Ontario Power Generation

Proposed Stinson Generating Station Life Extension Project

Terrestrial Environment
Technical Support Document (Final Draft)

January 2025

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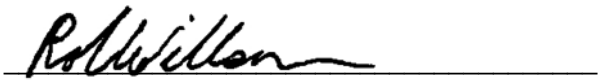

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An environmental assessment is not required for the Stinson Generating Station (GS) Life Extension Project. An environmental assessment is not required in Ontario for waterpower facilities when the re-developed facility has its capacity restricted to an increase of 25% or less than the existing one. The existing Stinson GS has a capacity of 5.4 MW while the planned facility will have a capacity of 6 MW. This increase can be accomplished through a negligible change in the flow through the turbines of 43.4 cubic meters per second (cms) to 43.5. While an environmental assessment is not required on the project an assessment of terrestrial environment conditions, potential environmental impacts and proposed mitigation and monitoring measures are described in this Terrestrial Environment Technical Support Document in order to: support discussions with any other government agencies on terrestrial environment issues; and provide direction to OPG, its Owner's Engineer and its constructor contractor on necessary terrestrial environment considerations including construction stage mitigation and monitoring measures.

This Report describes the fieldwork undertaken including early morning breeding bird surveys, turtle basking surveys, targeted nocturnal surveys for Eastern Whip-poor-will and targeted surveys for bats. The results of these studies are presented and form part of the description of the local environment. This Report also contains detailed mitigation and monitoring measures to eliminate and lessen potential environmental effects on the terrestrial environment. The mitigation and monitoring measures proposed are very similar in scope and detail to the measures proposed for the Coniston Generating Station Life Extension Project. With one constructor proposed for the two projects and with two closely located and similarly sized sites, it is recognized that common mitigation and monitoring measures are likely going to be easier to understand and implement.

One of the key results of the terrestrial surveys is the finding that there is a pair of Eastern Whip-poor-will using portions of the Stinson GS as breeding habitat. Vocalizations from a male breeding Whip-poor-will were documented during both on-site surveys and with a remotely deployed acoustic detector. The acoustic detector documented the male's vocalizations in close proximity on almost all of the days it was deployed. The male's territory is estimated to encompass the Stinson GS on both sides of the river. The Wanapitei River in this area has a combination of open rock barren, interspersed with forest, and as such makes the area ideal habitat for the species. Preliminary assessment indicates that much of the proposed laydown area for the project would be defined as Category 2 Whip-poor-will habitat following the general habitat description for the species (MECP). There may not be practical alternatives to these laydown areas for the project due to existing slopes and access, and it is therefore likely these areas will be highly disturbed for laydown equipment and activity during the time when the GS is being refurbished. Given the lack of viable alternative laydown areas and the threatened status of the Eastern Whip-poor-will on the provincial SARO list, it was recommended in the previous draft of this report that OPG proceed with obtaining an Overall Benefit Permit following the provisions for this species set out in regulations of the ESA. However, with the federal and provincial downgrading of Eastern Whip-poor-will to special concern, it is anticipated that the SARO list (O. Reg. 230/08) will be amended in January 2025 to reflect that change. If and when that occurs, an Overall Benefit Permit will no longer be required, as activities affecting Eastern Whip-poor-will or its habitat will no longer be subject to prohibitions under the ESA. Despite this change in status, mitigation is still recommended to avoid adverse effects on individuals of the species, as well as reducing negative effects on breeding habitat of the species by restoring portions of the laydown areas no longer needed after the generating station refurbishment. These recommendations reflect the fact that the Eastern Whip-poor-will, despite its downgraded status, will still be a special concern species.

1 Introduction

An environmental assessment is not required for the Stinson GS Life Extension Project. An environmental assessment is not required in Ontario for waterpower facilities when the re-developed facility has its capacity restricted to an increase of 25% or less than the existing one. The existing Stinson GS has a capacity of 5.4 MW while the planned facility will have a capacity of 6 MW. This increase can be accomplished through a negligible change in the flow through the turbines of 43.4 cubic meters per second (cms) to 43.5. While an environmental assessment is not required on the project an assessment of terrestrial environment conditions, potential environmental impacts and proposed mitigation and monitoring measures are described in this Terrestrial Environment Technical Support Document in order to:

- Support discussions with any other government agencies on terrestrial environment issues.
- Provide direction to OPG, its Owner's Engineer and its constructor contractor on necessary terrestrial environment considerations including construction stage mitigation and monitoring measures.

The scope of the Terrestrial Environment Work included the following field studies and report production.

- Early morning breeding bird surveys were completed in June to determine if Barn Swallows and/or nests were present.
- Turtle basking surveys were conducted during May and June to determine whether Blanding's Turtles were present.
- Targeted nocturnal surveys for Eastern Whip-poor-will were conducted in June to determine whether the species was breeding within potential laydown areas.
- Targeted surveys for bat habitat and presence of individuals (i.e., passive acoustic surveys) were conducted during appropriate seasons to determine whether any of the buildings or trees were being used for roosting.
- Beacon prepared one consolidated report summarizing the findings of the work and recommending any proposed mitigation and monitoring measures associated with them.

In the absence of an environmental assessment process this report is being prepared for OPG to facilitate obtaining environmentally related permits and to provide environmental management direction for the construction period for the Stinson GS Life Extension Project. This Report is comprised of the following chapters.

- Chapter 1 – Introduction. This chapter describes the purposes, rationale and organization of this Report.
- Chapter 2 – Project Description. This chapter describes the project.
- Chapter 3 – Description of the Terrestrial Environment. This chapter describes the methods and results of the terrestrial environment assessments that were completed.
- Chapter 4 – Environmental Effects, Mitigation and Monitoring. This chapter describes likely environmental effects and the proposed mitigation and monitoring measures.
- Chapter 5 – Summary and Conclusions.
- Chapter 6 – References.
- Chapter 7 – Acronyms and Abbreviations.

2 Project Description

2.1 Introduction

OPG has spent the past few years planning the life extension of the Stinson Generating Station (GS). The original station was constructed in 1925 and therefore is close to 100 years old and is at the end of its service life (normally considered to be 90 years). OPG is planning on refurbishing the existing GS and installing two new turbine units.

OPG would note that OPG is also currently working on the life extension of the Coniston GS which is located downriver of Stinson GS.

2.2 Location of the Project

Stinson GS is located within the boundary of the City of Greater Sudbury. The GS is located on the Wanapitei River approximately 25 kilometres east of the city centre of Sudbury and approximately 20 km downstream of the Wanapitei Lake control dam. The Wanapitei River is a tributary of the French River and has its headwaters north of Stinson with the first large waterbody being Wanapitei Lake. The Stinson GS is upstream of OPG's Coniston GS and downstream of Moose Rapids GS (which is privately owned) (see Figure 2-1).

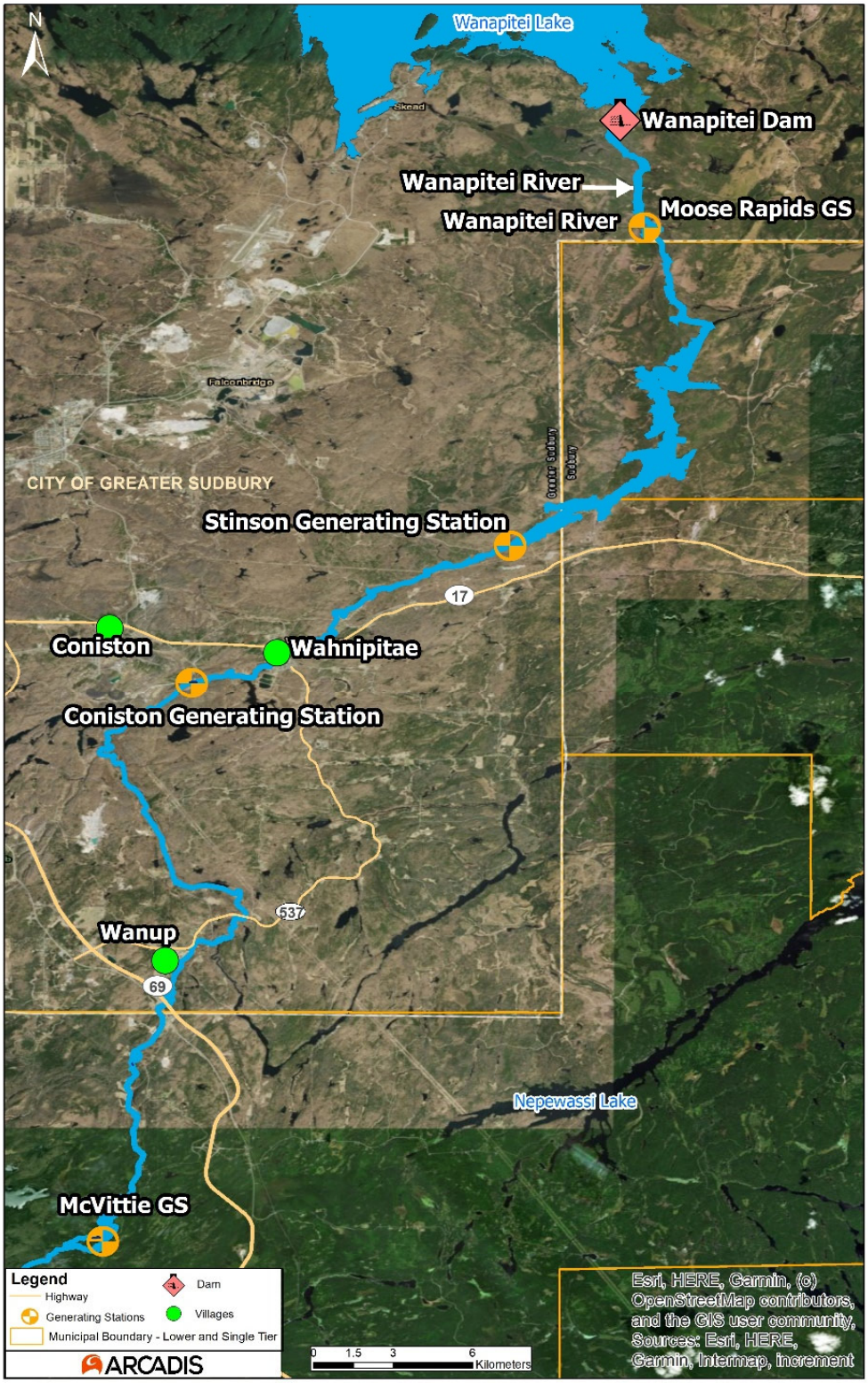

Figure 2-1 Location of the Stinson GS

2.3 Historical Development

The Stinson GS was built in 1925 by the Wanapitei Power Company, the same company that developed the McVittie and Coniston GSs. Stinson was the last of the three GSs to be built and was acquired by HEPCO (predecessor to Ontario Hydro) in 1929. A small colony of eighteen buildings was developed on the site to operate the facility. The colony buildings were removed in 1967 (Unterman McPhail, 2021).

2.4 Existing Station

The existing site consists of a main concrete gravity dam section, containing nine sluiceways and a retired (sealed) log chute, a concrete gravity section with four intake bays and trashracks leading to the intake canal. Water is conveyed through the canal to the headworks, and continues down through two rivetted steel plate penstocks, each 3.4 m in diameter and 21 m long to the steel water chest of a turbine. Two steel headgates are controlled locally with electric hoists to isolate the penstocks but do not function as emergency gates. The station has two horizontal double Francis (camel back) generating units that operate at a gross head of 16.7 m, each capable of producing 2.7 MW resulting in the total plant capacity of 5.4 MW; however, the plant typically operates at no more than 5.2 MW. Over the years rehabilitations of elements have occurred, some of the major rehabilitations are described below.

- Refaced the concrete of the majority of the piers and sluices and installed a concrete plug at the log chute on the main dam.
- Installed steel plating in various locations on downstream faces of the intake piers.
- Concrete lined and elevated the top of the north intake canal wall.
- Rehabilitated the top and downstream face of the headwork concrete.
- Recoated the penstock and rehabilitated the penstock saddles.
- Replaced the transmission lines and the substation.
- Replaced the power cables from the powerhouse to the substation (KGS, 2021).

Based on the existing condition of the facility it will technically reach its end of life in the next 5 years.

Figure 2-2 below is an aerial photograph of the site with key features labelled.

Figure 2-2 Site Overview

Figure 2-3 is a photograph looking upstream to the reservoir from the Stinson Dam.

Figure 2-3 Stinson Reservoir (looking upstream from the main dam)

Figure 2-4 shows the forebay to the Stinson powerhouse.

Figure 2-4 Stinson Intake Canal

Figure 2-5 shows the Stinson Main Dam.

Figure 2-5 Stinson Main Dam

Figure 2-6 and Figure 2-7 show the Spillway at no flow and partial flow.

Figure 2-6 Stinson Spillway: Leakage Flow Only

Figure 2-7 Stinson Spillway (likely 43.8 cms showing for the day)

Figure 2-8 shows the powerhouse and vehicular access.

Figure 2-8 Stinson Powerhouse

2.5 Operation

The Wanapitei River Water Management Plan (WRWMP) describes the operational requirements for the Stinson GS. The current operating regime at Stinson GS does not have any minimum flow requirements.

The Stinson GS forebay has two different operating range requirements. For the period May 1 to October 15 the range is 255.18 m to 255.42 m. For the balance of the year the range is: 254.66 m to 255.42 m. The narrower summer operating range is maintained for the benefit of residents and cottagers upstream of Stinson (OMNR *et al*., 2011).

During the winter, efforts are made to keep the water level above 255.00 m from January 1st until an ice cap is formed (usually by January 15th). This practice is carried out to reduce the probability of frozen residential water lines above Stinson GS (OMNR, *et al*., 2011).

OPG tries to operate its generators producing the greatest amount of hydroelectricity 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 "cycle" its operations within the WRWMP limits, resulting in the fluctuation of downstream flows over a relatively short period of time. 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.

2.6 Alternatives Assessment

An alternatives assessment was undertaken by OPG including considerations for overhaul, refurbishment and redevelopment options resulting in the selection of a refurbishment option by OPG.

2.7 Proposed Refurbishment

The preferred option is to refurbish the facility.

The refurbished GS will have the following characteristics:

- Effective Capacity of 6 MW (capacity of the current facility is 5.4);
  - Estimated Annual Energy Generation of approximately 26 GWh;
  - Number of Units – 2;
- Station Flow – 43.5 cms (existing is 43.4 cms);
  - Minimum Operating Flow – 2.18 m^3/s;
  - Minimum Operating Flow per unit – 2.18 m^3/s (existing is 6.6 cms to 9 cms);
  - Average Annual Flow – 30 m^3/s; and
  - Average Head of 16.54 m (range of head from 15.0 m to 18.0 m).

2.7.1 General Layout – Site Plan

The proposed new site plan for the Stinson GS along with topographic and bathymetric elevations shown in Figure 2-9. The overall layout of the GS will remain largely unchanged from the existing situation. All of the major civil features of the GS will be retained in their current location including the dam, spillway, intake canal, penstocks, powerhouse and tailrace. The powerhouse superstructure will be demolished and replaced. The powerhouse foundation will be re-used with some concrete repair work proposed. Two new turbine/generator units will be installed, and the vast majority of the powerhouse mechanical and electrical equipment replaced.

With respect to the remaining civil works on site, the existing Main Dam and Sluiceway will be largely unaltered except for some minor work. The existing isolation gates will be refurbished (paint and new wheels), and a new hoist structure and motor will be installed. The existing Switchyard will have one new structure added to accommodate some update electrical equipment, but the overall size is not expected to change.

The existing access road, **Stinson Hydro Road** will still be used for access.

