PROPOSED RANNEY FALLS GENERATING STATION G3 EXPANSION PROJECT

PUBLIC AND AGENCY CONSULTATION TECHNICAL SUPPORT DOCUMENT

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EXECUTIVE SUMMARY

Ontario Power Generation Inc. (OPG) is proposing to expand the capacity of its Ranney Falls Generating Station (GS) located on the Trent-Severn Waterway (TSW) in the Municipality of Trent Hills. There are two powerhouses on site. The main powerhouse has the G1 and G2 turbine units, each operating at approximately 5 MW during maximum flows. A secondary powerhouse, referred to as the "Pup", contains the 0.72 MW G3 unit that ceased operations in June 2014.

Based on a Feasibility Study for the proposed Ranney Falls GS G3 Expansion Project (Ranney Falls G3 Project or Project), it was determined that a new G3 unit of up to 10 MW could be installed at the Ranney Falls GS site. This would increase total station capacity to approximately 20 MW. The "Pup" powerhouse would be decommissioned but the building will be left in place.

The proposed Ranney Falls G3 Project is being undertaken by OPG to improve the efficient use of the available hydroelectric potential at the site, to reduce greenhouse gas emissions and to increase the amount of clean renewable energy from OPG's Central Operations (COs). The Panel on the Future of the Trent-Severn Waterway (PFTSW, 2008) concluded that the development of renewable energy resources is a sound public policy goal and supported a vigorous effort to pursue green energy generating potential along the TSW. The proposed Project is consistent with the Provincial Policy Statement, which recommends that the use of existing infrastructure and public service facilities should be optimized, whenever feasible, before consideration is given to developing new infrastructure and public service facilities (OMMAH, 2014). OPG will operate the proposed expanded Ranney site within historical water levels (since 1951) and existing water management practices with a flow up to 171 cms at the Ranney site. There will be no increase in water levels operating the proposed site.

Spillway discharge capacity for flood control at Dam 10 (Ranney Falls) is the sole responsibility of the Trent-Severn Waterway (Parks Canada). Installation and operation of a new spillway to be built between the existing and new powerhouse to bypass powerhouse flows in the event of an emergency shutdown of the unit is the responsibility of OPG. The Spillway operation will minimize wave surge and mitigate any rapid increase in water level associated with unplanned station shutdown. The design for the new spillway will be developed during the next stage of development (Interim Licence) whereby General Construction Plans are prepared for the review and approval by the Parks Canada Agency.

This Detailed Environmental Impact Analysis (DIA) Report was prepared to fulfill federal department obligations to the *Canadian Environmental Assessment Act, 2012 CEAA,* section 67*.* Parks Canada's legal accountability under CEAA 2012 is to ensure that project activities undertaken on the lands it manages do not result in significant adverse effects (Section 67 CEAA 2012). Parks Canada has jurisdiction over the bed of the canal at Ranney Falls. The DIA Report provides a description of the proposed undertaking, summarizes the overall environmental setting and anticipated environmental effects, recommends appropriate

mitigation measures to minimize or obviate these effects, and describes public, agency and Aboriginal consultation. More detailed information on the environmental setting, anticipated environmental effects and recommended mitigation measures is provided in four Technical Support Documents (TSDs) addressing the aquatic environment, terrestrial environment, land use and socio-economic environment, and cultural heritage resources. Two additional TSDs provide a more detailed description of outcomes of public and government agency, as well as First Nation and Métis Nation of Ontario, consultation and engagement.

An Open House was held on the project on June 17, 2015 and over twenty-four individuals attended that meeting. No individuals indicated an opposition to the proposed Project and several people indicated support for it. However, a number of questions were asked about the Project and a few local residents raised questions with respect to traffic, noise and potentially other nuisance effects. Responses were provided to them and OPG takes the position that it is always willing to listen to concerns and issues and address them wherever possible.

Based on assessment of the available baseline information and potential effects, as well as the implementation of the recommended mitigation measures, it is concluded that effects due to construction activities associated with the proposed Project will be minimal, localized and short-term. It is anticipated that substantial economic benefits will be realized by Campbellford and other local communities due to the supply of required goods and services during the construction phase.

Based on assessment of the available baseline information and potential effects, as well as the implementation of the recommended mitigation measures, it is concluded that the operation of the proposed Project will have negligible effects on the environment.

