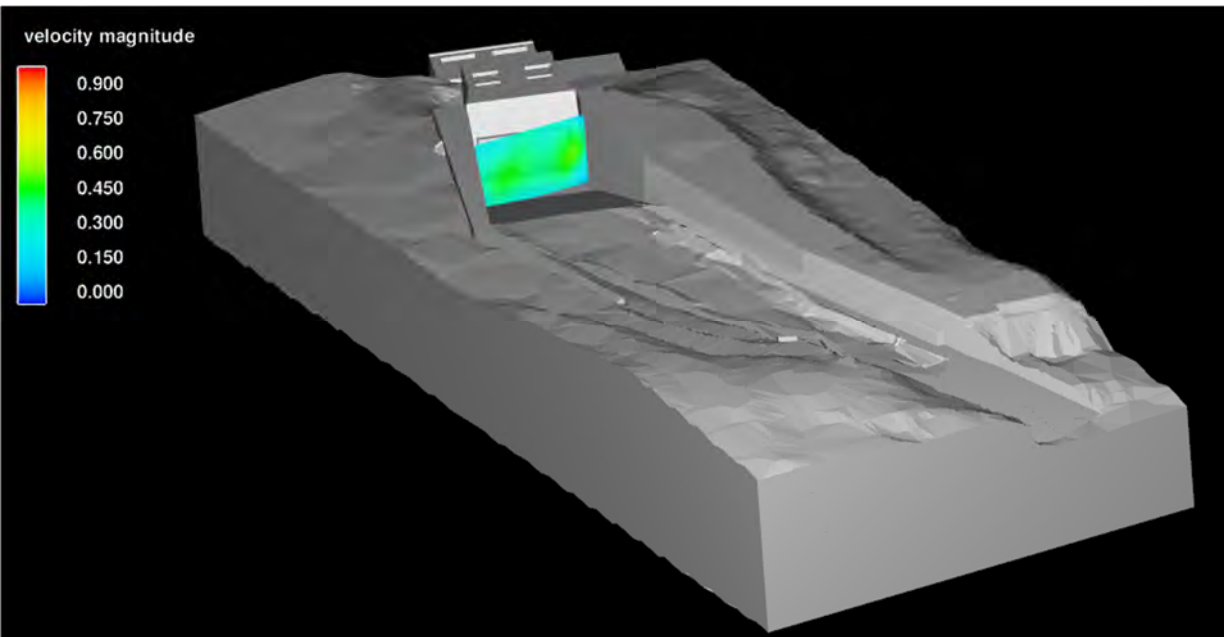
Figure 2-16 Flow Conditions Under Bridge in New Approach Canal (Section 1 – Figure 2-15)



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

Figure 2-17 Flow Conditions upstream of Bridge in New Approach Canal (Section 2 – Figure 2-15)

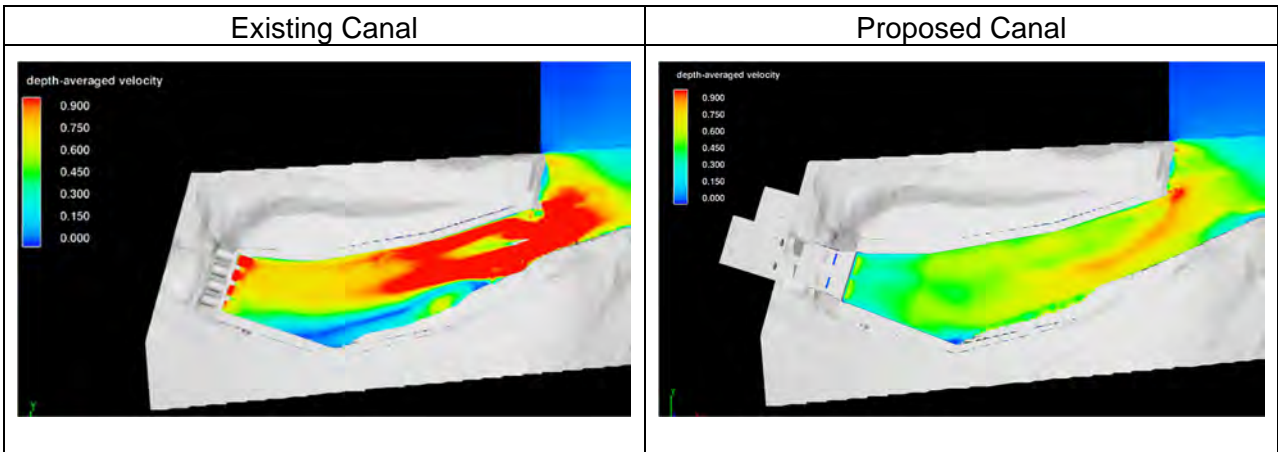
Figure 2-18 shows the flow conditions just upstream of the trashracks at the new intake which shows velocities less than 0.9 m/s throughout the water column.



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

Figure 2-18 Flow Conditions at New Intake (Section 3 – Figure 2-15)

The below Figure 2-19 shows a comparison of the pre project and the proposed post project conditions. The figure shows that there is a notable reduction in overall depth average velocity within the channel and that the majority of the new channel now operates below 0.9 m/s. Velocity that presented the potential to entrain fish in the existing channel has been largely eliminated and approach velocity at the trashracks to the unit intakes has been reduced to below 0.9 m/s reducing the potential for impingement as compared to the existing plant.



* The velocity contour has been capped at 0.9 m/s to clearly show the areas of the model that exceed the specified target velocity of 0.9 m/s

Figure 2-19 Comparison of Velocities – Existing and Proposed GS

Modifications to the intake canal have changed the wetted area of the Intake Canal and Forebay as follows in Table 2-1. The changes are the result of the excavation required to provide velocities low enough prevent fish entrainment into the intake canal as well as minor modification within the canal as a result of the position and width of the proposed intake.

Table 2-1 Changes to Wetted Area in the Intake Canal

Location	Existing Arrangement	Proposed Arrangement	Notes
Canal (Downstream of Bridge)	1634 m ²	1628 m ² (-6 m ²)	Changes noted to position of intake, narrowing of approach to intake, and widening of canal under bridge
Forebay (Upstream of Bridge)	Not calculated	+ 45 m ²	Due to channel excavation on south shore upstream of bridge.
Total Change		+39 m ²	Bedrock Substrate

2.4.4.2 Powerhouse and Intake

The proposed new powerhouse will be situated approximately 30 metres upstream of the existing powerhouse in the footprint of the existing steel penstocks. The powerhouse will be approximately 24 metres by 16 metres structure and will be 30 metres tall from the invert of the excavation to the top of the superstructure roof. The powerhouse will be excavated to a depth of approximately 16 metres to allow for proper submergence settings of the turbines and the provision of dewatering sumps. It is currently anticipated that the powerhouse structure will be comprised of a cast-in-place concrete substructure and a metal clad steel superstructure. The intake portion will be located within the footprint of the existing intake structure upstream of the powerhouse and will be approximately 24 metres by 16 metres structure and will be 11 metres tall from the invert of the excavation to the top of the concrete deck. Hydraulic passages, both upstream and downstream of the units, will be appropriately sized to maintain machine performance. The powerhouse will be connected to the existing switchyard with a duct bank. To save space in the powerhouse, a modular electrical building will be located in the northwest of the decommissioned HONI yard alongside the relocated backup diesel generator. Vehicular access to the new powerhouse will be from the north side of the building by a road along the north side of the intake channel similar to the existing arrangement.

2.4.4.3 Turbines

As previously indicated, the powerhouse will include the installation of two vertical-axis SAXO type turbines with a combined total discharge capacity of 43.5 cms. Each turbine will be capable of producing approximately 3 MW for a combined total capacity of 6 MW. Each unit will be capable of passing a flow of 21.75 cms with a minimum operating flow of 3 cms. The turbine is capable of operating from a minimum gross head of 13 m to a maximum gross head of 17.5 m. Each turbine runner will have 5 blades and will operate at 277 rpm.

2.4.4.4 Tailrace

The existing channel downstream of the new powerhouse will be excavated to form the new tailrace (see Figure 2-20). The new tailrace channel is anticipated to be in the order of 13 to 24 m wide along its length and will connect the powerhouse within the downstream river reach. The tailrace will be excavated through the existing

powerhouse location and connect to the existing tailrace channels with the channel splitting and wrapping around the bedrock outcrop that the existing powerhouse was partly founded on. The tailrace channel will be excavated in bedrock for the entirety of its length from the new powerhouse to where it connects to the existing tailrace channel excavations in the river. Limited overburden excavations are expected near surface in between the existing and new powerhouse. Bedrock will be excavated in vertical cuts and any remaining overburden will be sloped or retained by retaining walls and protected against erosion and sloughing. Retaining walls will be constructed along portions of the tailrace to retain fill placed to form the crane pad, turn around and laydown area adjacent to the powerhouse on the north side to the channel and to preserve access to the switchyard to the south.

The existing tailrace channels beyond the existing powerhouse have become infilled with rock debris over time due to natural process or the collapse of a suspect existing submerged timber crib structure created during the original construction of the powerhouse. Portions of these remaining channels will have material that may need to be excavated to install the proposed cofferdams or to profile the tailrace excavation. Further dredging or excavation of the material beyond the proposed new tailrace is not envisioned.

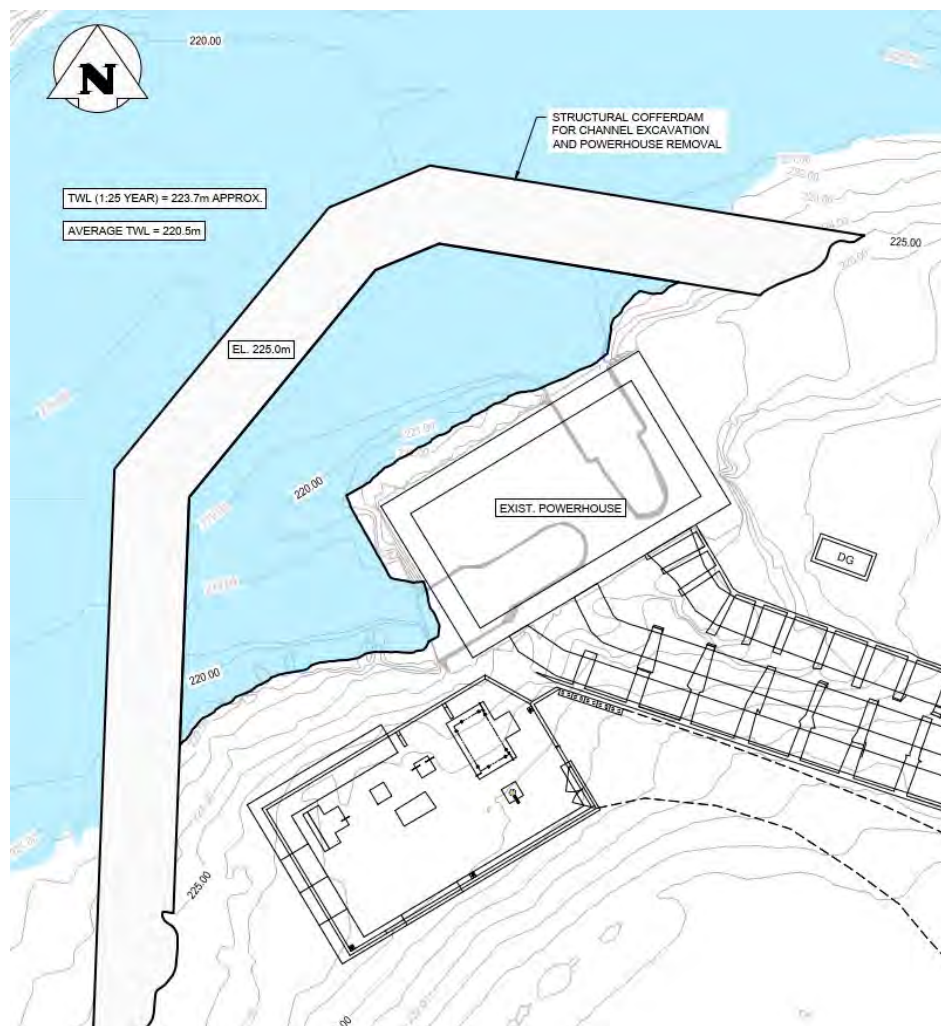


Figure 2-20 Plan of Tailrace and Cofferdam

During final design the tailrace geometry will be optimised to reduce head losses, reduce costs, reduce the risk of frazil ice formation and reduce or prevent impacts to existing fish habitat and spawning areas.

The Aquatic TSD contains a detailed discussion of existing and proposed tailrace habitat conditions under various flow scenarios. The modelling results are summarized in Figure 2-21 and illustrated in Appendix B of the Aquatic TSD. There is an increase in the total amount of habitat (i.e., total wetted area) following redevelopment for all flow scenarios. This is largely a consequence of the excavation of the new tailrace. There is small increase in the area of habitat that is most suitable for Walleye spawning and a small decrease in the amount of habitat that is suitable for Walleye spawning at low (10th percentile) flow. At median flow there is an increase in the amount of both most suitable and suitable habitat for Walleye spawning. At maximum plant flow, which corresponds approximately to the 69th percentile, there is a decrease in both most suitable and suitable habitat for Walleye spawning. At high flows there is little Walleye spawning habitat present within the modelled area, due primarily to high velocities, regardless of whether there is flow through the powerhouse or not. It should be noted that areas of suitable substrate extend downstream from the modelled reach, and these may be used, particularly during years when flow is high.

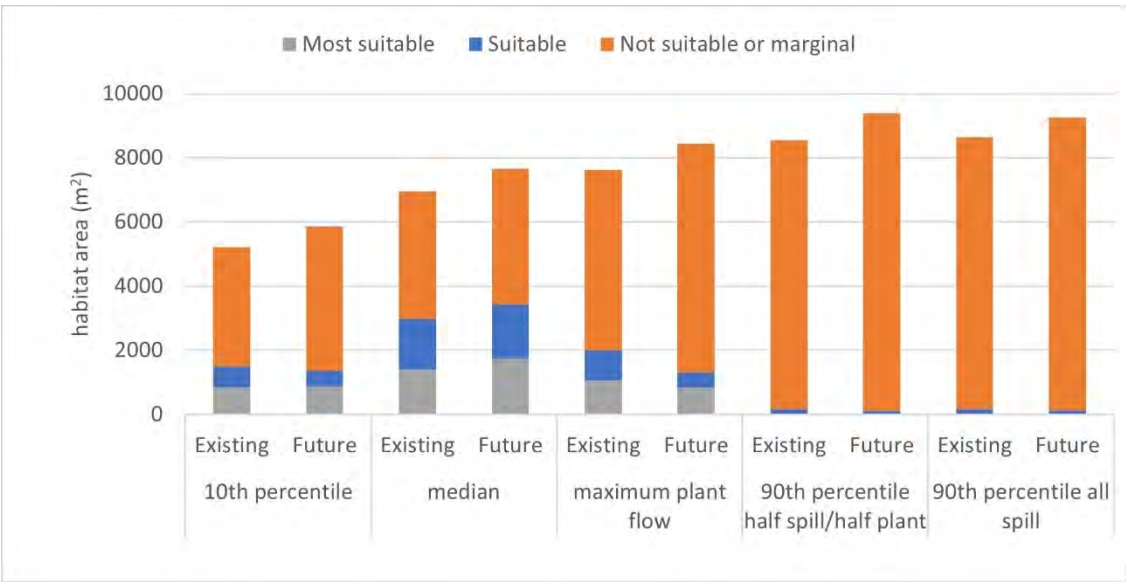


Figure 2-21 Tailrace Habitat Suitability

Tailrace Construction

The construction of the tailrace is proposed to occur in the dry using a structural cofferdam to allow the removal of the existing powerhouse in the dry and to undertake the rock excavation in the dry. However, further refinement of the tailrace and review by DBC may result in an earthen cofferdam and/or portions of the excavation to be completed in the wet outside of the cofferdam limits. Any portion of the tailrace constructed under or outside of the proposed would likely be completed by the construction of a rock pad to permit access for excavation equipment. If required, small areas of blasting would be carried out through the rock pad.

The downstream extent of the tailrace area may require riprap to locally protect against erosion of the new powerhouse fill against higher water levels and flows and sloughing of any overburden encountered; however, it is currently envisaged that the bulk of the tailrace excavation will be rock.

The shift of moving the powerhouse approximately 30 metres upstream along with the elimination of penstocks and expansion of the tailrace will increase the amount of downstream aquatic habitat by approximately 639 square metres which will consist of excavated rock surfaces.

Due to the overlap of the new tailrace excavation with the existing tailrace channels and their substrate the following changes to substrate are noted in Table 2-2. At total of 322 square metres of boulder/cobble, cobble boulder, cobble gravel and gravel cobble is anticipated to be converted to bedrock substrate.

Table 2-2 Changes to Tailrace Area and Substrate

Substrate	Change (m ²)
Bedrock	962
Boulder/Cobble	-127
Cobble/Boulder	-144
Cobble/Gravel	-44
Gravel/Cobble	-7
Altered Habitat	322
Created Habitat (bedrock)	639

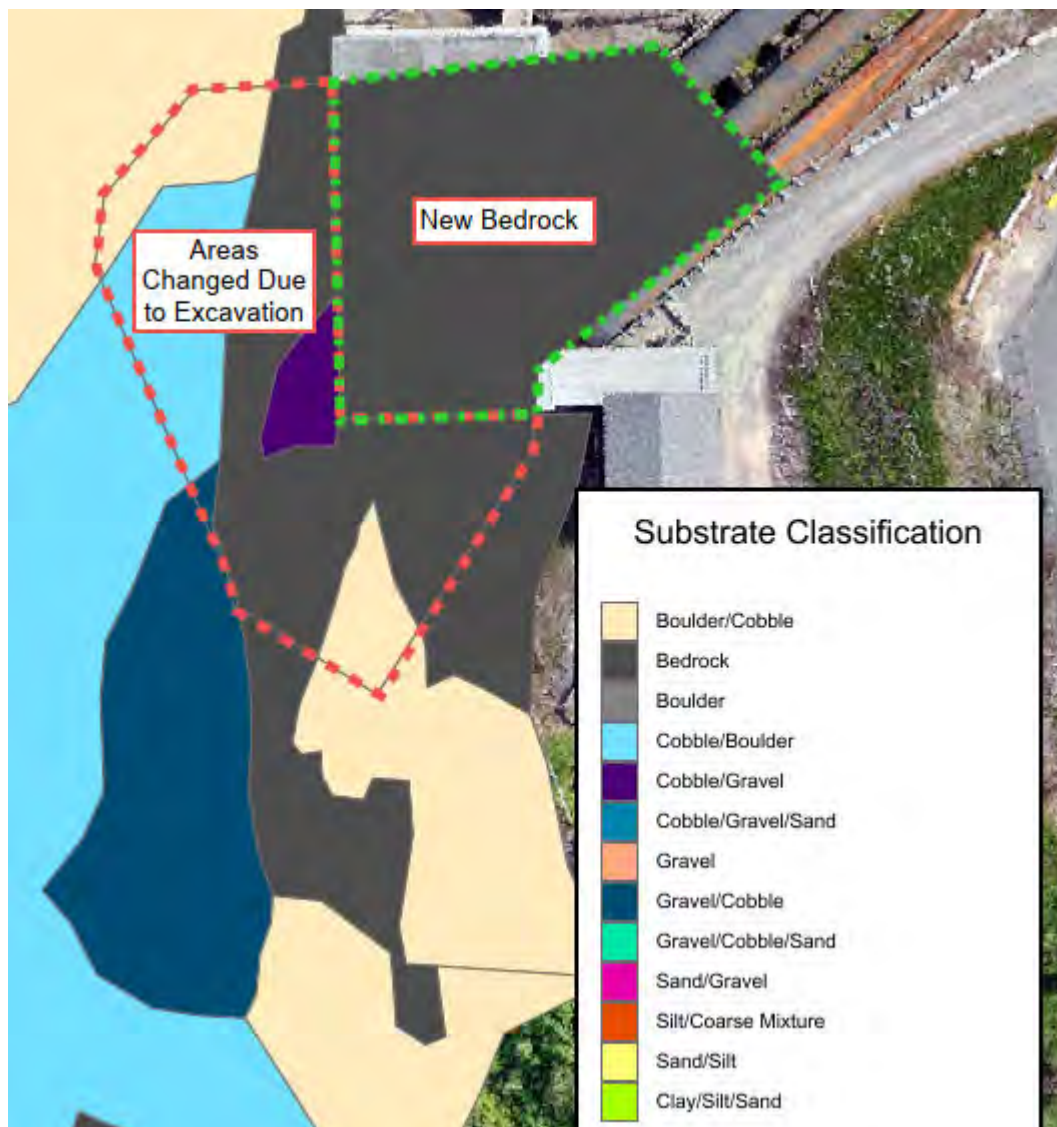


Figure 2-22 Changes to Tailrace Substrate

2.4.4.5 Transmission

The new Coniston GS will be connected to the HONI Martindale TS via the existing 44 kV M6 feeder. The existing 44 kV switchyard is located to the south of the existing powerhouse contains the main output transformer (MOT) and the 44 kV interconnection to the M6 feeder that was constructed in 2019. A teleprotection communication tower was also constructed in 2019 and is located on the north end of the site off the Access Road. All of this existing equipment will be retained, and the station will be connected to the existing switchyard via buried duct banks and/or overhead lines.

2.4.4.6 Off-Site Communication

All existing off-site communication will be retained and upgraded as required. There will be no changes to the existing communication tower on site and no plans to construct additional communications infrastructure.

2.4.4.7 Water Control Features

The MNRF has in place *Lakes and Rivers Improvement Act* Technical Bulletins that detail the Ministry requirements for the safe operations of dams. The Technical Bulletins were initially issued in 2011. OPG will be reviewing the IDF capacity of the main dam as part of its overall dam safety assessment program. No major work is proposed on the main dam as part of the Coniston Life Extension Project.

2.4.4.8 Other Features

Other features of the Coniston GS that will remain unchanged from the current situation. Safety devices such as buoys, signage and booms will remain unchanged from the current situation.

The existing Work Centre will remain on site and unchanged.

The large Hydro One Switchyard on site was decommissioned in 2019 and replaced by the current switchyard. The area will be used as laydown and storage during the project. To save space in the powerhouse, a modular electrical building will be located in the northwest corner of this area alongside the relocated backup diesel generator.

2.5 Construction Features

Figure 2-5 shows the Coniston site with a variety of construction stage features. These are each described below.

2.5.1 Site Access, Roads and Parking Areas

The primary access road to the site will remain as the Coniston Hydro Road, a gravel road that is sufficiently wide to accommodate the proposed construction. That road provides access to the Trans-Canada Highway (or Highway 17).

Improvements to site access are contemplated on OPG property at either end of the main dam and to the north of the intake canal to permit access to the generating station. Rock excavation and regrading will be completed to widen the turning radius at either end of the dam to permit access by larger tractor trailer vehicles for maintenance and construction. Rockfill will be placed north of the canal to raise the grade around the new powerhouse and improve the slope of the access road to the powerhouse.

During construction temporary access roads will be constructed on OPG's site as required for site access and construction purposed but these will generally be limited to the proposed footprint of the powerhouse area and regrading north of the canal. Temporary access roads would also be required to service the abutments of the upstream and downstream cofferdams and within the laydown and storage area to facilitate stockpiling and material handling as indicated in Section 2.5.2.

At this point no modifications are anticipated to the entrance at the Highway. However, should modifications be required these would be subject to review and approval by the City of Greater Sudbury and the Ontario Ministry of Transportation. Prior to construction, the DBC will meet with the City of Greater Sudbury and the Ministry of Transportation to discuss any relevant concerns.

The City of Sudbury noted that municipal permits are required for extra-long/large loads.

2.5.2 Laydown and Storage Areas

The Site Plan shown as Figure 2-5 shows that the existing OPG storage area will be slightly expanded as a laydown area for use by the DBC. This area will be cleared of vegetation, graded and a pad placed in order to allow for the orderly storage of equipment and material. That laydown area has been sited to avoid steeper slopes near the river. The total area of this newly cleared laydown area is 2.7 hectares.

The newly cleared laydown area will be used in combination with the area of the decommissioned HONI switchyard for temporary site offices, parking, material storage and delivery, stockpile of granular materials, onsite refuelling, concrete washout facility, small grout plant, equipment to facilitate the processing of excavated material for reuse on site (screens and potentially a crusher), washrooms, and other miscellaneous equipment or activities to suit product needs. A detailed plan for the laydown area will be prepared by the DBC once they are retained which will respect all environmental requirements.

2.5.3 Cofferdams

As already explained, one upstream cofferdam is required to isolate the canal and safely allow work in the dry and one downstream for the removal of the existing powerhouse and the excavation and clearing of the tailrace in the dry.

The final cofferdam designs will be the responsibility of the DBC with its alignment, design and footprint specified to suit the finalized tailrace and intake excavations, required construction sequence and scheduling limitations.

Several types of cofferdams are considered possible and could include granular cofferdams with geomembrane liner, granular cofferdams with cement bentonite core, cellular sheet pile cofferdams or similar.

The upstream cofferdam will be required for the majority of the construction duration (24 months) and would be installed at the earliest available opportunity to dewater the intake canal and the area upstream of the existing bridge. This cofferdam would not be removed until the intake structure and the powerhouse are complete and the turbine and flow control equipment in the intake area ready to receive water as part of wet commissioning. The approximate area dewatered behind the upstream cofferdam assuming an average head pond elevation of 237.1 m is 2,330 m², this includes 1634 m² within the existing canal and 693 m² in the forebay. The footprint of the proposed cofferdam shown is 1112 m² but is noted could vary based on cofferdam construction and refinement to the proposed intake canal excavation.

The downstream cofferdam will be required to facilitate removal of the existing powerhouse substructure and the excavation and clearing of the tailrace. The cofferdam will need to be constructed and removed during lower flow conditions in the river while respecting in water work restrictions. These features would be installed after the completion of the upstream cofferdam once these conditions are available. The anticipated duration of the

downstream cofferdam is (24 months). The approximate dewatered area behind the downstream cofferdam to the existing powerhouse assuming an average tailwater level of 220.5 m is 830 m². The in-water footprint of the proposed cofferdam shown is 870 m² but is noted could vary based on cofferdam construction and refinement to the proposed tailrace canal excavation. Of note, the cofferdam has been shown as a structural cofferdam due to concerns of restricting the spillway channel during construction as well as impacting potential fish habitat. However, construction of an earthen structure depending on the final tailrace configuration is not precluded and could increase the footprint of the cofferdam significantly. All areas, durations and the cofferdam configuration are subject to refinement, change and additional detail pending involvement of the DBC, finalization of the design and development of a detailed construction schedule.

Cofferdams should be constructed by adhering to the DFO Interim Code of Practice: Temporary Cofferdams and Diversion Channels (2020).

2.5.4 Excavation

Overburden and rock excavation will be required to construct the new powerhouse and intake. It is anticipated that some of the total quantity of rock excavated can be re-purposed on the site as fill for access road improvement following processing minimizing material imported or exported off-site.

The area to the north of the intake canal will be cleared of the existing fill by excavators and truck to permit exposure of the bedrock. This fill is known to consist of a variety of materials dating to original construction and work done at the site over time. The existing overburden consist of sand and gravel fill, rockfill and sandy silt. Material will be excavated and the existing rockfill will be salvaged, if possible, for general fill or for building temporary access roads.

The remainder of the excavation at site will be in rock and predominantly carried out by the drill and blast method in the dry. To complete blasting, drills will be employed to drill holes in the rock to delineate the excavation area as well as for placing explosive charges. The excavation will be carried out in multiple smaller blasts planned and designed by engineers and contractors specialized in this trade. Each blast will be planned and controlled to prevent damage to the existing structures and to the environment by utilizing controlled and timed blasting charges, reducing blast sizes and by employing blast matts or covering fill to reduce fly rock. Blasting would be preferably carried out to create rock sizes that are suitable for use as construction materials such as general rockfill and rip rap. To use the materials some degree of onsite processing by excavator and screens will be required. Crushing and further processing would need to be employed if excavated material is intended for use as engineered fill or for use in cofferdams and embankments.

Some blasting is anticipated within the footprint of the upstream cofferdam and would be carried out through in water blasting through a rock mattress behind the proposed cofferdam. Any blasting in the wet by use of rock pad would employ protections for fish and existing structure through implementing DFO guidelines for blasting which include but are not limited to warning blasts and protective bubble curtains.

2.5.5 Rock and Soil Deposition Areas

Overburden materials will be inspected and sorted for potential reuse and stored on site if applicable. All other excavated overburden will be disposed of off-site.

Rock will be temporarily stored on site following excavation to facilitate processing for use on site where possible. As indicated above it is intended that some of this material can be re-purposed at the site for site development purposes including grading and shaping stable contours to the land.

Some rock and/or overburden may be permanently stockpiled on the GS site for future use, in areas that are to be disturbed for the project, provided all materials are clean and managed to prevent erosion, sedimentation and according to all regulations.

All other material will be disposed of off-site.

2.5.6 Site Grading and Re-Vegetation

Following construction, the areas will be revegetated to suit the surrounding environment. This may involve seeding, planting or natural re-generation by placement of topsoil and with an appropriate seeding or planting. Discussions could be held with the Wahnapiitae First Nation or other First Nations on appropriate vegetation.

2.5.7 Workforce and Traffic

The redevelopment of hydroelectric facilities requires a wide number of professions and trades that change at various stages during the project cycle. The first phases of the work involve more civil work including setting up the construction site, excavation, removal of rock and general civil work. Once the powerhouse is constructed, labour needs shift more to the installation and connection of equipment. As such, labour needs evolve over the course of the project. It is anticipated that anywhere from 40 to 120 workers may be on the site at any one time during the approximately two-year construction period.

Workers will be generally responsible to get themselves to the worksite. The project will generally operate on a one shift per day basis meaning that there would be likely 80 to 240 vehicular movements per day on Coniston Hydro Road associated workers coming and leaving the site each day.

During cofferdam construction, excavations, demolition of existing structures and cofferdam removal activities heavy truck traffic will be present on Coniston Hydro Road and the Trans Canada Hwy in the vicinity of the site as all excess materials are to be removed from site.

Other traffic movement would be associated with deliveries of concrete, other construction materials, and the permanent equipment. These traffic movements will likely vary from a handful each day (under 20) to up to over 200 per day during excavation and demolition activities. Increases in truck traffic would also occur on certain days from week to week to support concrete pours as material will be brought in from off site. A small number of oversized loads are also expected during the course of construction.

2.5.8 Construction Schedule and Strategy

Construction is planned to commence in late 2023. The proposed new GS is expected to go into operation during the second half of 2025.

The placement of cofferdams and other in-water work (if needed) will adhere to any fisheries windows. Vegetation clearing will adhere to windows for breeding birds and bats.