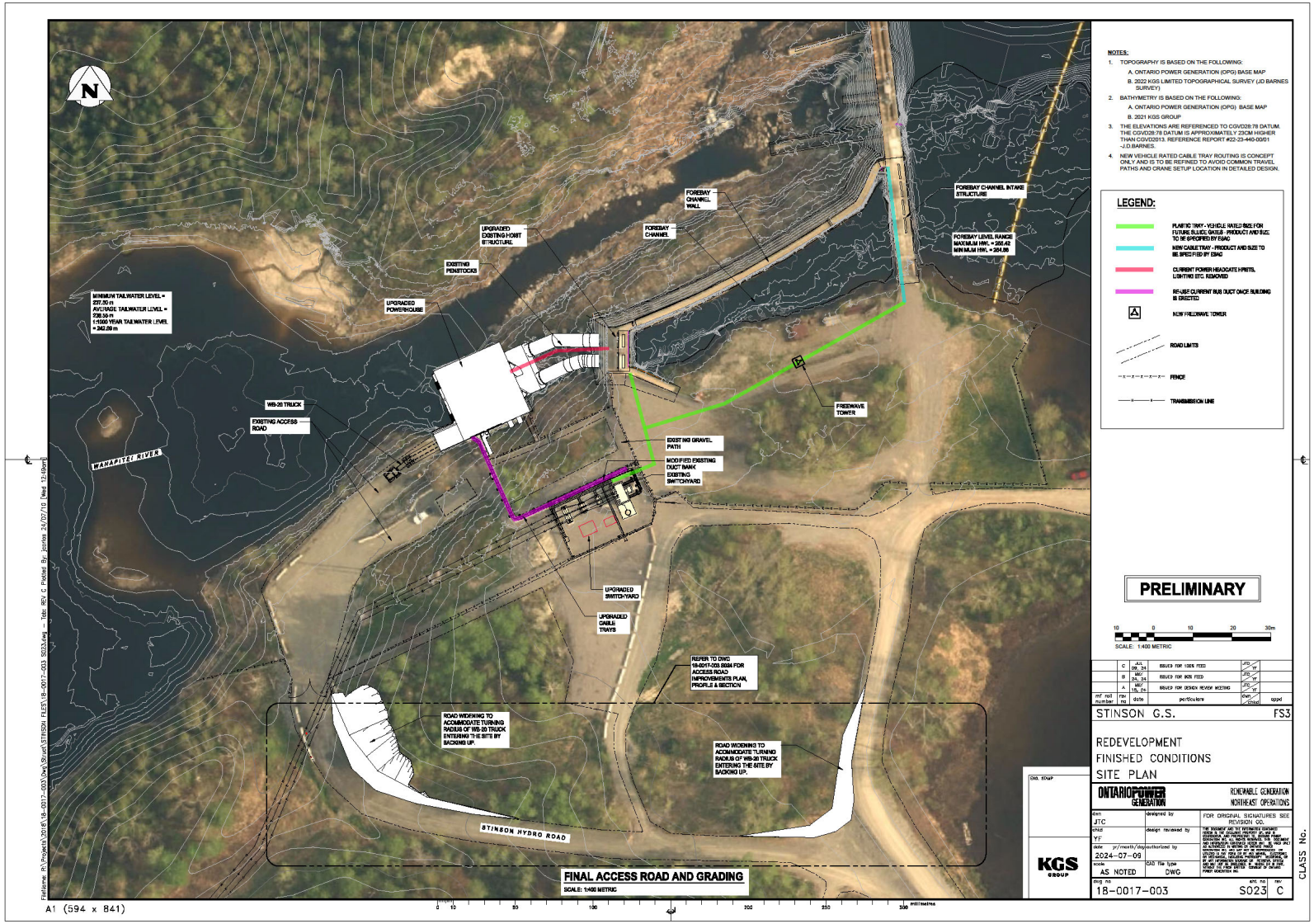

Figure 2-9 Proposed General Arrangement Site Plan for the Stinson GS

Figure 2-10 shows the site plan during the construction period. In order to providing working space for the construction two laydown areas are proposed south of the intake canal and shown on the Figure. The repair work for man-made intake canal channel walls and intake deck are shown. Figure 2-10 and Figure 2-11 shows the proposed road modifications. These proposed road modifications will allow for improved accessibility for trucks. All the proposed road modifications occur on OPG property.

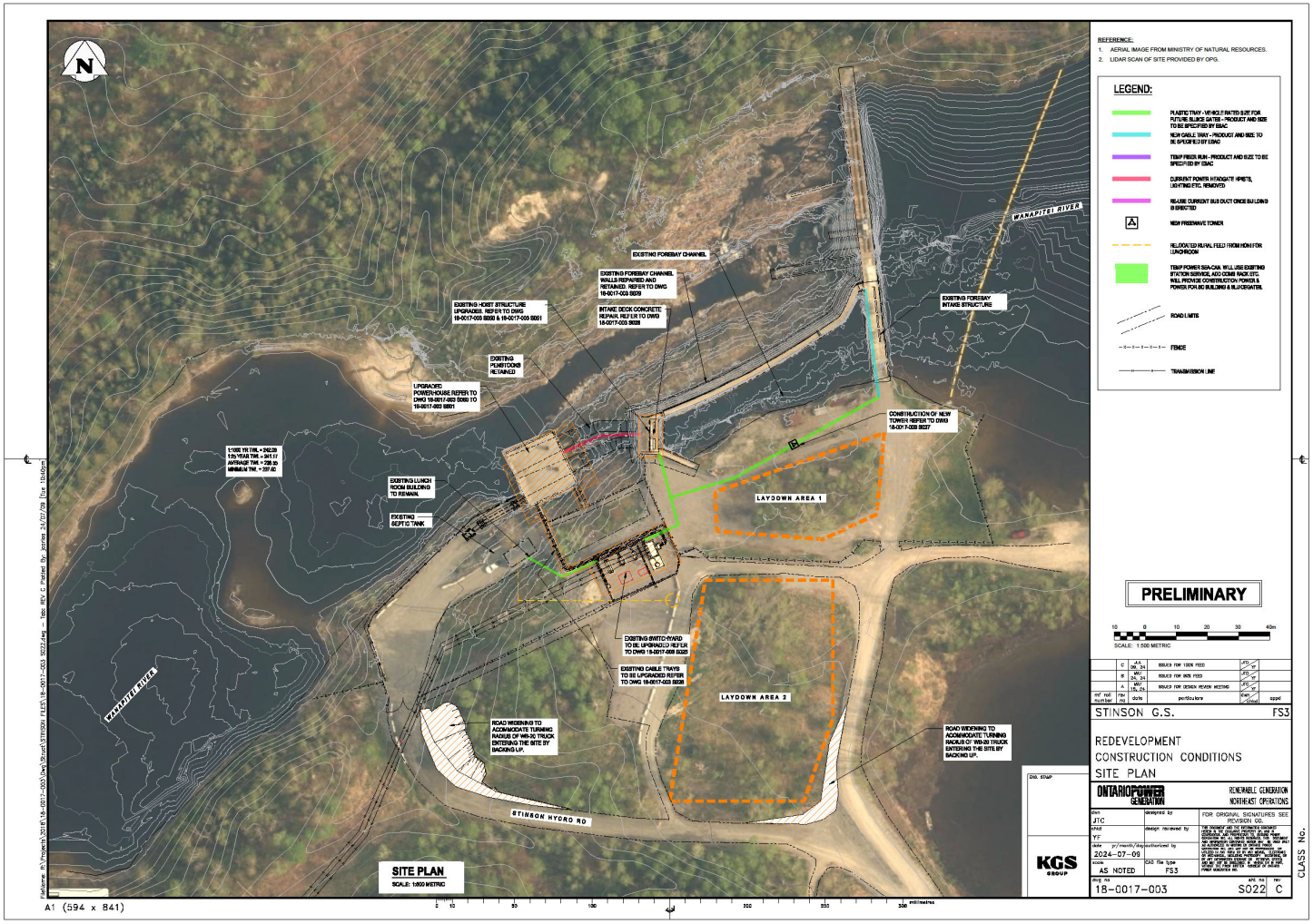

Figure 2-10 Proposed General Arrangement Site Plan for Construction for the Stinson GS

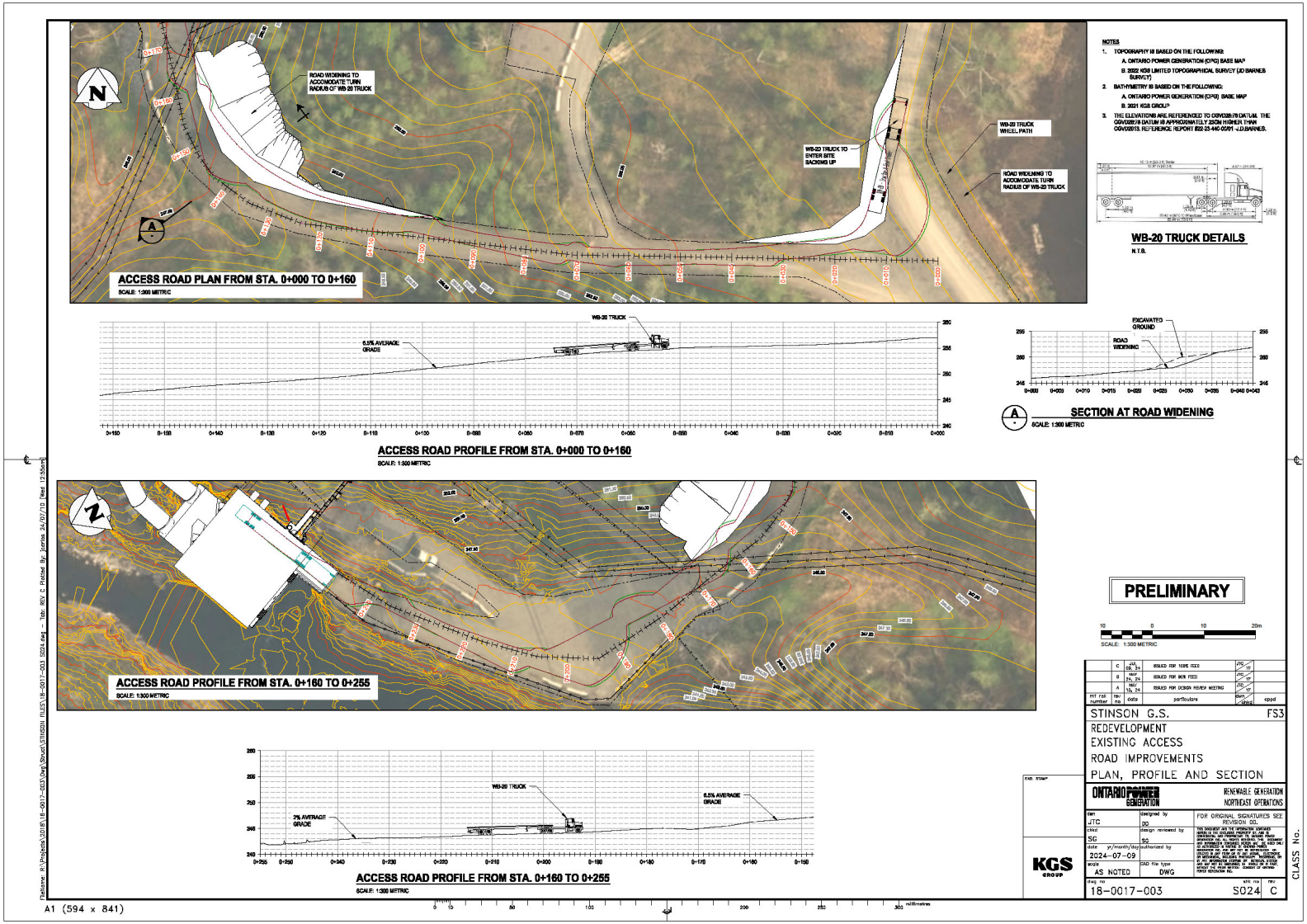

Figure 2-11 Road Improvements for the Stinson GS

2.7.2 Powerhouse

Figure 2-12 and Figure 2-13 show the proposed re-built Powerhouse General Arrangement Exterior and Interior Conditions in a 3D View. Both Figures show the penstocks connecting to the north face of the powerhouse and water passages and vehicular access occurring to the south. They represent no changes from the existing conditions.

The total area of the powerhouse will remain the same, as a prefabricated steel building will be added directly on the existing foundation. The height of the new powerhouse will be 3.92 M taller to accommodate the new taller units and a powerhouse crane.

As previously described, the powerhouse superstructure will be demolished and replaced, two new DIVE turbine/generator units will be installed, and the vast majority of the powerhouse mechanical and electrical equipment replaced. The powerhouse foundation will be re-used with some concrete repair work proposed.

DIVE Turbines are Fit for Purpose and greatly reduce civil work in comparison to Kaplan or SAXO type turbines. The general features of the DIVE turbines and their benefits for the project are as follows:

- Fit in current powerhouse footprint and can utilize the existing draft tubes.
- Civil work below the floor of the current powerhouse will be limited.
- No downstream cofferdam will be required.
- No permanent tailrace gates are required.
- Turbines are more fish friendly versus SAXO type turbines.

The DIVE-Turbine is an innovative turbine system for hydropower plants up to 4MW per turbine. DIVE Turbine Technology is optimally suited for low-head environments and has spread out over Europe quickly in recent years due to its cost-efficient design enabling partial loads due to double regulation. The units are designed maintenance-free and require only minimal service efforts enabling extremely high availability factor of 99.85% over 20 years. DIVE Turbines are a double regulated turbine and permanent magnet synchronous generator designed in one fully submersible unit.

DIVE Turbines are vertical-axis propeller turbines with electronic regulation. Based on the low RPM and simple propeller type runner, the mortality rate of fish migrating downstream via the DIVE-Turbine is minimized in comparison to classical Kaplan turbines.

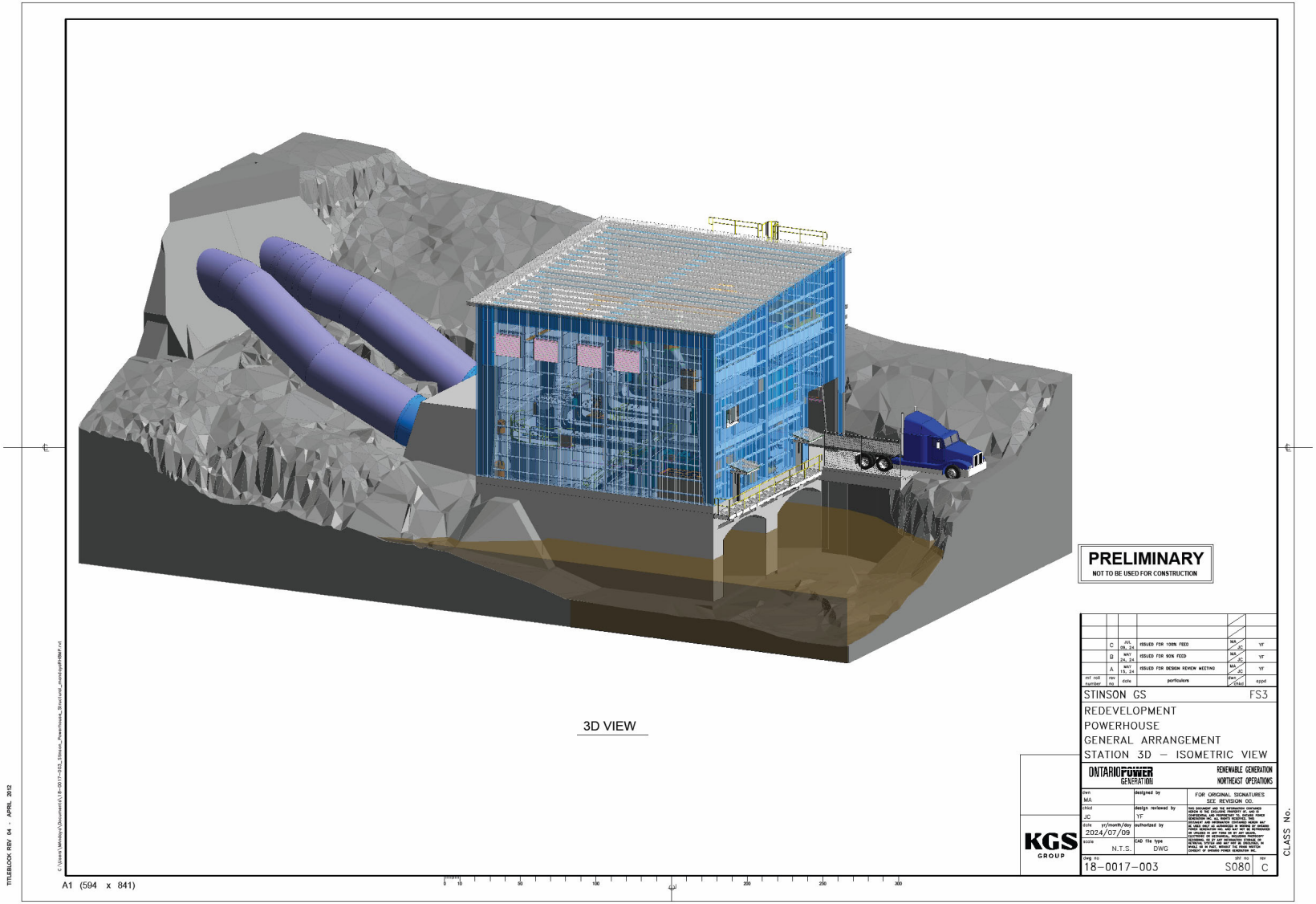

Figure 2-12 Powerhouse General Arrangement Exterior 3D View

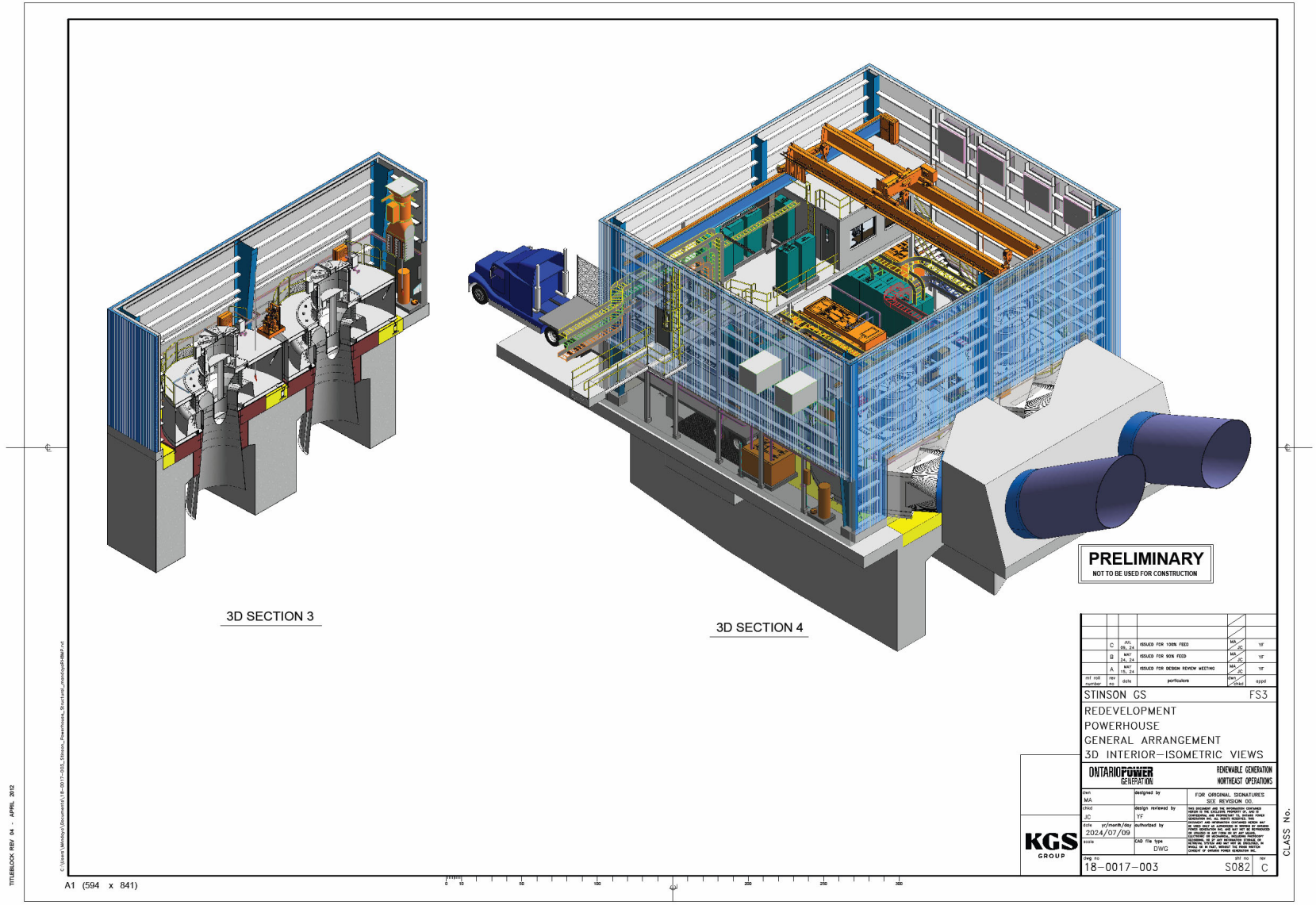

Figure 2-13 Powerhouse General Arrangement Interior 3D View

Figure 2-14 shows the General Arrangement of the Powerhouse from the downstream side of the river. Clearly visible are the two water passages for the two units and an exterior walkway.