1.0 PROJECT

1.1 Scope of Project

The Ranney Falls Generating Station (GS) site was formerly leased by the Federal Government to the Seymour Power Company. With its purchase of the Seymour Power Company on March 9, 1916, ownership rights to the site were acquired by the Province. Ranney Falls GS G1 and G2 units were commissioned in August 22, 1922 and September 2, 1922, respectively. Unit G3, which started operation in 1926, was acquired by the Hydro-Electric Power Commission of Ontario from the Quinte and Trent Valley Power Company in 1937. Ranney Falls GS was transferred to OPG on April 1, 1999, and is managed by OPG's Central Operations (COs) with remote operation from its North Bay Control Centre and maintained by its Campbellford Service Centre.

OPG is proposing to expand the capacity of its Ranney Falls GS that is located on the Trent-Severn Waterway (TSW) within the community of Campbellford in the Municipality of Trent Hills (Trent Hills), Northumberland County (Figure 1.1). There are two powerhouses on site (Figure 1.2). The main powerhouse has the G1 and G2 turbine units, each operating at approximately 5 MW during maximum flows. A secondary powerhouse, referred to as the "Pup", contains the 0.72 MW G3 unit that ceased operations in June 2014.

Ranney Falls GS was first identified by Ontario Hydro (1992) to be within the scope of the Small Hydroelectric Assessment and Retrofit Program (SHARP) for assessment of its long-term viability as a generating resource. The SHARP was established as a formalized approach to address operational optimization of the 33 existing small and ageing hydroelectric stations within the hydraulic generation system. Based on the criteria for age, capacity and operating condition, the SHARP identified Ranney Falls GS as a potential opportunity for renewal and improvement.

As a result, a Concept Phase Study for the Ranney Falls GS was undertaken by KST Hydroelectric Engineers (KST, 1992) to review all available project options and recommend a preferred alternative, as well as to identify the detailed engineering and environmental studies and their associated costs for the Definition Phase. Due to the cancellation of the SHARP, further work associated with the redevelopment of Ranney Falls GS was terminated.