2.6 Proposed Coniston GS Operations

The proposed Coniston GS is expected to operate in a similar fashion to the existing GS. The WRWMP describes the operational requirements for the Coniston GS.

- For the River reach above the dam, throughout the year, there is a 0.55 m operating range with a lower limit of 236.62 m and a maximum limit of 237.17 m.
- Coniston has a legal flow requirement of 3 m³/s (calculated as a daily average). The minimum flow requirement of 3.0 m³/s exists at the Coniston GS as a recommendation from MECP. This 3.0 m³/s daily average minimum flow is in place to dilute the metal concentration of inflows from Coniston Creek, downstream of Coniston GS (MNR, *et. al.*, 2011).
- The current operating regime at Coniston GS does not have any seasonal limits.

OPG will operate the new GS within the current operating regime of the WRWMP. The new 6 MW powerhouse will operate with a maximum proposed flow of 43.5 m³/s which is slightly less than the same historical maximum flow of 44.3 m³/s. The existing WRWMP rules have and will continue to be followed. The operating rules were set up recognizing the ecological conditions of the River and were the culmination of a multi-year planning process involving numerous stakeholders and government agencies examining various conditions and issues on the River.

The only change in water management operations will be that with new functional units, the station will be able to pass more flow to generate power rather than at present. However, that will merely restore the flow regime that existed prior to the failure of the units.

The plant was and will remain a part of the cascading system on the Wanapitei River (referred to in the WRWMP as a run-of-the-river GS), only passing what flow is available from natural inflow due to the very little storage capacity in the reservoir and will continue to be operated according to the same WRWMP operating rules. Units will be utilized to suit the natural available inflows with excess flow being spilled (beyond plant capacity) through the spillway. OPG has limited storage and a limited operating range (0.55 m), and as such, peaking style operations are not possible.”

2.7 Proposed Decommissioning

Decommissioning involves the permanent removal of the hydroelectric facilities, with the resultant loss of the site as a renewable source of electricity generation. Rather than decommissioning, redevelopment of a facility that is at the end of its designed service life could be a viable option. A number of OPG owned hydroelectric facilities that were built in the early 1900s have been redeveloped in the last 15 years. These include Wawaitin GS, Sandy Falls GS and Lower Sturgeon GS on the Upper Mattagami River and Hound Chute GS on the Montreal River.

Once the Coniston GS Redevelopment Project has reached the end of its service life in 90 years or more, additional redevelopment, rather than decommissioning, would be an option that should be considered again to further extend the life of this plant.

3 General Consultation Approach

This chapter describes the general consultation approach undertaken as part of the proposed Project.

3.1 Public Consultation Plan

A public consultation plan was prepared for the Project with the overall objective, as per the OWA Class EA (2018) (p. 34): “to provide those who may have an interest in the project, or those who may wish to participate with the opportunity to contribute to and inform decisions relating to a project.”

The plan was designed to, at a minimum, adhere to the requirements of the OWA Class EA process. The only mandatory public consultation requirements for Projects Associated with Existing Infrastructure are (OWA Class EA, 2018, Table 2, p.27):

- Notice of Commencement;
- Notice of Completion (to parties who have expressed an interest or participated); and,
- Statement of Completion.

The requirements for the above notices are identified within the OWA Class EA document, along with a description of a number of consultation principles, approaches and techniques. OPG’s consultation plan and past practices with respect to consultation on hydroelectric projects are consistent with these. Further, based on past experience of Arcadis and OPG, the consultation that was proposed in the plan and subsequently undertaken for the Project exceeds the minimum requirements.

3.2 Database

A database of public and agency stakeholders to be notified about the Project, open houses and newsletters was developed. The initial stakeholder database primarily focused on agency stakeholders and public stakeholders in the vicinity of the Coniston GS. Public stakeholders were initially notified through Canada Post’s Neighbourhood Mail Service (discussed further in Section 3.4.1 below). Participants at the first open house who provided contact information or who requested to be added to the database were added following the first open house. The stakeholder list was updated and revised through the course of the consultation process.

A list of agency stakeholders was developed for the Project. A copy of the agency contact list is provided in Appendix B. Further information on the development of the agency stakeholder list is provided in Section 5 below.

3.3 Project Website

A website was created for the Project and can be found at www.conistongs.com. This website was active in October 2019 for the public and its operation has been on-going. Contact information is provided to facilitate inquiries.

The website pages include:

- Home Page;
- Notices/Decisions;
- Supporting Documents;
- Frequently Asked Questions;
- Open House Information (including the virtual Open House content described in Section 4.2 below);
- Information on a related OPG project (Stinson GS); and
- Contact Page.

3.4 Notices

Public notices were prepared and circulated for the commencement and completion of the Project, and prior to each open house. These included the following:

- Notice of Commencement and First Open House; and,
- Notice of Update and Virtual Consultation Options.

A Notice of Completion will be prepared and placed in local newspapers and on the website following the government agency review.

3.4.1 Notice of Commencement and First Open House

A Notice of Commencement and First Open House for the Project was prepared and provided the following information: project title; name of the proponent; a brief project description and project type; a map depicting the project location and anticipated zone of impact; a statement that the Project is subject to a defined process under the Class EA for Waterpower projects; an invitation to participate in the process; a tentative schedule; a statement that the Project is associated with existing infrastructure; the project website and project contact information, and informed of an upcoming public information session including detailed information on the format, time and location of the first open house.

The notice was published in the following newspapers:

- Sudbury Northern Life (English) (October 24, 2019);
- Sudbury Star (English) (October 23, 2019);
- Le Voyageur (French) (October 23, 2019).

An e-mail containing an invitation to the Kick-off meeting and First Open House which included a copy of the Project Description was circulated on September 16, 2019 to the following agencies:

- Ministry of Environment, Conservation and Parks (MECP);

- Ministry of Natural Resources and Forestry (MNRF);
- Ministry of Heritage, Sport, Tourism & Culture Industries (MHSTCI);
- Fisheries and Oceans Canada (DFO); and
- City of Greater Sudbury.

The notice was also available on the project website as of the week of October 21, 2019. Canada Post's Neighbourhood Mail Service was also utilized to distribute notices. This service provides complete delivery for user specified areas using the online Geographic Information System service, Precision Targeter. Notices were circulated to 1,867 addresses in the communities of Coniston (postal code P0M 1M0) and Wahnapiatae (postal code P0M 3C0) which are in the vicinity of the Coniston GS the week of October 21, 2019, and included houses, apartments, businesses and farms.

A copy of the notice is provided in Appendix A.

3.4.2 Notice of Update and Virtual Consultation Options (Second Open House)

OPG determined that an in-person Open House was not a practical and safe alternative, due to COVID-19. In place of an in-person Open House, OPG identified alternative virtual consultation options that were communicated through a notice.

A Notice of Update and Virtual Consultation Options for the Project was prepared and provided the following information: project title; name of the proponent; a brief project description and project type; a map depicting the project location and anticipated zone of impact; a statement that the Project is subject to a defined process under the Class EA for Waterpower projects; an invitation to participate in the process; a tentative schedule; a statement that the Project is associated with existing infrastructure; the project website and project contact information. The notice also informed of four virtual consultation options and how to access these (including the format/source and timing). The alternatives included in the notice are discussed further in Section 4.2 below.

The notice was published in the following newspapers:

- Sudbury Star (English) (March 2, 2022); and,
- Le Voyageur (French) (March 2, 2022).

The notice was circulated to 12 stakeholders who participated at the first open house and who provided contact information or who requested to be added to the database (noted above in Section 3.2), as well as one property owner identified within 500m of the project site. The notifications contained a copy of the notice and were sent on February 25, 2022, to those that provided only a mailing address and on February 28, 2022, to those that provided an email address. Of the notices circulated to these addresses, one was returned as undeliverable as a result of a discrepancy in the email address and was resent on March 1, 2022 to a revised email address.

An email containing an invitation to the Second Open House was circulated on February 28, 2022 to the following agencies:

- Ministry of Environment, Conservation and Parks (MECP);
- Ministry of Natural Resources and Forestry (MNRF);
- Ministry of Heritage, Sport, Tourism & Culture Industries (MHSTCI);
- Conservation Sudbury;
- Fisheries and Oceans Canada (DFO); and
- City of Greater Sudbury.

The notice was also available on the project website commencing on March 7, 2022.

Canada Post's Neighbourhood Mail Service was also utilized again to distribute notices. Notices were circulated to 1,794 addresses in the communities of Coniston (postal code P0M 1M0) and Wahnapiatae (postal code P0M 3C0) which are in the vicinity of the Coniston GS the week of February 28, 2022, and included houses, apartments, businesses and farms.

A copy of the notice is provided in Appendix A.

3.4.3 Notice and Statement of Completion

A Notice and Statement of Completion will be prepared following government agency review.

4 Public Consultation Open Houses

Two public open houses were held for the Project. The first was held in November of 2019 and the second a virtual open house was held in March 2022.

4.1 Public Open House #1

The first public open house for the Project was held on November 6, 2019, from 4:00 p.m. to 8:00 p.m. at the Wahnapiatae Community Centre in Wahnapiatae, Ontario.

The open house was designed for informal drop-in with project team representation from OPG and Arcadis. The purpose of the open house was to:

- Introduce the proposed Project and the project team;
- Provide information about the studies undertaken to support the Class EA process;
- Provide attendees the opportunity to ask questions and comment on the Project;
- Respond to questions and comments; and
- Create an opportunity for positive consultation.

Project information was presented through display panels. Copies of the Notice of First Open House were available.

A project sign-in sheet was available for participants to provide contact information in order to be included in future project correspondence. A comment sheet was also available for participants to submit questions and comments.

A total of 13 individuals attended the open house, all of whom provided contact information on the sign-in sheet. The attendees represented the general public from the surrounding community.

Copies of the display panels and comment sheet are provided in Appendix C. Photos from the open house are provided below.

Proposed Coniston Generating Station Life Extension Project
Public and Agency Consultation – Technical Support Document



A total of 22 Information Panels were available for the public to review, with project team members available to respond to questions. The panels provided an overview of OPG, the Project and re-development options. They also indicated that an EA process under the OWA Class EA was commencing and identified general approval requirements. The material explained and identified the types of studies and field work that would be undertaken or that had already commenced and/or been completed. Information was provided on how hydroelectric development works and next steps for the Project. In addition to Appendix C, these presentation panels can be found on the project website.

4.1.1 Input Received

A comment sheet was provided at the open house giving the public 30 days to return comments. One comment sheet was returned at the venue. Additional comments were received verbally at the open house or via email following the open house.

Comments largely related to the re-use and/or demolition of the existing powerhouse at the site and offered potential engineering constraints to be considered. Additional comments included the types of fish species identified upstream during recreational activities, support for the Project, and an interest in project information. There was general positive support for the Project.

The questions and comments received verbally and via comment sheet from the public are described below in Table 4-1. The comment sheet identified a check box to receive a follow up call from the project team regarding comments and questions. The participant that filled out a comment sheet did not request this, although one individual did request notification of supporting documents being posted on the project website.

Table 4-1 Input Received from the Public at Open House #1

Comment/Question from the Public	Response
Noted that they have no concerns about the environmental aspects of the Project providing the same dam operating rules are followed and the construction is handled according to the Class EA, and that no change in operation of the Coniston GS will result in minimal environmental impacts.	Acknowledged.
Noted the age of the existing powerhouse and commented on potential for Alkali Silica Reaction (ASR) to occur in concrete associated with the same era in the Sudbury area. Suggested OPG consider reviewing this potential issue if re-purposing the building.	Acknowledged.
Would not be in favor of supporting a heritage building designation, should that be the case, and stated a clear preference for the building to be demolished as opposed to re-purposed. Re-purposing will limit choices of new equipment and will require awkward and expensive penstock splitting.	Acknowledged. The engineering team will undertake significant investigations of the powerhouse if renewal is contemplated.
Bedrock quality in the old building and tailrace will require evaluation with respect to a similar alignment for a new plant, noting the presence of several geological engineers in the area who could provide a geotechnical assessment of the current alignment. Noted a preference for the current alignment, with new and efficient equipment, providing this is feasible, as opposed to undertaking detailed work on alternatives.	Acknowledged. The engineering team will undertake significant investigations of the powerhouse if renewal is contemplated.
Supportive of the proposed Project so that power generation can continue.	Acknowledged.
Fish species caught upstream of Stinson while camping include only bass, and the occasional walleye.	Acknowledged.
Inquiry about when supporting documents to the open house (i.e. poster boards) will be posted on the Project website.	Panels will be available on the project website by November 8 th .

4.2 Public Open House #2 (Virtual) and Consultation Options

The purpose of the second Open House was to:

- Update the public on the proposed Project;
- Describe the proposed project;

- Describe proposed environmental effects and recommended mitigation and monitoring measures;
- Provide attendees the opportunity to ask questions and comment on the Project;
- Respond to questions and comments; and
- Create an opportunity for positive consultation.

As noted in Section 3.4.2 above, OPG decided an in-person Open House was not a practical and safe alternative due to COVID-19, and in its place provided four alternatives for consultation on the Project. These alternatives were communicated through the notice described in Section 3.4.2 and included the following:

- Project information provided in Presentation Panels (normally available at an Open House) in PDF format were made available on the Project website: www.conistongs.com starting March 7, 2022.
- A narrated version of the Presentation Panels was made available on the Project website: www.conistongs.com starting March 7, 2022.
- An offer for Presentation Panels to be mailed in hard copy or email to individuals who requested them.
- An offer to discuss the Project on the phone or via an on-line option such as Microsoft Teams by contacting identified project representatives.

In addition to the Presentation Panels noted above, copies of the notice and project panels provided at the first Open House were provided on the project website.

An online comment form was also available for participants to submit questions and comments. An option to provide contact information in order to be included in future project correspondence was included in the form. The online comment form was made available on March 7, 2022 and continued to be available on the website following the open house but comments to the form were requested to be completed by March 21st in order to become part of the public record.

Copies of the display panels and comment form are provided in Appendix D.

4.2.1 Input Received

A comment form was provided at the open house and OPG requested the public to submit questions and comments by March 21st. No individuals provided comments on the online form. The on-line public comment form is still available on the website.

Two comments were received following the Open House via email, represented by a member of the public and also by the Ontario Rivers Alliance.

Comments largely related to the fishery, impacts of hydroelectric projects on greenhouse gases (GHG), details on the zone of impact, water levels and flows, sedimentation removal and quality, operational processes and the EA process.

There was positive support to how this virtual Open House was presented/undertaken.

The questions and comments received from the public are described below in Table 4-2.

Table 4-2 Input Received from the Public at Open House #2

Comment/Question from the Public	Response
<p>One individual noted a general interest in the walleye fishery in an e-mail to Arcadis. The comment was not formally submitted as part of the Open House but was likely made because this member of the public saw the public notice.</p>	<p>Arcadis spoke to this individual directly because the individual was knowledgeable about the Coniston River and was interested in talking. The individual raised no concerns but was interested in reviewing a copy of the Aquatic Technical Supporting Document (associated with the Environmental Report) once it has been finalized.</p>
<p>The only other comment that came from the Open House was a letter received from the Chair of the Ontario Rivers Alliance. That letter and the OPG response can be found in Appendix E. The comments in summary form are provided below.</p> <p>Noted the Virtual Open House was very informative, effective and convenient with high recommendation for this format to continue (even post pandemic).</p> <p>Noted concerns regarding the impacts of hydro-electric to methane contributions as well as to potential impacts to aquatic species, and asked how the project reduce greenhouse gas emissions (as was documented on the project website).</p> <p>Requested to know if there were any wastewater treatment facilities upstream of the facility and if this could contribute to GHG emissions.</p> <p>Commented on the Zone of Impact (as provided in the project information) and requested information and explanation regarding how this was assessed (including extent and distances used and why certain features were not included, such as Coniston Creek, in the assessment), and also noted the potential for the extent of upstream zone of impact to affect water levels/flows.</p> <p>Requested information on removal of existing sediment buildup (including timing, process and disposal).</p> <p>Requested to know if sediment has been assessed or analyzed for contaminants.</p> <p>Requested an explanation of a “run-to-fail” mode.</p> <p>Noted the public no longer has the right to make a Part II Order request to appeal a Minister’s decision, unless it relates to Indigenous treaty rights, and suggested this reference be removed from the project website.</p>	<p>Please see OPG’s response in Appendix E.</p>

4.3 Summary of Public Open Houses

The two open houses (including virtual consultation options) demonstrated that there is no public opposition to the Project. Concerns were only raised by one individual representing the Ontario Rivers Alliance (ORA). The ORA did express concerns with hydroelectric generating stations in generation and specifically in relation to greenhouse gas emissions. See Appendix E for OPG's response to the letter sent by the ORA. Other comments generally related to the re-use and/or demolition of the existing powerhouse at the site and offered potential engineering constraints to be considered. Additional comments included personal experience of fish species identified upstream, support for the Project and the virtual Open House format, and an interest in project information.

5 Government Agency Consultation

Consultation was undertaken with agencies, specifically the Ministry of Environment, Conservation and Parks (MECP), Ministry of Natural Resources and Forestry (MNRF), Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), Fisheries and Oceans Canada (DFO), and City of Greater Sudbury. Significant consultation was initiated in 2019 with a site visit to the Coniston GS and an agency kick-off meeting and continues to the current period. Initial discussions focused on the nature and scope of the proposed Project, the EA approach, Indigenous engagement and likely government information requirements.

A summary of agency consultation activities undertaken once the EA commenced in 2017 is provided below. OPG has consulted with various provincial and federal government agencies throughout the EA process. Some key dates and consultation are summarized below. Meetings notes from some of these meetings can be provided if the government agencies wish them. Meeting presentation materials and/or notes are provided in Appendix F.

- November 2, 2019 – Coniston GS Site Visit and Kick-off meeting at Wahnapiatae Community Centre, Wahnapiatae, Ontario. This was a meeting with multiple government agencies as described above.
- May 27, 2020 – Coniston Environmental Assessment and Permits Meeting. This was a meeting with the City of Greater Sudbury. Meeting to discuss environment assessment, land use planning issues and interests of the City of Greater Sudbury.
- June 24, 2022 – Cultural Heritage. This was a meeting with MHSTCI to discuss built heritage issues at Coniston.

In addition to the meetings above there has been other less informal communications on-going with all the various federal, provincial and municipal entities.

6 Summary and Conclusion

The public and agency consultation process for the proposed Coniston GS Redevelopment Project has been comprehensive and inclusive of all interested individuals and government representatives. In general, the public has been supportive of the Project. OPG is not aware of a single individual that has indicated opposition to the Project. One individual did express a few concerns about hydroelectric generating stations and greenhouse gas emissions and other issues.

It is our opinion that all public comments raised have or are being addressed including ones unrelated to the undertaking. OPG will continue to address public and agency comments as they come forward.

7 References

Department of Fisheries and Oceans. Interim Code of Practice: Temporary Cofferdams and Diversion Channels. 2020.

KGS Group. Monthly Flows at Coniston. 2022.

Ministry of Natural Resources (OMNR), Ontario Power Generation and the Trans-Alta Corporation. 2011. Water Management Plan for the Wanapitei River System.

Ontario Waterpower Association. 2018. Class Environmental Assessment for Waterpower Projects. Eighth Edition.

WSP. 2016. Coniston GS Strategic Assessment. Geotechnical Baseline Report.

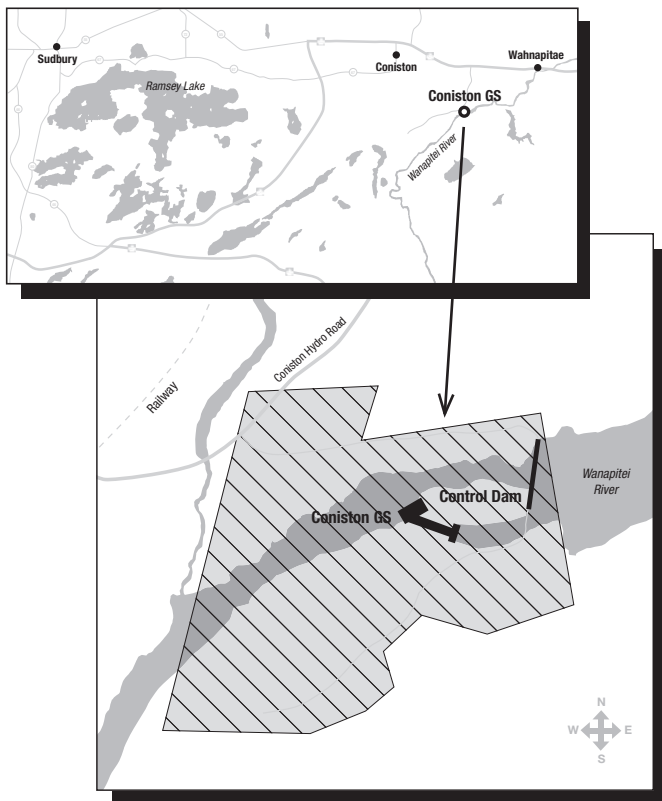
Appendix A

Project Notifications

NOTICE OF COMMENCEMENT AND FIRST OPEN HOUSE FOR THE PROPOSED UNDERTAKING UNDER THE ONTARIO WATERPOWER ASSOCIATION CLASS EA FOR WATERPOWER PROJECTS: CONISTON GENERATING STATION REDEVELOPMENT PROJECT

Ontario Power Generation (OPG) is proposing to redevelop the existing Coniston Generating Station (GS). This Proposed Undertaking will involve an Environmental Assessment (EA) under the Ontario Waterpower Association (OWA) Class EA for Waterpower projects as a project Associated with Existing Infrastructure. Constructed in 1905, the existing station has an installed capacity of 4.6 megawatts (MW) and is now at its end of life stage. OPG intends to redevelop the site and increase the station's capacity to an installed capacity of up to 6 MW.

The Proposed Undertaking is on the Wanapitei River within the City of Greater Sudbury, Ontario, as detailed on the map below. OPG does not plan to alter the approved water levels and flows as described in the Wanapitei River Management Plan (WMP). As such, the anticipated zone of impact for the project is limited to the immediate area around the station (see shaded/hatched area on the map). A minor amendment to the WMP may be required under the Lakes and Rivers Improvement Act. This notice and public consultation process for the project under the Class EA is intended to coordinate and meet the notification requirements relevant to the planning stage of the project under both the Environmental Assessment Act and Lakes and Rivers Improvement Act statutes.



The Class EA process requires OPG to undertake an evaluation of the project to evaluate its potential effects to the environment (positive and negative) and prepare a detailed Environmental Report. The evaluation and resulting Environmental Report will assess the potential effects of the proposed waterpower project on the environment during both construction and operation. OPG has identified certain environmental components that it expects to be the focus of the proposed project. Consultation with Indigenous communities and the public is an integral component of this process, to allow interested parties to provide comments on the project. You are invited to provide comments on the issues to be addressed. For information on the project proposal, to raise any issues or concerns, or to be placed on the project's mailing list, please contact one of the individuals identified below.

Over the next year, OPG will use the OWA Class EA process as a basis for coordinating all future consultation required for the planning stage of the Proposed Undertaking. If the project proceeds as scheduled, construction could commence in 2021.

To encourage public participation, OPG is scheduling two rounds of Open Houses. The first Open House is scheduled as follows:

Wednesday, November 6, 2019, 4:00 p.m. to 8:00 p.m.
Wahnapiatae Community Centre
161 Glenbower Crescent, Wahnapiatae

The Open House will provide the public with more information about the Proposed Undertaking. Anyone who attends will have the opportunity to speak directly with representatives from OPG and their environmental consulting team with regard to the OWA Class EA.

OPG has retained Arcadis Canada Inc. to undertake the Class EA process. For more information, please contact:

Ed Naval
Senior Environmental Advisor
Ontario Power Generation
800 Kipling Avenue
Toronto, ON
M8Z 5G4
416-231-4111 ext. 4137
edward.naval@opg.com

Phil Shantz
Vice-President and Environmental
Planning Leader
Arcadis Canada
121 Granton Drive
Richmond Hill, ON
L4B 3N4
905-764-9380
phil.shantz@arcadis.com

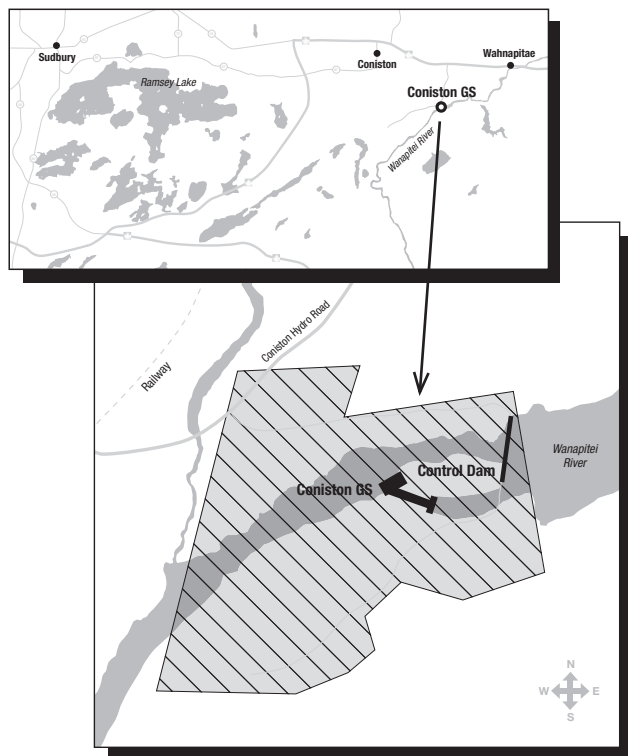
For more detail, please visit www.conistongs.com.

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this matter and will be released, if requested, to any person.

AVIS DE LANCEMENT ET PREMIÈRE JOURNÉE PORTES OUVERTES POUR LE PROJET PROPOSÉ DANS LE CADRE DE L'ÉVALUATION ENVIRONNEMENTALE DE LA ONTARIO WATERPOWER ASSOCIATION : PROJET DE RÉAMÉNAGEMENT DE LA CENTRALE DE CONISTON

Ontario Power Generation (OPG) propose de réaménager la centrale existante de Coniston. L'engagement proposé impliquera une évaluation environnementale de la Waterpower Association de l'Ontario (OWA) relative aux projets d'énergie hydraulique en tant que projet associé à une infrastructure existante. Construite en 1905, la station, maintenant en fin de vie, avait une puissance installée de 4,6 mégawatts (MW). OPG a l'intention de la réaménager et d'en augmenter la capacité à une puissance installée allant jusqu'à 6 MW.

La centrale se trouve sur la rivière Wanapitei, dans la ville du Grand Sudbury, en Ontario, comme l'indique la carte ci-dessous. OPG ne prévoit pas modifier les niveaux d'eau et les débits approuvés, comme ils sont décrits dans le Plan de gestion des eaux de la rivière Wanapitei. En tant que telle, la zone d'impact prévue pour le projet est limitée à la zone immédiate autour de la station (voir la zone ombrée/hachurée sur la carte). Une modification mineure du Plan pourrait être requise en vertu de la Loi sur l'aménagement des lacs et des rivières. Le présent avis et processus de consultation publique relatif au projet en vertu de l'évaluation environnementale vise à coordonner et à respecter les exigences en matière d'avis applicables à l'étape de la planification du projet en vertu de la Loi sur les évaluations environnementales et de la Loi sur l'aménagement des lacs et des rivières.



Le processus d'évaluation environnementale par catégorie exige qu'OPG entreprenne une évaluation du projet afin d'évaluer ses effets potentiels (positifs et négatifs) sur l'environnement et de préparer un rapport environnemental détaillé. L'évaluation et le rapport environnemental qui en résulte évalueront les effets potentiels du projet d'énergie hydraulique sur l'environnement pendant la construction et l'exploitation. OPG a déterminé certaines composantes environnementales importantes dans le projet proposé. La consultation des communautés autochtones et du public fait partie intégrante de ce processus afin de permettre aux parties intéressées de formuler des commentaires sur le projet. Vous êtes invités à commenter les problèmes à traiter. Pour obtenir des informations sur la proposition de projet, soulever des problèmes ou des préoccupations ou figurer sur la liste de diffusion du projet, veuillez contacter l'une des personnes mentionnées ci-dessous.

Au cours de la prochaine année, OPG emploiera le processus d'évaluation environnementale globale de l'OWA comme base pour la coordination de toutes les consultations futures requises pour la phase de planification de l'engagement proposé. Si le projet se réalise comme il est prévu, les travaux de construction pourraient commencer en 2021.

Pour encourager la participation du public, OPG organise deux journées portes ouvertes. La première aura lieu :

**Le mercredi 6 novembre 2019, de 16 h à 20 h,
au Centre communautaire Wahnapiatae,
161, Glenbow Crescent, à Wahnapiatae.**

La journée portes ouvertes fournira au public davantage d'informations sur l'engagement proposé. Tous les participants auront l'occasion de s'entretenir directement avec des représentants d'OPG et de leur équipe de consultants en environnement au sujet de l'évaluation environnementale de catégorie OWA.

Pour obtenir plus de renseignements, rendez-vous au www.conistongs.com.

En vertu de la Loi sur l'accès à l'information et de la protection de la vie privée et de la Loi sur l'évaluation environnementale, sauf indication contraire dans la présentation, toutes les informations personnelles telles que les noms, les adresses, les numéros de téléphone, le numéro et l'emplacement de la propriété inclus dans une soumission feront partie des dossiers publics et seront communiqués, sur demande, à quiconque le désirera.

OPG a retenu les services d'Arcadis Canada Inc. pour entreprendre le processus d'évaluation environnementale par catégorie. Pour obtenir plus d'information, veuillez contacter :

Ed Naval
Conseiller principal en environnement
Ontario Power Generation
800, Kipling Avenue
Toronto, Ontario
M8Z 5G4
416 231-4111, poste 4137
edward.naval@opg.com

Phil Shantz
Vice-président et responsable
de la planification environnementale
Arcadis Canada
121, Granton Drive
Richmond Hill, Ontario
L4B 3N4
905 764-9380
phil.shantz@arcadis.com

NOTICE OF UPDATE AND VIRTUAL CONSULTATION OPTIONS FOR THE PROPOSED UNDERTAKING UNDER THE ONTARIO WATERPOWER ASSOCIATION CLASS EA FOR WATERPOWER PROJECTS: CONISTON GENERATING STATION LIFE EXTENSION PROJECT

Ontario Power Generation (OPG) is proposing to redevelop the existing Coniston Generating Station (GS). This Proposed Undertaking will involve an Environmental Assessment (EA) under the Ontario Waterpower Association (OWA) Class EA for Waterpower Projects as a Project Associated with Existing Infrastructure. Constructed in 1905, the existing station had an installed capacity of less than 5 megawatts (MW) and is now at its end-of-life stage, operating only at about 2 MW. OPG intends to redevelop the site and construct a new station with installed capacity of approximately 6 MW.