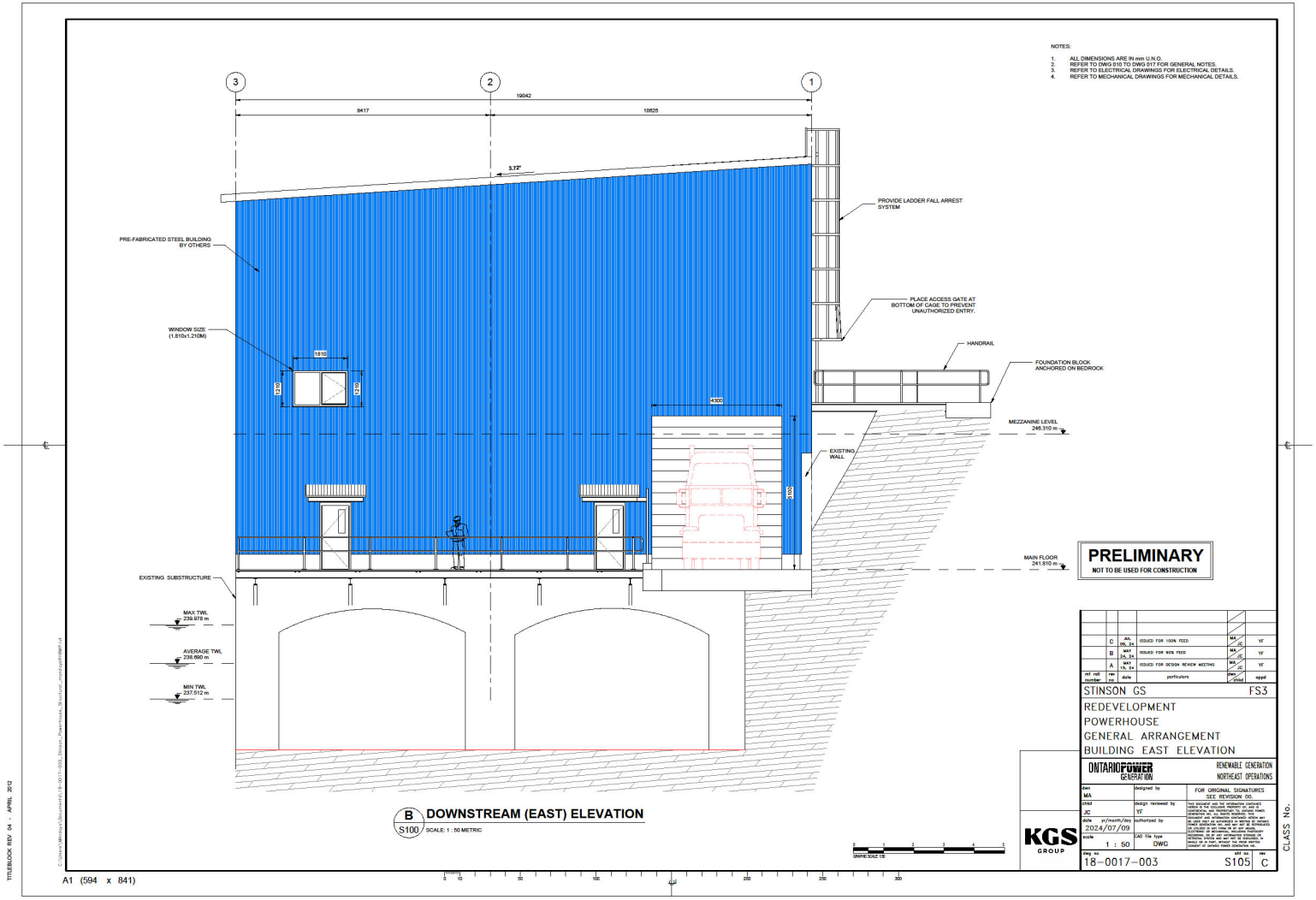

Figure 2-14 General Arrangement of the Powerhouse at the Main Level

Figure 2-15 shows the General Arrangement of the Powerhouse along Units #1 and #2 and depicting the mechanical and electrical equipment. Figure 2-16 shows the General Arrangement of the Powerhouse Operating Floor as a top view. The Figure shows the layout on the main floor of the powerhouse including the two generator/turbine units. Figure 2-17 shows the General Arrangement of the Powerhouse including depiction of the Control Room.

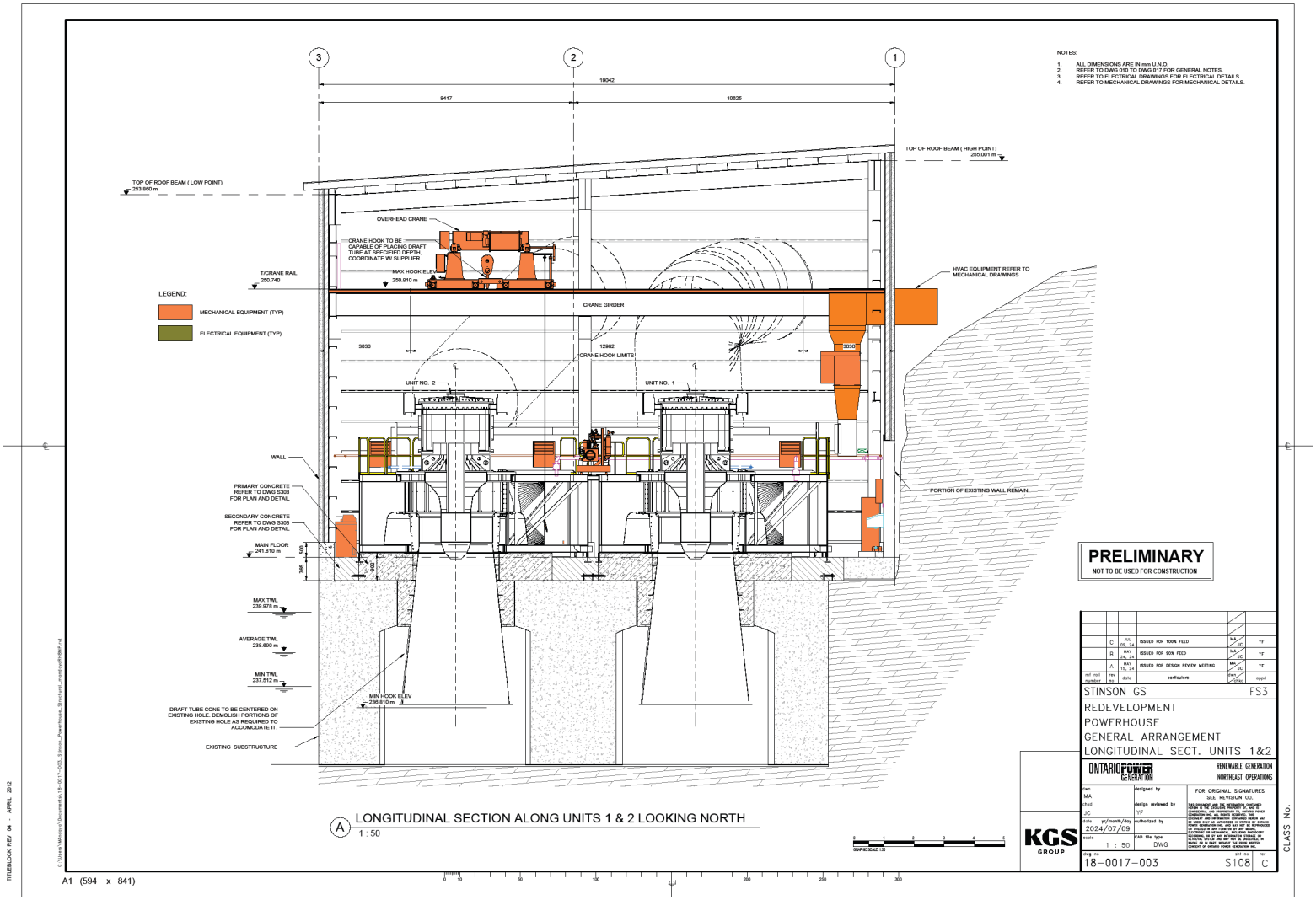

Figure 2-15 General Arrangement of the Powerhouse Along Units #1 and #2

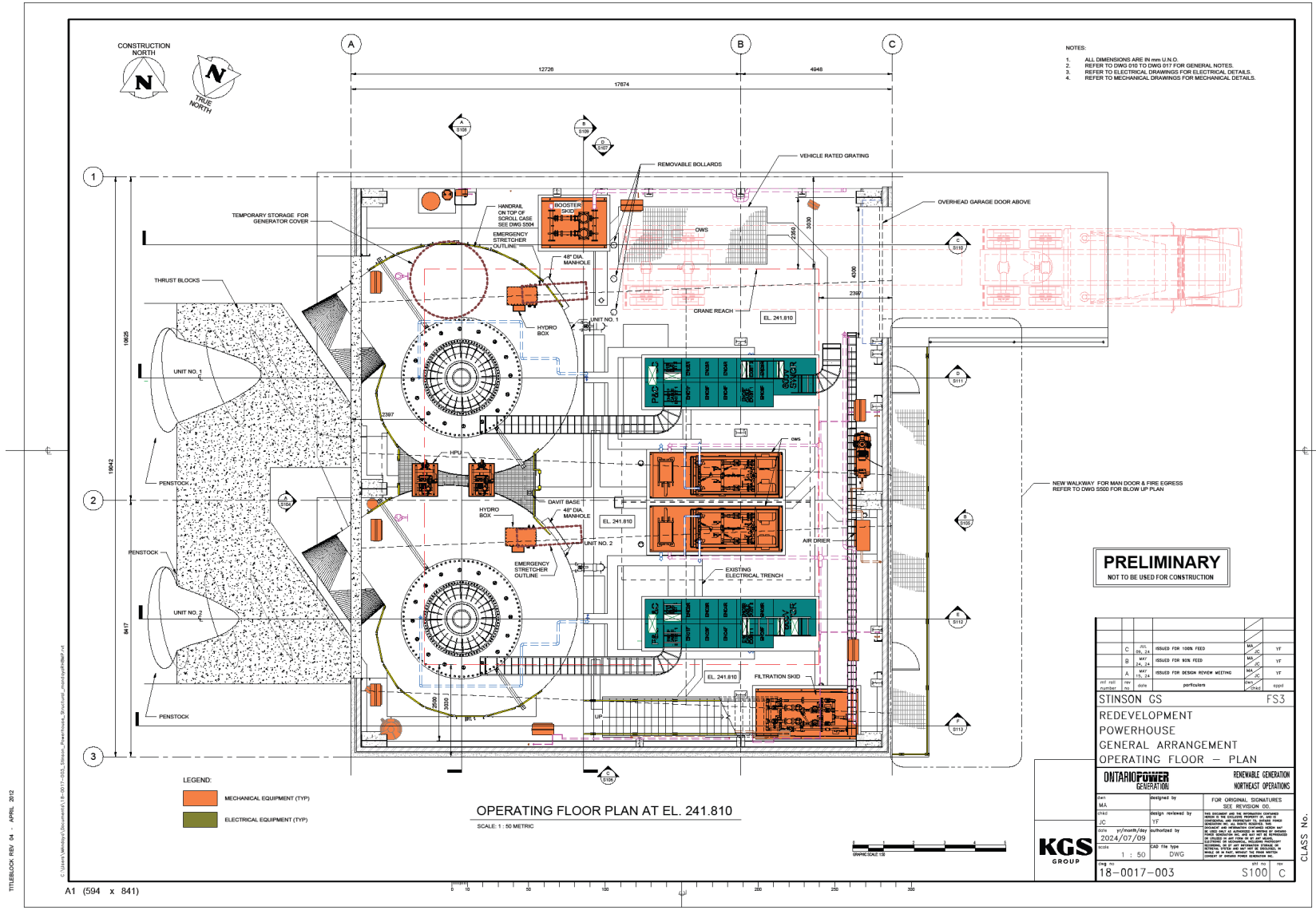

Figure 2-16 General Arrangement of the Powerhouse Operating Floor Plan

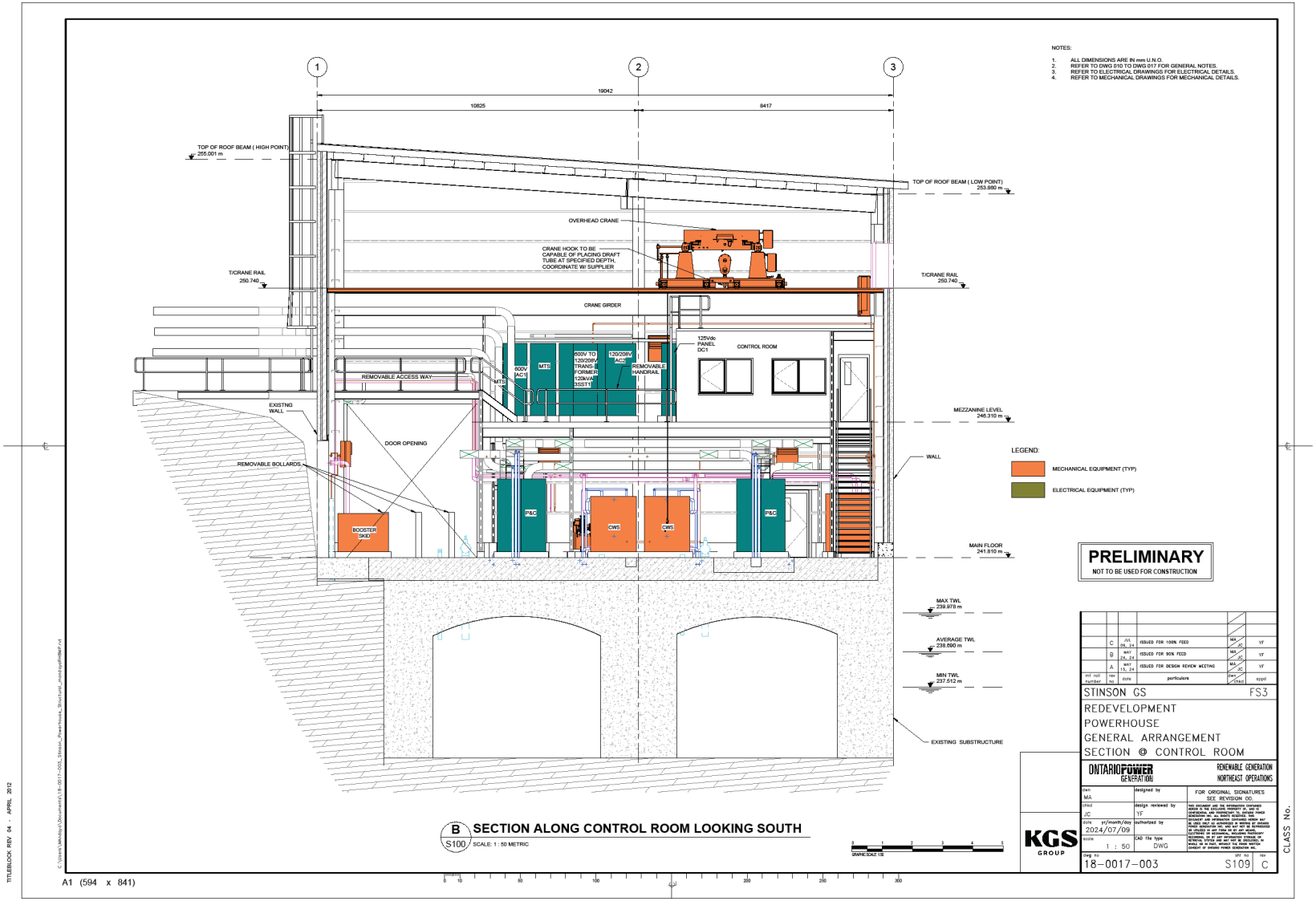

Figure 2-17 General Arrangement of the Powerhouse and Control Room

2.7.3 Construction Sequencing

The construction would proceed according to the following general stages as described below.