Figure 1.1 Project Location

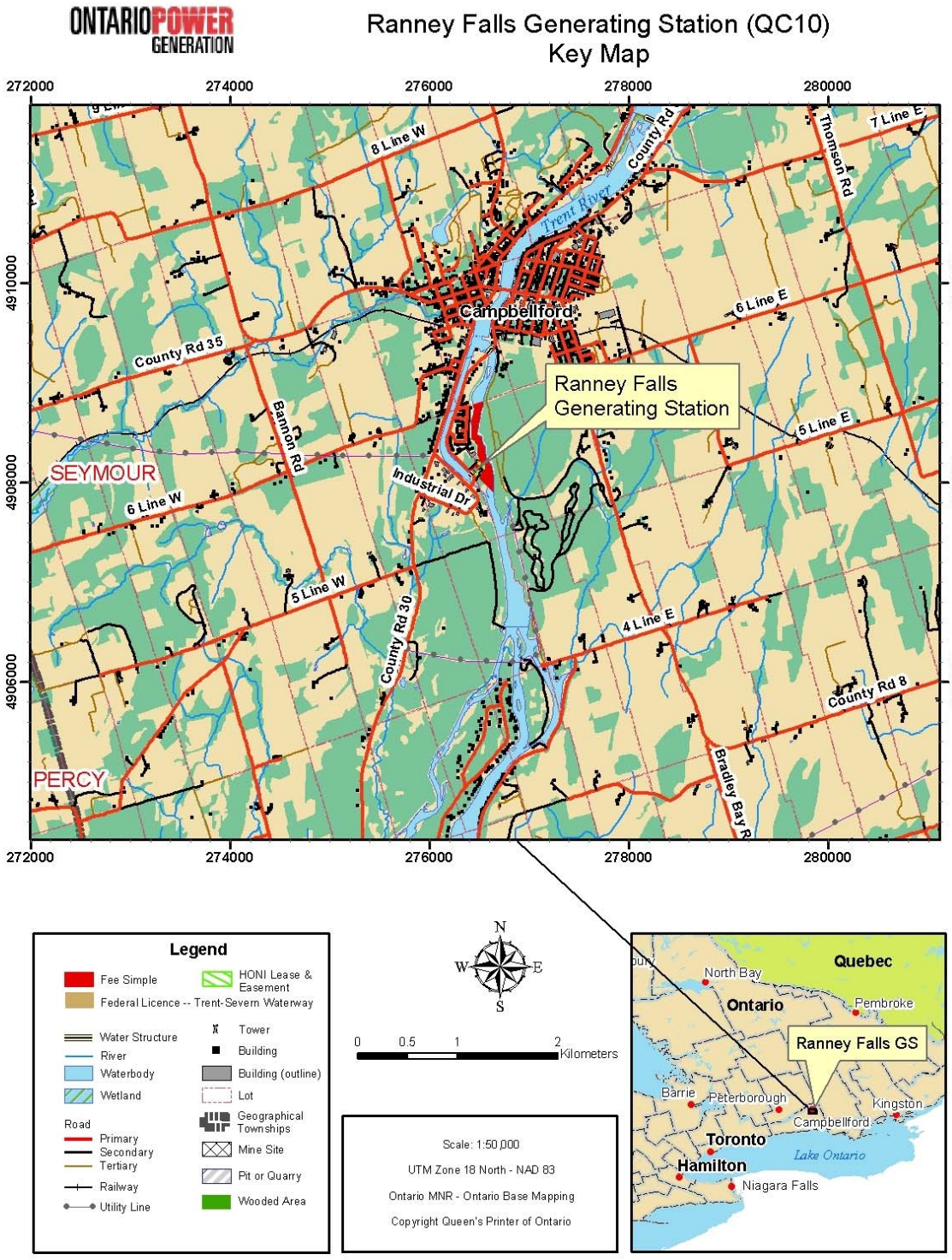


Figure 1.2 Aerial Photo of Ranney Falls GS Setting

In 2005, OPG again initiated a site evaluation and an assessment of concept alternatives for Ranney Falls GS expansion focusing on the redevelopment of the secondary "Pup" powerhouse. A Feasibility Study was completed in 2006, establishing that a new unit of up to 10 MW could be installed at the Ranney Falls GS site (Hatch Acres, 2006). This would increase the total station capacity to approximately 20 MW and result in total average annual generation of 83 GWh (an increase of 30.4 GWh). However, the project was deferred by OPG prior to initiation of the Definition Phase.

Based on the preliminary studies undertaken by KST (1992) and Hatch Acres (2006), OPG has concluded that the existing installed capacity does not make optimal use of the total water available (mean annual flow of approximately 118 m^3/s). As a result, OPG has identified an opportunity to expand its capacity by replacing the secondary "Pup" powerhouse with a new unit having an incremental capacity of up to 10 MW (OPG, 2011a).

Since 2006, the scope of the project including its layouts was further optimized and the proposed Ranney Falls G3 Project includes the following:

- expansion of the existing forebay;
- construction of a new G3 powerhouse with a new intake structure and 10 MW turbine unit adjacent to the existing main powerhouse;
- expansion of the existing tailrace channel;
- construction of a new electrical substation to connect with one of the Hydro One Networks Inc. (Hydro One) local distribution lines on site;
- construction of a new spillway to by-pass station flow to the tailrace channel for emergency situations;
- decommissioning the "Pup" powerhouse;
- rehabilitation of the forebay intake structure and its operating deck (work platform) adjacent to the roadway/TSW bridge;
- relocation of the existing upstream boom; and
- creation of enhanced habitat for Northern Map Turtle and Eastern Snapping Turtle and installation of fencing to prevent turtles accessing the construction area.

1.2 Background

1.2.1 Purpose and Justification

The proposed Ranney Falls G3 Project undertaken by OPG is to improve the efficient use of the available hydroelectric potential at the site, to reduce greenhouse gas emissions and to increase the amount of clean renewable energy from OPG's COs, without any changes to the overall flow within the Trent River or to existing TSW water management. The proposed Project is consistent with the Provincial Policy Statement (PPS), which recommends that the use of existing infrastructure and public service facilities should be optimized, wherever feasible,

before consideration is given to developing new infrastructure and public service facilities (OMMAH, 2014).

The Ranney Falls GS is located on OPG land adjacent to Lock #11 and #12 of the TSW, which is designated as a National Historic Site of Canada. Water levels and flows in the Trent River and Trent Canal are managed by Parks Canada – TSW staff to:

- permit safe navigation;
- lessen flooding of agricultural, residential and commercial property;
- provide for recreational activities;
- protect fish and wildlife habitat;
- help maintain water quality; and
- generate green hydroelectric power.