The Proposed Undertaking is on the Wanapitei River within the City of Greater Sudbury, Ontario, as detailed on the map below. OPG does not plan to alter the approved water levels and flows as described in the Wanapitei River Water Management Plan (WMP). As such, the anticipated zone of impact for the Project is limited to the immediate area around the station (see shaded/hatched area on the map). A minor amendment to the WMP may be required under the Lakes and Rivers Improvement Act to describe the new facility. This notice and public consultation process for the Project under the Class EA is intended to coordinate and meet the notification requirements relevant to the planning stage of the Project under both the provincial Environmental Assessment Act and Lakes and Rivers Improvement Act statutes and the federal Fisheries Act and Navigable Waters Act.

The Class EA process requires OPG to undertake an evaluation of the Project to evaluate its potential effects to the environment (positive and negative) and prepare a detailed Environmental Report. The evaluation and resulting Environmental Report will assess the potential effects of the proposed waterpower project on the environment during both construction and operation. OPG has identified certain environmental components that it expects to be the focus of the proposed Project. Consultation with Indigenous communities and the public is an integral component of this process, to allow interested parties to provide comments on the Project. You are invited to provide comments on the issues to be addressed. For information on the Project proposal, to raise any issues or concerns, or to be placed on the Project's mailing list, please contact one of the individuals identified below.

Ontario Power Generation has advanced the Project to the point where normally a second Open House would be held. At this stage in the Project, OPG will be presenting a project site layout and will also describe likely environmental effects and recommended mitigation and monitoring measures.

Due to COVID-19, OPG has decided an in-person Open House is not a practical and safe alternative. In place of an Open House, OPG has identified four alternatives for consultation on the Project.

- Presentation Panels with narration that would normally be available at an Open House will be available on the Project website: www.conistongs.com starting March 7, 2022.
- Presentation Panels in PDF format will be available on the Project website: www.conistongs.com starting March 7, 2022.
- Presentation Panels will be mailed in hard copy or email to individuals who request them. Please contact one of the individuals below if you want a hard copy mailed to you.
- If you want to talk about the Project on the phone or via an on-line option such as Microsoft Teams, please contact one of the individuals listed below.

A Comment Sheet is available on-line at www.conistongs.com or if you request a hard copy of the presentation panels a Comment Sheet can be mailed to you. OPG is requesting that any comments on the Project be sent or given to OPG and/or its representatives below by March 21, 2022.

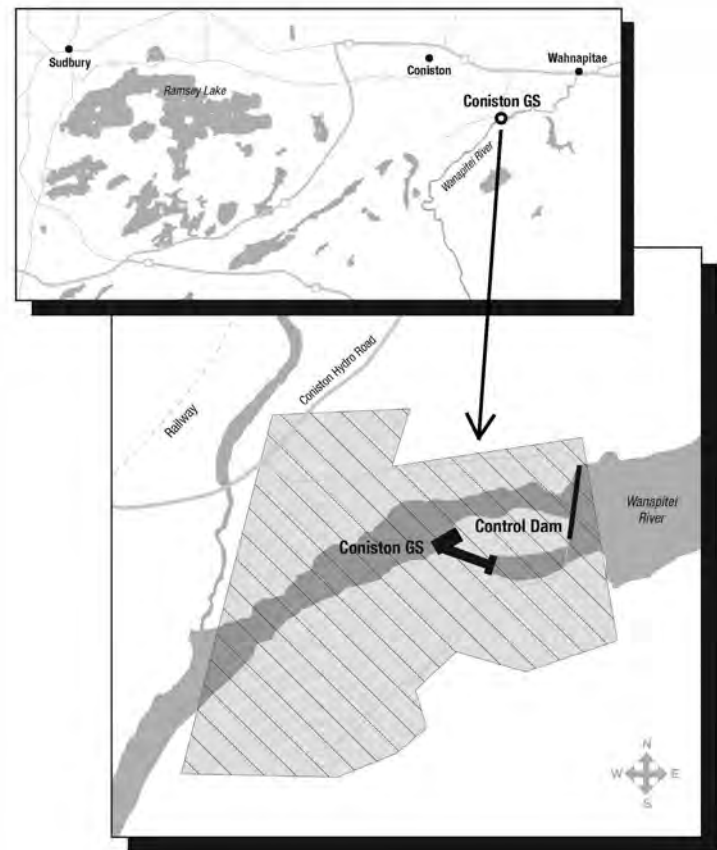
OPG has retained Arcadis Canada Inc. to undertake the Class EA process. For more information, please contact:

Ed Naval
Senior Environmental Advisor
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416-231-4111 ext. 4137
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Phil Shantz
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AVIS DE MISE À JOUR ET OPTIONS DE CONSULTATION VIRTUELLE CONCERNANT LE PROJET PROPOSÉ DANS LE CADRE DE L'ÉVALUATION ENVIRONNEMENTALE DE PORTÉE GÉNÉRALE DE L'ONTARIO WATERPOWER ASSOCIATION POUR LES PROJETS D'ÉNERGIE HYDRAULIQUE: PROJET DE PROLONGEMENT DE LA DURÉE DE VIE DE LA CENTRALE HYDROÉLECTRIQUE DE CONISTON

Ontario Power Generation (OPG) propose de réaménager l'actuelle centrale hydroélectrique de Coniston (GS). Le projet proposé fera l'objet d'une évaluation environnementale (EE) dans le cadre d'une EE de portée générale de l'Ontario Waterpower Association (OWA) pour les projets d'énergie hydraulique en tant que projet associé à l'infrastructure existante. Construite en 1905, la centrale existante avait une puissance installée de moins de 5 mégawatts (MW) et a maintenant atteint la fin de son cycle de vie utile, avec une puissance installée d'environ 2 MW seulement. OPG a l'intention de réaménager le site et de construire une nouvelle centrale dotée d'une puissance installée d'environ 6 MW.

Le projet proposé se trouve sur la rivière Wanapitei, dans le Grand Sudbury, en Ontario, comme l'indique la carte ci-dessous. OPG ne prévoit pas de modifier les niveaux et débits d'eau approuvés, comme décrit dans le plan de gestion de l'eau de la rivière Wanapitei. Par conséquent, la zone d'impact prévue pour le projet est limitée à la zone immédiate autour de la station (voir la zone ombragée/hachurée sur la carte). Une modification mineure au plan de gestion de l'eau peut être requise en vertu de la Loi sur l'aménagement des lacs et des rivières pour décrire la nouvelle installation. Le présent avis et le processus de consultation publique associé au projet, dans le cadre de l'EE de portée générale, visent à coordonner et à respecter les exigences pertinentes en matière de notification à l'étape de la planification du projet en vertu de la Loi sur l'évaluation environnementale de la province, de la Loi sur l'aménagement des lacs et des rivières, de la Loi fédérale sur les pêches et de la Loi sur les eaux navigables canadiennes.

Le processus d'EE de portée générale exige qu'OPG entreprenne une évaluation du projet afin de déterminer ses effets potentiels sur l'environnement (positifs et négatifs) et de préparer un rapport environnemental détaillé. L'évaluation et le rapport environnemental qui en découleront permettront d'identifier les effets potentiels du projet d'énergie hydraulique proposé sur l'environnement pendant la construction et l'exploitation. OPG a ciblé certains éléments environnementaux qui devraient être au cœur du projet proposé. La consultation des collectivités autochtones et du public fait partie intégrante de ce processus, afin de permettre aux parties intéressées de formuler des commentaires sur le projet. Nous vous invitons à formuler des commentaires sur les enjeux qui seront abordés. Pour obtenir des renseignements sur la proposition de projet, pour soulever des questions ou des préoccupations ou pour ajouter votre nom à la liste d'envoi du projet, veuillez communiquer avec l'une des personnes indiquées ci-dessous.

Ontario Power Generation a fait progresser le projet au point où une deuxième journée portes ouvertes devrait habituellement avoir lieu. À cette étape du projet, OPG présentera un plan d'aménagement du site et décrira les effets environnementaux probables ainsi que les mesures d'atténuation et de surveillance recommandées.

Dans le contexte de la COVID-19, OPG a déterminé que la tenue d'une journée portes ouvertes en personne n'est pas une solution pratique et sécuritaire. L'entreprise privilégie plutôt quatre options de consultation entourant le projet.

- Des présentations d'experts avec narration, habituellement effectuées lors d'une journée portes ouvertes, pourront être consultées sur le site Web du projet à l'adresse www.conistongs.com à compter du 7 mars 2022.
- Vous pouvez les consulter en format PDF sur le site Web du projet à l'adresse www.conistongs.com à compter du 7 mars 2022.
- Il est également possible de faire parvenir des versions papier de ces présentations par la poste ou de les envoyer par courriel aux personnes qui en font la demande. Si vous voulez recevoir un exemplaire de ces présentations en format papier par la poste, veuillez communiquer avec l'une des personnes ci-dessous.
- Si vous souhaitez discuter du projet au téléphone ou en ligne, par exemple au moyen de Microsoft Teams, veuillez communiquer avec l'une des personnes indiquées ci-dessous.

Une fiche de commentaires est disponible en ligne à www.conistongs.com. Nous pouvons également vous la faire parvenir par la poste lorsque vous demandez de recevoir une version papier des présentations des experts. OPG vous demande de transmettre vos commentaires sur le projet à OPG ou à ses représentants indiqués ci-dessous d'ici le 21 mars 2022.

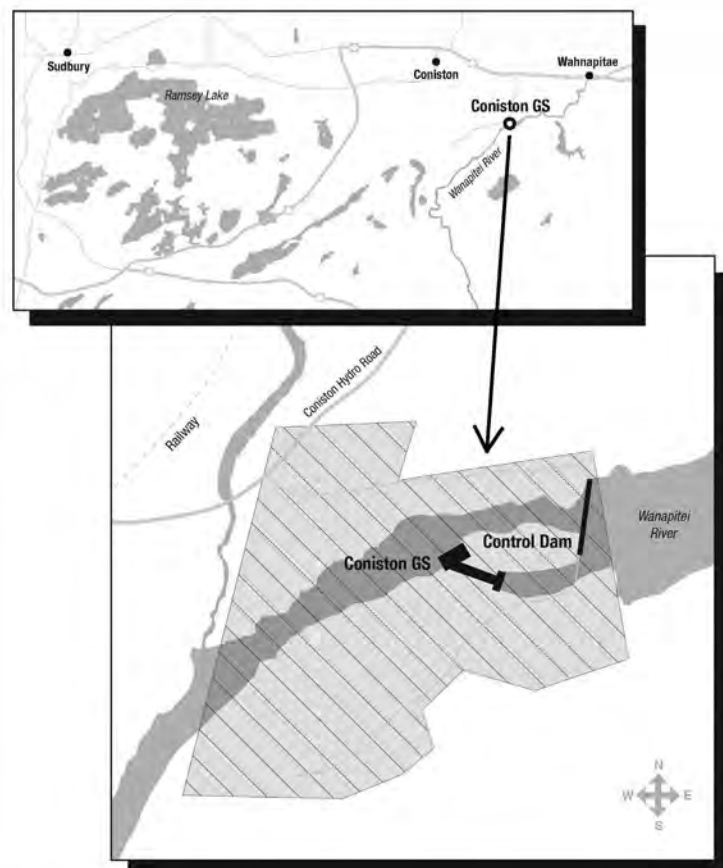
OPG a retenu les services d'Arcadis Canada Inc. pour entreprendre le processus d'EE de portée générale. Pour obtenir de plus amples renseignements, veuillez communiquer avec :

Ed Naval
Conseiller principal en environnement
Ontario Power Generation
800, avenue Kipling
Toronto (Ontario)
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Pour de plus amples renseignements, visitez le www.conistongs.com.

En vertu de la Loi sur l'accès à l'information et la protection de la vie privée et de la Loi sur l'évaluation environnementale, sauf indication contraire dans la soumission, tout renseignement personnel comme le nom, l'adresse, le numéro de téléphone, le numéro et l'emplacement de la propriété inclus dans une soumission feront partie des dossiers publics à ce sujet et seront communiqués à toute personne qui en fait la demande.



Appendix B

Agency Contact List

The following table lists added stakeholders

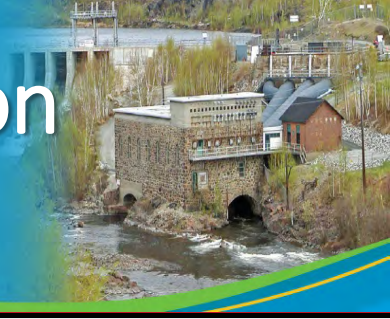
OPG sending to this list

Stakeholder Type	Organization	First Name	Last Name	Title / Role	Mailing Address	Postal Code	Phone	Email	Comments
Environmental Group	Ontario Rivers Alliance	Linda	Heron	Chair			705-866-1677	lindah@ontarioriversalliance.ca	Added at Phil's Request
Conservation Authority	Conservation Sudbury	Carl	Jorgensen	General Manager	401 - 199 Larch Street Sudbury, ON	P3E 5P9	705-674-5249 ext.203	Carl.Jorgensen@ConservationSudbury.ca	Added based on email from Ed Naval correspondence to contact
Conservation Authority	Conservation Sudbury	Bailey	Chabot	Watershed Planner	401 - 199 Larch Street Sudbury, ON	P3E 5P9	705-674-5249	bailey.chabot@conservationsudbury.ca	Added at Phil's request in addition to contact above
Municipal Agency	City of Greater Sudbury	Guido	Mazza	Director of Building Services	Chief Building Official		705-671-2489 ext. 4284	guido.mazza@greatersudbury.ca	Nov 6, 2019 Meeting and Site Visit
Municipal Agency	City of Greater Sudbury	Alex	Singbush	Planning Department				Alex.Singbush@greatersudbury.ca	Teams Meeting attendee with Ed and Phil
Provincial Agency	Ministry of Environment, Conservation and Parks (MECP)	Mark	Bidali	Regional Environmental Planner (REP) – Southwest Region	Project Review Unit Environmental Assessment Branch Ontario Ministry of the Environment, Conservation and Parks		(416) 457-2155	Mark.Badali1@ontario.ca	Responded to Coniston Open House #2
Provincial Agency	Ministry of Environment, Conservation and Parks (MECP)	Carrie	Hutchinson	Environmental Assessment Coordinator – Environmental Planner			807-475-1720	carrie.hutchison@ontario.ca	Nov 6, 2019 Meeting only
Provincial Agency	Ministry of Environment, Conservation and Parks (MECP)	Jacinth	Gilliam-Price	Surface Water Specialist	Surface Water Unit Suite 331, 435 James St S, Thunder Bay, ON	P7E 6S7		Jacinth.GilliamPrice@ontario.ca	Nov 6, 2019 Meeting only
Provincial Agency	Ministry of Environment, Conservation and Parks (MECP)	Brendan	O'Farrell	Senior Environmental Officer	Sudbury District Office, 199 Larch St, Suite 1201, Sudbury, Ontario	P3E 5P9	705-561-9657	Brendan.O'Farrell@ontario.ca	Nov 6, 2019 Meeting and Site Visit
Provincial Agency	Ministry of Natural Resources and Forests (MNRF)	Jennifer	Telford	Resource Planner	Northeast Region		705-235-1178	Jennifer.telford@ontario.ca	Nov 6, 2019 Meeting only
Provincial Agency	Ministry of Natural Resources and Forests (MNRF)	Richard	Pyrce	Hydrologist	Regional Engineering Unit, 5520 Hwy 101 E, PO Bag 3020, South Porcupine, ON	P0N 1H0	705-235-1223	rich.pyrce@ontario.ca	Nov 6, 2019 Meeting only
Provincial Agency	Ministry of Natural Resources and Forests (MNRF)	Taiwo	Akisanmi	Senior Project Engineer	5520 Hwy 101 E, PO Bag 3020, South Porcupine, ON	P0N 1H0	705-235-1156	taiwo.akisanmi@ontario.ca	Nov 6, 2019 Meeting only
Provincial Agency	Ministry of Tourism, Culture & Sport	Rosi	Zirger	Heritage Advisor	Culture Division Programs & Services Branch, Heritage Programs Unit 401 Bay Street, Suite 1700 Toronto, ON	M7A 0A7	M-W: 416-314-7159 Th-F: 905-704-2996	rosi.zirger@ontario.ca	Nov 6, 2019 Meeting only
Federal Agency	Fisheries and Oceans Canada (DFO)	Jennifer	Hallett	Aquatic Science Technician	1219 Queen Street East Sault Ste Marie, ON	P6A 2E5	705-941-2012	Jennifer.Hallett@dfo-mpo.gc.ca	Nov 6, 2019 Meeting and Site Visit
Federal Agency	Fisheries and Oceans Canada (DFO)	Neil	Fisher				(343) 540-8943	Neil.Fisher@dfo-mpo.gc.ca	Nov 6, 2019 Meeting
Federal Agency	Fisheries and Oceans Canada (DFO)	Rich	Rudolph	Team Leader - Hydro and Flows			(613) 925-2865 Ext 155	Rich.Rudolph@dfo-mpo.gc.ca	New Supervisor Hydroelectric, January 2022.
	Ontario Waterpower Association	Janelle	Bates	Director, Communications and Member Relations			866-743-1500 ext. 23 M: 705-761-8899	jbates@owa.ca	Ed Naval sent notice via email Feb 28,2022

Appendix C

Presentation Materials from Open House #1

Coniston Generating Station Redevelopment Project



WELCOME!

Thank you for taking time to visit this Open House.

Please fill out a Comment Sheet and leave it with us or take it home and return it later to the address provided.

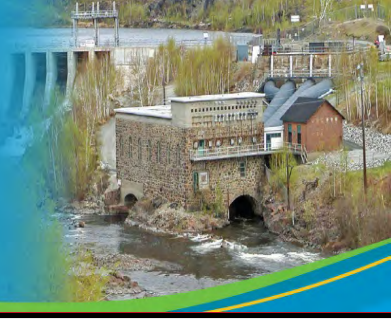
A project representative will be glad to answer your questions.

Your input and comments are an important contribution to helping us develop an environmentally responsible project.



Please **SIGN-IN** to receive future project updates

Purpose of this Open House



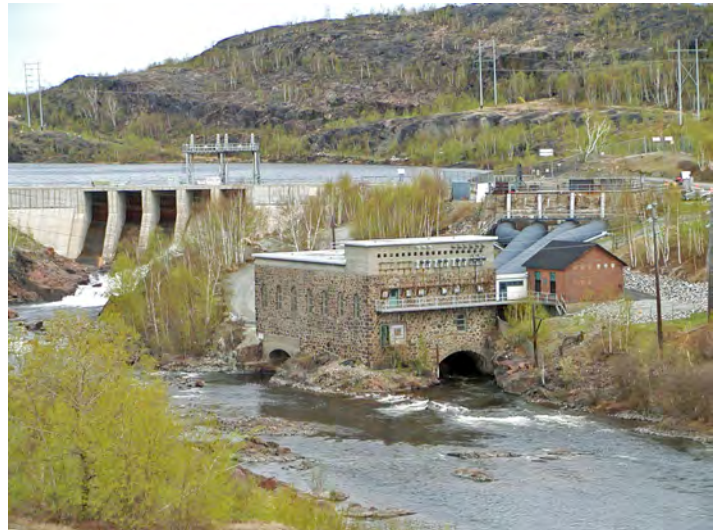
To introduce you to Ontario Power Generation Inc.'s plans to redevelop the Coniston Generating Station (GS).



To seek your feedback at this early stage on local environmental considerations, issues or concerns that should be addressed through the environmental assessment process.

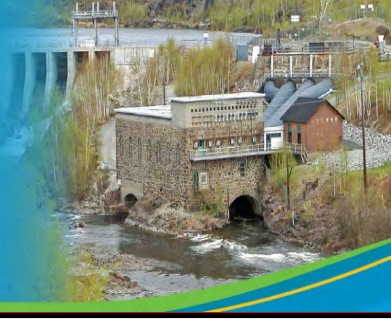
Who is Ontario Power Generation?

- Ontario Power Generation (OPG) is an Ontario-based electricity generation company.
- OPG focuses on the efficient production of electricity from its generation assets, while operating in a safe, open and environmentally responsible manner.
- OPG is a commercial company, owned by the Province of Ontario – its sole shareholder.
- OPG has been given a mandate from the Province of Ontario to develop and expand its hydroelectric capacity.
- This project will provide more clean, reliable and renewable electricity for Ontario.



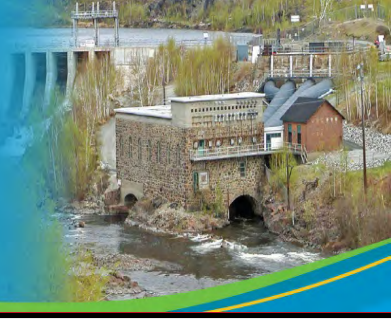
Existing Coniston GS

Wanapitei River and Water Management Operations



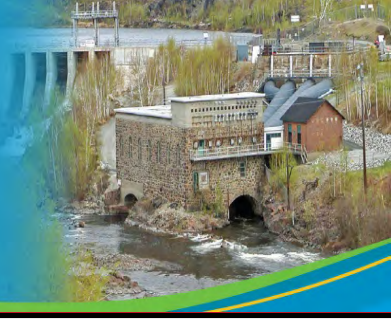
- Throughout the year, there is a 0.55 m operating range on the River with a lower limit of 236.62 m and a maximum limit of 237.17 m.
- Minimum daily average flow of 3.0 m³/s (OPG attempts to maintain a continuous flow throughout the day but at times it may be necessary to shut down all turbines):
 - Maintained at the request of Ministry of Environment Conservation and Parks (MECP) to dilute metal concentrations that flow into the Wanapitei River from Coniston Creek, immediately downstream of Coniston GS.
- No seasonal restrictions.
- OPG tries to produce the greatest amount of hydro-electricity with the flows available.
- The facility was previously able to “cycle” its operations, resulting in the fluctuation of downstream flows over a relatively short period of time. However, since the facility is down to one unit, the facility has limited ability to “cycle” its operations.
- No changes are proposed that would alter the above noted water regime.

Proposed Project

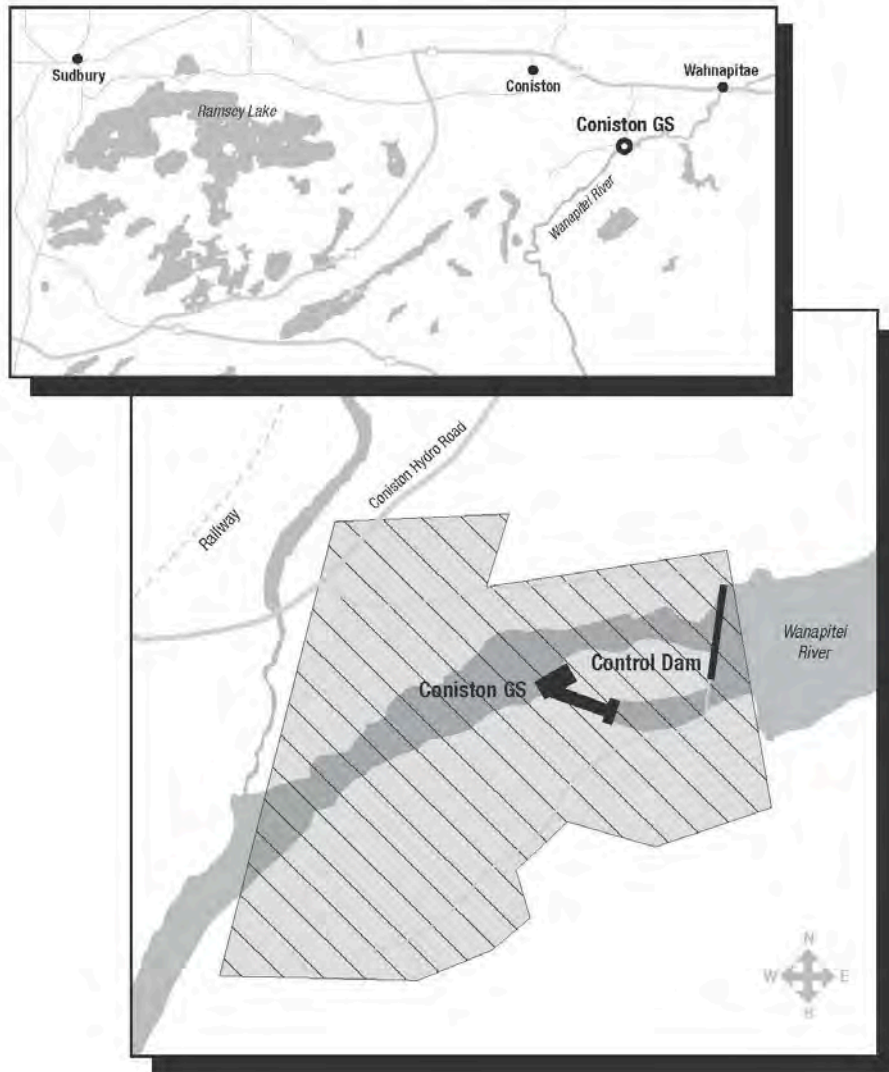


- OPG is considering the redevelopment of the Coniston Generating Station (GS).
- OPG has conducted several studies over the last decade assessing the condition of the existing facility and whether the GS should be refurbished to extend operating life or be redeveloped.
- OPG has moved the Project forward into a “Definition” stage which involves design work and environmental assessment.
- OPG does not propose to alter the existing water management compliance requirements associated with this facility.
 - A Minor Amendment will likely be required to the Water Management Plan (WMP).
- A redeveloped Coniston GS will continue to be operated in full accordance with all of the flow and water level targets and compliance conditions identified in the WMP.
- Proposed project is for up to 6 megawatts (MW).

General Location and Zone of Impact

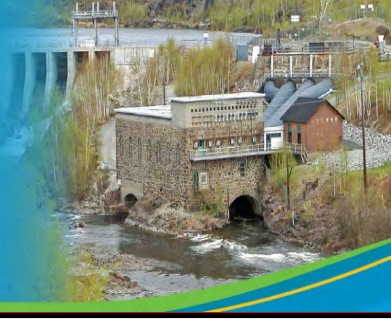


- The proposed zone of impact for the project is expected to be the immediate area around the GS (shown in the hatched area in the Figure below).



Project location and proposed zone of impact

Existing Site

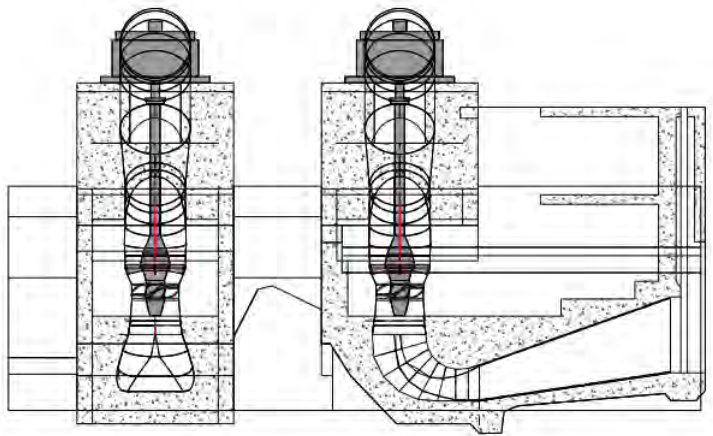
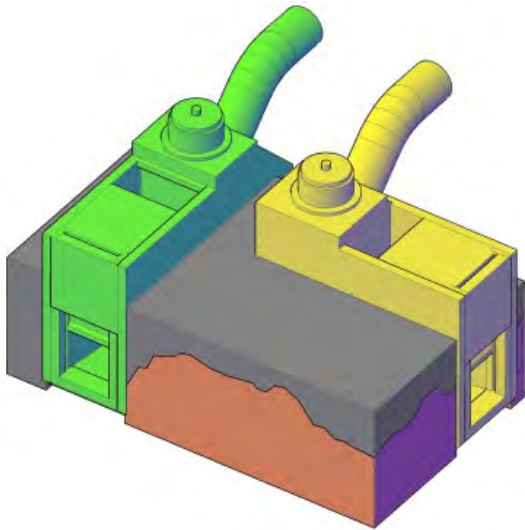
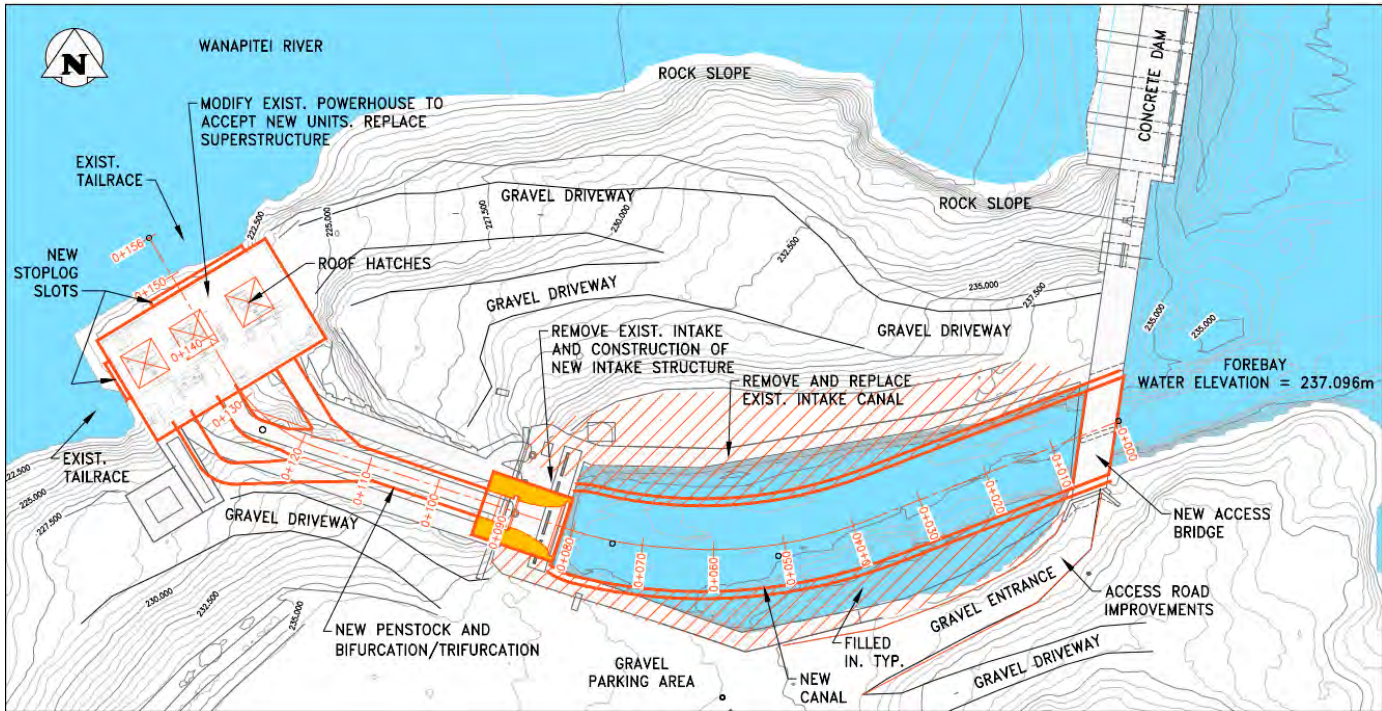


- The Facility was constructed in 1905 with an installed plant capacity of 4.75 MW.
- Turbines have reached the end of their service life.
- Two of the units are no longer running due to penstock issues.
- The 3rd unit is currently operated in a “run-to-fail” mode, with capacity of 2 MW (de-rated from 2.5 MW).
- The remaining penstock is considered to be in poor to fair condition.