Stage #1 – Site Preparation

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 (April 1 to October 1). Merchantable timber belongs to the Crown, although the amount of such material to be cleared on site is minimal. 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.

Stage #2 – Demolition

The Intake Canal will be dewatered using the existing intake structure and stop logs. This will allow the removal of the two isolation gates for off-site restoration and removal of the hoist frame for replacement. The Intake Canal will be drained through the powerhouse and existing units. Pumps will be utilized to assist in dewatering if necessary.

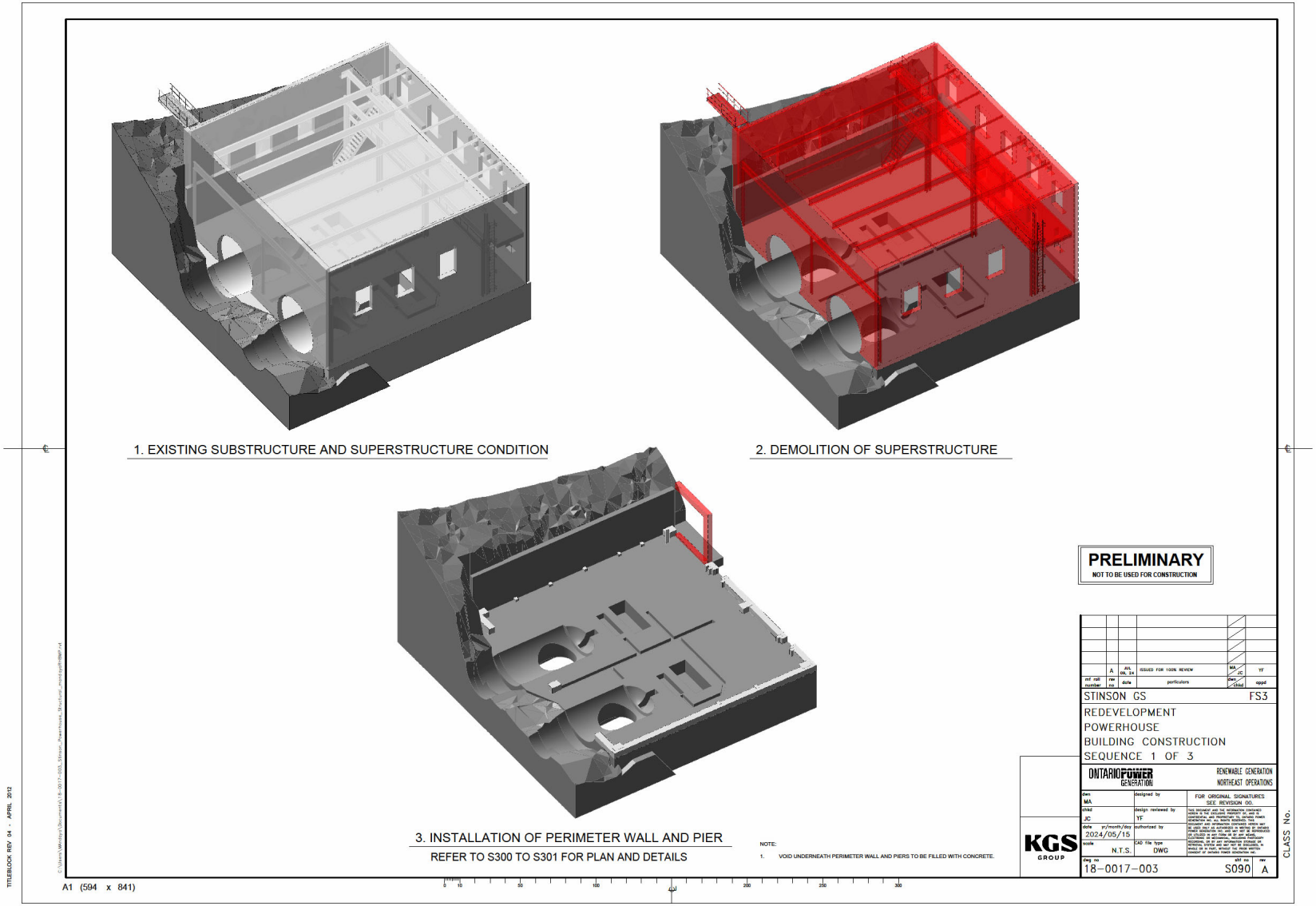

Figure 2-18 Powerhouse Re-Development Sequence 1 – Demolition

Stage #3 – Unit Removal and Draft Tube Install

Once the powerhouse superstructure has been removed, the two existing camel back units will be removed as well as all electrical and mechanical systems. The concrete floor will be excavated to the extent required to install new support beams and reinforcement for the new DIVE units. Figure 2-19 shows the extent of the planned concrete floor removal.

Once the excavations are completed, new prefabricated steel draft tube cones will be lowered into position and embedded in concrete along with embedments for the scroll cases.

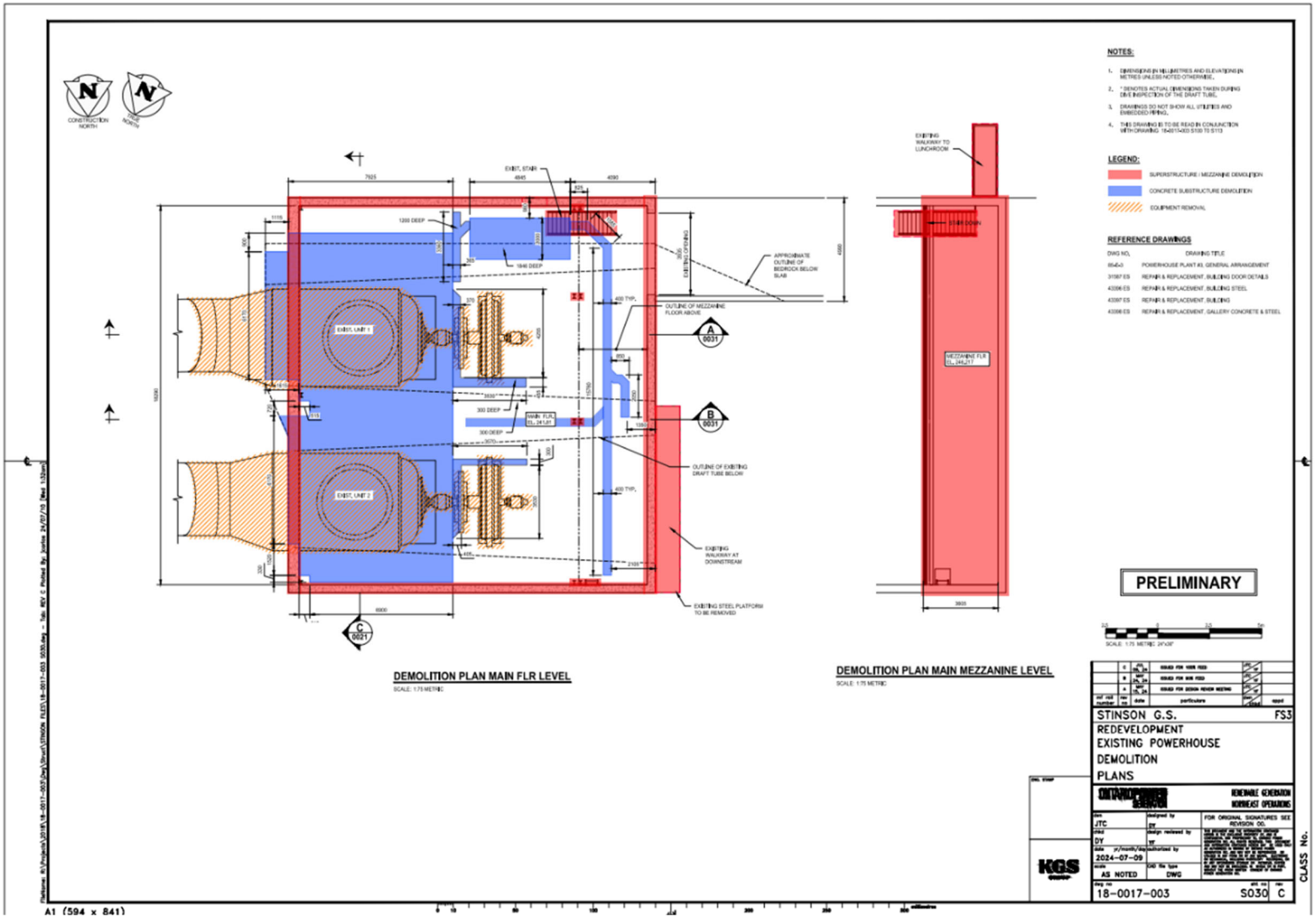

Figure 2-19 Powerhouse Re-Development Floor Removal

Stage #4 – Powerhouse and Equipment Installation

A pre-fabricated steel building will be erected on the existing foundation. After the superstructure is erected, a new 40-ton powerhouse crane will be installed to aid in the installation of the DIVE turbine units. The DIVE units will be installed in three segments. The scroll case, the turbine and the generator. Other plant electrical and mechanical equipment will also be installed in parallel.

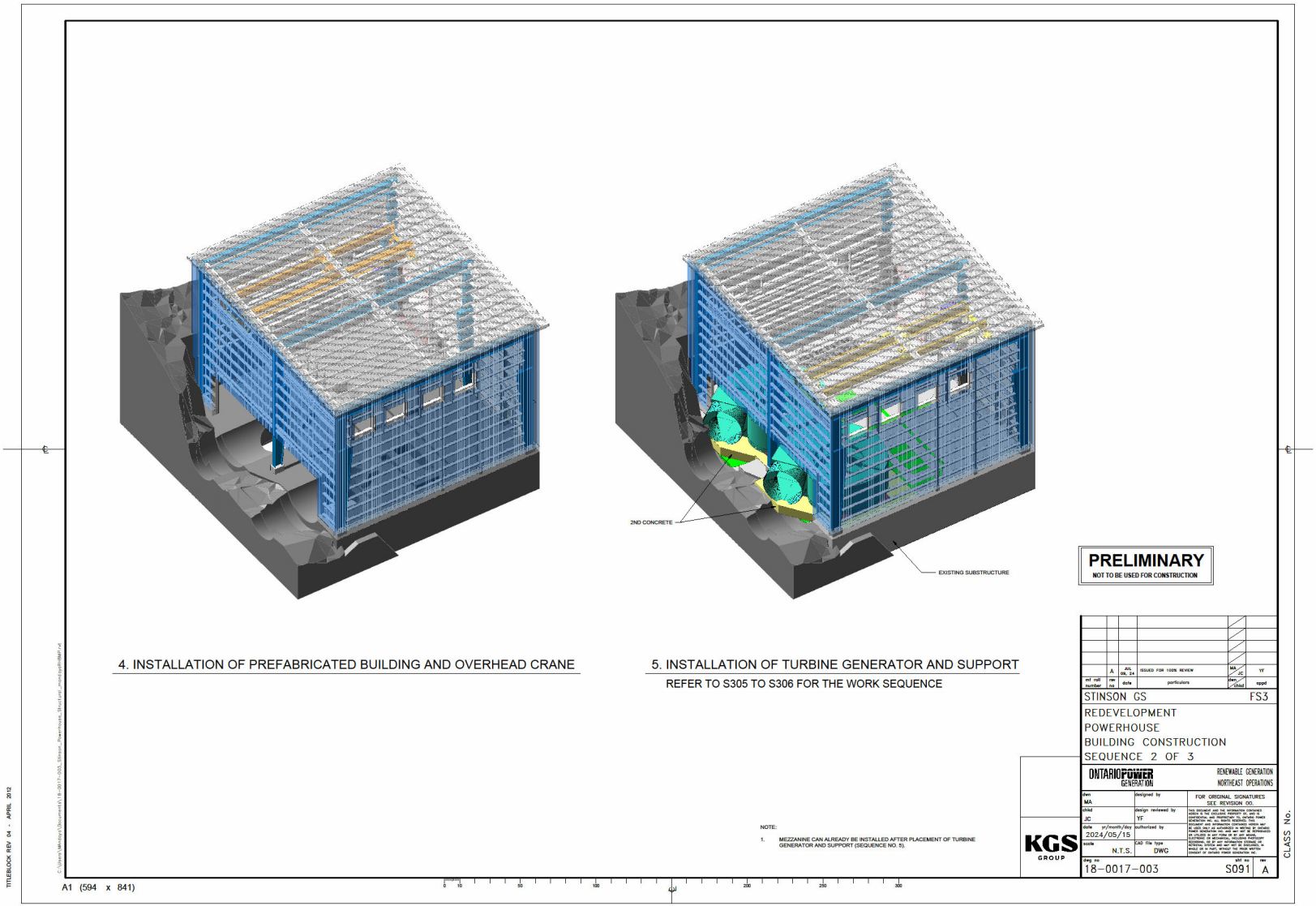

Figure 2-20 Powerhouse Construction – Installation of Prefabricated Building, Overhead Crane and Turbine Generator and Support

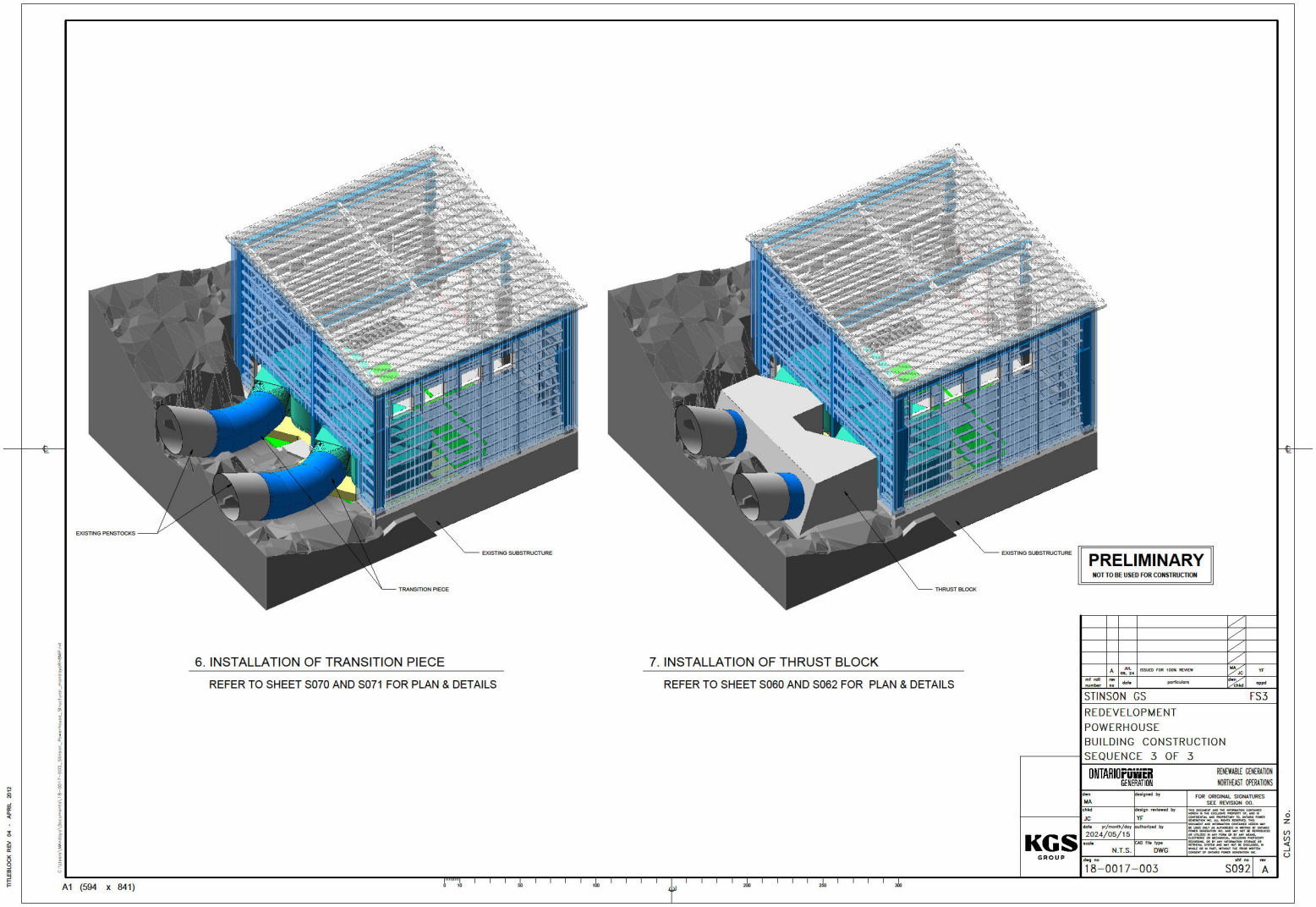

Figure 2-21 Powerhouse Construction – Installation of Transition Piece and Thrust Block

Stage #5 – Commissioning

When all the equipment is installed and verified it will be released to commissioning gradually. A series of verifications will be completed prior to permitting the Intake Canal to be watered once again. Once the water is restored to the flow passages the units will be placed back into service following a sequence of testing. The testing will occur in compliance with the WRWMP.

Stage #6 – Site Remediation

Stage #6 will involve final clean-up of the site including removal of all temporary construction features and equipment.

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

2.8 Construction

The Project will be executed using a Design-Build Strategy with early contractor engagement. Both the Coniston and Stinson GSs will be completed together as one project. Per this strategy, OPG has secured the services of a professional engineering firm to complete the detailed design. In parallel, the Construction Contractor is engaged providing early constructability input and preparing the final construction cost and schedule estimates for the preferred option for Stinson GS.