Parks Canada – TSW staff work cooperatively with the MNRF and DFO to protect fish spawning areas and other wildlife habitat, as well as with local Conservation Authorities to reduce flooding. Parks Canada – TSW staff are also in daily contact with OPG, other public utilities and private interests, which operate and maintain generating stations within the TSW drainage basins.

A management plan for the TSW National Historic Site received ministerial approval in 2000 (Parks Canada, 2000). The Panel on the Future of the Trent-Severn Waterway (PFTSW, 2008) was mandated in 2007 to assess and make recommendations to the federal Minister of the Environment concerning the future contributions and management of the TSW. The PFTSW review pre-empted the typical five-year management plan review cycle. The process to develop a new management plan began in late 2011, and was subsequently postponed following a review of the management plan cycle. The next management plan review is scheduled for completion in 2018.

In addition to other considerations, the PFTSW considered “ways in which the Waterway can contribute to economically sustainable communities, including the role of renewable energy.” The PFTSW concluded that the development of renewable energy resources is a sound public policy goal and supported a vigorous effort to pursue the potential for generation of green energy along the TSW. The PFTSW acknowledged that the *Canadian Environmental Assessment Act* (*CEAA*), if applied knowledgeably and rigorously, provides the process and regulatory instrument for proposed hydroelectric projects to ensure the protection of natural and cultural values of the TSW. *CEAA* (S.C. 1992, c. 37) was repealed when the *Canadian Environmental Assessment Act, 2012* (*CEAA 2012*) came into force (see Section 1.0).

Northumberland-Quinte West MPP Rob Milligan held a public meeting on February 18, 2012 in Campbellford to promote new waterpower developments within the provincial riding with 37 potential hydroelectric sites identified that, if developed, could generate 21 MW of electricity, providing power to between 15,000 and 18,000 homes. The sites include old lumber and grist mills, as well as sites along the TSW.

1.2.2 Alternatives and Alternative Means

Alternative 1 – Redevelopment

OPG has concluded that the existing installed capacity of Ranney Falls GS does not make optimal use of the total water available at the site. As a result, OPG has identified an opportunity to expand its capacity by replacing the "Pup" with a new unit having an incremental capacity of up to 10 MW (OPG, 2011a).

Alternative 2 – Status quo

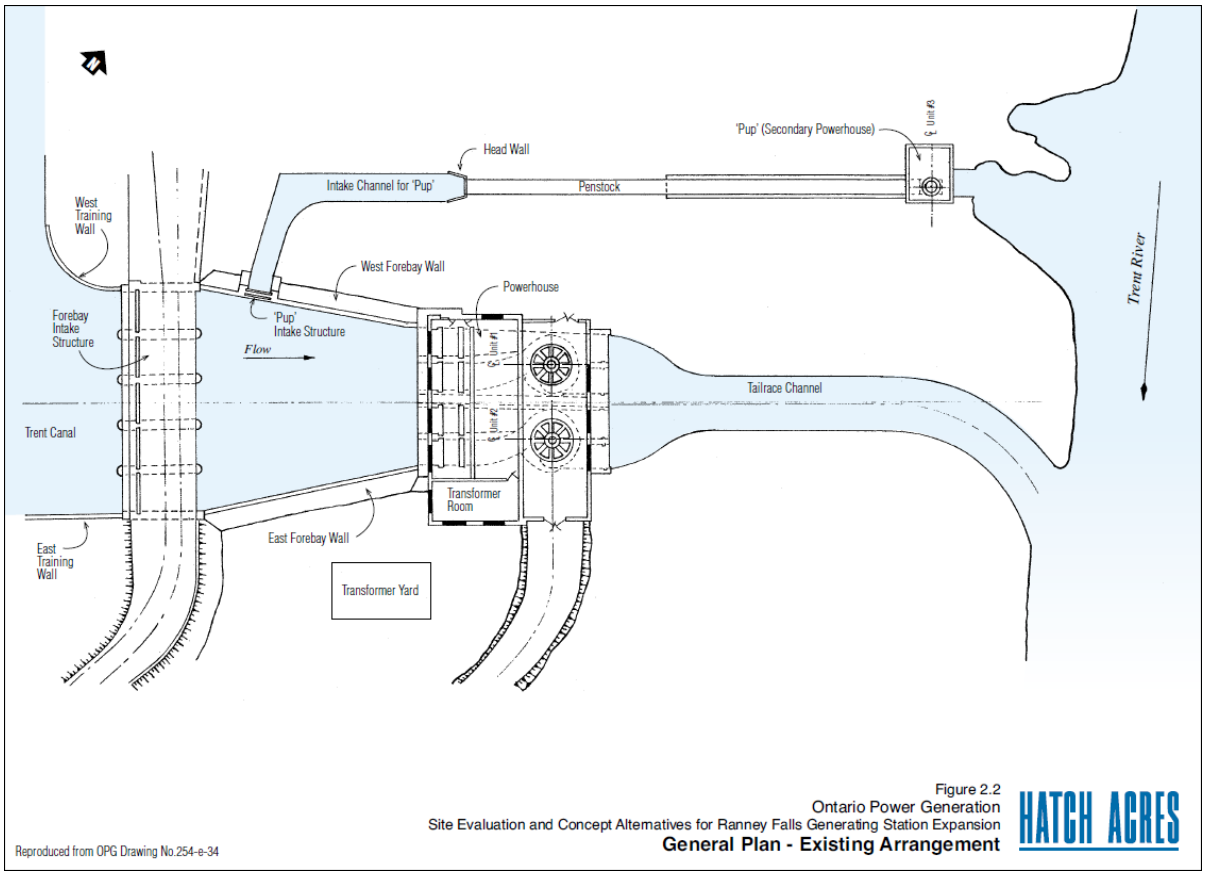
Maintenance of the "status quo" would result in the loss of hydroelectricity production capacity of 0.72 MW due to the decommissioning of the "Pup". It would also preclude the opportunity to expand the capacity of the Ranney Falls GS by replacing the "Pup" with a new unit having an incremental capacity of up to 10 MW.