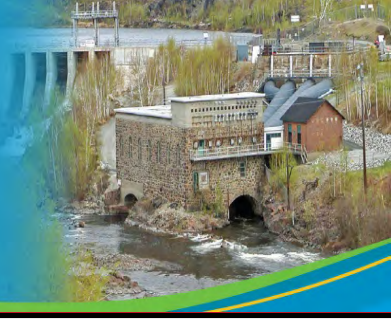


Existing Coniston Generating Station





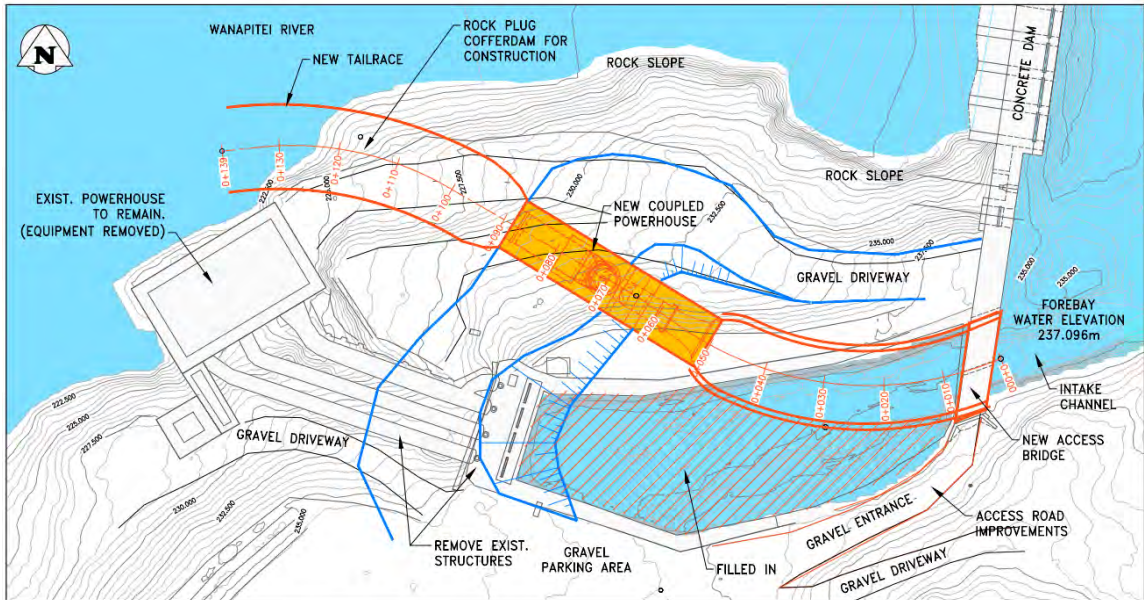
Proposed Plans – Option #1: Refurbish



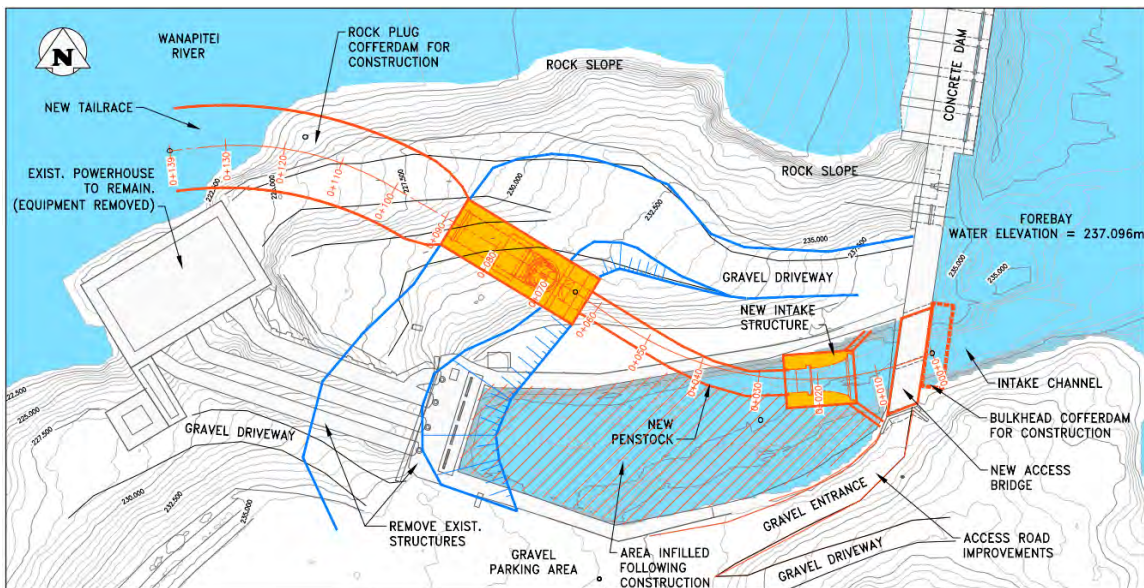
- Replace the existing generation equipment with new larger capacity and more efficient equipment.
- 2 or 3 unit options considered.
- Utilize the existing powerhouse to the extent possible.
 - Partial to full demolition of the superstructure.
 - Modifications to the substructure to include tailrace gates, new turbines and new support equipment.
- Replace penstocks, intake structure and canal walls.
 - Components are at the end of their life.
 - Replacement addresses condition as well as safety of facility.
- Rehabilitate or replace the bridge over the canal.
- Improve access conditions at site for construction and long-term maintenance.
- Other activities would involve the following:
 - Mobilization and de-mobilization;
 - Laydown and work area preparation;
 - Fencing and signage;
 - Environmental controls (e.g., erosion controls, wildlife exclusion fencing, cofferdams, water treatment systems);
 - Bulkhead cofferdam at the dam and granular cofferdam in the tailrace; and,
 - Site restoration and rehabilitation.

Proposed Plans – Option #2: Re-Development – Alignment #1

- Alignment 1 – Canal North of the Existing Powerhouse

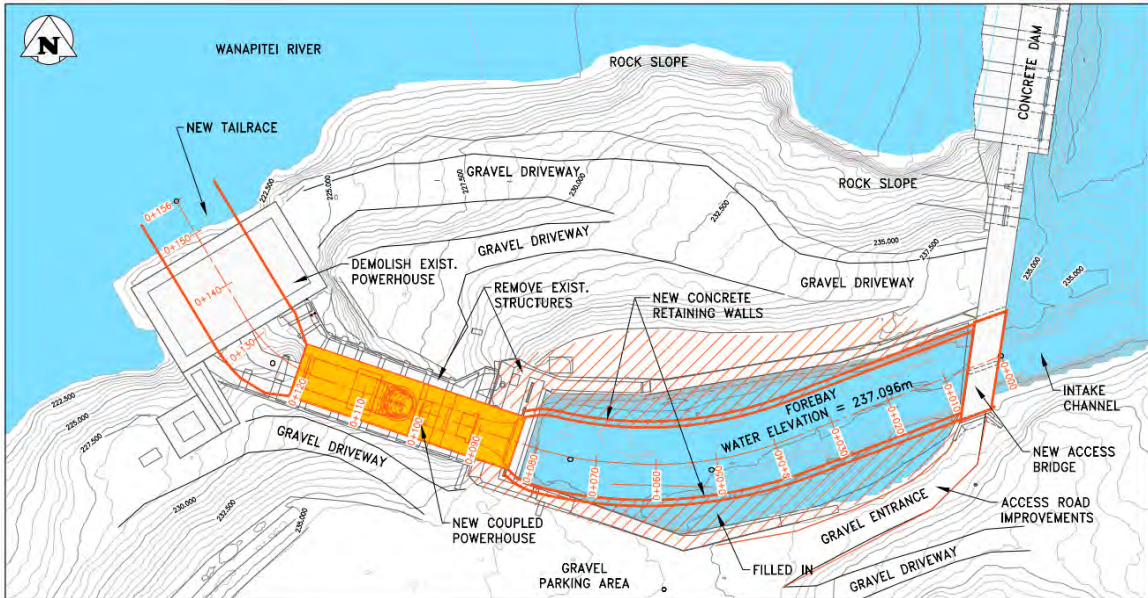


- Alignment 1 – Penstock North of the Existing Powerhouse

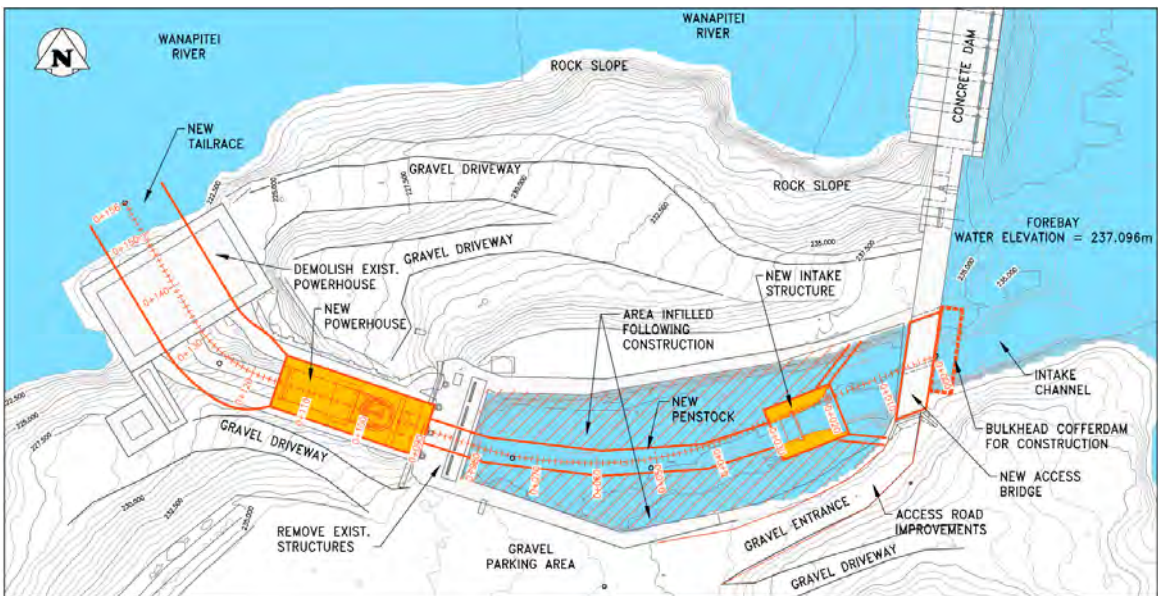


Proposed Plans – Option #2: Re-Development – Alignment #2

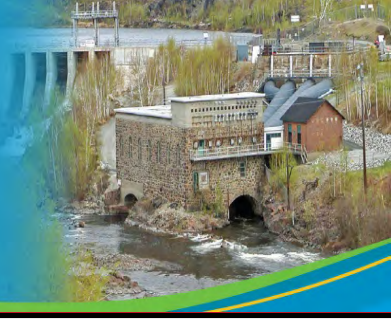
- Alignment 2 – Canal on existing alignment



- Alignment 2 – Penstock on existing alignment



Proposed Plans – Option #2: Re-Development



- Demolish the existing canal, intake structure, penstock and powerhouse.
- Build New Powerhouse with new turbines and generators.
- 1 or 2 unit options considered.
- New intake structure and canal walls.
 - Components are at the end of their life.
 - Replacement addresses condition as well as safety of facility.
- Potentially new penstock depending on costs.
- Rehabilitate or replace the bridge over the canal.
- Improve access conditions at site for construction and long-term maintenance.
- Other activities would involve the following:
 - Mobilization and de-mobilization;
 - Laydown and work area preparation;
 - Fencing and signage;
 - Environmental controls (e.g., erosion controls, wildlife exclusion fencing, cofferdams, water treatment systems)
 - Bulkhead cofferdam at the dam and rock plug of existing powerhouse used as the downstream cofferdam; and,
 - Site restoration and rehabilitation.

Environmental Assessment Process

- In Ontario, proposed waterpower facilities are subject to the *Environmental Assessment Act* (EA Act).
- The Ontario Waterpower Association (OWA) developed the Class EA process which was approved by the Ontario Minister of the Environment and the Lieutenant Governor in Council in 2008. The EA Act formally recognizes the OWA Class Environmental Assessment for Waterpower Projects (OWA Class EA) and outlines the requirements for EA approval.
- Under the OWA Class EA the Coniston GS Project will be classified as a “Project Associated with Existing Infrastructure”. Provided the requirements of the OWA Class EA planning process are met, and a Part II Order request is not made (or denied), a project is considered approved under the EA Act.
- Copies of the Class EA are available from www.owa.ca



Environmental Assessment Process (continued)

- EA approval is required prior to issuance of other project approvals and permits.



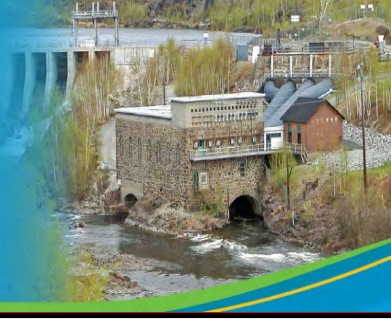
View Inside the Existing Powerhouse

- Preliminary field work associated with assessing the environmental effects was initiated in 2015, 2016 and 2017.
- More comprehensive field work was carried out in 2019.
- The effects of the project during construction and operation are now being assessed.
- Measures to avoid, prevent, eliminate, reduce, mitigate and compensate for negative effects will be identified.
- Measures to enhance positive effects will also be identified.



Wanapitie River Downstream of the Dam

Aquatic Assessment

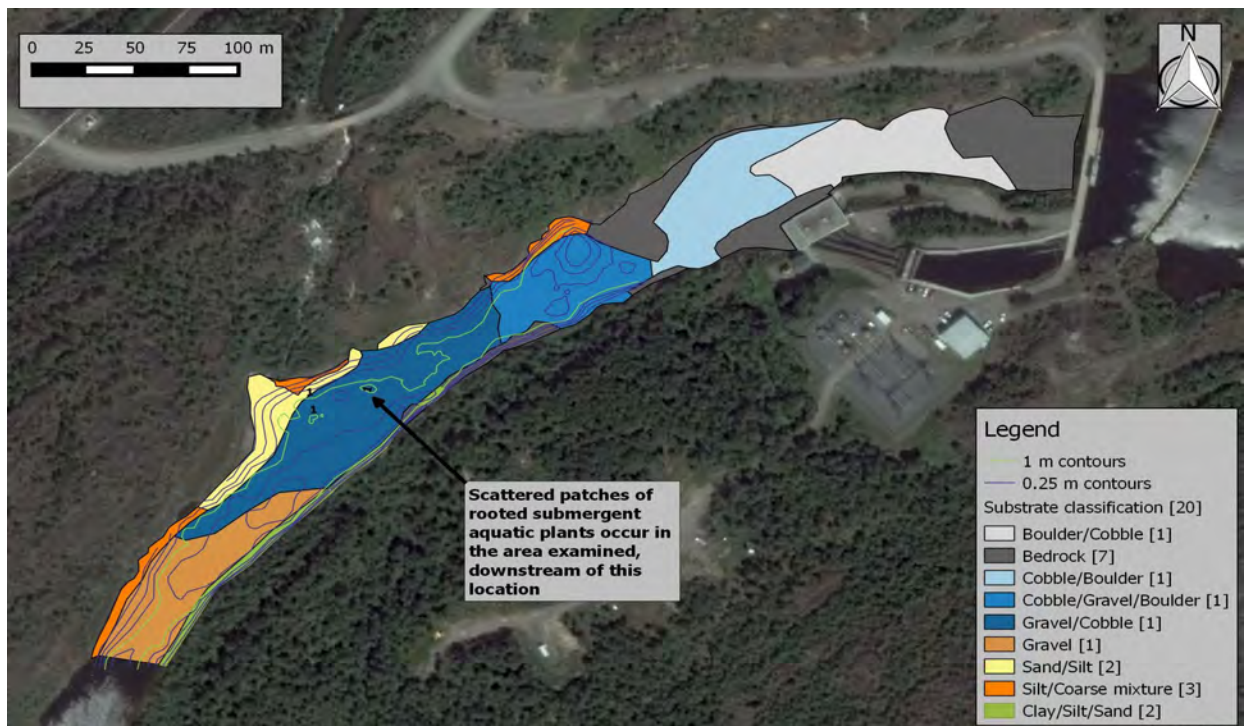


- Aquatic field studies were completed in 2015, 2016, 2017 and 2019.
- Studies undertaken have included: fish habitat assessment, fish community studies (electro-fishing) and spring walleye spawning surveys.
- Fish Caught or Observed at Station: Walleye, Smallmouth Bass, Rock Bass, Pumpkinseed, White Sucker Johnny Darter, Logperch, Longnose Dace.
- Total of 24 species occur in the River but some of the sport species are stocked (3 trout species) in Wanapitei Lake and are unlikely to be found near Coniston GS.
- No species at risk (SAR) have been reported from the Wanapitei River in the vicinity of Coniston GS.

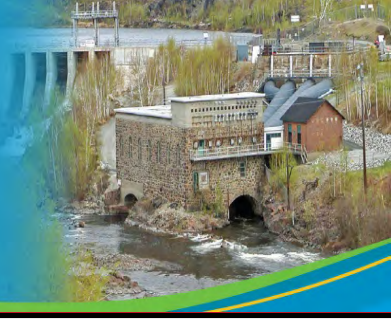


Aquatic Assessment (continued)

- Fall-spawning fish are not known to be present in the stretch of the River between Coniston GS and McVittie GS.
- No major constraints are expected on the project



Terrestrial Assessment



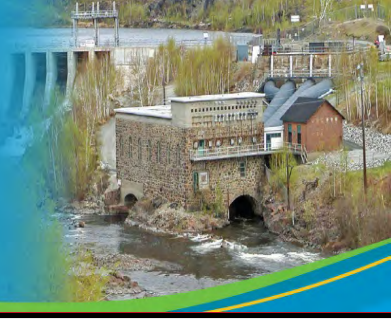
- Terrestrial field studies were completed in 2015 and 2019.
- Most of the forest cover on the site is early successional poplar - white birch vegetation community.
- Field studies/surveys on site have included:
 - Whip-poor-will Surveys
 - Dawn Breeding Bird Surveys
 - Vegetation assessment (ecological land classification)
 - Acoustic and Leaf-Off Habitat Surveys for Bats



Acoustic Detector

- No major constraints are expected on the project.

Cultural Heritage Assessment

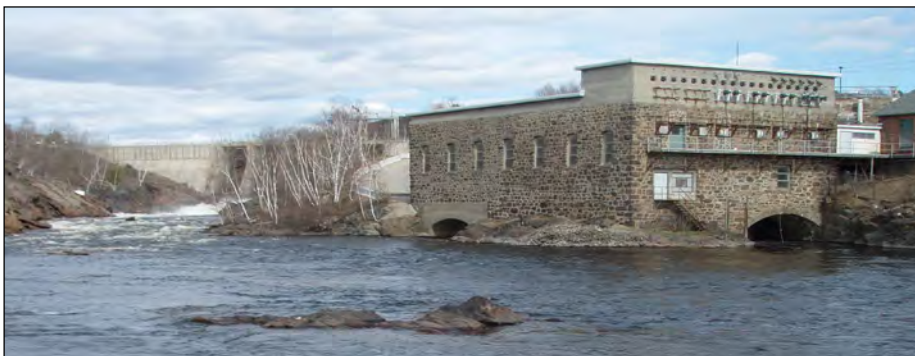


Archaeology

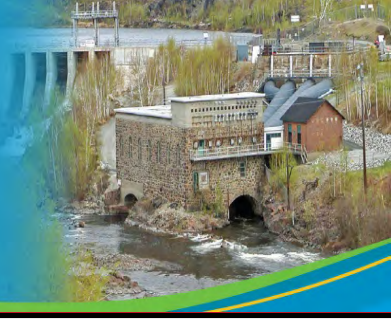
- Stage 1 archaeological assessments were completed on the Calabogie GS in 2016 and 2019.
- No areas of archaeological potential were identified and therefore no further archaeological resource assessment work is required.

Built Heritage

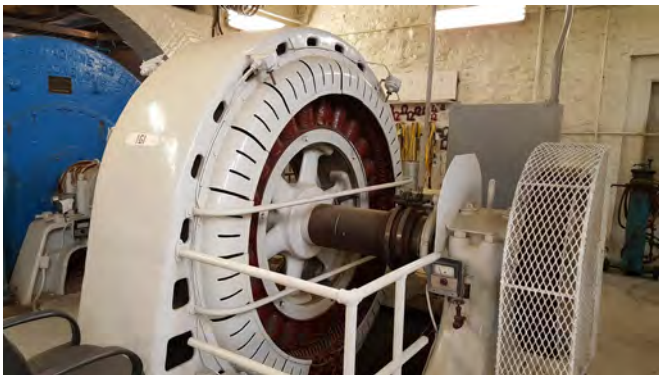
- A Cultural Heritage Evaluation was conducted on the Coniston GS.
- Property identified as not provincially significant.
- A Cultural Heritage Impact Assessment will be required based on the future design decisions for the proposed project development or site alteration.



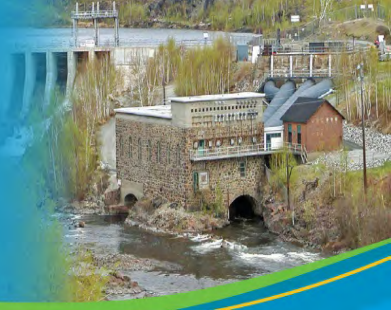
Socio-Economic Assessment



- No change in land use is proposed with the project.
- The project will generally have a minor positive effect during the construction phase through construction employment and contracting.
- Discussions will occur with the City of Greater Sudbury to determine any areas of concern and to mitigate any potential nuisance effects.
- There are no proposed alterations to Water Management Plan levels and flows on the River.

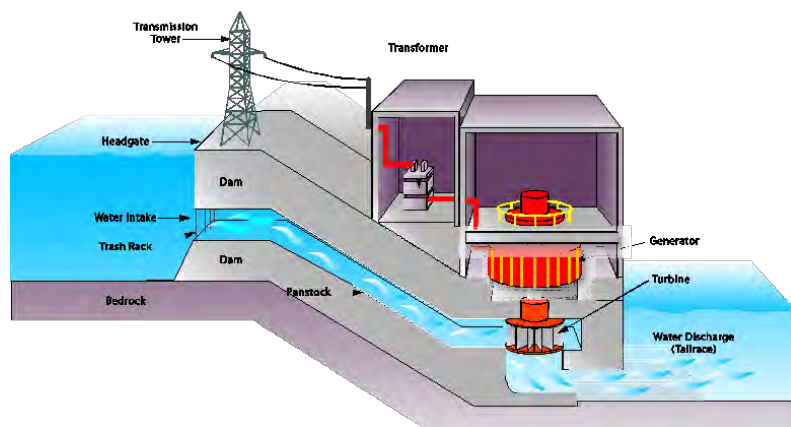


How Hydroelectric Development Works



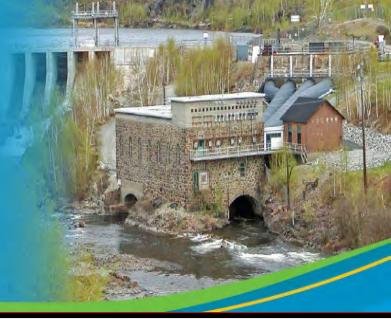
- Hydroelectric power stations convert the kinetic energy of falling water into electrical energy.
- Hydroelectric stations use either the natural drop of a river, such as a waterfall, or a dam built across a river to raise the water level and provide the drop (head) needed to create a driving force.
- Water is collected at the top of the dam in what is called the forebay. From there, the water flows into a pipe

called a penstock which carries it down to a turbine water wheel.



- The water pressure increases as it flows down the penstock. The pressure and flow of the falling water drives a turbine which in turn spins a generator.
- This creates electricity that can be sent to the transmission grid.

We Value Your Opinion



THANK YOU for attending!

- Consultation is a key component of the EA process as it provides you with an opportunity to contribute and inform decisions relating to the project.
- OPG will be hosting a second Open House in late 2020 or early 2021.
- Meetings and consultation activities are also occurring with Indigenous communities.
- We would like to know if there are any important environmental or social values, interests or concerns you might have about the project.
- There will be additional opportunities for you to participate in the EA process.

Please take the time to ask questions and complete the *Comment Sheets* before you leave.

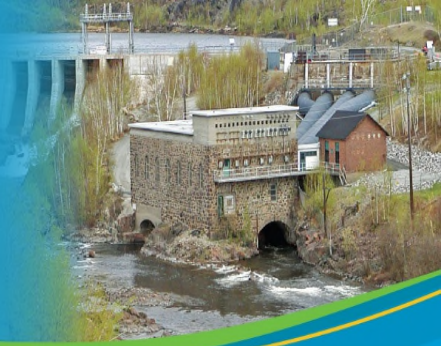
If you have further comments or questions please email us at: info@conistongs.com or visit our project webpage at: www.conistongs.com

Coniston Generating Station Redevelopment Project

First Public Open House

Wednesday, November 6, 2019, 4:00 p.m. to 8:00 p.m.

Wahnapitae Community Centre
161 Glenbower Crescent, Wahnapitae, Ontario



Ontario Power Generation (OPG) is proposing to redevelop the existing Coniston Generating Station (GS). Please take a few minutes to complete this questionnaire and leave it with a Project Team representative. OPG is interested in hearing your comments and questions regarding the Coniston Generating Station Redevelopment Project.

- 1) Do you have any comments or concerns about the proposed Coniston Generating Station Redevelopment Project?

- 2) Are you aware of any environmental, social or economic features or values near the proposed project that we should be aware of?

- 3) Do you have any other comments, questions, concerns or issues about the proposed project that you would like to share with members of the Project Team at this time?

4) Would you like to be added to the project mailing list to receive further public notifications regarding the project?

Yes _____ (please provide your contact information below) No _____

5) Would you like to receive a call from a team member about your questions, concerns or issues?

Yes _____ (please provide your contact information below) No _____

If you have requested to be on the mailing list and/or to be contacted regarding your questions, please provide your contact information below. ***Please print clearly and indicate [✓] how you would like to receive information.***

Name _____ Phone Number _____

E-mail: [] Email Address _____

Mail: [] Street Address _____

City _____ Postal code _____

If you have any questions or comments about the project in the future, please contact:

Phil Shantz
Environmental Planning Leader
Arcadis Canada
121 Granton Drive
Richmond Hill, ON L4B 3N4
905-764-9380, ext. 434
phil.shantz@arcadis.com

Please leave your completed questionnaire form with a Project Team Representative or send to Phil Shantz by no later than **December 6, 2019.**

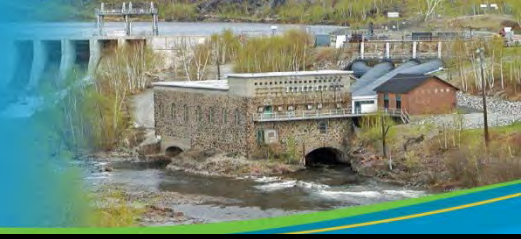
Project Information: **www.conistongs.com**

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this matter and will be released, if requested, to any person.

Appendix D

Presentation Materials from Open House #2

Coniston Generating Station Life Extension Project



WELCOME!

Thank you for taking time to visit this Open House #2
(Virtual Format).

Your input and comments are an important contribution
to helping us develop an environmentally responsible
project.

If you want to speak to someone on the project team,
please e-mail or call us at the contact information
provided later in the slide deck and a project
representative will be pleased to speak to you.

Purpose of this Open House

To introduce you to Ontario Power Generation Inc.'s plans to redevelop the Coniston Generating Station (GS).



Open House #1: Wahnapiatae Community Centre, November 2019.

To seek your feedback on local environmental considerations, issues or concerns that should be addressed through the environmental assessment process.

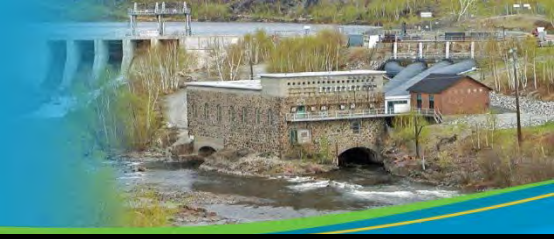
Who is Ontario Power Generation?

- Ontario Power Generation (OPG) is an Ontario-based electricity generation company.
- OPG focuses on the efficient production of electricity from its generation assets, while operating in a safe, open and environmentally responsible manner.
- OPG is a commercial company, owned by the Province of Ontario – its sole shareholder.
- OPG has been given a mandate from the Province of Ontario to develop and expand its hydroelectric capacity.
- This project will provide more clean, reliable and renewable electricity for Ontario.

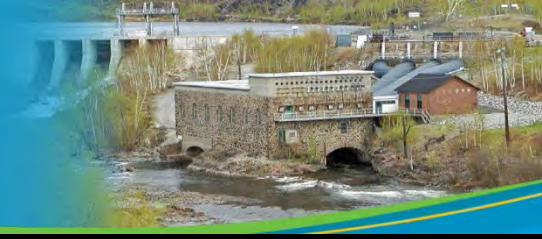


Existing Coniston GS

Existing Coniston Generating Station

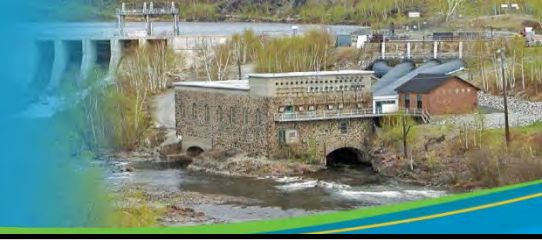


Wanapitei River and Water and Water Management Operations



- Throughout the year, there is a 0.55 m operating range on the River with a lower limit of 236.62 m and a maximum limit of 237.17 m.
- Minimum daily average flow of 3.0 m³/s (OPG attempts to maintain a continuous flow throughout the day but at times it may be necessary to shut down all turbines):
 - Maintained at the request of Ministry of Environment Conservation and Parks (MECP) to dilute metal concentrations that flow into the Wanapitei River from Coniston Creek, immediately downstream of Coniston GS.
- No seasonal restrictions.
- OPG tries to produce the greatest amount of hydro-electricity with the flows available and within allowable limits.
- The facility was previously able to “cycle” its operations, resulting in the fluctuation of downstream flows over a relatively short period of time. However, since the facility is down to one unit, the facility has limited ability to “cycle” its operations.
- No changes are proposed that would alter the above noted water regime.