There will be office and construction crew trailers onsite, but there will not be any construction accommodations onsite with all construction staff accommodated offsite in nearby communities.

The existing onsite roads may require some limited upgrading and widening to facilitate construction and improve access to the site for semi-trailers.

As previously indicated in this Report the project has been revised to eliminate the need for: a downstream cofferdam; other in-water work; and the use of explosives. To facilitate both demolition and construction the following construction activities and infrastructure will be used:

- A floating dock will be installed in the tailrace of the current powerhouse to facilitate demolition and construction.

- A platform or platforms will be constructed connected to and around the existing powerhouse to facilitate demolition and construction. All the platforms will include a plastic liner that is intended to be impermeable barrier so debris cannot enter the water. Furthermore, a filter cloth will be placed over the liner to protect the integrity of the liner and act as a sponge to retain any liquid material (e.g., prevent rain from mixing with dirt on the platform).

- Sediment fencing and/or other erosion and sediment controls are to be utilized on land to prevent materials from entering the river. An in-water turbidity curtain may be employed in the river if further mitigation is warranted.

A Hazardous Materials Management Plan, Waste Management Plan and a Spills Emergency Preparedness and Response Plan will be developed for the Stinson Life Extension Project as part of a broader site-specific Environmental Management Plan for the construction period.

Commissioning of the new units will not differ much from normal operation. However, there will be more start-up and shut-down sequences for the units and emergency stops for testing of the equipment. All commissioning will be done in compliance with the WMP. Wet testing will be planned to avoid the Walleye spawning period and be in compliance with the WMP rules.

During the commissioning, the units would be cleaned of deleterious material prior to starting the unit. They may potentially be washed/mopped out. Any water from this would be minor, amounting to a few 5-gallon pails. This water would be disposed of through the septic system as normal wash water would at the station as it is currently configured. This water will go into a wastewater tank and be hauled off site by a certified septic company. Incidental spills of oil, gas, diesel and other liquids to the environment could occur during construction. In addition, sanitary and other wastes will be generated during construction. Fuelling and lubrication of construction equipment should be carried out in a manner that minimizes the possibility of releases to the environment. Measures for containment and cleanup of contaminant releases will be followed to minimize contamination of the natural environment, followed by approved landfill or other disposal. Interim sanitary waste collection and availability of treatment facilities will be arranged for the duration of the construction period. All construction waste, washwater and wastewater will be disposed of or managed in accordance with regulatory requirements.

2.9 Decommissioning

Decommissioning involves the permanent removal of the hydroelectric facilities, with the resultant loss of the site as a renewable source of electricity generation.

Once the Stinson GS Life Extension Project has reached the end of its service life in 90 years (approximately 90 years from now) 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 Description of the Terrestrial Environment

3.1 Desktop Assessment

OPG retained Beacon Environmental in 2020 to conduct a Terrestrial Environment Assessment for Potential Re-development of Stinson GS. This assessment included both a desktop review and field visit in 2020, and then multiple site visits in 2022 as part of Arcadis's work.

The following information sources were reviewed as part of the desktop assessment:

- Provincially Tracked Species Layer (1 km grid) from the Natural Heritage Information Centre (NHIC) via Land Information Ontario (LIO);
- Ontario Reptile and Amphibian Atlas (ORAA);
- Ontario Breeding Bird Atlas (OBBA);
- Species at risk range maps https://www.ontario.ca/environment-and-energy/species-risk-ontario-list
- High-resolution aerial photography (digital orthoimagery); and
- Natural and physical feature layers from LIO—these geospatial layers include wetlands (provincially significant and un-evaluated wetlands), and watercourses with thermal regime.

The information sources referenced above were reviewed in a Geographic Information System (GIS) mapping environment that assesses the likelihood that species at risk and other significant natural heritage features and functions are present in an area of interest. This system combines the most current information provided through the LIO portal with GIS layers from provincial floral and faunal atlases. All relevant layers can then be overlaid on the most recent high resolution orthoimagery. The screening process helps identify areas that can then be targeted (for example, potential habitat) during field assessment to maximize the efficiency and effectiveness of on-site investigations.

3.2 Ecological Land Classification (ELC) Mapping, Floristic Surveys

The Stinson GS lies within Ecodistrict 5E-4 and tertiary watershed 2DB-South Wanapitei (Phair *et al.*, 2005). Ecodistrict 5E-4 is largely composed of undifferentiated igneous and metamorphic rock, which is exposed at the surface or covered by a discontinuous, thin layer of drift (Henson and Brodribb 2005). Most of the ecodistrict remains as natural cover, primarily forest.

Ecological communities within the study area were classified as shown in Figure 3-1 and a general floral survey was conducted. The floral survey focused on the likely laydown areas that would be disturbed as part of construction activities. Representative photographs of the ecological communities are shown in Figure 3-1 and brief descriptions of the communities are provided below. A total of 85 vascular plant species were identified within the study area and a list of these species is provided in **Appendix A**. Most of the non-native species are located in close proximity to the powerhouse and associated infrastructure.

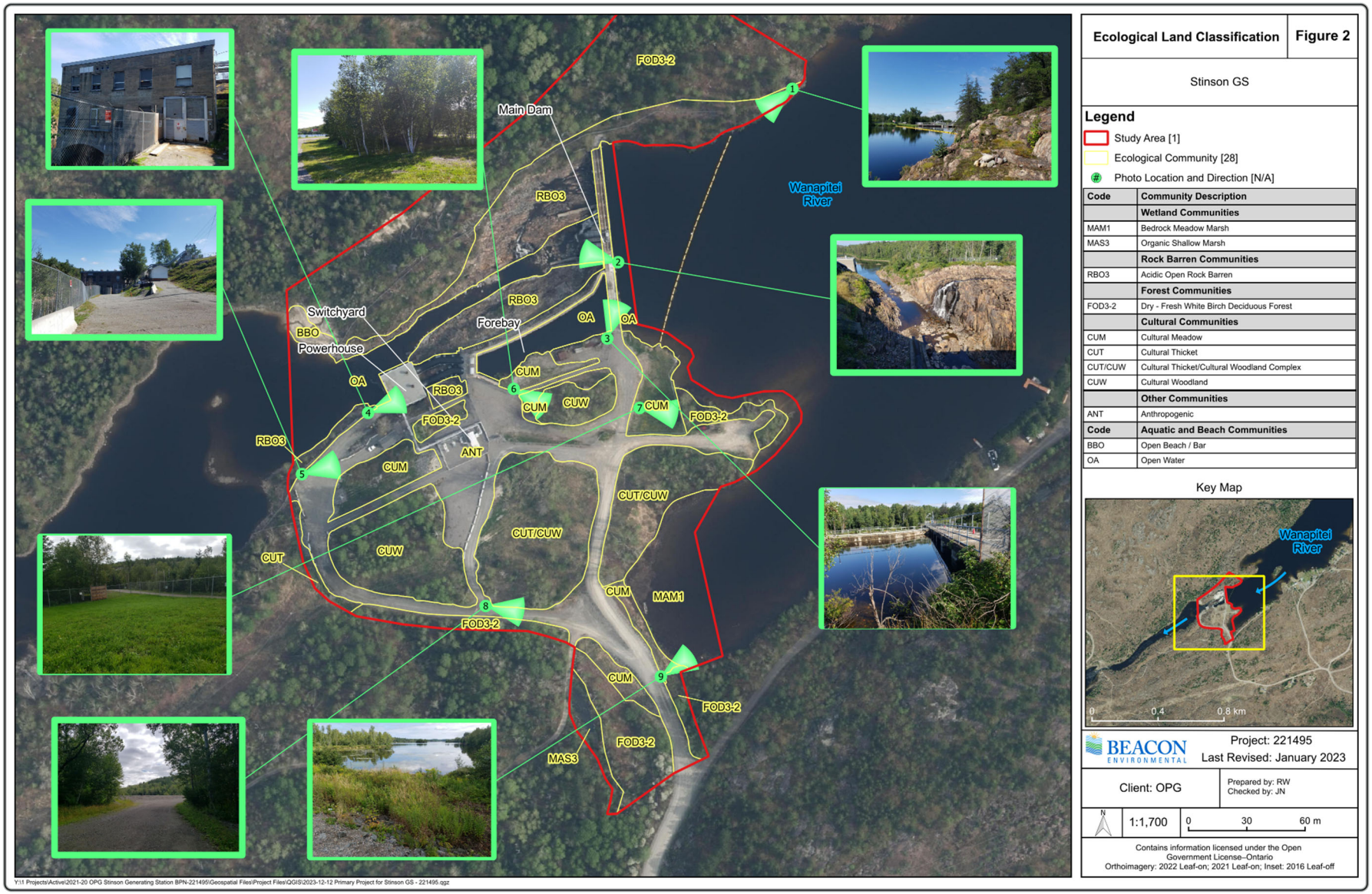

Figure 3-1 Ecological Land Classification

3.2.1 Forest Communities

FOD3-2: Dry - Fresh White Birch Deciduous Forest

This forest community is present north of the Wanapitei River and along the edge of the access road. Dominant tree species in the canopy include Red Pine (*Pinus resinosa*), Eastern White Pine (*Pinus strobus*), Trembling Aspen (*Populus tremuloides*) and Large-toothed Aspen (*Populus grandidentata*). Jack Pine (*Pinus banksiana*), Paper Birch (*Betula papyrifera*), Balsam Fir (*Abies balsamea*), Northern Red Oak (*Quercus rubra*) and Red Maple (*Acer rubrum*) are also present in the canopy and sub-canopy. Shrub species include Staghorn Sumac (*Rhus typhina*), Mountain Maple (*Acer spicatum*), Pin Cherry (*Prunus pensylvanica*) and Choke Cherry (*Prunus virginiana*). Species in the ground layer include Bunchberry (*Cornus canadensis*), Wild Sarsaparilla (*Aralia nudicaulis*), Velvet-leaved Blueberry (*Vaccinium myrtilloides*), Large-leaved Aster (*Eurybia macrophylla*), Northern Bush-honeysuckle (*Diervilla lonicera*) and Spreading Dogbane (*Apocynum androsaemifolium*).

3.2.2 Rock Barren Communities

RBO3: Acidic Open Rock Barren

Rock barren communities are present along the Wanapitei River as well as along the access road where hydro corridors abut the road. These communities are dominated by scrubby vegetation with intermittent shrub cover, including Choke Cherry (*Prunus virginiana*) and Staghorn Sumac. Spreading Dogbane, Sheep Sorrel (*Rumex acetosella*), Poverty Oat Grass (*Danthonia spicata*), Orange Hawkweed (*Pilosella aurantiaca*), Canada BlackBerry (*Rubus canadensis*), Spreading Dogbane, Sweet Fern (*Comptonia peregrina*), Red Raspberry (*Rubus idaeus*) and Early Lowbush Blueberry (*Vaccinium angustifolium*).

3.2.3 Wetland Communities

MAM1: Bedrock Meadow Marsh

This wetland community is present along the slowly flowing portions of the Wanapitei River. Shrubs present along the margin include Speckled Alder (*Alnus incana* ssp. *rugosa*), Red-osier Dogwood (*Cornus sericea*) and Sweet Gale (*Myrica gale*), while Soft Rush (*Juncus effusus*), Awl-fruited Sedge (*Carex stipata*), Lake Sedge (*Carex lacustris*) and Pointed Broom Sedge (*Carex scoparia*) were also present.

MAS3: Organic Shallow Marsh

This wetland community is present in the southwest corner of the study area. Speckled Alder and Broad-leaved Cattail (*Typha latifolia*) are found along the perimeter of the wetland while open water pools are present in the interior. Spotted Joe Pye Weed (*Eutrochium maculatum*), Soft Rush, Awl-fruited Sedge, Lake Sedge and Sensitive Fern (*Onoclea sensibilis*) also occur within the wetland community.

3.2.4 Cultural Communities

CUW: Cultural Woodland and CUT: Cultural Thicket

These cultural communities are highly disturbed and are present in the areas directly adjacent to the powerhouse and associated infrastructure. The dominant trees species in the canopy is Paper Birch, while Eastern White Pine,

Red Pine, Northern Red Oak, Trembling Aspen and Eastern Cottonwood (*Populus deltoides*) are occasional. Shrub species include Staghorn Sumac, Wild-raisin (*Viburnum nudum*) and Downy Serviceberry (*Amelanchier arborea*).

CUM: Cultural Meadow

The cultural meadow communities are highly disturbed and are present where the access road reaches the infrastructure associated with the powerhouse. Numerous herbaceous species, both native and non-native are present in these communities and include: Fireweed (*Chamaenerion angustifolium*), Northern Bush-honeysuckle, Tufted Vetch (*Vicia cracca*), Spreading Dogbane, Common Yarrow (*Achillea millefolium*), Oxeye Daisy (*Leucanthemum vulgare*), Meadow Hawkweed (*Pilosella caespitosa*), Red Clover (*Trifolium pratense*), Howell's Pussytoes (*Antennaria howellii*) and Quackgrass (*Elymus repens*).

3.2.5 Other Communities

ANT: Anthropogenic

Areas where vegetation has been completely removed and/or cannot grow because of impervious substrates (i.e., roads, parking lots and infrastructure) are classified as anthropogenic.

3.3 Wildlife and Wildlife Habitat

Based on an assessment of habitat potential for species at risk completed in 2020 (Beacon, 2020), the site visits described in Table 3–1 were conducted in 2022. Results of the site visits are described in the subsequent sections.

Table 3–1 Summary of Terrestrial Field Investigations Competed in 2022

Survey/Assessment Type	Date(s)
Bat habitat assessment for maternity roost trees (snags) during leaf-off conditions	May 11
Turtle (basking) surveys	Three surveys: May 11, 25, and June 8
Dawn breeding bird surveys (visual and auditory)	Three surveys: May 25, June 8 and 30
Eastern Whip-poor-will auditory surveys at dusk with Common Nighthawk secondarily assessed during the surveys	Two surveys in 2022 timed according to peak activity periods for Whip-poor-will following lunar cycle for 2022: June 7 and 13
Deployment of remote acoustic detector to survey for Eastern Whip-poor-will (and other birds)	June 8 (recording on site until June 30)
Deployment of three remote ultrasonic detectors to survey for bats	June 15 (recording on site until June 30)

3.3.1 Bats

Four provincially endangered bat species were considered to have potential to occur in the study area: Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Tri-colored Bat (*Perimyotis subflavus*) and Eastern Small-footed Myotis (*Myotis leibii*). To assess the likelihood of adversely affecting these species, two types of surveys for bats and bat habitat were completed in 2022 (Table 3–1). The first type of bat survey conducted involved the deployment of remote ultrasonic bat detectors to determine if any of the endangered bat species were present in areas where tree clearing could be required to support the proposed redevelopment. In 2022, three passive detectors were deployed in areas that could be considered for equipment laydown (Figure 3-2). The remote detectors used were Wildlife Acoustics SM4BAT units equipped with SMM-U1 ultrasonic microphones. The detectors were mounted on trees and set to record at sunset for five hours over approximately two weeks in June 2022. This deployment period provided more than ten nights of data recorded under suitable weather conditions (i.e., air temperature ≥10°C, wind less than 5.4 m/sec, and minimal precipitation) and thus satisfies the requirements laid out in the relevant survey protocol (MNRF, 2017).

Recordings from the detectors were analyzed using Kaleidoscope Pro software. A combination of auto-identification and manual analysis was applied to make species determinations.

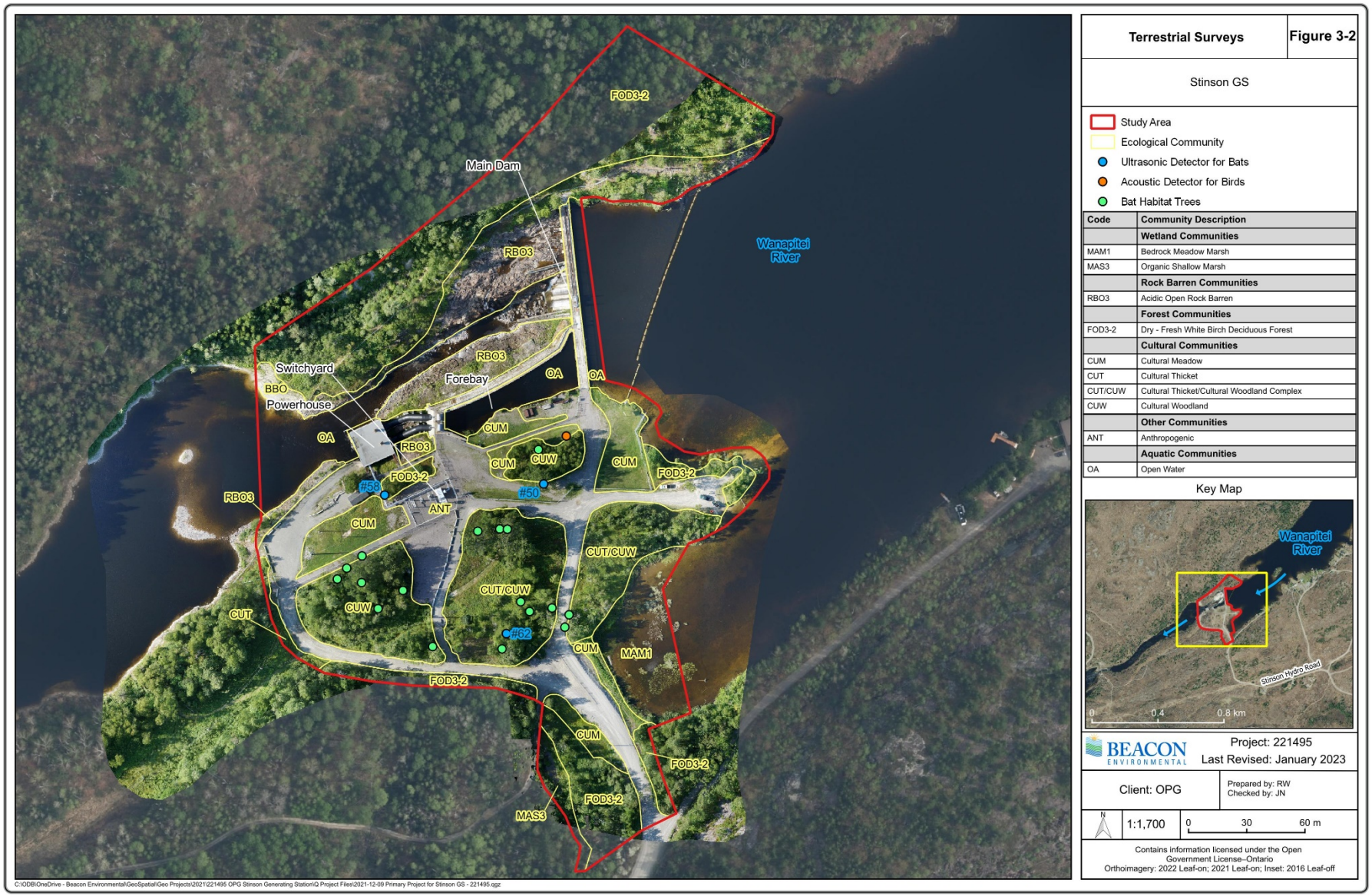

Figure 3-2 Terrestrial Surveys

All unclassified files (No ID Files) were manually reviewed for call frequency to determine if unclassified calls fell within the 40 kHz *Myotis* species and Tri-Coloured Bat range. If the call did not fall within the approximate 40 kHz range, it was not analyzed further as it is unlikely that the call was made by one of the endangered bats. Furthermore, a random selection of noise files was reviewed to ensure that the batch filters applied had functioned as intended.

A moderate number of detection "hits" were documented for the endangered bat species Little Brown Myotis and Northern Myotis (Table 3–2). As described below, there are trees that have the potential to function as bat maternity or roosting habitat for these species within the likely laydown areas, and as such these trees would have to be removed outside of the bat active season.

Table 3–2 Acoustic Bat Monitoring Results Summary

Detector #	Eastern Small-footed Myotis	Tri-coloured Bat	Little Brown Myotis	Northern Myotis	Unidentified 40 kHz Call (likely *Myotis*)
50			X	X	X
58			X	X	X
62			X	X	X

Note: unidentified 40 kHz calls are in the frequency range of the endangered *Myotis* species.

The analysis showed that there was bat activity at all three detectors. Based on the time of day of detections, and limited number of detections (known as hits or passes) within one hour of sunset at the detectors, there is a low likelihood that trees nearby were being used as roosts. The number and regular occurrence of the calls indicate that while the detectors may not have been deployed near active roosts, the ecological communities within which they were deployed were being used by Little Brown Myotis and Northern Myotis as habitat. Further discussion of the results in relation to potential habitat (i.e., habitat trees with roosting potential) is provided below.

Bat Habitat Assessment

Surveys to identify candidate maternity roosts for the endangered bat species Little Brown Myotis and Northern Myotis were undertaken during leaf-off conditions in the spring of 2022. Candidate maternity roost habitat was identified in accordance with provincial guidance documents (MNRF, 2017). The treed ELC communities were of a size and composition that could be assessed thoroughly without the use of transects.

The following characteristics were recorded for each tree/snag deemed to have the potential to function as maternity roost habitat:

- Location (geospatial coordinates);
- Tree species;
- Approximate tree height;
- Diameter beast height (DBH);
- Number of habitat features (cavities, knot holes, woodpecker holes);
- Peeling bark (%);
- Height of habitat features;

- Decay class;
- Height class;
- Canopy cover for habitat features; and
- Date-time.

The bat habitat surveys documented 17 potential bat maternity roost trees/snags (Figure 3-2). The number of snags documented within the treed ELC communities is low and this is expected given the tree species present and the early successional stages of the communities. Within the likely laydown areas shown in Figure 3-3, there are eight trees that have the potential to function as bat maternity or roosting habitat. These trees, as well as any other potential habitat trees would have to be removed outside of the bat active season.

3.3.2 Terrestrial Avifauna

Based on an assessment of habitat potential for species at risk completed in 2020 (Beacon, 2020), two provincially threatened bird species were considered to have the potential to occur within or adjacent to the study area: Barn Swallow and Eastern Whip-poor-will. Targeted surveys for these species were therefore conducted as summarized in Table 3–1 and described in detail below.

Eastern Whip-poor-will

In 2022, surveys for Eastern Whip-poor-will were conducted following provincial protocols (i.e., MNRF, 2016) and a Canadian Nightjar Survey Protocol (Knight, 2017). The surveys were conducted during the primary, recommended survey period in June during ideal conditions (moon > 50% illuminated, low noise, temperatures between 15 and 17°C, no precipitation, wind less than 5.4 m/sec, moon above the horizon and not obscured by clouds). Survey details are provided in Table 3–3.

Table 3–3 Eastern Whip-Poor-Will Surveys (2022)

	Survey 1	Survey 2
Date	June 7	June 13
Time (start–finish)	22:00–23:30	22:30–23:45
Temperature (°C; start–finish)	16.1–15.0	17.5–15.1
Wind (Beaufort scale; start–finish)	0–0	0–0
Cloud cover (%; start–finish)	50–25	25–0
Lunar Cycle	moon waxing, 51% illumination	moon waxing, 99% illumination
Moon Visibility	unobscured by clouds and above horizon	unobscured by clouds and above horizon
Precipitation	None	None

Given that Whip-poor-will vocalizations can be detected from a distance of approximately 300 m, the coverage of the site in 2022 was thorough and extended beyond the study area. Provincial protocols infer a detection distance of 500 m and so the consideration of a minimum detection distance of 300 m is conservative. Additionally, to supplement the 2022 on-site Whip-poor-will surveys, a remote acoustic detector for birds (SM4 Unit from Wildlife

Acoustics) was mounted on a tree in the location shown in Figure 3-2. The acoustic detector was set to record audio during dawn and dusk. Deploying a remote detector was deemed to be a better monitoring alternative than conducting a third on-site survey (i.e., the detector recorded audio every evening and morning for three weeks, whereas on-site surveys are only snapshots of Whip-poor-will behaviour and can cause disturbance of the male bird).

Vocalizations from a male breeding Whip-poor-will were documented during both on-site surveys and with a remotely deployed acoustic detector. The acoustic detector documented the male's vocalizations in close proximity on almost all of the days it was deployed. The male's territory is estimated to encompass the Stinson GS on both sides of the river. The Wanapitei River in this area has a combination of open rock barren, interspersed with forest, and as such makes the area ideal habitat for the species. Preliminary assessment indicates that much of the proposed laydown area for the project (see Figure 3-3 and Figure 3-4) would be defined as Category 2 Whip-poor-will habitat following the general habitat description for the species (MECP 2021). There may not be practical alternatives to these laydown areas for the project given slopes and access, and it is therefore likely that these areas will be highly disturbed for laydown equipment and activity during the time when the GS is being refurbished. Additional male Whip-poor-wills were detected vocalizing outside of the study area as well.

Figure 3-3 Oblique View of Treed Areas Likely to Be Removed for Laydown That Are Within Category 2 Habitat for Eastern Whip-Poor-Will (July 31, 2022)

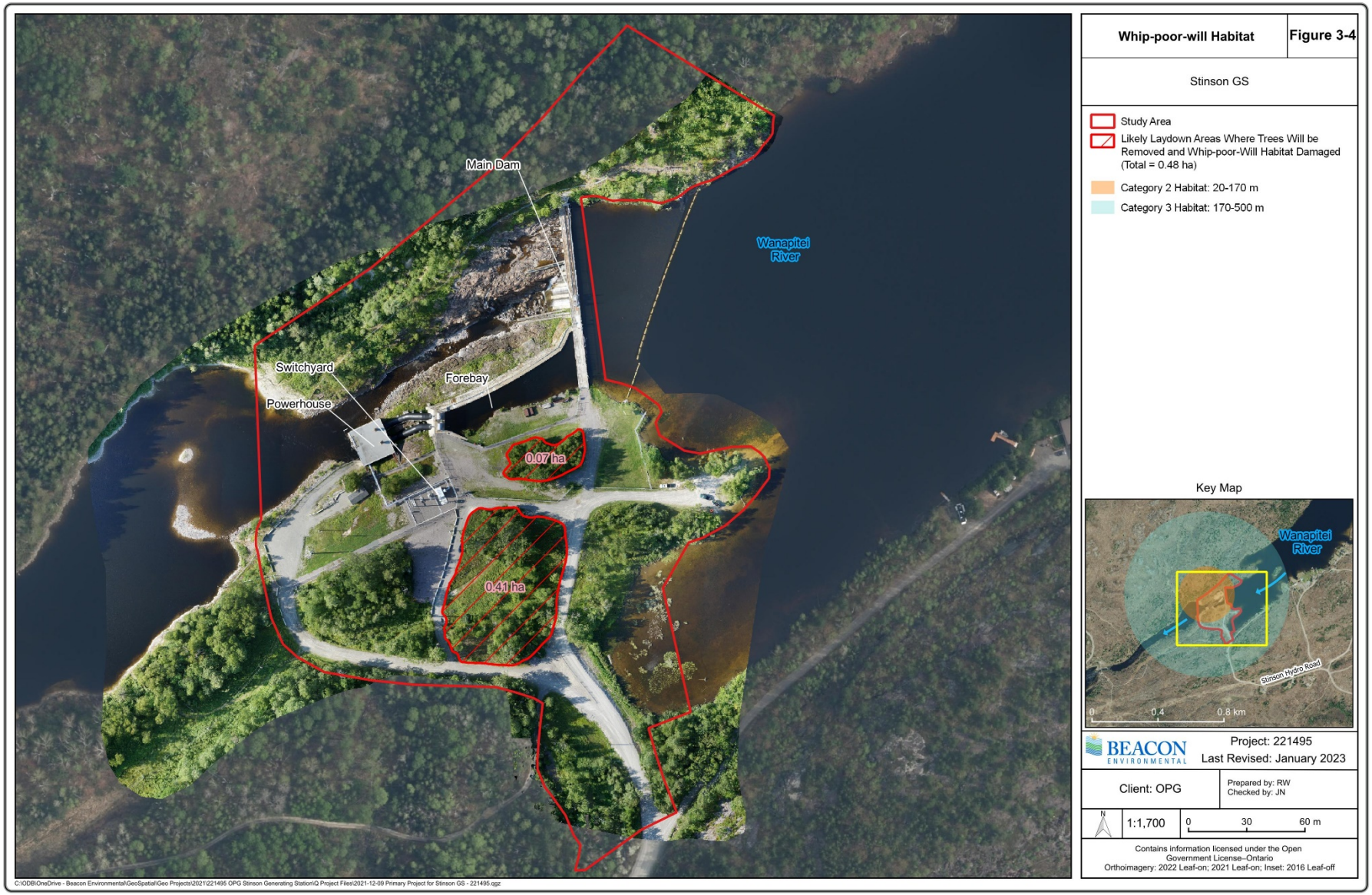

Figure 3-4 Whip-poor-will Habitat

General Dawn Breeding Bird Surveys (Visual and Auditory)

General surveys for breeding birds were conducted in 2022 in the early mornings with appropriate weather conditions. Roving methods were used, and all birds seen or heard within or adjacent to the study area were documented. Survey details are presented in Table 3–4.

Table 3–4 Breeding Bird Surveys (2022)

	Survey 1	Survey 2	Survey 3
Date	May 25	June 8	June 30
Time (start–finish)	06:10–09:40	06:40–10:00	06:30–08:30
Temperature (°C; start–finish)	14.0–19.5	13.1–22.1	12.0–13.0
Wind (Beaufort scale; start–finish)	0–2	0–0	0–0
Cloud cover (%; start–finish)	0–100	0–25	100–100
Precipitation	None	None	Started raining at 08:30 so survey stopped

A total of 44 bird species were documented within or adjacent to the study area (Appendix B). Red-headed Woodpecker (endangered under the ESA) was observed in the study area in the spring (May 25) but was only observed on this single occasion and thus may have been migrating through, albeit this area is north of the species' usual breeding range in Ontario. Canada Warbler (special concern) was breeding in the western and northern parts of the study area outside of any areas that would be disturbed by refurbishment activities or laydown. Eastern Wood-pewee (special concern) was likely breeding just beyond the southwestern corner of the study area.

No Barn Swallow (now special concern) or other ESA bird species were documented breeding or foraging within the study area.

3.3.3 Amphibians and Reptiles

Targeted surveys for amphibians were not conducted as only marginal breeding habitat was present within the study area. Targeted surveys for snakes were not conducted. None of the amphibians or snakes potentially present in this area are subject to prohibitions under the provincial ESA or classified as special concern on Ontario's SARO list.

Three turtle basking surveys were conducted following provincial protocols (MNRF 2015) under ideal conditions using binoculars from onshore vantage points that provided good views of potential basking areas (Table 3-5).

Table 3–5 Turtle Basking Surveys (2022)

	Survey 1	Survey 2	Survey 3
Date	May 11	May 25	June 8
Time (start–finish)	08:30–12:00	09:00–11:40	08:00–11:00
Temperature (°C; start–finish)	14.0–20.0	17.0–23.5	17.5–22.1
Wind (Beaufort scale; start–finish)	0–0	0–0	0–0
Cloud cover (%; start–finish)	25–0	0–100	0–25
Precipitation	None	None	None

Although Blanding's Turtles were not observed, the species is known to be present at low densities in the Wanapitei River system and is subject to prohibitions under the provincial ESA. As such, mitigation measures such as exclusion fencing around areas of high vehicular activity during the nesting season are prudent. Additionally, a large Snapping Turtle, a species of special concern in Ontario was observed during the nesting season moving west from the intake canal to the penstock area and then back to the river. This event included observing the turtle fall 6.5 m from the top of the intake canal dam wall. This event requires further discussion with OPG regarding future mitigation as a similar event was observed during fieldwork at the Calabogie GS and in most cases would result in turtle mortality. If mitigation is required for Blanding's Turtle (e.g., barrier fencing, species at risk training), these measures will also benefit Snapping Turtle. No evidence of nesting by any turtle species within the study area was detected.

3.3.4 Endangered and Threatened Species

Table 3–6 provides a summary of the provincially endangered and threatened species that were considered to potentially occur within or adjacent to the study area based on the desktop and on-site assessments that were completed.

Table 3–6 Endangered and Threatened Species

Common Name	Scientific Name	Status on SARO List	Were Species and/or Habitat Documented during On-site Assessment?
Blanding's Turtle	*Emydoidea blandingii*	THR	**Yes**, species is known to be present within documented movement distances of Blanding's Turtle; however, within the study area, aquatic/wetland habitat is limited to the Wanapitei River and riparian wetlands associated with the river. Habitat mapping has been completed following the General Habitat Description for the Blanding's Turtle (MNRF) and is provided in Figure 3-5. The figure shows the wetlands and waterbodies within and adjacent to the study area. The forebay is not considered to be Category 1 or 2 habitat as it is regularly drained as part of required operations. No aquatic or wetland areas within the study area are considered to have potential for hibernation. The rock barrens, cultural meadow and periphery of roads are considered to have low potential to function as nesting habitat with no areas having a higher likelihood of use.
Eastern Whip-poor-will	*Antrostomus vociferus*	THR (as of Jan 2024)**	**Yes**, species detected during targeted surveys. Vocalizations from a male breeding Whip-poor-will were documented during both on-site surveys and with a remotely deployed acoustic detector. The acoustic detector documented the male's vocalizations in close proximity on almost all of the days it was deployed. The male's territory is estimated to encompass the Stinson GS on both sides of the river. The Wanapitei River in this area has a combination of open rock barren, interspersed with forest, and as such makes the area ideal habitat for the species.
Barn Swallow	*Hirundo rustica*	THR (now SC)	No, species not detected during breeding bird surveys.
Bank Swallow	*Riparia*	THR	No, species not detected during breeding bird surveys.

Common Name	Scientific Name	Status on SARO List	Were Species and/or Habitat Documented during On-site Assessment?
Bobolink	*Dolichonyx oryzivorus*	THR	No, species not detected during breeding bird surveys.
Eastern Meadowlark	*Sturnella magna*	THR	No, species not detected during breeding bird surveys.
Chimney Swift	*Chaetura pelagica*	THR	No, species not detected during breeding bird surveys.
Little Brown Myotis	*Myotis lucifugus*	END	**Yes**, species detected using remote acoustic monitoring and trees (snags) suitable for roosting documented within study area.
Northern Myotis	*Myotis septentrionalis*	END	**Yes**, species detected using remote acoustic monitoring and trees (snags) suitable for roosting documented within study area.
Tri-colored Bat	*Perimyotis subflavus*	END	No, species not detected using remote acoustic monitoring.
Eastern Small-footed Myotis	*Myotis leibii*	END	No, species not detected using remote acoustic monitoring.
Butternut	*Juglans cinerea*	END	No, species not observed during floral surveys or other site visits.