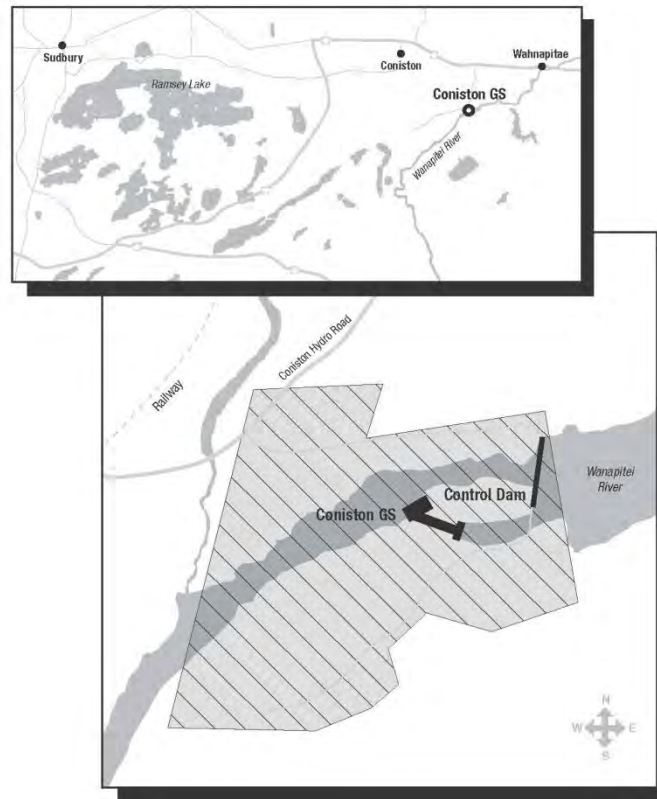
Proposed Project



- OPG is planning to construct a new Coniston Generating Station (GS).
- OPG has conducted several studies over the last decade assessing the condition of the existing facility and whether the GS should be refurbished to extend operating life or redeveloped.
- OPG has moved the Project forward into a “Definition” stage which involves design work and environmental assessment.
- OPG does not propose to alter the existing water management compliance requirements associated with this facility.
 - A Minor Amendment will likely be required to the Water Management Plan (WMP) to describe the new facility including the number of units and their capacity.
- The new Coniston GS will continue to be operated in full accordance with all of the flow and water level targets and compliance conditions identified in the WMP.
- The proposed project is for approximately 6 megawatts.

General Location and Zone of Impact

- The proposed zone of impact for the project is expected to be the immediate area around the GS (shown in the hatched area in the Figure below).



Project location and proposed zone of impact

Existing Site

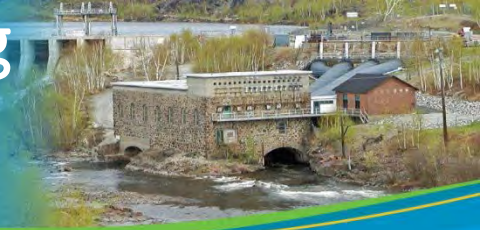
- The Facility was constructed in 1905 with an installed plant capacity of 4.75 MW.
- Turbines have reached the end of their service life.
- Two of the units are no longer running due to penstock issues.
- The 3rd unit is currently operated in a “run-to-fail” mode, with capacity of 2 MW (de-rated from 2.5 MW).
- The remaining penstock is considered to be in poor condition and near end of life.



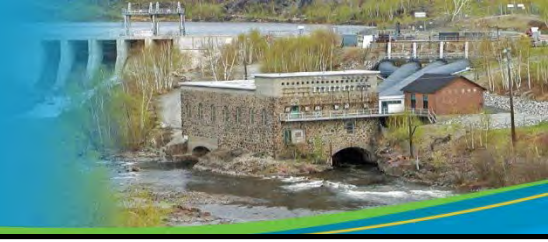
Re-Development of the Coniston Generating Station (Proposed Final Conditions)



Re-Development of the Coniston Generating Station (Proposed Construction Conditions)



Re-Development of the Coniston Generating Station



Construction of the new Coniston Generating Station will involve the following

- Powerhouse structure will be demolished, and a new powerhouse erected.
- New larger capacity and more efficient equipment will be installed in the new powerhouse. The two new units will have a capacity that is approximately 26% higher than the original three units.
- Existing penstocks and intake structure will be demolished and replaced with new.
- Reuse existing canal walls with some rehabilitation. A portion of the canal walls will be rebuilt to tie into the new intake structure.
- Replace or rehabilitate the bridge over the canal entrance.
- Connect new station to existing switchyard.
- Other activities would involve the following:
 - Mobilization and de-mobilization.
 - Laydown and work area preparation.
 - Fencing and signage.
 - Environmental controls (e.g., erosion controls, wildlife exclusion fencing, cofferdams, water treatment systems).
 - Cofferdams and using the old powerhouse as a rock plug are required in order to undertake work safety in the dry.
 - Site restoration and rehabilitation.

Environmental Assessment Process

- In Ontario, proposed waterpower facilities are subject to the *Environmental Assessment Act* (EA Act).
- Under the Ontario Waterpower Association (OWA) Class Environmental Assessment (Class EA) the Coniston GS Project will be classified as a “Project Associated with Existing Infrastructure”.
- Provided the requirements of the OWA Class EA planning process are met, and a Part II Order request is not made (or denied), a project is considered approved under the EA Act. Copies of the Class EA are available from www.owa.ca.
- Indigenous Peoples Consultation has been on-going since the start of the process.
- Open House #1 introduced the project including the alternatives and was held November 6, 2019.



Environmental Assessment Process (Continued)

- EA approval is required prior to issuance of other project approvals and permits.



View Inside the Existing Powerhouse

- Preliminary field work associated with assessing the environmental effects was initiated in 2015, 2016 and 2017.
- More comprehensive field work was carried out in 2019.

- The effects of the project during construction and operation are now being assessed.
- Measures to avoid, prevent, eliminate, reduce, mitigate and compensate for negative effects will be identified.
- Measures to enhance positive effects will also be identified.



*Wanapitei River Downstream
of the Dam*

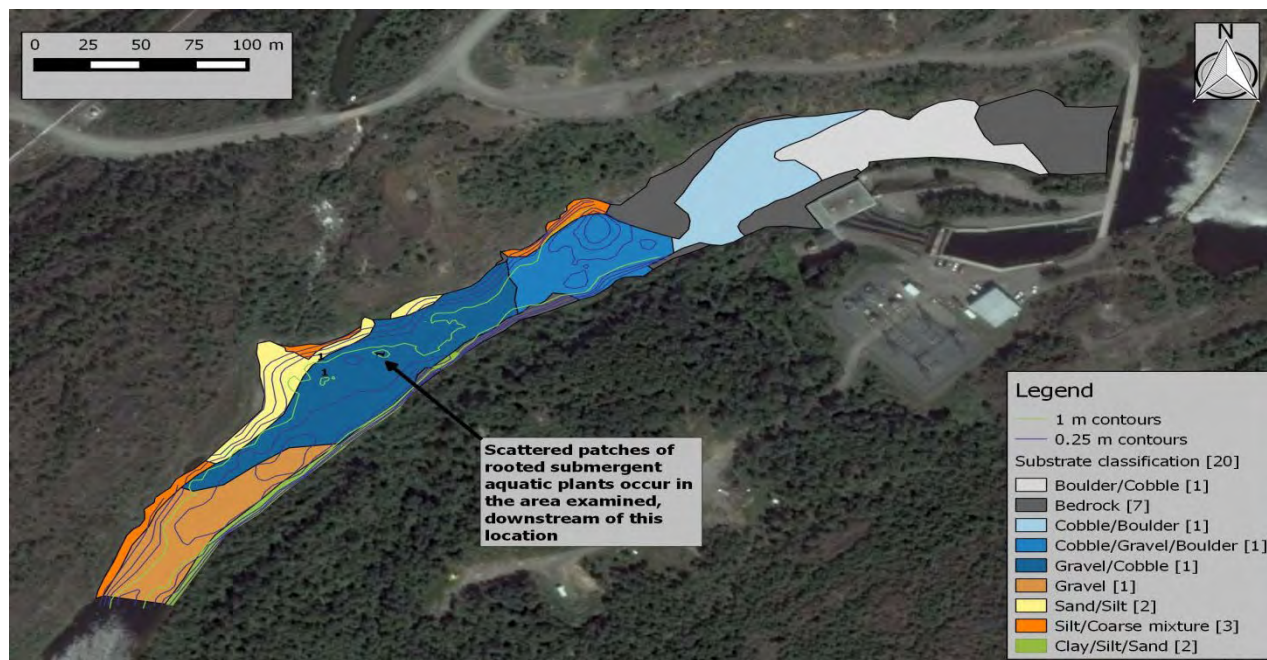
Aquatic Assessment

- Aquatic field studies were completed in 2015, 2016, 2017, 2019 and 2020.
- Studies undertaken have included: fish habitat assessment, fish community surveys (electro-fishing) and spring walleye spawning surveys.
- Fish Caught or Observed at Station: Walleye, Smallmouth Bass, Rock Bass, Pumpkinseed, White Sucker, Johnny Darter, Logperch, Longnose Dace.
- Total of 24 fish species are known to occur in the Wanapitei River system.
- Coldwater species (trout, salmon, lake whitefish) are not known to occur in the vicinity of the Coniston GS.



Aquatic Assessment (Continued)

- No aquatic species at risk (SAR) have been reported from the Wanapitei River in the vicinity of the Coniston GS.
- Fall-spawning fish are not known to be present in the stretch of the River between Coniston GS and McVittie GS.
- No major constraints are expected on the project.



Aquatic Assessment (Continued)

- The proposed new generating station is not anticipated to have any net negative effects on the fishery or aquatic environment.
- A large number of standard and specialized mitigation and monitoring measures are proposed to prevent negative effects from occurring.
- Mitigation measures would include: adherence to in-water work timing windows; and managing the construction site to prevent spills, erosion, sedimentation and alterations to the natural shoreline.
- The area of habitat affected by the project will be small. Fisheries and Oceans Canada will review the project to determine if offsetting is required. Opportunity would be available to improve fisheries habitat downstream of the GS.



Terrestrial Assessment

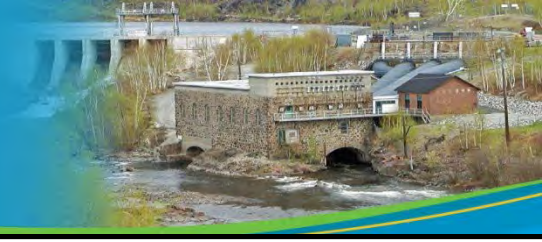
- Terrestrial field studies were completed in 2015 and 2019.
- Most of the forest cover on the site is early successional poplar - white birch vegetation community.
- Field studies/surveys on site have included:
 - Whip-poor-will Surveys.
 - Dawn Breeding Bird Surveys.
 - Vegetation assessment (ecological land classification).
 - Acoustic and Leaf-Off Habitat Surveys for Bats.



Acoustic Detector

- No major constraints are expected on the project.

Terrestrial Assessment (Continued)



- 4 *Endangered Species Act* species are likely on or adjacent to the property and mitigation measures proposed include:
 - Blanding's Turtle – Mitigation to include staff training, signage and temporary exclusion fencing.
 - 2 Bat species – Mitigation will be to clear habitat trees outside of active season (April 1 to October 1).
 - Whip-poor-will – Mitigation to include staff training.
- Variety of other mitigation measures to be utilized to protect the terrestrial environmental including:
 - Situating project development activities away from any rare or sensitive plants;
 - Environmental construction planning and monitoring;
 - Appropriate erosion and sediment controls;
 - Maintenance of equipment and management of site to avoid and remediate spills;
 - Timing of activities to avoid certain seasons;
 - Planning for emergencies; and
 - Worker education etc.
- Proposed mitigation measures are expected to address all potential negative effects resulting in no negative residual effects.

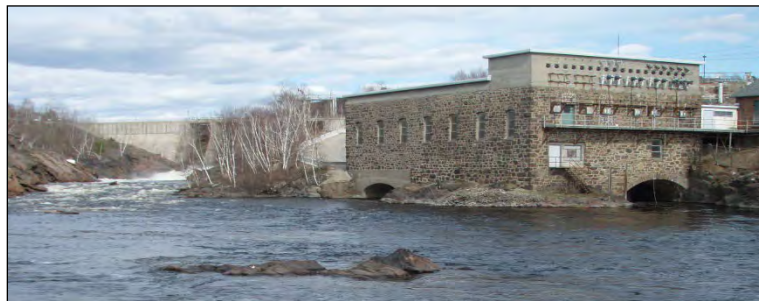
Cultural Heritage Assessment

Archaeology

- Stage 1 archaeological assessments were completed on the Coniston GS in 2016 and 2019.
- No areas of archaeological potential were identified and therefore no further archaeological resource assessment work is required.

Built Heritage

- A Cultural Heritage Evaluation was conducted on the Coniston GS.
- Property identified as not provincially significant.
- A Cultural Heritage Impact Assessment will be required.

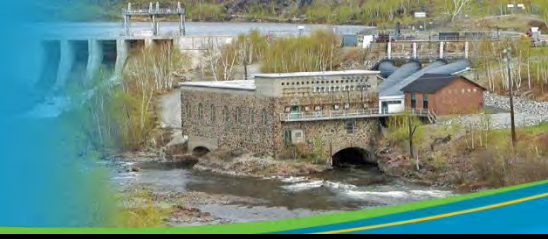


Socio-Economic Assessment

- No change in land use is proposed with the project.
- The project will generally have a minor positive effect during the construction phase through construction employment and contracting.
- Discussions have occurred with the City of Greater Sudbury to determine any areas of concern and to mitigate any potential nuisance effects.
- There are no proposed alterations to Water Management Plan levels and flows on the River.

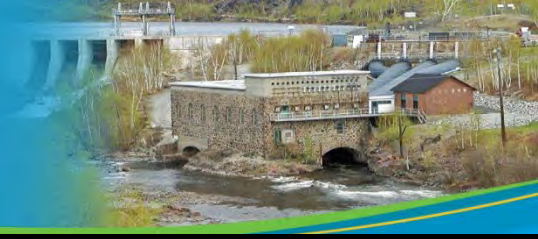


Project Benefits

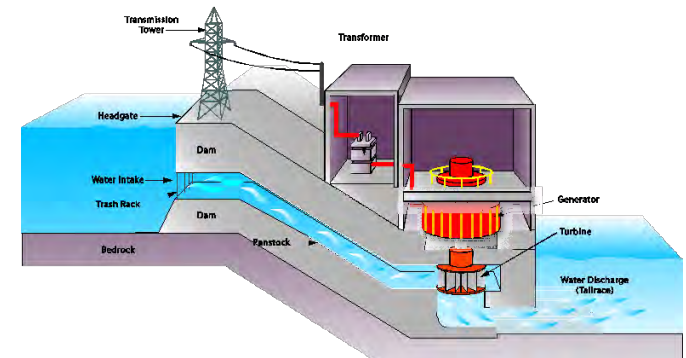


- Will produce 6 megawatts (MW) of clean renewable power for the Ontario electricity system for at least the next 90 years.
 - Increase of 4 megawatts from the current facility. This is an increase that provides electricity for roughly 4,000 homes.
 - Increase of 1.25 MW from the original facility.
- Results in a local and regional economic benefit during the construction stage, which will be approximately 2 yrs.
- All environmental impacts can be mitigated through appropriate planning, construction and monitoring.

How Hydroelectric Development Works



- Hydroelectric power stations convert the kinetic energy of falling water into electrical energy.
- Hydroelectric stations use either the natural drop of a river, such as a waterfall, or a dam built across a river to raise the water level and provide the drop (head) needed to create a driving force.
- Water is collected at the top of the dam in what is called the forebay. From there, the water flows into a pipe called a penstock which carries it down to a turbine water wheel.



- The water pressure increases as it flows down the penstock. The pressure and flow of the falling water drives a turbine which in turn spins a generator.
- This creates electricity that can be sent to the transmission grid.
- For more information on how hydroelectric power works, please visit us at: <https://www.opg.com/powering-ontario/our-generation/hydro/how-it-works/>.

We Value Your Opinion

- Your comments are important for the environmental assessment process, possible permits and the project overall.
- If you have comments, please complete the on-line comment form or send us an e-mail directly.
- If you have questions, please contact us by e-mail and one of the project team members will get back to you. Please contact either:
 - Phil Shantz, Arcadis Canada, Environmental Assessment Consultant, phil.shantz@arcadis.com
 - Ed Naval, Ontario Power Generation, Senior Environmental Advisor, Edward.naval@opg.com
- **Please send us your comments no later than March 21, 2022, to be included in the Open House public record. However, if you have comments or concerns at any time, please contact us.**
- Environment Reports for the review and Notice of Completion Stage will be posted spring 2022 on OPG's project website: www.conistongs.com
- Construction is planned to commence in late 2023.
- The proposed new GS is expected to go into operation during the second half of 2025.



Stinson Generating Station Life Extension Project



Location of Stinson GS



OPG's Proposed Stinson GS Life Extension Project



- OPG is proposing to extend the life of the Stinson GS located in the City of Greater Sudbury Ontario.
- Stinson GS is a 2-unit, 5.2 MW station built in 1925. It is directly upstream from Coniston on the Wanapitei River.
- Stinson equipment is approaching end-of-life.
- The project will look to refurbish the site to extend the service life by at least 40 years.
- New generating equipment will also utilize the available river flows at the site to more efficiently generate additional clean energy.

Stinson Project Overview



- **The Ontario Waterpower Association Class Environmental Assessment (OWA Class EA) process is not triggered for Stinson** largely because the nameplate capacity of the facility will be less than a 25% increase.
 - 5.2MW --> 6MW, increase of 15%
- While no regulatory environmental assessment is being completed, OPG is undertaking a number of fisheries, terrestrial, archaeological, built heritage and other studies to address other environmental and regulatory issues.
- If you have concerns about Stinson please contact:
 - Phil Shantz, Arcadis Canada, Environmental Assessment Consultant, phil.shantz@arcadis.com
 - Ed Naval, Ontario Power Generation, Senior Environmental Advisor, Edward.naval@opg.com
- Construction is planned to commence in late 2023.
- The proposed new GS is expected to go into operation during the second half of 2025.

Combining Coniston and Stinson Projects



There are many reasons why combining Coniston and Stinson into one project makes sense:

- The stations are in close proximity (13km drive) and are cascading on the Wanapitei River.
- The scope of work for both sites is similar.
- The water flow and head at both sites are nearly identical, which means the same new units can be installed at both stations.
- Many cost saving opportunities (such as procuring same units, using same contractors and team, etc.) which will benefit ratepayers and make projects more attractive economically.
- Matching design flows of the stations will simplify future river operations.

Stinson GS – Existing Site





OPEN HOUSE #2 COMMENT SHEET

Ontario Power Generation (OPG) is proposing to redevelop the existing Coniston Generating Station (GS). Please take a few minutes to complete this online questionnaire. OPG is interested in hearing your comments and questions regarding the Coniston Generating Station Redevelopment Project.

If you want to make sure your comments are part of the public record, please submit your comment sheet by March 8th.

We will respond to public inquiries at any time.

Contact Information

Name *

First

Last

Email *

Address

Address Line 1

Address Line 2

City

State / Province / Region

Postal Code

Country

Phone

Phone Contact

☐ Yes, please contact me by phone

Mailing List

☐ Add to

Mailing List

Comments

1) Do you have any comments or concerns about the proposed Coniston Generating Station Redevelopment Project?

2) Are you aware of any environmental, social or economic features or values near the proposed project that we should be aware of?

3) Do you have any other comments, questions, concerns or issues about the proposed project that you would like to share with members of the Project Team at this time?

4) Please provide feedback on your opinion of the digital online format of this Open House.

Under the Freedom of Information and Protection of Privacy Act and the Environmental Assessment Act, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this matter and will be released, if requested, to any person.

Submit

Appendix E

Correspondence with the Ontario Rivers Alliance



ONTARIO
RIVERS
ALLIANCE

379 Ronka Road
Worthington, ON P0M3H0
LindaH@OntarioRiversAlliance.ca
OntarioRiversAlliance.ca

10 March 2022

Phil Shantz, Environmental Assessment Consultant
Arcadis Canada
By Email to: Phil.Shantz@arcadis.com

Ed Naval, Senior Environmental Advisor
Ontario Power Generation
By Email to: Edward.Naval@opg.com

Re: Coniston Generating Station – Life Extension Project
Open House #2 – Virtual Format

Dear Sirs:

The Ontario Rivers Alliance (ORA) is a not-for-profit grassroots organization with a mission to protect, conserve and restore riverine ecosystems all across Ontario. ORA advocates for effective policy and legislation to ensure that development affecting Ontario rivers is environmentally and socially sustainable.

First, it's important to give credit where credit is due. The virtual online Open House for the Coniston Generating Station (Project) Open House was very informative and well done. It is a powerful way to relay complex information in such a convenient and effective manner. I highly recommend this format for public consultation to continue, even after the COVID pandemic is over.

The following are questions and comments regarding the Project:

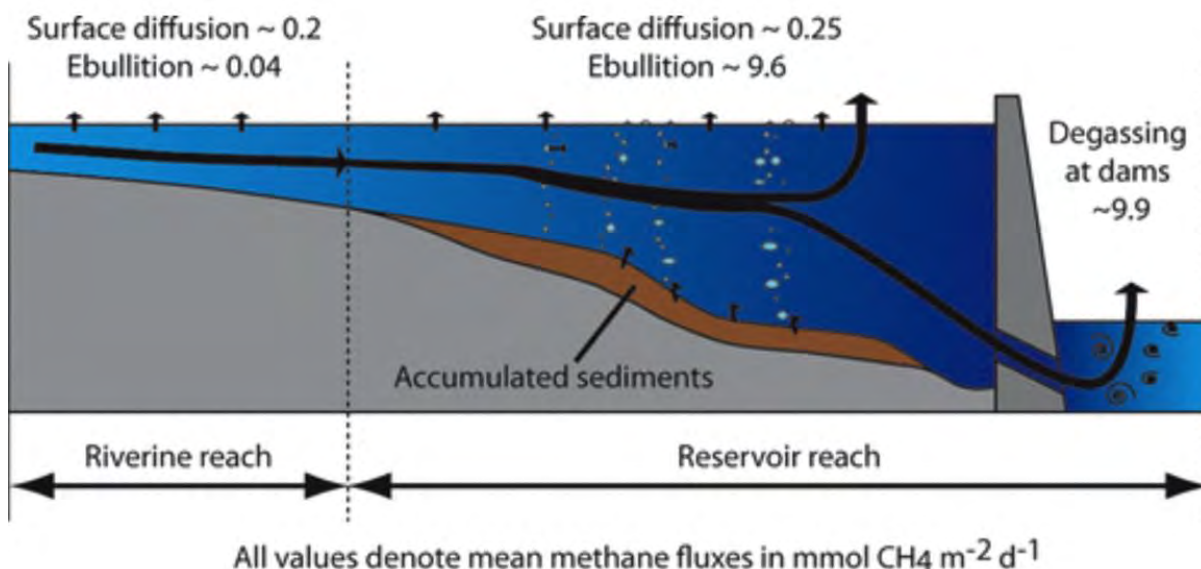
1. The link to the Project's webpage provided in the email gave an update on the Project. It stated that *"the proposed Project is being undertaken by Ontario Power Generation [OPG] to improve the available hydroelectric potential at the site, to reduce greenhouse gas emissions and to increase the amount of clean renewable energy available to consumers."*¹ Please explain: how will the Coniston GS reduce greenhouse gas emissions?

Hydroelectric is not emission-free or clean. A Washington State University study on the effects of damming conducted in a central European impounded river revealed that the reservoir reaches are a major source of methane emissions and that areal emission rates far exceed previous estimates for temperate reservoirs or rivers. It showed that sediment accumulation correlates with methane production and subsequent ebullitive release rates. Results suggested that sedimentation-driven methane emissions from dammed river hot spot sites can

¹ [Coniston Generating Station Project Update.](#)



potentially increase global freshwater emissions by up to 7%.² Hydroelectric facilities need to acknowledge and account for the associated GHG emissions they produce.



With smaller dams, storage becomes increasingly important. Reservoirs silting up or becoming overloaded with nutrients are common problems, especially where shallower bodies of water are created. The shallower a water body, the more easily eutrophic it can become and is even more serious when they are downstream from wastewater treatment facilities. Likewise, methane generation occurs largely where water and sediment meet, and this means that a shallower water body is likely to release more methane per unit area than a deeper water body. We are led to believe it's clean and green because most countries are well-invested in hydroelectric, which in Ontario makes up over 25% and in Canada 59% of our electricity mix.

The collateral environmental damage caused by hydroelectric has been well documented for decades, including the loss or serious decline in migratory fish species and they are key factors in the listing of some iconic fish species as species at risk, declining biodiversity, impaired water quality, including elevation of mercury concentrations in fish tissue, and are key threats to imperiled aquatic species. There are 224 hydroelectric facilities in Ontario, and a total of only 3 have that have installed fish passage. The Coniston GS has no fish passage.

Hydroelectric is not emission-free and must be recognized for the significant and ongoing negative impacts that result from their impoundments, diversions, and cycling and peaking operating strategies. These effects are not being adequately identified much less properly addressed through the Class EA for Waterpower.

The Ontario Waterpower Association (OWA) and Ontario government just removed public consultation from the Class EA for Waterpower for the conversion of dams to generate power, and for the upgrades of older hydroelectric dams. Fortunately, this Project began before the amendment to the Class EA and was in a different category with an increase in capacity over 25%.

² Maeck, A., DelSontro, T., McGinnis, D.F., Fischer, H., Flury, S., Schmidt, M., Fietzek, P. and Lorke, A., 2013. *Sediment Trapping by Dams Creates Methane Emission Hot Spots*, *Environmental Science and Technology*, 8130-8137, Online: <http://www.dx.doi.org/10.1021/es4003907>



The OWA and OPG are now looking to Northern Ontario to dam more rivers to increase hydroelectric power generation and Ken Hartwick, President and CEO of OPG publicly referred to it as “*new non-emitting hydropower*”³, which is extremely misleading. It's time the OPG, OWA, and the Ontario government come clean and tell the truth! Hydroelectric power generation is not clean or non-emitting. It is time OPG started to account for GHG emissions at all their facilities.

2. Are there any wastewater treatment facilities upstream of this facility, because this is a factor that could also increase GHG emissions?
3. The presentation shows a very small zone of impact, that includes very little of the upstream, except in the immediate vicinity of the dam, and a very short distance downstream of the dam. This facility will cycle its operations, which can have major impacts on both the upstream and downstream. The upstream and downstream area that would be impacted by the operating strategy was always referred to as the Zone of Influence, so it is interesting that now it is a much smaller area that is referred to as the Zone of Impact. Please provide the following information:
 - a. You only explain that cycling operations will result in fluctuations of downstream flows, when in fact it will impact on upstream and downstream water levels and flow volume. Why are you not taking into account the impact on the upstream reservoir?
 - b. What is the distance between the dam and the upstream zone of impact?
 - c. What is the distance between the dam and the downstream zone of impact?
 - d. Why does the zone of impact not include Coniston Creek, when the presentation mentions that MECP requires the shutdown of all turbines to dilute metal concentrations that flow into the Wanapitei River from Coniston Creek?
 - e. Why does the zone of impact not extend much further upstream when the cycling will create fluctuations in water levels and flows which will likely result in erosion, turbidity, increased water temperatures and greenhouse gas emissions?
4. What will the frequency and duration of fluctuations in water levels and flows be on a daily basis when the dam is in full operation?
5. Will the sediment that has already built up behind the dam over the last 100 years be removed? If so, how will it be removed and how and where will it be done disposed of?
6. Has the sediment been assessed or analyzed for contaminants?
7. What is a “run-to-fail” mode – can you explain?
8. The public no longer has the right to make a Part II Order request to appeal a Minister's decision, unless it relates to Indigenous treaty rights. Therefore, this reference should be removed from your website.

The loss of the public's right to appeal a Minister's decision on a hydroelectric approval, was only one of the public's rights that were removed within the last few years. With Bill 32, a Permit to Take Water was no longer required for waterpower facilities, which also meant the loss of the public's ability to appeal decisions that impact on timing, frequency and volume of flows. It also meant the loss of the strict monitoring and compliance oversight of methylmercury production in headponds, and the amount of water left in the river to support aquatic life. This was another travesty that the OWA and Ontario government are responsible for.

Thank you for this opportunity to comment.

³ *News Release: Province asking Ontario Power Generation to Investigate New Hydroelectric Opportunities, January 20, 2022.*



Respectfully,

Linda Heron
Chair, Ontario Rivers Alliance
(705) 866-1677

April 14, 2022

Linda Heron
Chair, Ontario Rivers Alliance
379 Ronka Road
Worthington, ON P0M 3H0

BY EMAIL ONLY: Linda@OntarioRiversAlliance.ca

Dear Linda,

Thank you for your comments on the proposed Life Extension to the Coniston Generating Station (GS) Project. Please find below responses to your comments.

To begin with, as indicated in the presentation available on the www.conistongs.com website, while Ontario Power Generation (OPG) is re-developing the Coniston GS, OPG does not plan to alter the current operating regime for the facility or make any changes to the compliance water levels and flows that are outlined in the Wanapitei River Water Management Plan (WRWMP). The WRWMP was approved by the Ontario Ministry of Natural Resources in 2011. If you do not have a copy of the WRWMP, we would be pleased to send it to you.

For clarity we have copied your comments and then provided a response directly below it.

Comment #1 - Greenhouse Gas Emissions

The link to the Project's webpage provided in the email gave an update on the Project. It stated that "the proposed Project is being undertaken by Ontario Power Generation [OPG] to improve the available hydroelectric potential at the site, to reduce greenhouse gas emissions and to increase the amount of clean renewable energy available to consumers." **1 Please explain: how will the Coniston GS reduce greenhouse gas emissions?** Hydroelectric is not emission-free or clean. A Washington State University study on the effects of damming conducted in a central European impounded river revealed that the reservoir reaches are a major source of methane emissions and that areal emission rates far exceed previous estimates for temperate reservoirs or rivers. It showed that sediment accumulation correlates with methane production and subsequent ebullitive release rates. Results suggested that sedimentation-driven methane emissions from dammed river hot spot sites can potentially increase global freshwater emissions by up to 7%. Hydroelectric facilities need to acknowledge and account for the associated GHG emissions they produce.