SARO: Species at Risk in Ontario List (Ontario Regulation 230/08)

COSSARO: Committee on the Status of Species at Risk in Ontario

END: Endangered

THR: Threatened

SC: Special Concern

**Eastern Whip-poor-will was assessed by the provincial committee COSSARO and downgraded to SC in 2023, the species is therefore expected to be downgraded to special concern on the SARO list in January 2025

As described in Table 3–6, four species subject to prohibitions under the provincial ESA at the time of the surveys were documented to occur within or adjacent to the study area. The species included two bats (Little Brown Myotis and Northern Myotis), one turtle (Blanding's Turtle), and one bird (Eastern Whip-poor-will). As described in Table 3-6 above, the status of Eastern Whip-poor-will has been downgraded from threatened to special concern by the provincial committee, COSSARO, responsible for these determinations. It should be noted that the species was also downgraded federally by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2022. Although the official list for species regulated under the ESA i.e., the SARO list, has yet to be updated with this downgraded status of special concern, it is anticipated that this will occur in January 2025.

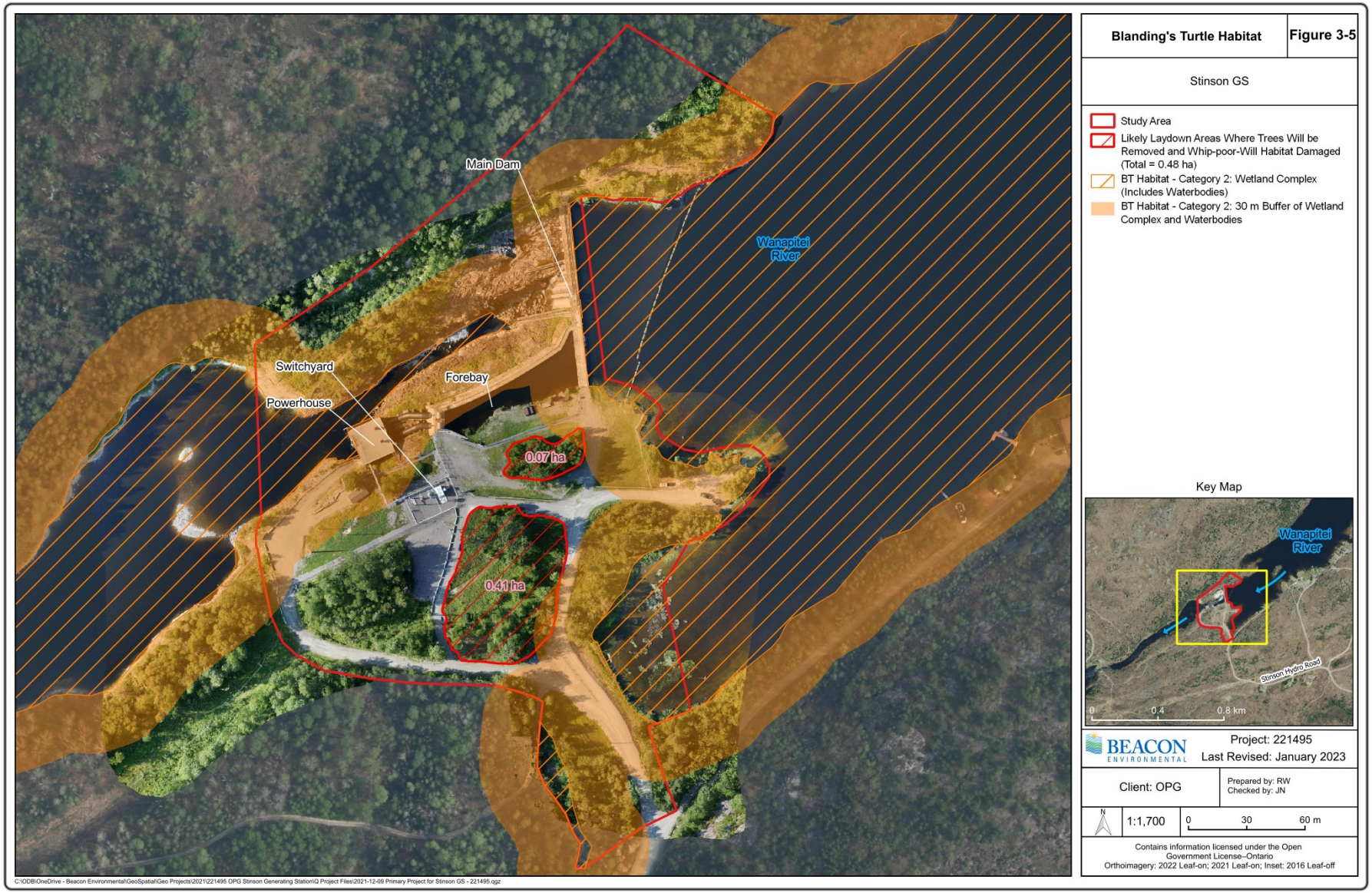

Figure 3-5 Blanding's Turtle Habitat

3.3.5 Species of Conservation Concern

Table 3–7 lists the species of conservation concern that are classified as special concern on the provincial SARO list and that were documented in the study area. These species are not subject to prohibitions under Sections 9 and 10 of the ESA.

Table 3–7 Special Concern Species (Provincial)

Common Name	Scientific Name	Status on SARO List	Were Species and/or Habitat Documented during on-site Assessment?
Snapping Turtle	*Chelydra serpentina*	SC	Yes, species documented during site visits.
Canada Warbler	*Cardellina canadensis*	SC	Yes, species documented during breeding bird surveys.
Eastern Wood-pewee	*Contopus virens*	SC	Yes, species documented during breeding bird surveys.

SARO: Species at Risk in Ontario List (Ontario Regulation 230/08)

SC: Special Concern

3.3.6 Significant Wildlife Habitat

No areas with the potential to be considered Significant Wildlife Habitat in ecoregion 5E (MNRF 2015) are located within the proposed development footprint. Specifically, none of the following features were documented: Seasonal Concentration Areas of Animals, Rare Vegetation Communities or Specialized Habitat for Wildlife, or Animal Movement Corridors.

Regarding Habitat for Species of Conservation Concern (not including endangered or threatened species), two bird species that are special concern on the provincial SARO list, Canada Warbler and Eastern Wood-pewee are likely to be breeding adjacent to the areas proposed for site alteration. Additionally, one special concern turtle species, Snapping Turtle, is present in the study area.

For all three species, no areas within the site alteration or development footprint would be considered candidate significant wildlife habitat. The mixed forest that surrounds the study area provides considerable habitat for Eastern Wood-pewee, while the Canada Warbler would be breeding in treed and shrub swamps that are common in this landscape. For Snapping Turtle, all the areas where nesting could occur within the development footprint are of marginal quality (e.g., gravel roadsides).

As such, the potential for habitat of Canada Warbler, Eastern Wood-pewee or Snapping Turtle to be adversely affected is acceptably low and mitigation measures will be implemented to minimize the likelihood of negative effects on individuals of the species (e.g., exclusion fencing for turtles and timing restrictions for grubbing and clearing of vegetation).

4 Environmental Effects, Mitigation and Monitoring

A number of mitigation measures are proposed to protect the terrestrial environment from negative effects associated with construction activities for the project.

4.1 Site Plan and Preparation of an Environmental Management Plan

A site development plan should be prepared by the DBC, including planning considerations; site and design considerations; site development scheduling; selection of construction equipment; and site development details.

A site-specific Environmental Management Plan should be developed that ensures that environmental protection will be achieved during construction by describing government agency requirements, proposed Project commitments and recommended mitigation measures to be undertaken. The site-specific Environmental Management Plan will include an Erosion and Sediment Control Plan, Spills Emergency Preparedness and Response Plan, Hazardous Materials Management Plan, Waste Management Plan and Site Rehabilitation Plan.

For more specific direction on mitigation measures the DBC is encouraged to utilize best industry practices described in various sources such as OWA (2012b) "Best Management Practices Guide for the Mitigation of Impacts of Waterpower Facility Construction", relevant Fisheries and Oceans Canada (DFO) Standards and Codes of Practices (e.g., Routine Maintenance Dredging and End-of-Pipe Fish Protection Screens for Small Water Intakes in Freshwater), and Ontario Provincial Standard Specifications as well as government agency and other organization consultation. Assessment of the DFO pressures, avoidance and mitigation measures should also considered in the development of mitigation, monitoring and project design measures. (https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html).

A Fire Protection Plan should be developed by the DBC. This Plan will provide an inventory of available fire suppressant equipment, response plans and contingency plans. This could be part of an overall Emergency Response Plan.

4.2 Water Quality – Erosion and Sediment Controls

Protecting water quality will be a high priority during construction. A wide variety of erosion and sediment controls would be in place to prevent erosion and sedimentation from occurring.

In general, the following guidelines will be applied in the development of the Erosion and Sediment Control Plan:

- fitting of proposed works to the terrain (i.e., using the natural topography of the land in the placement and organization of the construction site);
- timing of grading and construction activities to minimize soil exposure;
- retention of existing vegetation where feasible;
- restriction of the use of heavy construction equipment to within the approved work areas to minimize soil disturbance and vegetation destruction;

- storage of stripped soil at upland locations with a minimum of 5 m from the edge of the River;
- implementation of erosion control measures, e.g., rip-rap berms underlain by filter geotextile, straw bales used as filters, silt fencing along the shoreline and/or mulching for interim stabilization;
- diversion of runoff away from exposed areas;
- minimization of the length and steepness of slopes subject to erosion;
- maintenance of low runoff velocities;
- design of drainage works, such as ditches and outfalls, to handle concentrated runoff;
- retention of sediment on site;
- routine inspection and maintenance of erosion and sediment control measures; and
- re-vegetation of disturbed areas by seeding and/or planting following construction as soon as seasonal conditions permit.

More detailed direction with respect to erosion and sediment control can be obtained by looking at Ontario Provincial Standard Specification 805, Construction Specification for Temporary Erosion and Sediment Control Measures.

Settling ponds or other methods to manage sediment laden waters may be required on site. The use of settling ponds will likely require Environmental Compliance Approvals (ECA) under the *Ontario Water Resources Act* (OWRA). If a settling pond is required, the DBC will be responsible for the final design of the settling ponds, including locations of such works, treatment options, volumes, discharges to the environment, proposed monitoring plans and effluent criteria for parameters of concern (e.g., pH, TSS, turbidity, hydrocarbons, total ammonia).

4.3 Management and Control of Hazardous Waste, Construction Wastes and Incidental Spills

All materials and equipment used for the purpose of site preparation and proposed Project completion should be operated and stored in a manner that prevents any deleterious substance (e.g., petroleum products, debris, etc.) from entering the water or spilling onto land. Incidental spills of oil, gas, diesel fuel and other liquids to the environment could occur during construction. Fuelling and lubrication of construction equipment should be carried out in a manner that minimizes the possibility of releases to the environment. All hazardous materials should be clearly marked and stored safely on site to avoid accidental release.

Measures for containment and cleanup of contaminant releases should be followed to minimize contamination of the natural environment, e.g., placement of fuel tanks and generators on an appropriate form of containment where possible, monitoring and other measures documented in the site-specific Environmental Management Plan. At all times where spills are a risk, appropriate materials for cleanup and approved disposal locations should be available. Spills or other discharges should be reported to the MECP as required by provincial legislation. Interim sanitary waste collection and availability of treatment facilities should be arranged for the duration of the construction period. All construction waste, washwater and wastewater should be disposed of in accordance with regulatory requirements.

During powerhouse construction, there is a potential for accidental loss of cement during surface application. Any dripped cement should be recovered from the river bottom for suitable disposal. All trash and other solid debris should also be collected for appropriate disposal.

A Hazardous Materials Management Plan, Waste Management Plan and a Spills Emergency Preparedness and Response Plan will be developed as part of the site-specific Environmental Management Plan. The implementation of these pollution prevention plans will obviate or minimize the environmental effects of accidental releases to the natural environment that have the potential to affect surface water and groundwater quality in the proposed Project area.

4.4 Erosion and Sediment Controls

Erosion and sediment controls were discussed in section 4.2 above. The same measures used to protect the aquatic environment would also be employed for the terrestrial environment.

4.5 Wetlands and Areas of Natural and Scientific Interest

The wetlands within the study area have not been evaluated by the province and as such are not designated as provincially significant wetlands. Nevertheless, no development will be occurring within or adjacent to the wetlands associated with the Wanapitei River and mitigation measures will be implemented to protect vegetation and wetland function. There are no Areas of Natural and Scientific Interest or Provincially Significant Wetlands within a distance where they would be affected by activities within the study area.

4.6 Wildlife

The redevelopment of the Stinson GS is not expected to have any long-term negative effects on the wildlife documented to be present or likely to be present within the study area or on the adjacent lands (including both endangered bat species, Blanding's Turtle and Eastern Whip-poor-will).

As per the regulations under the federal *Migratory Birds Convention Act* it is necessary to ensure that breeding birds and/or their nests, eggs or young are not disturbed, damaged or destroyed. Therefore:

- Vegetation clearing should be avoided during the migratory bird nesting season (April to the end of August) (it is OPG's intention to clear trees between October 1 and April 1 to meet the bat cavity tree window); and
- If minor vegetation clearing needs to occur during the migratory bird nesting season or if clearing needs to occur in highly disturbed areas with simple vegetative structure, then a qualified avian ecologist will examine the area to be affected to ensure that no nests, eggs or nestlings or indications of nesting are present. However, it should be recognized that in almost all circumstances a high risk of nesting birds will occur from May to July inclusive.

4.6.1 Proposed GS Construction and Road Traffic

The potential effects of environmental noise on wildlife are presented in Section 4.9.

All traffic associated with the project will travel along Stinson Hydro Road. On the sections of Stinson Hydro Road within the study area, traffic speeds are limited for safety purposes given the slopes and road widths and these low speeds reduce the likelihood of vehicular-animal incidents. Given the presence of turtles in the study area, including the threatened Blanding's Turtle, specific mitigation measures are recommended in Section 4.7.2 to minimize the adverse effects of vehicular traffic on wildlife.

The DB contractor will also monitor any wildlife mortality caused by construction traffic and alter practices if any incidents are documented.

4.6.2 Proposed Project Operation

Once construction of the proposed Project is completed, any displaced animals could reoccupy the habitat created on the rehabilitated areas, and the habitat not directly affected by construction activities. The steady noise from the proposed Project powerhouse during operation is not expected to elicit an adverse reaction from wildlife due to habituation.

4.7 Endangered and Threatened Species

As indicated in Sections 3.3.4, several species subject to prohibitions under the provincial ESA are known to occur within or adjacent to the study area and hence warrant further discussion.

4.7.1 Bats (Little Brown Myotis, Northern Myotis)

Two endangered bat species were confirmed by acoustic surveys to be present within the study area and habitat for these species was documented. As shown in Figure 3-2, bat habitat trees were present in several locations. As such, the following is recommended to avoid adverse effects on individuals of the species as per Section 9 of the ESA:

- Any removal of potential bat habitat trees should be completed outside of the active season for bats (no habitat tree removal between April 1 and October 1).

It is expected that no authorizations specific to bats under the ESA would be required if trees were cleared outside of the bat active season (April 1 to October 1). Additionally, if tree removal cannot be completed during this timing window, then MECP must be contacted to obtain further direction prior to removal of any trees.

4.7.2 Blanding's Turtle

Blanding's Turtles make regular overland movements between wetlands/waterbodies, as well as to and from nesting areas. These movements can be up to 2 km and can occur anytime during the turtle's active season but are more likely during the nesting season. These behavioural characteristics make it difficult to exclude Blanding's Turtles

from all work areas that have the potential to injure or kill individuals (i.e., roads and areas where motorized vehicles are operating). That said, mitigation measures that combine species at risk training for on-site workers with temporary exclusion fencing can substantially reduce the likelihood of adverse effects on Blanding's Turtle. The following mitigation measures are recommended:

- Qualified Professional to provide species at risk training for DBC staff and all workers that will be on-site;
- Develop and adhere to site-specific response protocols for turtles and other wildlife encounters;
- Incorporate "tailgate" education material for species at risk;
- Erect one turtle/snake crossing awareness sign near the entrance to the active construction zone;
- Erect temporary exclusion fencing to prevent turtles from moving into areas of active construction and motorized vehicle traffic; and
- Exclusion fencing to be installed can double as sediment fencing but must meet the specifications recommended in the most recent version of MNRF's guidance document *Reptile and Amphibian Exclusion Fencing*.

Based on the implementation of these mitigation measures, it is our opinion that the proposed activities will achieve avoidance under the ESA with respect to Blanding's Turtle and thus not require an authorization.

4.7.3 Eastern Whip-poor-will

As indicated in Section 3.3.4, vocalizations from a male breeding Whip-poor-will were documented during both on-site surveys and with a remotely deployed acoustic detector. The male's territory is estimated to encompass the Stinson GS on both sides of the river. The Wanapitei River in this area has a combination of open rock barren, interspersed with forest, and as such, makes the area ideal habitat for the species. Preliminary assessment indicates that much of the proposed laydown area for the project (see Figure 3-3 and Figure 3-4) would be defined as Category 2 Whip-poor-will habitat following the general habitat description for the species (MECP 2021). There may not be practical alternatives to these laydown areas for the project given slopes and access, and it is therefore likely these areas will be highly disturbed for laydown equipment and activity during the time when the generating station is being refurbished.

Adhering to the mitigation measures for vegetation clearing for migratory birds will avoid adverse effects on Eastern Whip-poor-will during the breeding season, specifically:

- Vegetation clearing should be avoided during the migratory bird nesting season (April to the end of August).
- If minor vegetation removal needs to occur during the nesting season for migratory birds or if clearing needs to occur in highly disturbed areas with simple vegetative structure, then a qualified avian ecologist will examine the area to be affected to ensure that no nests, eggs or nestlings or indications of nesting are present.

To reduce the amount of habitat permanently lost once the laydown areas are cleared and being used for refurbishment activities the following is recommended:

- Remove equipment and temporary infrastructure from portions of the laydown areas no longer needed after the generating station refurbishment has been completed.