With smaller dams, storage becomes increasingly important. Reservoirs silting up or becoming overloaded with nutrients are common problems, especially where shallower bodies of water are created. The shallower a water body, the more easily eutrophic it can become and is even more serious when they are downstream from wastewater treatment facilities. Likewise, methane generation occurs largely where water and sediment meet, and this means that a shallower water body is likely to release more methane per unit area than a deeper water body. We are led to believe it's clean and green

because most countries are well-invested in hydroelectric, which in Ontario makes up over 25% and in Canada 59% of our electricity mix. The collateral environmental damage caused by hydroelectric has been well documented for decades, including the loss or serious decline in migratory fish species and they are key factors in the listing of some iconic fish species as species at risk, declining biodiversity, impaired water quality, including elevation of mercury concentrations in fish tissue, and are key threats to imperiled aquatic species. There are 224 hydroelectric facilities in Ontario, and a total of only 3 have that have installed fish passage. The Coniston GS has no fish passage. Hydroelectric is not emission-free and must be recognized for the significant and ongoing negative impacts that result from their impoundments, diversions, and cycling and peaking operating strategies. These effects are not being adequately identified much less properly addressed through the Class EA for Waterpower. The Ontario Waterpower Association (OWA) and Ontario government just removed public consultation from the Class EA for Waterpower for the conversion of dams to generate power, and for the upgrades of older hydroelectric dams. Fortunately, this Project began before the amendment to the Class EA and was in a different category with an increase in capacity over 25%.

The OWA and OPG are now looking to Northern Ontario to dam more rivers to increase hydroelectric power generation and Ken Hartwick, President and CEO of OPG publicly referred to it as “new non-emitting hydropower, which is extremely misleading. It's time the OPG, OWA, and the Ontario government come clean and tell the truth! Hydroelectric power generation is not clean or non-emitting. It is time OPG started to account for GHG emissions at all their facilities.

Response #1 - Greenhouse Gas Emissions

With respect to your first comment/question under #1, you first asked: “Please explain: how will the Coniston GS reduce greenhouse gas emissions?”

The proposed Coniston GS will reduce greenhouse gas emissions. At present in Ontario, the alternative to hydroelectric facilities would be increased electricity production from natural gas generating stations. The proposed new GS is being developed to a capacity of 6 MW. However, as the GS has currently only one unit running it is not generating all the power it could potentially do so and therefore there is an opportunity to increase current production from approximately 2 MW to 6 MW, representing a 4MW increase. OPG has assumed that natural gas generating plants would be used part of the time to replace the same energy produced at the Coniston GS if the station were to stop operating (as the facility is close to 120 years old, OPG anticipates that the facility will not be able to operate more than a few years without the planned life extension to it). OPG has estimated that a re-developed Coniston GS would displace 12,880 Mg of carbon dioxide per year for each MW of power that would have otherwise been emitted through the use of natural gas. Therefore, the proposed undertaking is assumed to help offset that amount of greenhouse gas emissions (GHGs). Wind or solar power are simply not alternatives for hydropower in Ontario at present. The energy from waterpower is generally predictable and helps to provide baseload or dispatchable power whereas wind and solar are intermittent and dependent on the right conditions.

Your comment expressed the concern about GHG emissions and reservoirs. Visual examination of the stretch of the Wanapitei River immediately above the Coniston GS demonstrates that very little area would have been inundated for a reservoir. There is no large lake or impoundment immediately above the Coniston GS. There is a limited forebay to store water since Coniston is a run-of-the river GS. OPG

acknowledges that a reservoir produces some GHG emissions, however reservoirs on the Canadian Shield are not known to produce significant GHGs. Within a Canadian context a few recent projects in Quebec and Manitoba have demonstrated the net benefits of hydropower from the perspective of reducing greenhouse gas emissions. For example, there is readily available research from Hydro Quebec on reservoirs and greenhouse gas emissions: [Greenhouse gas emissions and reservoirs | Hydro-Québec \(hydroquebec.com\)](https://www.hydroquebec.com/en/energy/energy-production/hydropower/low-carbon-energy/low-carbon-energy-factsheet).

The reservoir for the Coniston GS has been in place for close to 120 years. As the research from Quebec Hydro demonstrates, most of the GHG emissions associated with a reservoir are temporary and peak at two to four years following impoundment. The proposed Coniston GS Project is not changing the existing reservoir area nor the operating pattern for this segment of the Wanapitei River, as such there will be no change in greenhouse gas emissions associated with this stretch of the River, and therefore there is no incremental impact with respect to the present undertaking on the river area (or reservoir) immediately above the Coniston GS.

In summary, the Coniston GS will help to reduce greenhouse gas emissions that would otherwise be produced by natural gas generating stations in Ontario.

The proposed Coniston GS will also potentially assist in mitigating climate changes impacts. The Coniston GS together with OPG's other facilities and those of a couple other private producers provide the primary water control capabilities within the Wanapitei River watershed. As such, these facilities provide, at no cost to the public, control of water levels and flows on the River. In a future where climate change will result in greater uncertainty with respect to water, this capability allows for the potential mitigation of many deleterious effects of climate change on River flows and levels.

You also made reference to fish passage in your comment. OPG does not plan to provide for upstream fish passage at Coniston. Based on historical survey information and our internal assessment, the site of the Coniston GS was a Falls prior to hydroelectric development. The Falls were assessed to have a vertical drop of approximately 60 feet by the original surveyor of the River. A photo below showing only a portion of the vertical drop may assist you with understanding this.



Because these were Falls, it is the opinion of our biologists that fish could not have moved upstream prior to the development of the GS. There are currently no fish in this section of the River that have biological reasons to move upstream of the facility. The main sportfish in this stretch of the River is Walleye and all the habitat needs of the species are met within this stretch of the River. As such, there is no biological rationale for upstream fish passage at the Coniston GS.

Comment #2 – Upstream Wastewater Treatment Facility

Are there any wastewater treatment facilities upstream of this facility, because this is a factor that could also increase GHG emissions?

Response #2 – Upstream Wastewater Treatment Facility

There are sewage lagoons upstream of the Coniston GS. The City of Greater Sudbury has an active treatment facility for the community of Wahnapiatae. The lagoons discharge effluent seasonally, within timeframes assigned by the Ministry of Environment, Conservation and Parks (MECP). The presence of these facilities was acknowledged in the existing WRWMP.

We are not aware how the proposed life extension to the Coniston GS would somehow interact with the above facility and result in increased GHG emissions. The existing Coniston GS has been in place for close to 120 years. As already indicated, the proposed project would not change the water levels, flow or current area of the reservoir above the Coniston GS.

Comment #3 – Zone of Impact

The presentation shows a very small zone of impact, that includes very little of the upstream, except in the immediate vicinity of the dam, and a very short distance downstream of the dam. This facility will cycle its operations, which can have major impacts on both the upstream and downstream. The

upstream and downstream area that would be impacted by the operating strategy was always referred to as the Zone of Influence, so it is interesting that now it is a much smaller area that is referred to as the Zone of Impact. Please provide the following information: a. You only explain that cycling operations will result in fluctuations of downstream flows, when in fact it will impact on upstream and downstream water levels and flow volume. Why are you not taking into account the impact on the upstream reservoir? b. What is the distance between the dam and the upstream zone of impact? c. What is the distance between the dam and the downstream zone of impact? d. Why does the zone of impact not include Coniston Creek, when the presentation mentions that MECP requires the shutdown of all turbines to dilute metal concentrations that flow into the Wanapitei River from Coniston Creek? e. Why does the zone of impact not extend much further upstream when the cycling will create fluctuations in water levels and flows which will likely result in erosion, turbidity, increased water temperatures and greenhouse gas emissions?

Response #3 – Zone of Impact

As you point out, OPG has identified a relatively small zone of impact. That is because the environmental effects of the project will occur in close proximity to the GS. Environmental assessment regimes across the globe are premised on assessing the impact of a proposed project against present environmental conditions. They are not premised on assessing the impact of a project according to some pre-development or historical condition. This project's zone of impact was assessed in the same manner.

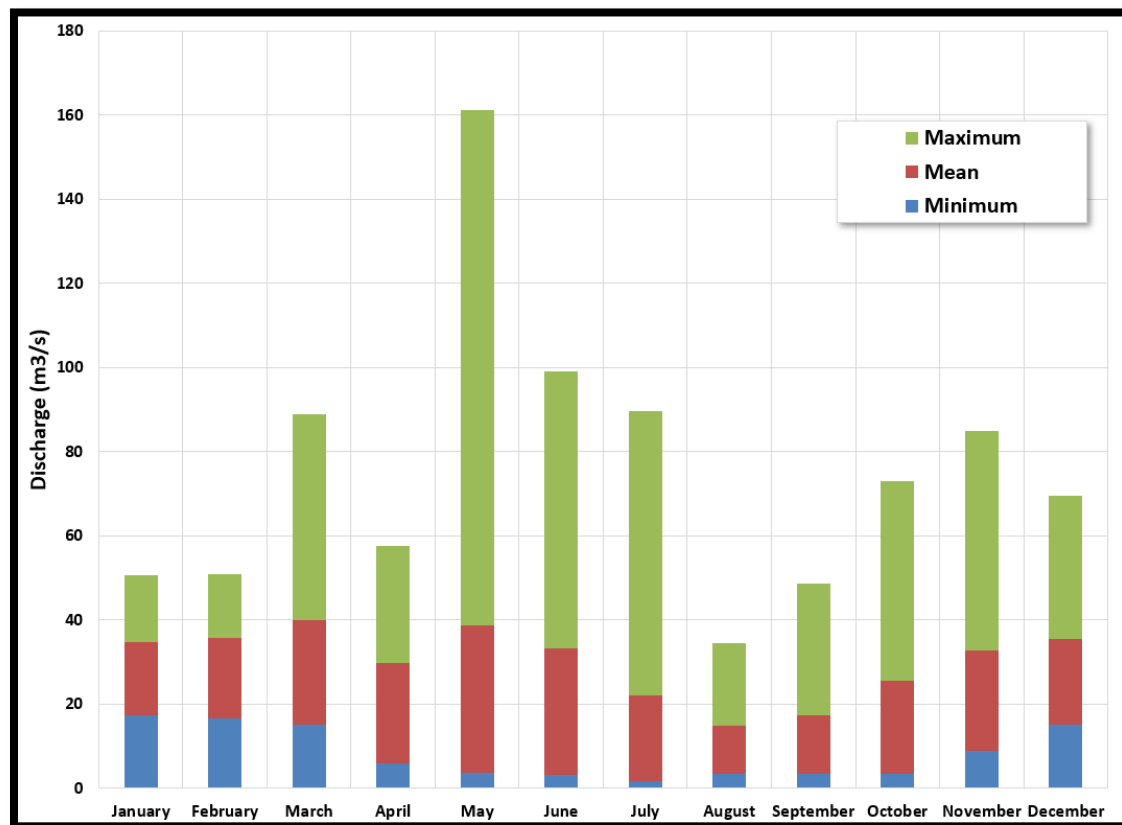
As mentioned above, OPG will be operating within the current operating regime of the WRWMP. Until recently the plant's capacity was 4.75 MW (max flow 44 m³/s). The new 6 MW (max flow 43.5 m³/s proposed) capacity stated is the result of new and more efficient generating units operating at near the same historical maximum flow of 44 m³/s. Recently, with only one operating unit (1 of 3), the capacity of the GS has been limited to well below 4.75MW and there has been limited "cycling" of units during low flow periods in order to pass the minimum daily average flow (3 m³/s). The existing WRWMP rules have and will continue to be followed. The operating rules were set up recognizing the ecological conditions of the River and were the culmination of a multi-year planning process involving numerous stakeholders and government agencies examining various conditions and issues on the River.

The only change in water management operations will be that with new functional units the station will be able to pass the available flow to generate power rather than it be passed through the spillway. As the plant was and will remain a run-of-the-river GS and only pass what flow is available from natural inflow there is very little storage capacity in the reservoir, and it will continue to be operated according to the same WRWMP operating rules. Flows through units will vary based on unit capacities and units will be cycled on or off to suit the natural available inflows with excess flow being spilled (beyond plant capacity) through the spillway. OPG has limited storage and a limited operating range (0.55m) in accordance with the WRWMP that peaking style operations are not possible. In short, the new plant is meant to be highly adaptable to various flow conditions.

No changes in operations will occur with the proposed new GS and would not have any identifiable ecological impacts on the River as total flow passed at the site will continue to match inflows on the river system. The Zone of Impact for the upstream side is just slightly upriver of the proposed dam (less than 100 meters) and was identified to account for possible cofferdams that may be required on the upstream side of the dam. The zone of impact does not extend further upstream because the GS will still

be operating within the operating rules already established within the WRWMP. The Zone of Impact for the downstream side potentially extends approximately 200 meters downstream of the powerhouse in order to include an area for the possibility of in-water work associated with fish habitat; cofferdams in close proximity to the powerhouse; and on the terrestrial side for possible vegetation clearing. The Zone of Impact does not include Coniston Creek because the proposed project won't impact Coniston Creek nor the requirement to maintain flow in the River. For context, there is a minimum daily average flow of $3.0 \text{ m}^3/\text{s}$, maintained at the request of MECP to dilute metal concentrations that flow into the Wanapitei River from Coniston Creek. These high metal concentrations have nothing to do with OPG operations and OPG provides this flow to assist with this existing environmental problem. OPG would continue to provide the minimum daily average flow in the river regardless of whether the life extension of the Coniston GS occurs or not. Lastly you indicate: "Why does the zone of impact not extend much further upstream when the cycling will create fluctuations in water levels and flows which will likely result in erosion, turbidity, increased water temperatures and greenhouse gas emissions?" The proposed re-development of the GS will not result in such effects because it will not change the overall flows and levels in the River from the existing conditions. To re-iterate, the overall compliance levels and flows will remain the same and therefore the effects will not change. It is important to remember that a River does have variable hydrological conditions. Inflows vary hourly, daily, monthly seasonally, annually and year-to-year. OPG maintains historical records, constantly assesses levels and flows and assesses the impacts of future climate changes scenarios on the hydrology for the Rivers it has facilities on. OPG uses that information to continue to manage the flows and levels on these rivers according to the compliance regimes set out in water management plans. The natural variations in the hydrology of the Wanapitei River are far greater than any slight changes that would occur with a new powerhouse (please see the figure below for data on the monthly historical flow record of the station) and with the new facility operating as a run-of-the-river facility. It is those natural/wider fluctuations that are more likely to produce the affects you suggest such as turbidity and erosion. But the compliance rules developed in the WRWMP were developed recognizing all of the historic and natural conditions.

AVERAGE, MAXIMUM, AND MINIMUM MONTHLY FLOWS AT CONISTON GS (KGS Group 2018)



The Wanapitei River is not an undeveloped River with Coniston as the only GS. There are a number of GSs on the River that operate as a run-of-the-river cascade system with limited storage capacities (except for Wanapitei Lake). As such, the re-development of Coniston GS cannot alter the fundamental way the River is operated.

The environmental effects that you are suggesting beyond the zone of impact that might occur won't be any different with the proposed project than without it, given the existing operating requirements for the Coniston GS and the future hydrological conditions on the River.

Comment #4 – Water Levels

What will the frequency and duration of fluctuations in water levels and flows be on a daily basis when the dam is in full operation?

Response #4 – Water Levels

As indicated, the proposed re-developed Coniston GS will be operated according to the same water management levels and flows that are outlined in the current WRWMP. Slightly more water will go through the powerhouse instead of the main dam compared to the present situation, simply because some of the equipment is not currently operational. Furthermore, the main dam has already been operating for approximately 120 years as previously indicated and no changes will be made to the existing operations of the main dam.

Comment #5 – Sediment Behind the Dam

Will the sediment that has already built up behind the dam over the last 100 years be removed? If so, how will it be removed and how and where will it be done disposed of?

Response #5 – Sediment Behind the Dam

There is no plan to remove or to disturb any sediment that exists behind the dam. The only work anticipated is a cofferdam upstream of the existing canal and potentially excavation in the dry in the vicinity of the canal entrance. The spillway is not closed and is rather opened several times a year to pass water flows to meet operational and dam safety requirements. As the dam is open likely during high flow events, some sediment moves down the River. OPG does not own the sediment above the dam. The sediment that exists is primarily a result of all human activities in the watershed above. OPG does regularly capture the trash and other debris that flows down the River and disposes of this material.

Comment #6 - Has the sediment been assessed or analyzed for contaminants?

Has the sediment been assessed or analyzed for contaminants?

Response #6 - Has the sediment been assessed or analyzed for contaminants?

To our knowledge there has been no assessment of sediments behind the dam for contaminants. The project will not disturb any sediment buildup behind the dam beyond what may occur during normal operation of the spillway.

Comment #7 - What is a “run-to-fail” mode – can you explain?

What is a “run-to-fail” mode – can you explain?

Response #7 - What is a “run-to-fail” mode – can you explain?

Run-to-fail mode is a strategy to minimize total maintenance on a unit that is reaching end of life, such as Coniston GS Unit 3. OPG continues to perform routine maintenance tasks on the unit to maintain operations but has determined that if a large investment is required (such as major maintenance or equipment replacement), it would not be worthwhile. Therefore, in the case that a component integral to unit operation reaches the end of its service life, the unit would be safely and permanently shut down.

Comment #8 - The public no longer has the right to make a Part II Order request to appeal a Minister’s decision, unless it relates to Indigenous treaty rights. Therefore, this reference should be removed from your website.

Response #8 – Class EA Process

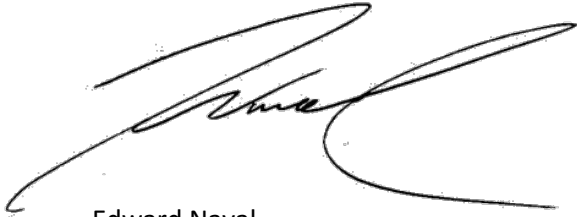
The only mention of a Part II Order request provision on the Coniston GS website is within the Open House No. 2 Presentation Panels, on slide 12. The slide states:

“Provided the requirements of the OWA Class EA planning process are met, and a Part II Order request is not made (or denied), a project is considered approved under the EA Act.”

As mentioned in your letter, Part II Order requests can still be received if it relates to Indigenous treaty rights. So OPG believes this statement is still accurate.

We trust that these clarifications help to address your questions. If you require anything further, please do not hesitate to contact me at (647) 524-3402 or email at edward.naval@opg.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Edward Naval', with a large, sweeping flourish extending from the end of the signature.

Edward Naval
Environmental Advisor, Coniston/Stinson Life Extension Projects
Ontario Power Generation

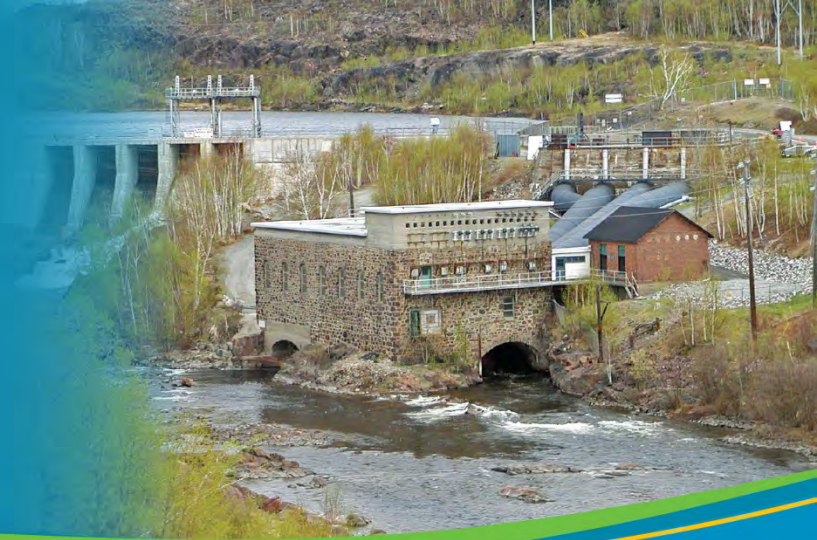
cc: Svetlana Helc, Project Manager, Coniston/Stinson Life Extension Projects
Phil Shantz, Project Manager, Arcadis

Appendix F

Agency Meeting Presentation Materials

Coniston GS

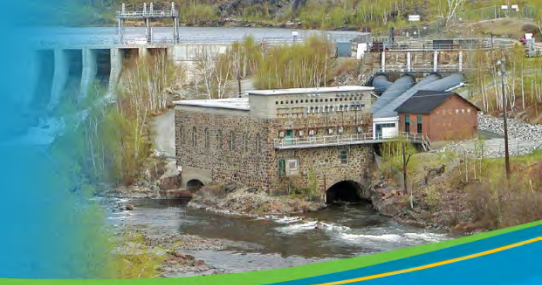
REDEVELOPMENT PROJECT



Environmental Assessment Overview

Agency Kick Off Meeting
November 6, 2019

Meeting Objectives

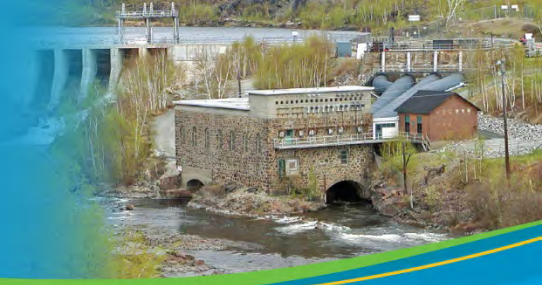


- ▶ Kick-off the Coniston Generating Station (GS) Redevelopment Environmental Assessment (EA) process with all relevant Regulators and Agencies.
- ▶ Discuss and obtain feedback on EA approach and planned feedback.
- ▶ Discuss Indigenous Peoples Consultation.

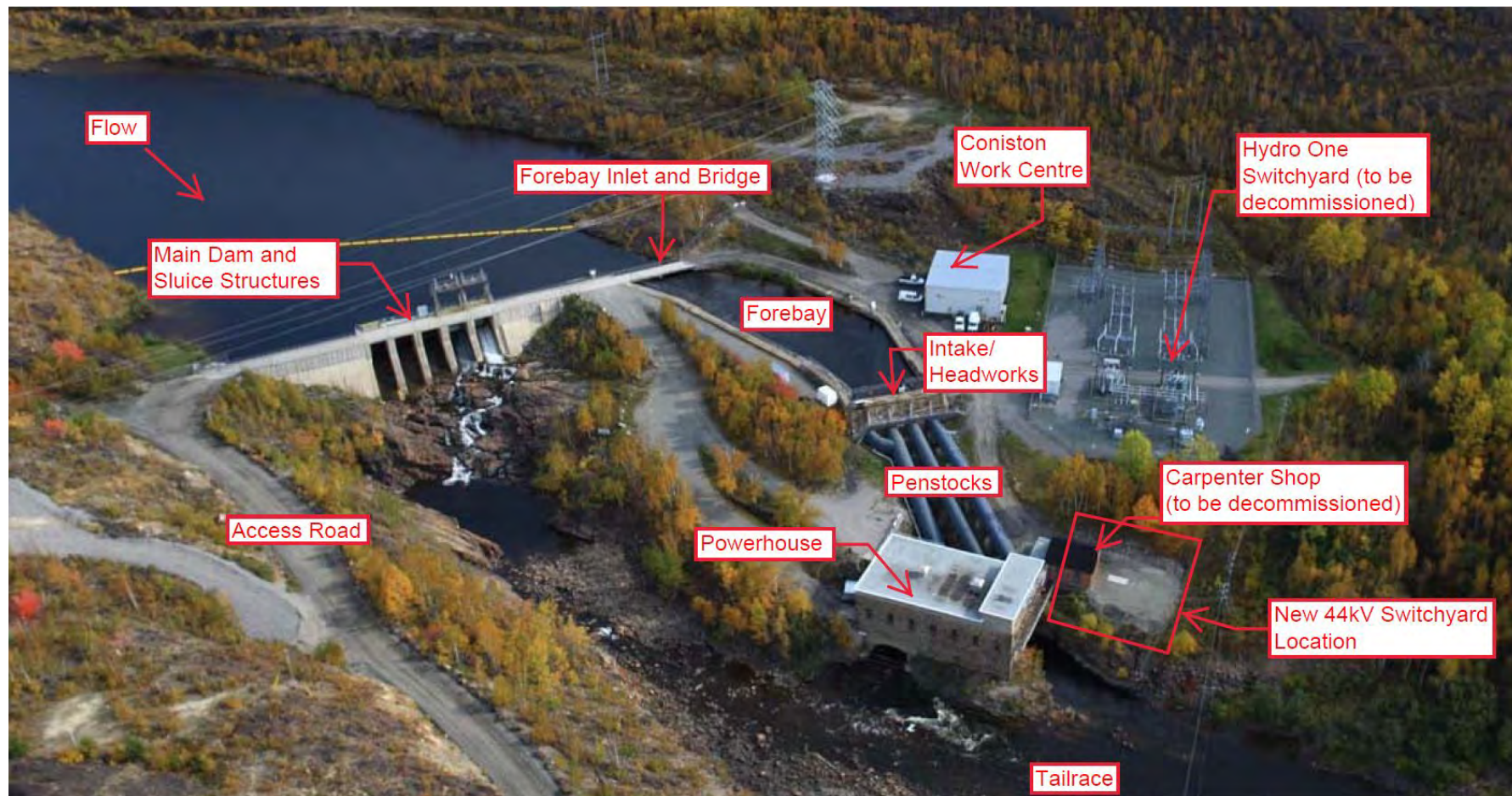
Agenda

- ▶ Welcome & Introductions
- ▶ Location
- ▶ Project Overview
- ▶ Environmental Assessment
- ▶ Discussion
- ▶ Next Steps

Location



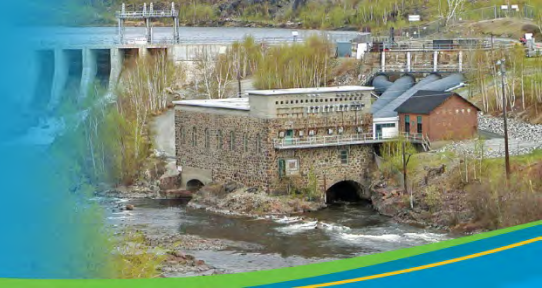
Existing Site



Existing Site

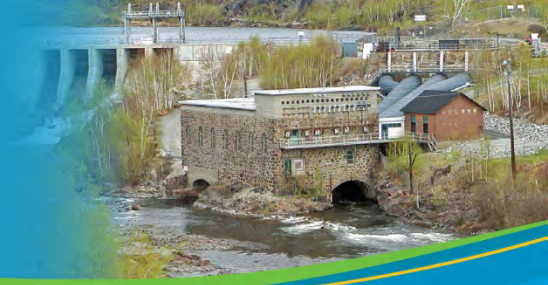


Background Information



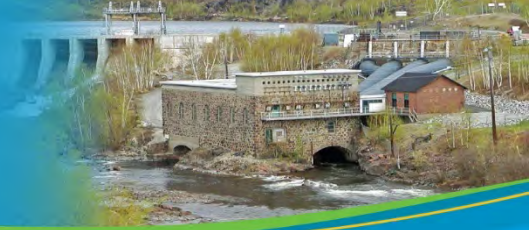
- ▶ OPG is considering the redevelopment of the Coniston GS.
- ▶ OPG has conducted several studies over the last decade assessing the condition of the existing facility and whether the GS should be refurbished to extend operating life or redeveloped.
- ▶ OPG has moved the Project forward into a “Definition” stage which involves design work and environmental assessment.

Background Information



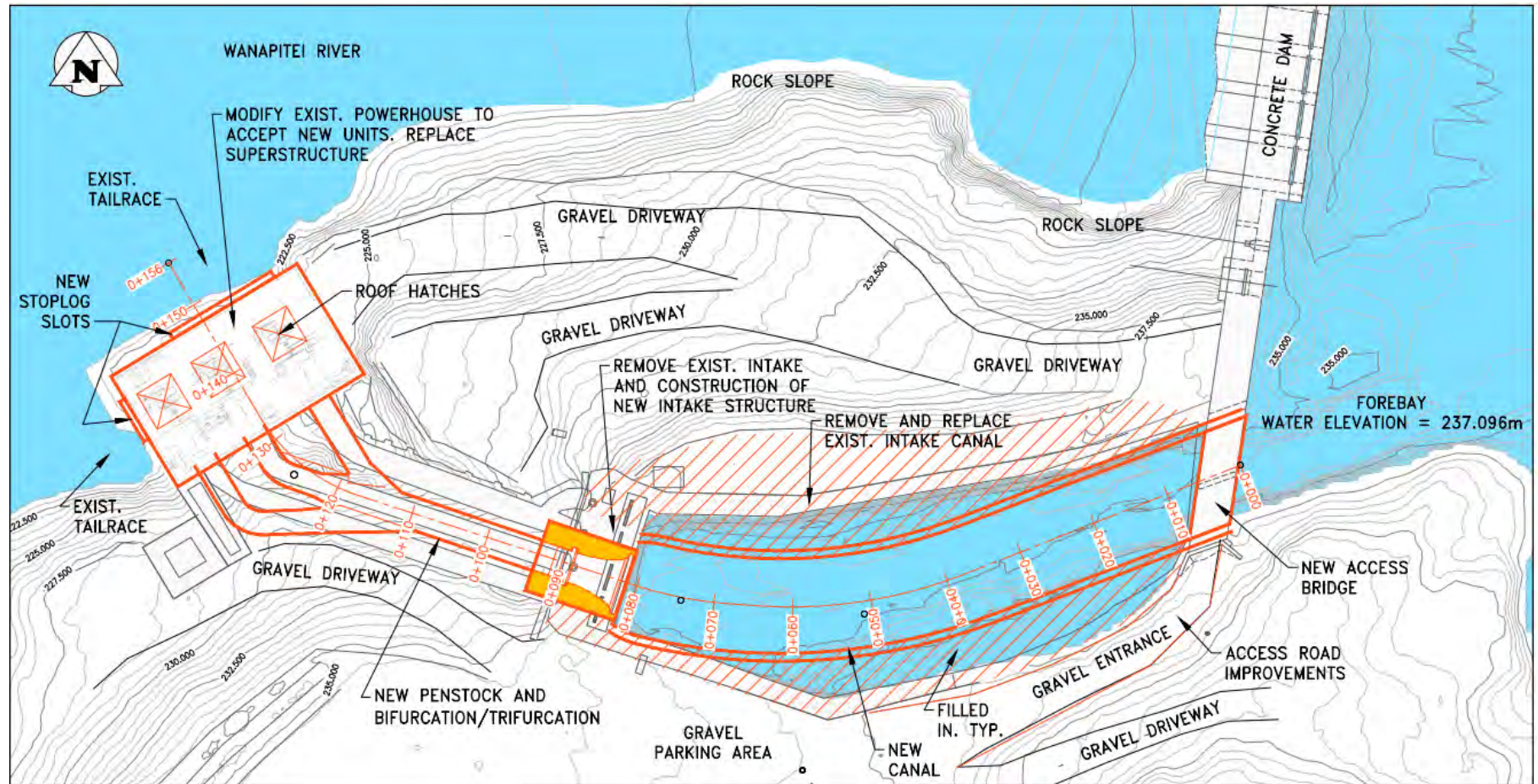
- ▶ Facility constructed in 1905 with an installed plant capacity of 4.75 MW.
- ▶ Turbines have reached the end of their service life.
- ▶ Two of the units are no longer running due to penstock issues.
- ▶ The 3rd unit is currently operated in a “run-to-fail” mode, with capacity of 2MW (de-rated from 2.5MW).
- ▶ The remaining penstock is considered to be in poor to fair condition.
- ▶ Station is part of the OPG rate regulated assets, which can be redeveloped as the end-of-the-life assets.

Proposed Plans – Option #1: Refurbish



- ▶ Replace the existing generation equipment with new larger capacity and more efficient equipment.
- ▶ 2 or 3 unit options considered.
- ▶ Utilize the existing powerhouse to the extent possible.
 - Partial to full demolition of the superstructure.
 - Modifications to the substructure to include tailrace gates, new turbines and new support equipment.
- ▶ Replace penstocks, intake structure and canal walls.
 - Components are at the end of their life.
 - Replacement addresses condition as well as safety of facility.
- ▶ Rehabilitate or replace the bridge over the canal.

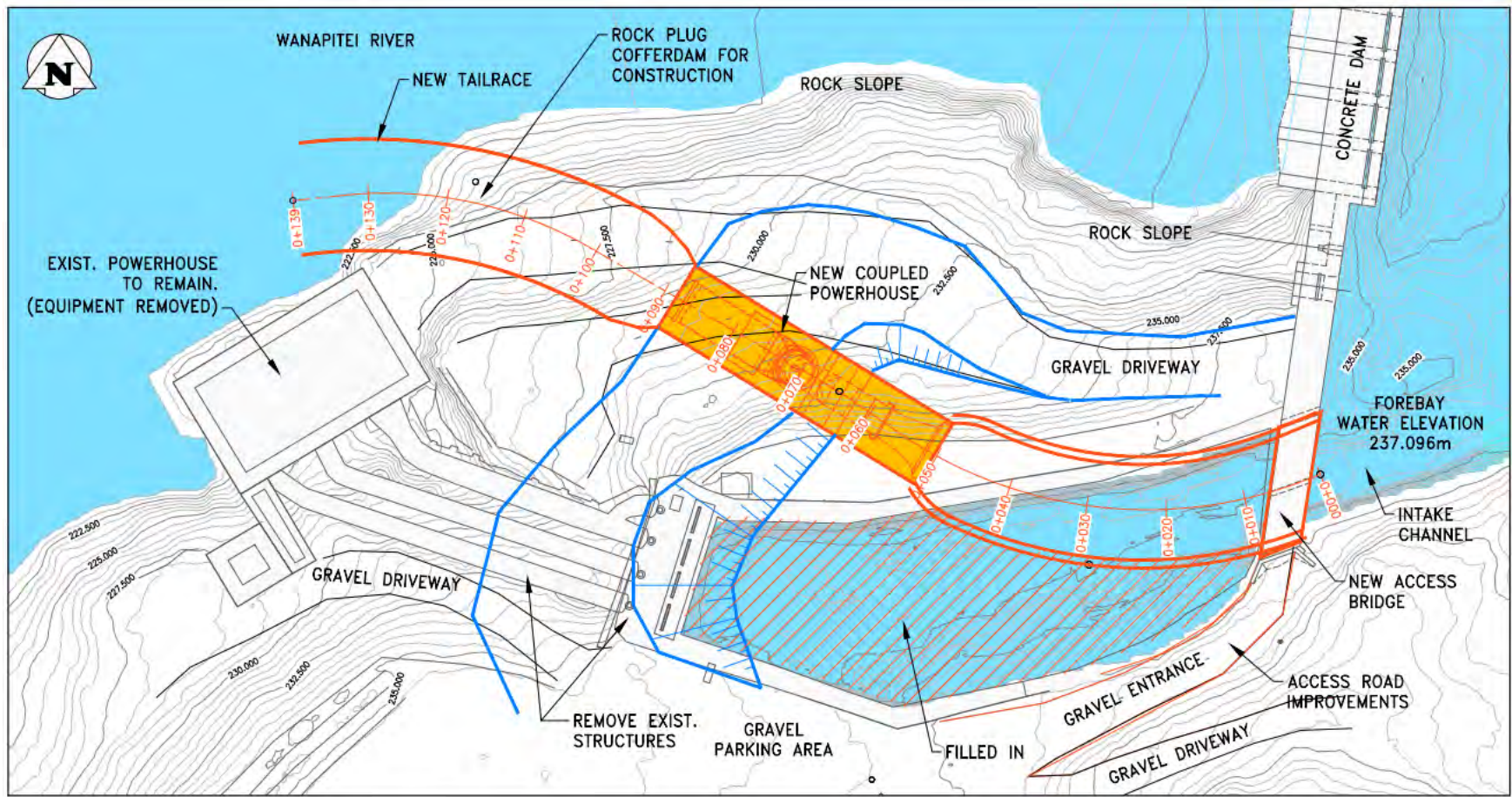
Proposed Plans – Option #1: Refurbish



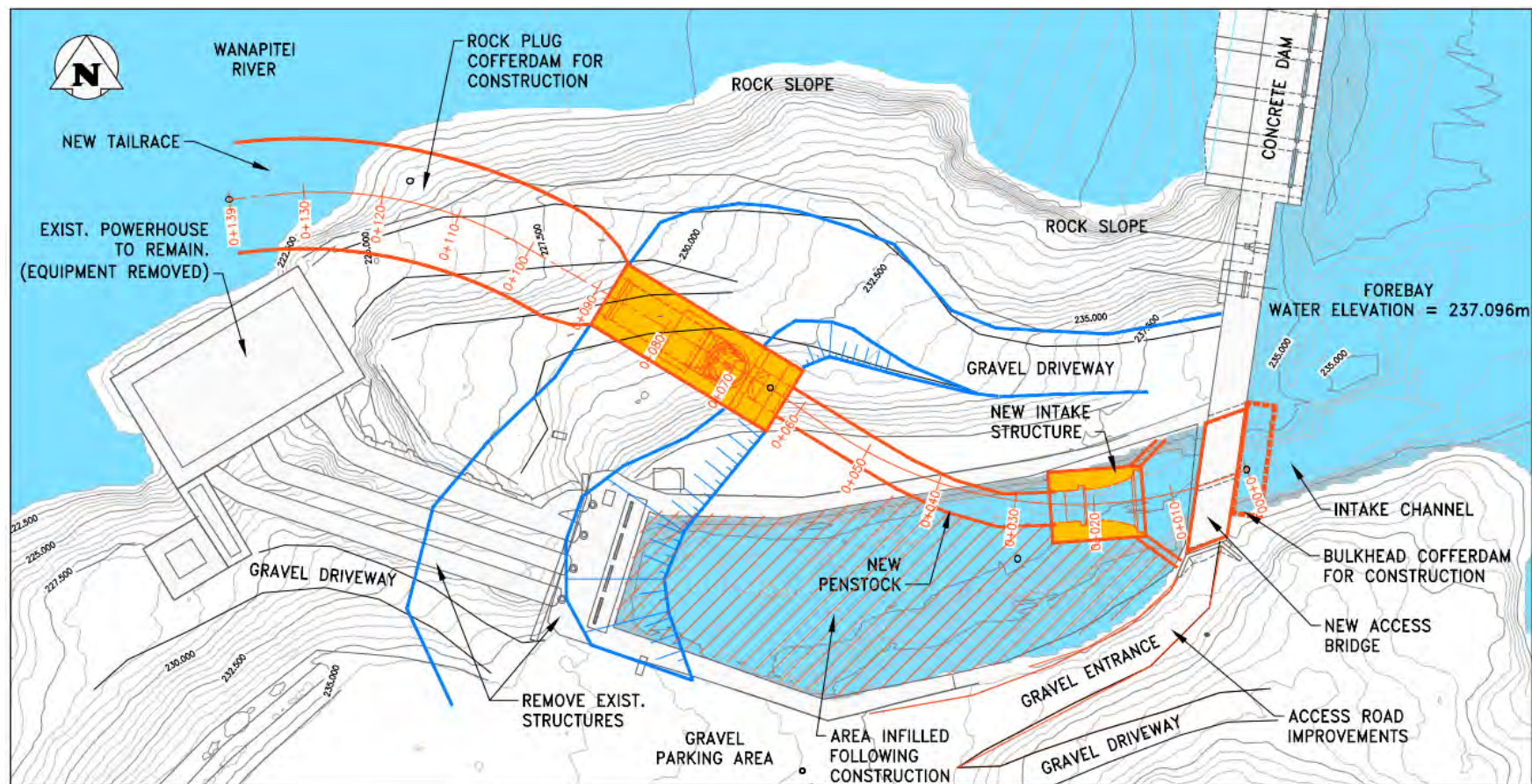
Proposed Plans – Option #2: Re-Development

- ▶ Demolish the existing canal, intake structure, penstock and powerhouse.
- ▶ Build New Powerhouse with new turbines and generators.
- ▶ 1 or 2 unit options considered.
- ▶ New intake structure and canal walls.
 - Components are at the end of their life.
 - Replacement addresses condition as well as safety of facility.
- ▶ Potentially new penstock depending on costs.
- ▶ Rehabilitate or replace the bridge over the canal.

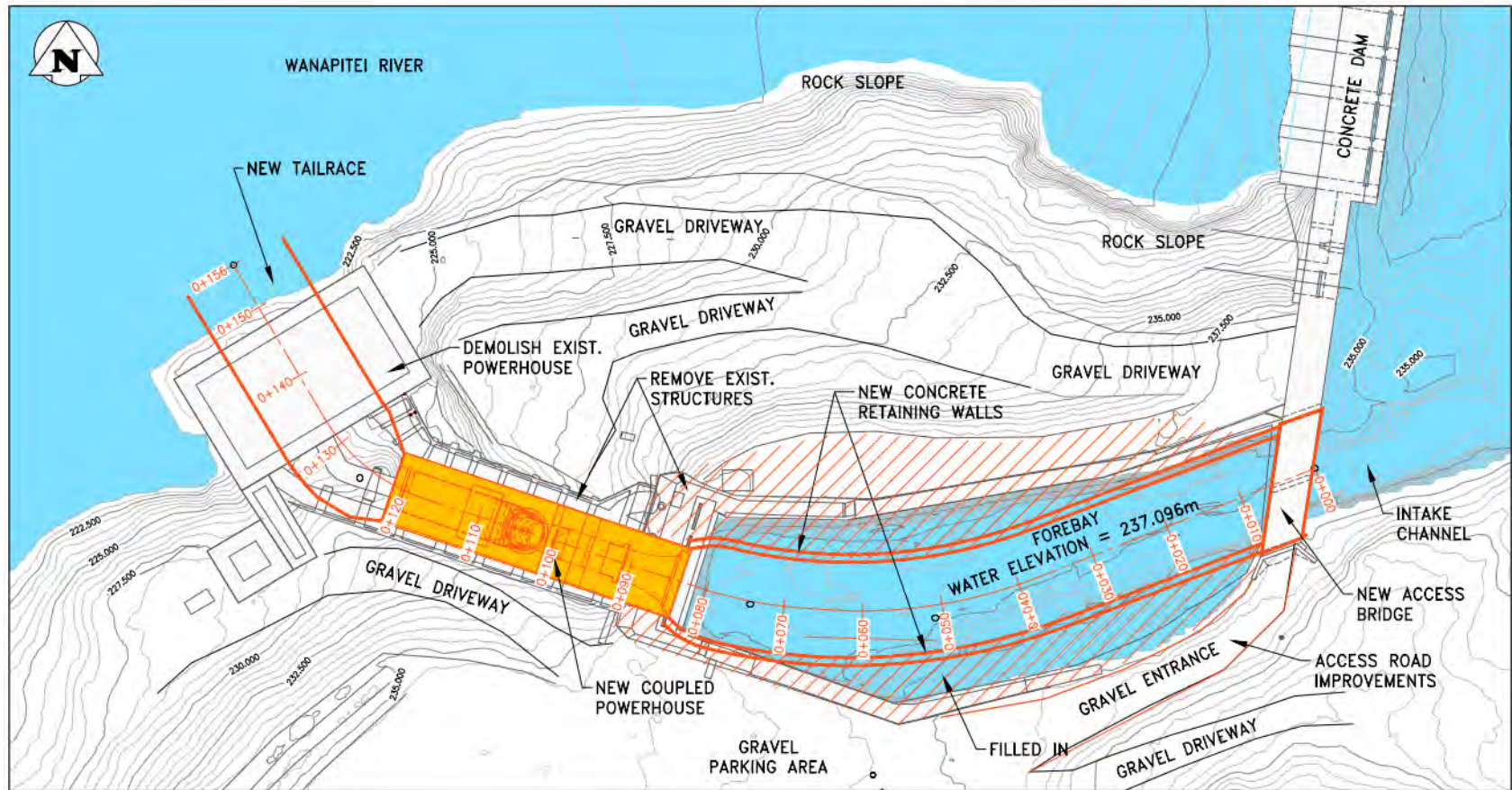
Proposed Plans – Option #2: Re-Development – Alignment #1: Canal North of the Existing Powerhouse



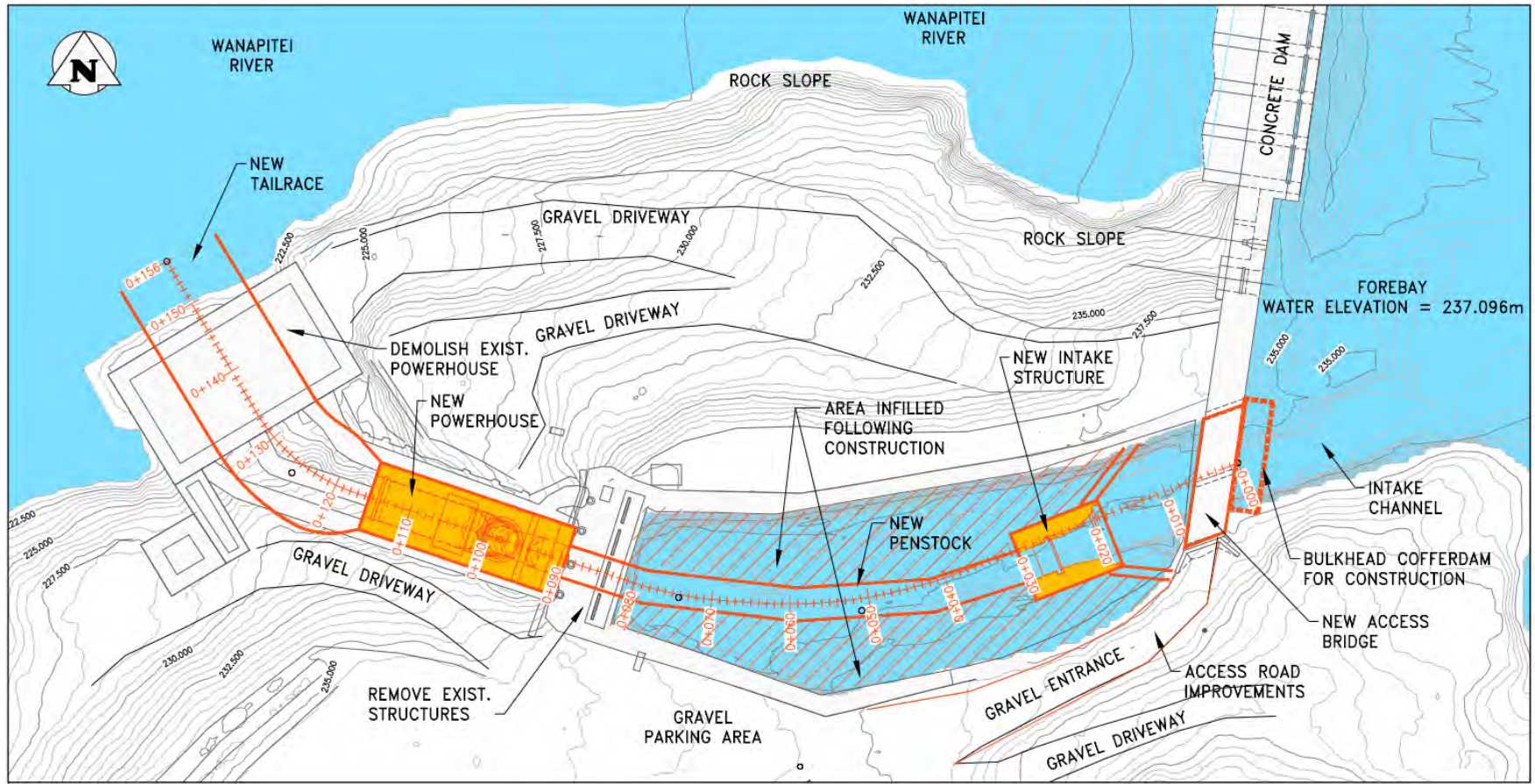
Proposed Plans – Option #2: Re-Development – Alignment #1: Penstock North of the Existing Powerhouse



Proposed Plans – Option #2: Re-Development – Alignment #2: Canal on Existing Alignment



Proposed Plans – Option #2: Re-Development – Alignment #2: Penstock on Existing Alignment



Works and Activities under All Options and Alternatives



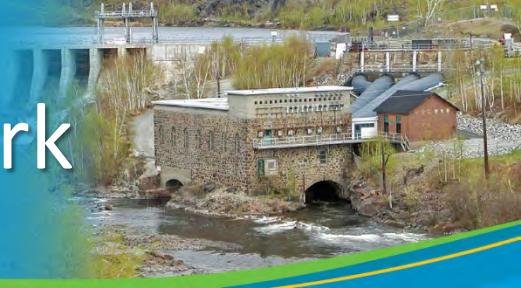
- ▶ Up to 6 megawatts.
- ▶ 35 to 45 cms capacity range.
- ▶ Improve access conditions at site for construction and long-term maintenance.
- ▶ Other activities would involve the following:
 - Mobilization and de-mobilization;
 - Laydown and work area preparation;
 - Fencing and signage;
 - Environmental controls (e.g., erosion controls, wildlife exclusion fencing, cofferdams, water treatment systems);
 - Bulkhead cofferdam at the dam and rock plug of existing powerhouse used as the downstream cofferdam; and,
 - Site restoration and rehabilitation.

Definition Phase – Scope of Work



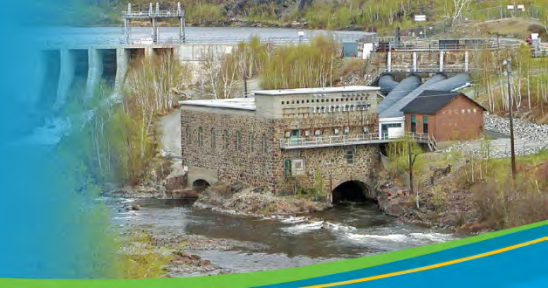
- ▶ Definition Phase started in 2019.
- ▶ Owner's Representative (KGS)
 - Preliminary site optimization
 - Prepare conformed performance specifications
- ▶ EA Services Provider (Arcadis)
 - Obtain EA approval
- ▶ Design Build DB Contractor – SNC Sullivan
 - Design and Construct GS

Definition Phase – Scope of Work



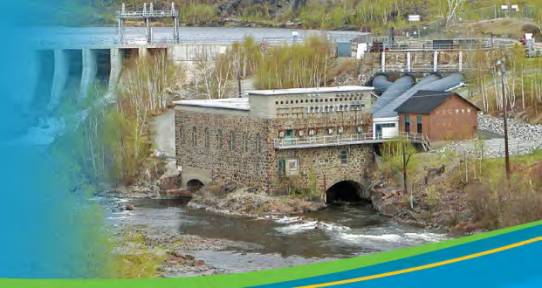
- ▶ DB Contractor to complete the FEED Phase
 - Optimization of the Project design
 - Procurement of the turbine/generator supplier
 - Develop cost and schedule estimates throughout the phase
 - Complete supplemental technical investigations, as required
- ▶ Negotiate final Engineering, Procurement, Construction (EPC) contract with DB Contractor
- ▶ Execute Connection Cost Agreement (CCA) with Hydro One

Wanapitei River Water Management Plan



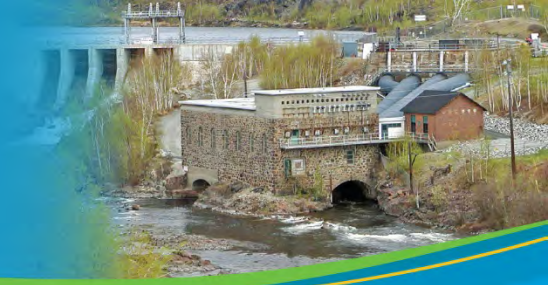
- ▶ Throughout the year, there is a 0.55 m operating range with a lower limit of 236.62 m and a maximum limit of 237.17 m.
- ▶ Minimum daily average flow of 3.0 m³/s
 - Maintained at the request of Ministry of Environment, Conservation and Parks to dilute metal concentrations that flow into the Wanapitei River from Coniston Creek, immediately downstream of Coniston GS.
- ▶ No seasonal restrictions.

Wanapitei River Water Management Plan



- ▶ OPG tries to produce the greatest amount of hydro-electricity with the flows available.
- ▶ OPG attempts to maintain a continuous flow throughout the day.
- ▶ However, at times, it may be necessary to shut down all turbines during low flows, but a daily 3 m³/s average is maintained.

Wanapitei River Water Management Plan



- ▶ OPG anticipates only a Minor Amendment will be required to the Water Management Plan (WMP).
- ▶ No changes that would alter the water regime.
- ▶ OPG is of the understanding that the WMP needs an amendment to update the new Plan with information describing the new GS (e.g., capacity).

Wanapitei River Water Management Plan

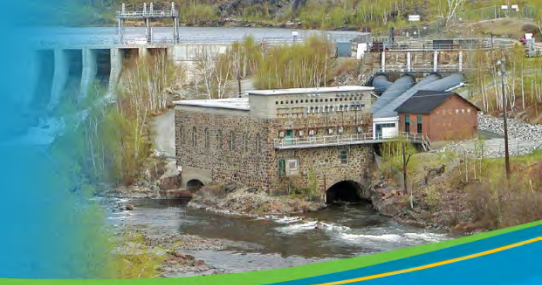
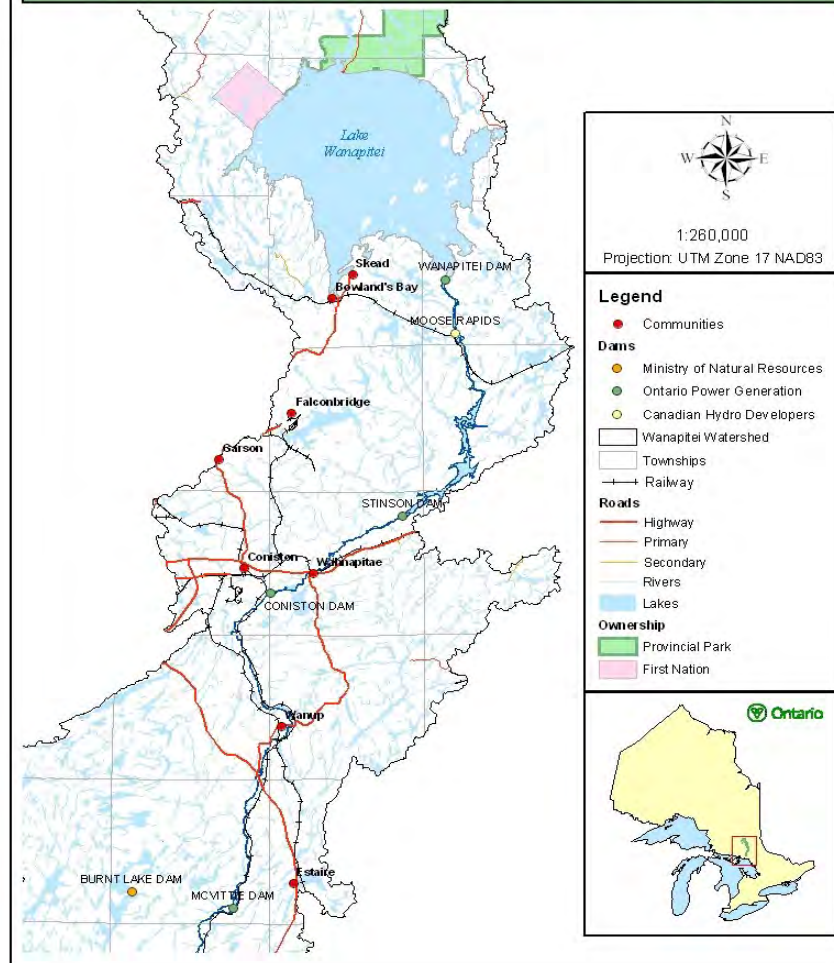
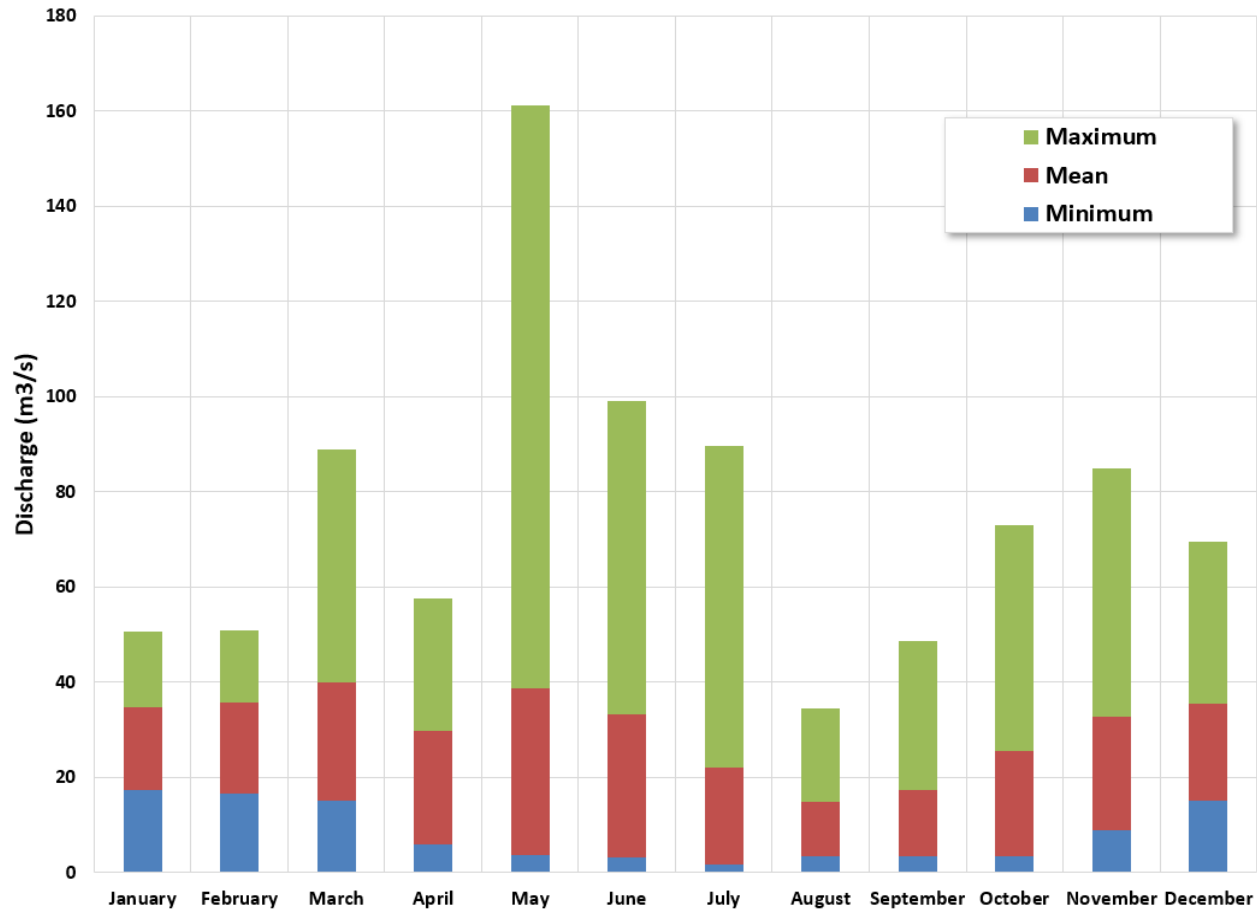
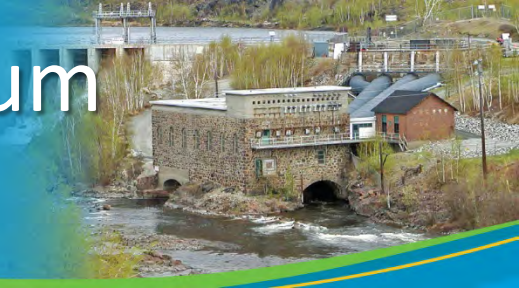


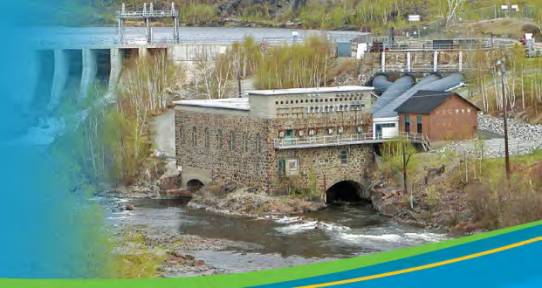
Figure 3-1: Wanapitei Watershed Planning Area



Average, Maximum and Minimum Flows at Coniston (1951-2014)

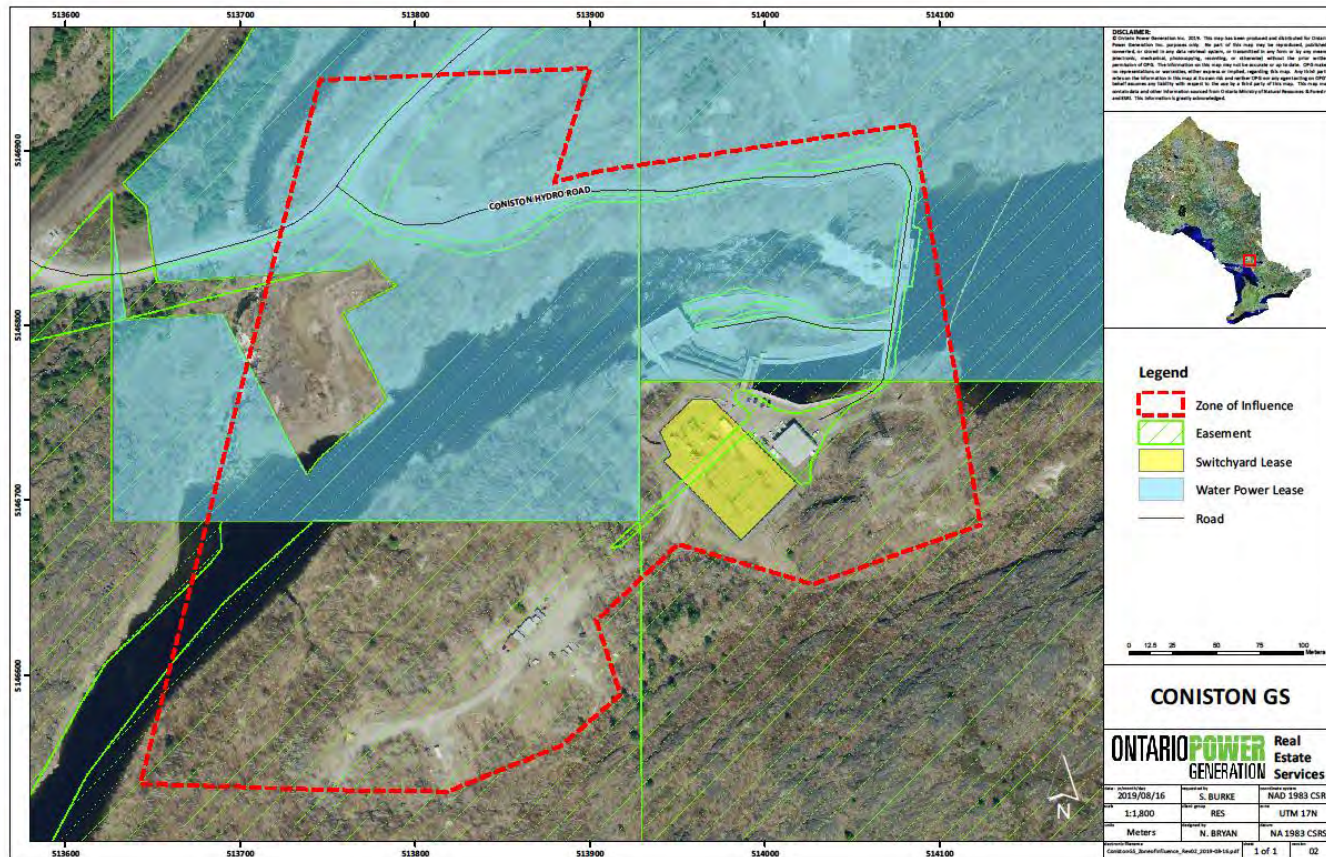
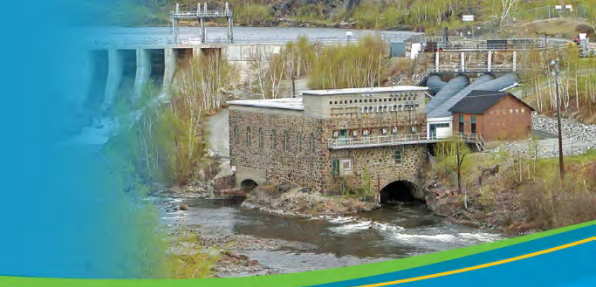


Land Tenure

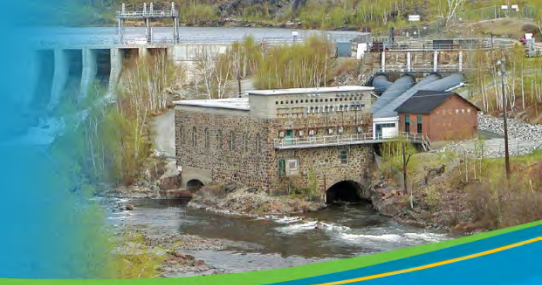


- ▶ OPG is of the opinion that the entire Project occurs within its land tenure.
- ▶ No off-site effects except for traffic and occasional effects such as noise.