4.8 Species of Conservation Concern

The mitigation measures provided above for migratory birds and Blanding's Turtle will prevent adverse effects on the species of conservation concern present in the study area.

4.9 Air and Noise

Construction activities have the potential for short-term effects on air quality in the vicinity of the site. Emissions are primarily exhaust emissions (and associated odour) from construction equipment and fugitive dust due to disturbance of dry fine-grained soils. As with any construction site, these emissions will be of relatively short duration and unlikely to have any effect on the surrounding airshed.

During construction, the practices and procedures outlined in the Cheminfo (2005) document "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities", prepared in conjunction with the Construction and Demolition Multi-Stakeholder Working Group for Environment Canada, will be followed, including:

- plans to minimize dust generation through planning, site layout and the proper use of materials, tools and equipment;
- use of wind fencing;
- compacting disturbed soil;
- activity scheduling;
- storage piles management;
- minimization of drop heights;
- barriers to prevent dispersion of materials;
- avoidance of blasting where feasible;
- work practices for loading debris;
- avoidance of prolonged storage of debris; and
- proper techniques for the use of materials that include VOCs.

The DBC and subcontractors will be required to maintain equipment in good working condition to minimize combustion emissions to the extent practicable. To reduce fugitive dust emissions, effective dust suppression techniques, such as on-site and road watering, will be used.

The application of the recommended mitigation measures should minimize combustion emissions and limit fugitive dust emissions to the work area. As a result of the low concentrations of the atmospheric pollutants generated during construction, no adverse effects on terrestrial vegetation due to these emissions are anticipated.

The primary form of mitigation of noise is adherence to the City of Sudbury's Noise ByLaw. The area is generally rural and industrial in character. The nearest human receptors to the construction site are shoreline residences 150 m upstream.

5 Summary and Conclusions

An environmental assessment is not required for the Stinson Generating Station (GS) Life Extension Project. An environmental assessment is not required in Ontario for waterpower facilities when the re-developed facility has its capacity restricted to an increase of 25% or less than the existing one. While an environmental assessment is not required on the project an assessment of terrestrial environment conditions, potential environmental impacts and proposed mitigation and monitoring measures are described in this Terrestrial Environment Technical Support Document in order to: support discussions with any other government agencies on terrestrial environment issues; and provide direction to OPG, its Owner's Engineer and its constructor contractor on necessary terrestrial environment considerations including construction stage mitigation and monitoring measures.

This Report describes the fieldwork undertaken including: early morning breeding bird surveys, turtle basking surveys, targeted nocturnal surveys for Eastern Whip-poor-will and targeted surveys for bats. The results of these studies are presented and form part of the description of the local environment. This Report also contains detailed mitigation and monitoring measures to eliminate and lessen potential environmental effects on the terrestrial environment. The mitigation and monitoring measures proposed are very similar in scope and detail to the measures proposed for the Coniston Generating Station Life Extension Project. With one constructor proposed for the two projects and with two closely located and similarly sized sites, it is recognized that common mitigation and monitoring measures are likely going to be easier to understand and implement.

One of the key results of the terrestrial surveys is the finding that there is a pair of Eastern Whip-poor-will using portions of the Stinson GS as breeding habitat. Vocalizations from a male breeding Whip-poor-will were documented during both on-site surveys and with a remotely deployed acoustic detector. The acoustic detector documented the male's vocalizations in close proximity on almost all of the days it was deployed. The male's territory is estimated to encompass the Stinson GS on both sides of the river. The Wanapitei River in this area has a combination of open rock barren, interspersed with forest, and as such makes the area ideal habitat for the species. Preliminary assessment indicates that much of the proposed laydown area for the project would be defined as Category 2 Whip-poor-will habitat following the general habitat description for the species (MECP). There may not be practical alternatives to these laydown areas for the project due to existing slopes and access, and it is therefore likely these areas will be highly disturbed for laydown equipment and activity during the time when the generating station is being refurbished. Given the lack of viable alternative laydown areas and the threatened status of the Eastern Whip-poor-will on the provincial SARO list, it was recommended in the previous draft of this report that OPG proceed with obtaining an Overall Benefit Permit following the provisions for this species set out in regulations of the ESA. However, with the federal and provincial downgrading of Eastern Whip-poor-will to special concern, it is anticipated that the SARO list (O. Reg. 230/08) will be amended in January 2025 to reflect that change. If and when that occurs, an Overall Benefit Permit will no longer be required, as activities affecting Eastern Whip-poor-will or its habitat will no longer be subject to prohibitions under the ESA. Despite this change in status, mitigation is still recommended to avoid adverse effects on individuals of the species, as well as reducing negative effects on breeding habitat of the species by restoring portions of the laydown areas no longer needed after the generating station refurbishment. These recommendations reflect the fact that the Eastern Whip-poor-will, despite its downgraded status, will still be a special concern species.

6 References

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7 Acronyms and Abbreviations

AAFN	Atikameksheng Anishnawbek First Nation
ARD	Acid Rock Drainage
Arcadis	Arcadis Canada Inc.
BMP	Best Management Practices
Beacon	Beacon Environmental
OWA Class EA	Class Environmental Assessment for Waterpower Projects
CFSA	*Crown Forest Sustainability Act*
CGSLEP	Coniston Generating Station Life Extension Project
CHDR	Cultural Heritage Documentation Report
CHER	Cultural Heritage Evaluation Report
DB	Design Build
DBC	Design-Build Contractor
DFO	Department of Fisheries and Oceans
DFN	Dokis First Nation
e.g.	For example (exempli gratia)
EA	Environmental Assessment
ECA	Environmental Compliance Approvals
EPA	*Environmental Protection Act*
ESA	*Endangered Species Act*
et al.	And others (et alia)
etc.	And so on (et cetera)
FRL	Forest Resource Licence
FWCA	*Fish and Wildlife Conservation Act*
GS	Generating Station
HADD	Habitat alteration, disruption or destruction
HIA	Heritage Impact Assessment
HIFN	Henvey Inlet First Nation
Hydro One	Hydro One Networks Inc.
i.e.	That is (id est)

INAC	Indigenous and Northern Affairs Canada
KGS Group	Kontzamanis, Graumaun, Smith, MacMillan Inc.
KM	Kilometre
LIO	Land Information Ontario
LRIA	*Lakes and Rivers Improvement Act*
M5	Extractive Industrial
MECP	Ontario Ministry of Environment, Conservation and Parks
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MNRF	Ontario Ministry of Natural Resources and Forestry
NFN	Nipissing First Nation
NHIC	Natural Heritage Information Centre
NWA	*Navigable Waters Act*
NWPA	*Navigable Waters Protection Act*
O. Reg.	Ontario Regulation
OBBA	Ontario Breeding Bird Atlas
OGS	Ontario Geological Survey
OHA	*Ontario Heritage Act*
OMNR	Ontario Ministry of Natural Resources
OMNRF	Ontario Ministry of Natural Resources and Forestry
OPG	Ontario Power Generation Inc.
ORAA	Ontario Reptile and Amphibian Atlas
OWA	Ontario Waterpower Association
OWRA	*Ontario Water Resources Act*
pers. comm.	Personal communication
PTTW	Permit to Take Water
RFR	Request for Review
RU	Rural
S&Gs	Standards & Guidelines for Conservation of Provincial Heritage Properties
S5	Secure – common, widespread and abundant in the Province
SAR	Species at risk
SARA	*Species at Risk Act*

SCHV	Statement of Cultural Heritage Value
SCP	Strategic Conservation Plan
SGSLEP	Stinson Generating Station Life Extension Project
SLS	Seasonal Limited Service
WFN	Wahnapitae First Nation
WMP	Water Management Plan
WR	Wanapitei River
WRA	*Ontario Water Resources Act*
WRFN	Whitefish River First Nation
WRWMP	Wanapitei River Water Management Plan

Appendix A

Vascular Plants

Appendix A

Vascular Plants

Family	Scientific Name	Common Name	SRank
Aceraceae	*Acer rubrum*	Red Maple	S5
Aceraceae	*Acer spicatum*	Mountain Maple	S5
Apocynaceae	*Apocynum androsaemifolium*	Spreading Dogbane	S5
Araliaceae	*Aralia nudicaulis*	Wild Sarsaparilla	S5
Asteraceae	*Achillea millefolium*	Common Yarrow	SE5?
Asteraceae	*Ambrosia artemisiifolia*	Common Ragweed	S5
Asteraceae	*Antennaria howellii*	Howell's Pussytoes	S5
Asteraceae	*Bidens cernua*	Nodding Beggarticks	S5
Asteraceae	*Cirsium vulgare*	Bull Thistle	SE5
Asteraceae	*Doellingeria umbellata*	Flat-top White Aster	S5
Asteraceae	*Erigeron annuus*	Annual Fleabane	S5
Asteraceae	*Eurybia macrophylla*	Large-leaved Aster	S5
Asteraceae	*Euthamia graminifolia*	Grass-leaved Goldenrod	S5
Asteraceae	*Eutrochium maculatum*	Spotted Joe Pye Weed	S5
Asteraceae	*Matricaria discoidea*	Pineappleweed	SE5
Asteraceae	*Pilosella caespitosa*	Meadow Hawkweed	SE5
Asteraceae	*Solidago altissima var. altissima*	Eastern Tall Goldenrod	S5
Asteraceae	*Solidago canadensis*	Canada Goldenrod	S5
Asteraceae	*Solidago rugosa ssp. rugosa*	Northern Rough-stemmed Goldenrod	S5
Asteraceae	*Taraxacum officinale*	Common Dandelion	SE5
Betulaceae	*Alnus incana ssp. rugosa*	Speckled Alder	S5
Betulaceae	*Betula papyrifera*	Paper Birch	S5
Betulaceae	*Corylus cornuta*	Beaked Hazelnut	S5
Boraginaceae	*Echium vulgare*	Common Viper's Bugloss	SE5
Caprifoliaceae	*Diervilla lonicera*	Northern Bush-honeysuckle	S5
Caprifoliaceae	*Sambucus racemosa*	Red Elderberry	S5
Caprifoliaceae	*Viburnum nudum var. cassinoides*	Wild Raisin	S5
Caryophyllaceae	*Silene vulgaris*	Bladder Campion	SE5
Cornaceae	*Cornus canadensis*	Bunchberry	S5
Cornaceae	*Cornus sericea*	Red-osier Dogwood	S5
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar	S5
Cyperaceae	*Carex crinita*	Fringed Sedge	S5
Cyperaceae	*Carex lacustris*	Lake Sedge	S5
Cyperaceae	*Carex scoparia*	Pointed Broom Sedge	S5
Cyperaceae	*Carex stipata*	Awl-fruited Sedge	S5
Cyperaceae	*Dulichium arundinaceum*	Three-way Sedge	S5
Cyperaceae	*Schoenoplectus tabernaemontani*	Soft-stemmed Bulrush	S5
Cyperaceae	*Scirpus cyperinus*	Common Woolly Bulrush	S5
Dryopteridaceae	*Athyrium filix-femina var. angustum*	Northeastern Lady Fern	S5
Dryopteridaceae	*Onoclea sensibilis*	Sensitive Fern	S5
Equisetaceae	*Equisetum pratense*	Meadow Horsetail	S5
Ericaceae	*Kalmia angustifolia*	Sheep Laurel	S5

Family	Scientific Name	Common Name	SRank
Ericaceae	*Vaccinium angustifolium*	Early Lowbush Blueberry	S5
Ericaceae	*Vaccinium myrtilloides*	Velvet-leaved Blueberry	S5
Fabaceae	*Lotus corniculatus*	Garden Bird's-foot Trefoil	SE5
Fabaceae	*Trifolium pratense*	Red Clover	SE5
Fabaceae	*Vicia cracca*	Tufted Vetch	SE5
Fagaceae	*Quercus rubra*	Northern Red Oak	S5
Juncaceae	*Juncus effusus*	Soft Rush	S5
Lamiaceae	*Lycopus uniflorus*	Northern Water-horehound	S5
Lythraceae	*Lythrum salicaria*	Purple Loosestrife	SE5
Myricaceae	*Comptonia peregrina*	Sweet-fern	S5
Myricaceae	*Myrica gale*	Sweet Gale	S5
Oleaceae	*Fraxinus americana*	White Ash	S4
Onagraceae	*Chamaenerion angustifolium*	Fireweed	S5
Onagraceae	*Oenothera biennis*	Common Evening-primrose	S5
Orchidaceae	*Epipactis helleborine*	Broad-leaved Helleborine	SE5
Pinaceae	*Abies balsamea*	Balsam Fir	S5
Pinaceae	*Picea glauca*	White Spruce	S5
Pinaceae	*Pinus banksiana*	Jack Pine	S5
Pinaceae	*Pinus resinosa*	Red Pine	S5
Pinaceae	*Pinus strobus*	Eastern White Pine	S5
Poaceae	*Danthonia spicata*	Poverty Oatgrass	S5
Poaceae	*Elymus repens*	Quackgrass	SE5
Poaceae	*Leersia oryzoides*	Rice Cutgrass	S5
Poaceae	*Poa annua*	Annual Bluegrass	SE5
Polygonaceae	*Fallopia cilinodis*	Fringed Black Bindweed	S5
Polygonaceae	*Rumex crispus*	Curled Dock	SE5
Primulaceae	*Lysimachia terrestris*	Swamp Yellow Loosestrife	S5
Pyrolaceae	*Pyrola elliptica*	Shinleaf	S5
Ranunculaceae	*Thalictrum pubescens*	Tall Meadow-rue	S5
Rosaceae	*Amelanchier arborea*	Downy Serviceberry	S5
Rosaceae	*Fragaria virginiana*	Wild Strawberry	S5
Rosaceae	*Prunus pensylvanica*	Pin Cherry	S5
Rosaceae	*Prunus virginiana*	Chokecherry	S5
Rosaceae	*Rubus idaeus*	Red Raspberry	S5
Rosaceae	*Sorbus decora*	Showy Mountain-ash	S5
Rosaceae	*Spiraea alba*	White Meadowsweet	S5
Salicaceae	*Populus balsamifera*	Balsam Poplar	S5
Salicaceae	*Populus deltoides*	Eastern Cottonwood	S5
Salicaceae	*Populus grandidentata*	Large-toothed Aspen	S5
Salicaceae	*Populus tremuloides*	Trembling Aspen	S5
Salicaceae	*Salix discolor*	Pussy Willow	S5
Scrophulariaceae	*Verbascum thapsus*	Common Mullein	SE5
Typhaceae	*Typha latifolia*	Broad-leaved Cattail	S5

Nomenclature follows the Natural Heritage Information Centre (NHIC) and is current to February 2022
SRank: Subnational Rank for Ontario as per NHIC February 2022
SRanks for non-native species are indicated by an “E” for exotic

Appendix B

Breeding Birds

Appendix B

Breeding Birds

Common Name	Scientific Name	Minimum Number of Breeding Pairs	Conservation Status
Common Loon	*Gavia immer*	NA	
Great Blue Heron	*Ardea herodias*	NA	
Mallard	*Anas platyrhynchos*	NA	
Common Merganser	*Mergus merganser*	NA	
Red-breasted Merganser	*Mergus serrator*	NA	
Spotted Sandpiper	*Actitis macularius*	1	
Rock Pigeon	*Columba livia*	5	
Yellow-bellied Sapsucker	*Sphyrapicus varius*	1	
Northern Flicker	*Colaptes auratus*	1	
Eastern Whip-poor-will	*Antrostomus vociferus*	1	Threatened (SARO & COSEWIC)
Hairy Woodpecker	*Dryobates villosus*	1	
Eastern Wood-pewee	*Contopus virens*	1	Special Concern (SARO & COSEWIC)
Least Flycatcher	*Empidonax minimus*	2	
Eastern Phoebe	*Sayornis phoebe*	2	
Red-eyed Vireo	*Vireo olivaceus*	3	
Blue Jay	*Cyanocitta cristata*	1	
American Crow	*Corvus brachyrhynchos*	1	
Common Raven	*Corvus corax*	1	
Black-capped Chickadee	*Poecile atricapillus*	2	
Veery	*Catharus fuscescens*	2	
Hermit Thrush	*Catharus guttatus*	2	
American Robin	*Turdus migratorius*	2	
European Starling	*Sturnus vulgaris*	2	
Cedar Waxwing	*Bombycilla cedrorum*	1	
Chestnut-sided Warbler	*Setophaga pensylvanica*	2	
Yellow-rumped Warbler	*Setophaga coronata*	1	
Black-throated Green Warbler	*Setophaga virens*	1	
Blackburnian Warbler	*Setophaga fusca*	1	
Black-and-white Warbler	*Mniotilta varia*	2	
American Redstart	*Setophaga ruticilla*	3	
Ovenbird	*Seiurus aurocapilla*	2	
Northern Waterthrush	*Parkesia noveboracensis*	1	
Mourning Warbler	*Geothlypis philadelphia*	2	
Nashville Warbler	*Leiothlypis ruficapilla*	1	
Common Yellowthroat	*Geothlypis trichas*	2	
Canada Warbler	*Cardellina canadensis*	1	Special Concern (SARO) Threatened (COSEWIC)
Scarlet Tanager	*Piranga olivacea*	1	
Chipping Sparrow	*Spizella passerina*	2	
Song Sparrow	*Melospiza melodia*	3	
White-throated Sparrow	*Zonotrichia albicollis*	2	

Common Name	Scientific Name	Minimum Number of Breeding Pairs	Conservation Status
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	1	
Indigo Bunting	*Passerina cyanea*	1	
Red-winged Blackbird	*Agelaius phoeniceus*	2	
Baltimore Oriole	*Icterus galbula*	1	

SARO: Species at Risk in Ontario List
COSEWIC: Committee on the Status of Endangered Wildlife in Canada

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