Potential Zone of Impact

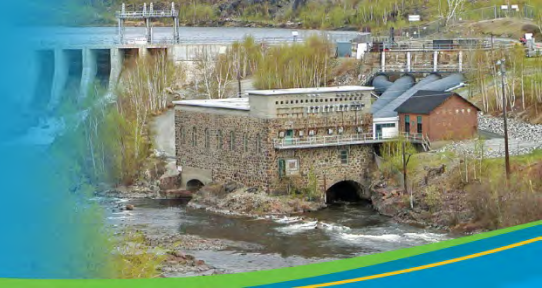


Environmental Assessment



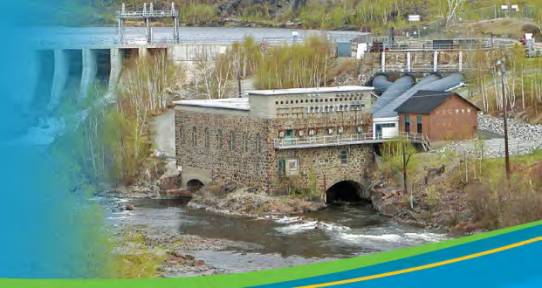
- ▶ Ontario Waterpower Association (OWA)
Waterpower Class Environmental Assessment.
- ▶ Project Associated with Existing Infrastructure.
- ▶ Does not trigger a Federal EA.
- ▶ Objective to work within the existing Water Management Plan
 - No changes to levels and flows on a daily basis

Aquatic – Studies Completed



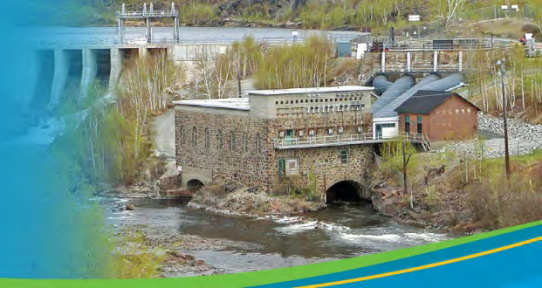
- ▶ Field investigations in 2015, 2016, 2017 and 2019.
- ▶ Spring walleye spawning.
- ▶ Electrofishing (characterize the local fish community).
- ▶ Habitat assessment.

Aquatic – Fish Community



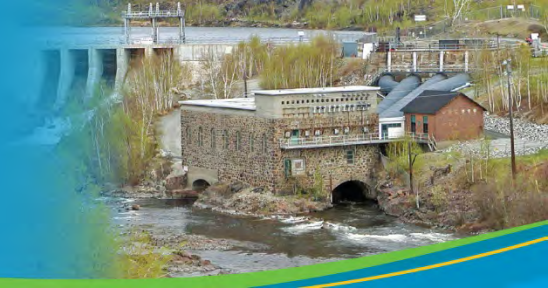
- ▶ Fish Caught or Observed at Station: Walleye, Smallmouth Bass, White Sucker Johnny Darter, Logperch, Longnose Dace.
- ▶ Total of 24 species identified in the River but some of the sport species are stocked (3 trout species) in Wanapitei Lake and are unlikely to be found near Coniston.
- ▶ No species at risk have been reported from the Wanapitei River in the vicinity of the Coniston GS.

Aquatic – Fish Movement



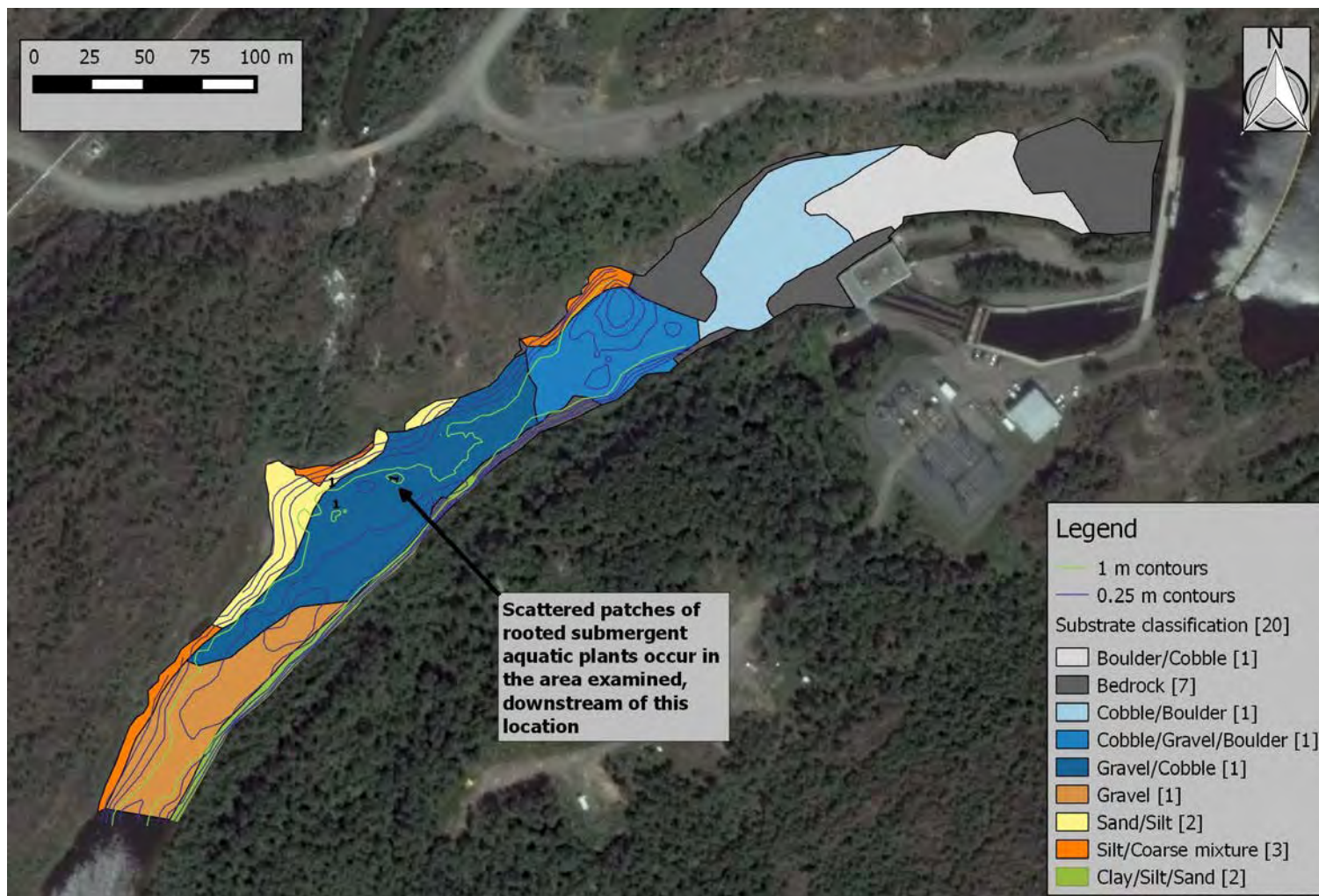
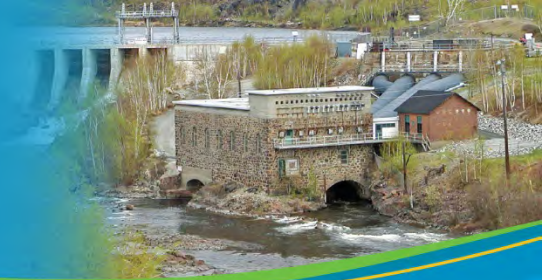
- ▶ Stinson GS is 11.2 km upstream.
- ▶ McVittie GS is about 27.5 km downstream.
- ▶ No possible upstream fish passage at any of these generating stations, and downstream passage at the Coniston GS can only occur through the GS or via the spillway when river flow exceeds the plant capacity.

Aquatic – Walleye Spawning

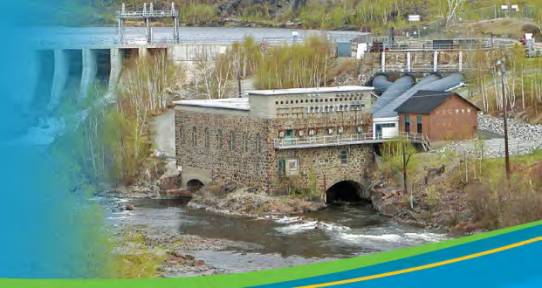


- ▶ Walleye spawning does occur at site.
- ▶ The low numbers of Walleye observed are likely, in part, due to the limited habitat area, and thus limited number of fish present, between the Coniston GS and the rock chute at Wanup, which is probably a barrier to upstream migrating Walleye.

Aquatic Habitat

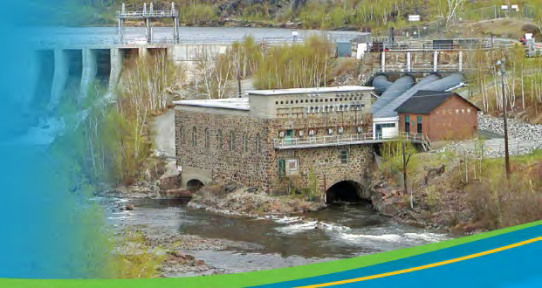


Aquatic Assessment



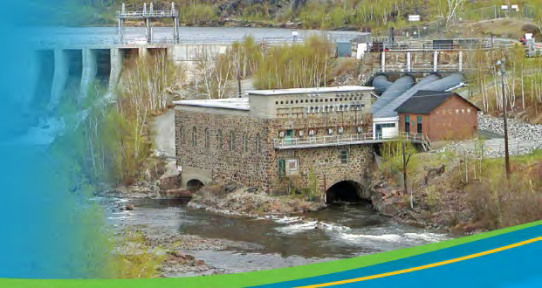
- ▶ The proposed redevelopment will not result in any new inundation and there are no proposed changes with respect to water levels therefore the Project does not trigger OWA Best Management Practices (BMP) for Small Hydropower and Methyl Mercury or the OWA BMP Surface Water Quality and Fish Sampling Programs guideline document.
- ▶ Therefore, no fish tissue sampling is proposed and water quality monitoring isn't required as per these Guides.
- ▶ Is MECP going to require water quality monitoring?
- ▶ No benthic macroinvertebrate sampling proposed as benthic invertebrates are not anticipated to be impacted.

Fisheries Act



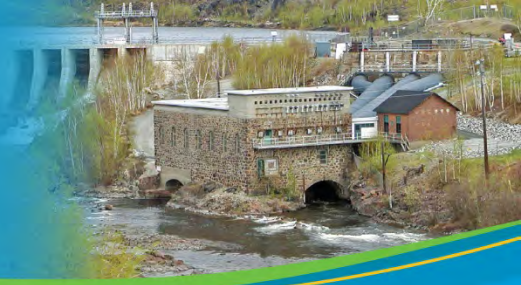
- ▶ Pathways of Effects analysis will be completed for the Project to identify any residual impacts to fish and fish habitat.
- ▶ Request for Review (RFR) submitted to Fisheries and Oceans Canada.

Terrestrial Environment



- ▶ Beacon carried out work in 2016.
- ▶ Forest communities within and immediately adjacent to the subject property are best described as ES17.1 Poplar-White Birch: dry to moderately fresh soils.
- ▶ Cavities suitable for use by wildlife were not observed within the subject property and this is to be expected given the early successional state of the communities.

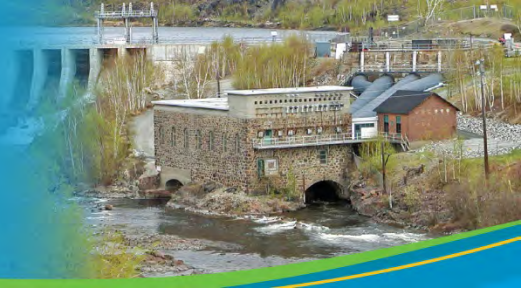
Terrestrial Studies – Species at Risk Assessment



Common Name	Scientific Name	Rationale for Considering Species	Do Site-Specific Attributes (e.g., ecological system and landscape configuration) Indicate that Potential Habitat Might be Present?
Little Brown Myotis	Myotis lucifugus	range map	YES, natural and anthropogenic structures suitable for roosting may be present.
Northern Myotis	Myotis septentrionalis	range map	YES, natural and anthropogenic structures suitable for roosting may be present.
Eastern Whip-poor-will	Antrostomus vociferous	OBBA	YES, both natural and anthropogenic openings in canopy adjacent to forest could provide suitable breeding and foraging habitat.
Chimney Swift	Chaetura pelagica	OBBA	YES, anthropogenic structures may be present that would be suitable for roosting.
Barn Swallow	Hirundo rustica	OBBA	YES, anthropogenic or natural structures suitable for nesting may be present.
Bank Swallow	Riparia riparia	OBBA	NO, man-made or natural structures suitable for nesting are absent.
Bobolink	Dolichonyx oryzivorus	OBBA	NO, suitable grassland or agricultural communities are absent.
Eastern Meadowlark	Sturnella magna	OBBA	NO, suitable grassland or agricultural communities are absent.

OBBA (Ontario Breeding Bird Atlas)

Terrestrial Studies – Species at Risk Assessment

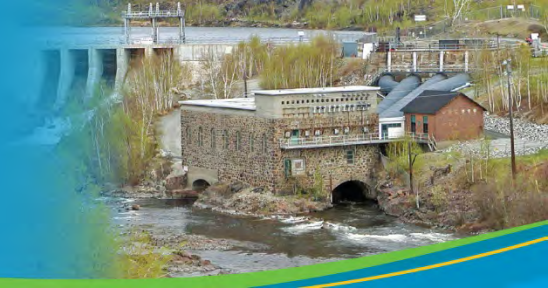


- ▶ Of the five species carried forward all but one was eliminated based on the on-site habitat conditions.
- ▶ Based on the assessment of habitat potential completed during the site visit, only the Eastern Whip-poor-will should be considered further.
- ▶ Remainder of SAR species considered are not likely to be present given the physical characteristics of the site as observed during the site visit.

Terrestrial Studies – Proposed Studies (partially completed)

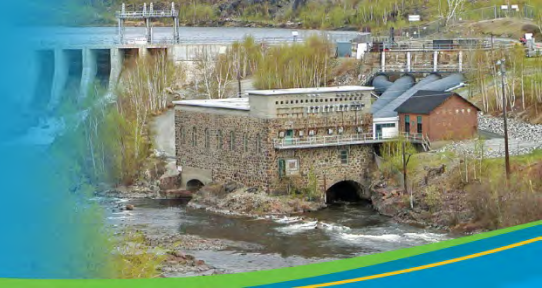
- ▶ Dawn Breeding Bird;
- ▶ Evening Whip-poor-will Surveys;
- ▶ Day time ELC and Flora Survey; and, a
- ▶ Leaf off survey for bat habitat trees.

Built Heritage



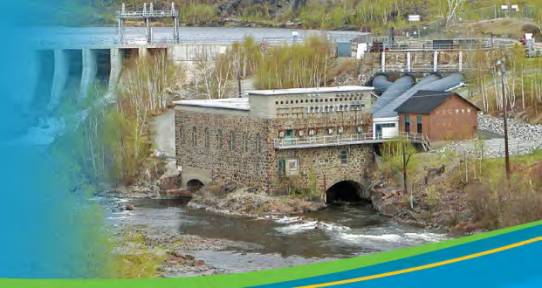
- ▶ Cultural Heritage Evaluation determined
 - *through the application of the “Criteria for Determining Cultural Heritage Value or Interest” under Ontario Regulation 9/06 that the Coniston GS is of cultural heritage value or interest, due to its physical or design value, historical or associative value and contextual value. Therefore, it is a **provincial heritage property** as defined by the Standards and Guidelines.*
 - *The Coniston GS does not fulfill the evaluation criteria for provincial significance as set out in Ontario Regulation 10/06. Therefore, it is **not considered** to be a **provincial heritage property of provincial significance** as defined by the Standards and Guidelines.*
- ▶ A Strategic Conservation Plan that outlines the options that are available for the site will need to be carried out and depending on those options a Cultural Heritage Impact Assessment may also need to be completed.

Archaeology



- ▶ Stage 1 archaeological assessment was completed on the Coniston GS in 2016.
- ▶ Stage 1 archaeological assessment carried out over a wider area in 2019.
- ▶ No areas of archaeological potential identified.

Socio-Economic



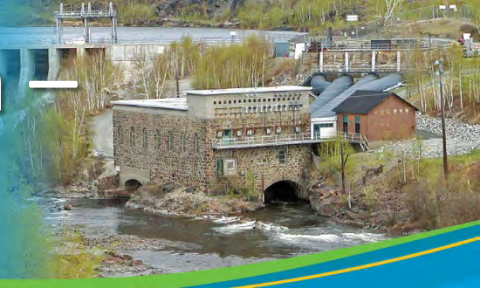
- ▶ Will include description of local socio-economic uses and the area.
- ▶ Describe potential construction stage effects, mitigation and benefits.
- ▶ No workers camp proposed.
- ▶ Not aware of any major concerns.
- ▶ The Socio-Economic Report will document any potential municipal requirements regarding construction as such as: need for a traffic management plan, road use requirements, building permits, etc.

Environmental Effects Assessment Matrix



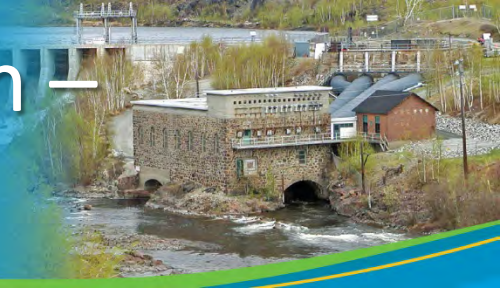
- ▶ Any comments?

Indigenous Peoples Consultation – Indigenous Groups Identified



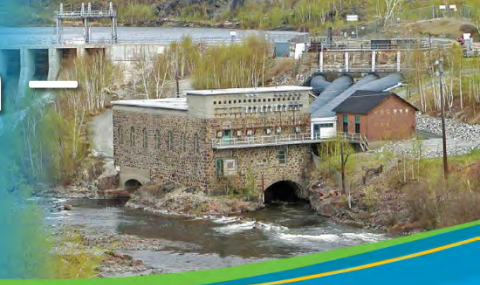
- ▶ MECP identified the following Indigenous communities with a potential interest:
 - Wahnapiatae First Nation;
 - Atikameksheng Anishnawbek First Nation;
 - Nipissing First Nation;
 - Whitefish River First Nation;
 - Henvey Inlet First Nation;
 - Dokis First Nation; and,
 - MNO Sudbury Métis Council.

Indigenous Peoples Consultation – Activities to Date



- ▶ OPG has sent out letter to all communities.
- ▶ Follow-up Phone Calls and emails.
- ▶ Meetings planned or initiated.
- ▶ “Mixed” interest.

Indigenous Peoples Consultation – Proposed Activities



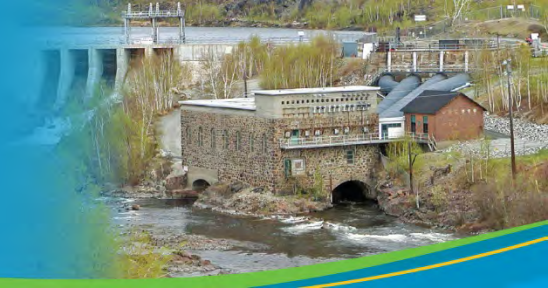
- ▶ OPG typically consults to the level desired by each community.
- ▶ OPG will provide appropriate and reasonable financial resources to Indigenous communities to participate.
- ▶ OPG will offer meetings to describe Project and possible impacts including impacts on rights and interests (rights impacts not anticipated).
- ▶ OPG will make offers for employment and contracting opportunities.
- ▶ OPG will prepare a specific Indigenous Peoples Technical Support Document that will:
 - Describe communities, Project, potential benefits, potential impacts on rights and interests, etc.

Indigenous Peoples Consultation – Agency Expectations



- ▶ What are Agency Expectations with respect to Indigenous Consultation ?

Public/Agency Consultation



- ▶ OPG typically does two open houses for hydroelectric projects.
- ▶ Probably in Coniston.
- ▶ Website is developed and will be updated with consultation.

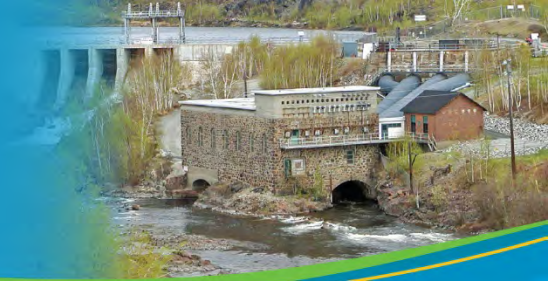
Post EA Process Approvals

- ▶ OPG will give Contractor responsibility for obtaining construction permits.

Next Steps

- ▶ Follow-up with agencies will be done individually moving forward.

Discussion



Questions?

MEETING BETWEEN CITY OF SUDBURY AND OPG RE: OPGs CONISTON RE-DEVELOPMENT PROJECT

Present

- Guido Mazza, City of Sudbury
- Alex Singbush, City of Sudbury
- Ed Naval, Ontario Power Generation
- Phil Shantz, Arcadis

Objectives of Meeting

- Inform City of Sudbury of Coniston Re-development Project.
- Discuss land use and zoning designations for property.
- Discuss future municipal requirements.

Comment on these Notes

- These notes are for our own purposes and won't be appended to any documents.
- Our Socio-Economic Technical Support Document, which is a supporting document to the main Class Environmental Assessment Report does generally describe the existing land-use conditions and any likely municipal permits or approvals required during the construction stage. There are a few points from the meeting that I would mention in that Report and reference as personal communications on May 28. The points that I would likely discuss (in different) language I have highlighted in bold below.

Discussion

- Phil gave presentation (not repeated here).
- **Existing facility is in conformity with the existing Official Plan designation (Phil and Alex agreed)**
- **City staff indicated that OPG as a provincial entity ("child of the province") may not be subject to municipal regulation (as such it doesn't necessarily need to be in conformity with the applicable zoning by-law). In Phil's opinion the facility does not appear in contravention of the zoning by-law but he can't explain why the zoning designations appear to split the powerhouse. Alex explained that this is a historical issue associated with the original zoning by-law of Wahnipitae.**
- OPG can choose not to apply for municipal building permits if it wants to.
- Phil and Ed indicated that OPG generally does but this issue will be brought back to be discussed.
- Some proponents do want the City to review building plans for added value.
- Alex confirmed Phil's opinion that the Facility is **not in a Source Water Protection Area**.
- Guido mentioned that SNC has some recent experience with the City on the Vale Clean AER Project and obtaining municipal approvals (Ed to pass this on to the OPG and SNC-Sullivan team)
- Phil noted that there may be road improvements but likely these would occur closer to the generating station (probably not at the highway but this is not known at this point).

- Guido mentioned that municipal permits are required for extra long/large loads, and that if there were improvements that needed to be made at the highway this would involve a joint MTO/municipal review. Alex indicated that he could help coordinate with MTO if required.
- Phil suggested that once SNC has more certainty about the design (likely this would be at 50% engineering drawings) it would be good to discuss any municipal permitting issues.
- Phil mentioned that the next formal notification that may be sent to the City would probably be for the Projects second Open House, forecasted for Dec. 2020.
- Phil mentioned that OPG has for some projects sought municipal support (merely a Council Resolution supporting the project for various socio-economic benefits associated with it). OPG hasn't contemplated that yet for this project. Guido indicated that it would be good to give our department a heads up if OPG wishes to pursue that as Mayor and Council will likely query staff on the project.

Future Dates (for your information)

- OPG is hoping to have Open House #2 on the Project in early December 2020 (likely in Wahnipitae) where the preferred concept and environmental effects and mitigation would be described.
- Arcadis would be distributing draft environmental assessment reports to government agencies in February 2021. The City does not need to review these Reports (the Ministries of Natural Resources and Forestry, Ministry of Environment Conservation and Park, Ministry of Culture and DFO will all review them) but would likely appreciate it if a City staff person would review the Socio-Economic Report which will include any commitments/requirements that may be required with the City during the construction stage (e.g., if SNC contemplates alterations to the access road).
- Execution (Construction) Phase of the Project would likely start in summer of 2021 (subject to final OPG approval).
- Contractor (SNC-Sullivan) should likely reach out to the City on municipal related issues in spring/summer of 2021.

Coniston GS (and Stinson GS) Life Extension Projects

MTHSCI and OPG

June 2022

ONTARIO **POWER**
GENERATION

Where a brighter
tomorrow begins.

Purpose

Coniston

- Follow-Up from Spring Correspondence
- Where we are in the process.

Stinson

- Overview

Coniston

- Similar to Bingham Chute, Coniston GS Extension Project is focused on the energy production assets of the site (e.g., powerhouse and penstock).
- General site layout, dam, dykes, spillway, etc. are not part of life extensions and are managed through OPG's Dam Safety process (a separate planning process that is not timed with energy production side).
- OPG is moving forward with re-development of the existing powerhouse as the preferred concept.

Coniston

- Powerhouse structure will be demolished, and a new powerhouse erected.
- Existing penstocks (one is already destroyed as a result of operations some years before) and intake structure will be demolished and replaced with new.
- Reuse existing canal walls with some rehabilitation. A portion of the canal walls will be rebuilt to tie into the new intake structure.
- Replace or rehabilitate the bridge over the canal entrance.
- Decision on re-development versus refurbishment was based on engineering concerns with trying to re-use old structure.
- Powerhouse can't be retained for other purposes (e.g., storage) as it will be in the River.

Р



Coniston

- CHER completed on Coniston
- Property identified as not provincially significant.
- No concerns raised by public with respect to re-development
- A Cultural Heritage Impact Assessment is required and is currently being prepared by Dr. Hinshelwood.
- Was Ministry concerned with our presentation panels?
- It was our understanding an SCP may not be required?

Stinson

- Similar to Coniston, OPG is also considering life extension to Stinson GS.
- No environmental assessment required.
- Similar to the other projects this focuses on the powerhouse and water conveyance equipment (canal, penstock, etc.) but does not include the Main Dam or other ancillary features of the site.
- OPG is proposing to refurbish the existing powerhouse (next slide).

Stinson



Stinson – Cultural Heritage Studies

- Unterman McPhail completed a preliminary assessment (similar to Bingham Chute)
- *Stinson GS has potential to be of “Cultural Heritage Value or Interest” and to be identified as a PHP under the O. Reg. 9/06 of the OHA*
- CHER needs to be prepared.
- Recommendation: CHER prepared first and sent to Ministry before decision on SCP and/or CHIA.
- OPG has made budget allotment to potentially prepare both an SCP and CHIA.

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