1.2.3 Existing Conditions

The existing Ranney Falls GS consists of a forebay intake structure, forebay, the main powerhouse and its tailrace, the Pup and its Intake, penstock and tailrace, and storage facilities (see Figures 1.3 and 1.4). A brief description of this existing infrastructure is provided below.

Figure 1.3 Aerial Photo of Existing Ranney Falls GS Infrastructure Layout

Figure 1.4 Schematic of Existing Ranney Falls GS Infrastructure Layout



Forebay Intake Structure

The forebay intake structure, which diverts flow from the Trent Canal to the Ranney Falls GS, consists of five bay sluiceways with a road bridge to the northeast and an operating deck (work platform) for stoplog operation to the southwest. The bridge and the portions of the supporting piers under the bridge are owned and operated by Parks Canada – TSW. Parks Canada – TSW recently rehabilitated the piers with new concrete surfacing.

The operating deck, stoplogs and the portions of the supporting piers under the deck are owned and operated by OPG. The stoplogs are used to dewater the forebay. The stoplog gains and operating deck, and the portions of the supporting piers under the operating deck require repairs.

Safety booms are installed in the Trent Canal and forebay upstream and downstream of the forebay intake structure (see Figures 1.2 and 1.3).

Forebay

The existing forebay is located between the forebay intake and the headworks for the main powerhouse. Concrete gravity retaining walls contain the forebay on the east and west sides. The forebay substrate consists of bedrock. A channel in the west forebay wall supplies water to the "Pup" powerhouse. The east and west retaining walls were resurfaced in 1994 and meet current dam safety requirements.

Main Powerhouse

The main powerhouse accommodates two concrete gravity type intakes, two vertical Kaplan turbine generator units (G1 and G2) and associated electrical and mechanical equipment and systems, auxiliary mechanical and electrical systems, restroom and control room.

The main powerhouse can be accessed by the existing road to the east which was rebuilt in 1992. The road connects to Trent Drive at the bridge spanning Lock #12.

The main powerhouse tailrace channel is a man-made open cut through the layered rock formation to the Trent River.

Main Substation

The main outdoor substation (transformer yard), located to the south of the main powerhouse, accommodates one 44 kV transformer and associated electrical equipment with supporting structures and underground piping (see Figure 1.4). It connects to Hydro One's 44 kV distribution line (R8S) at the wood pole located at the south of the Trent Drive.

Pup Facilities

The Pup facilities include the entrance gate, approach channel, intake, penstock, and powerhouse and tailrace channel. The entrance gate is located at the west retaining wall and controls the flows to the G3 unit. The approach channel is a concrete-lined open channel extending from the entrance gate to the concrete gravity intake structure at the upstream end of the penstock. The penstock is an exposed steel pipe on supporting concrete saddles which connects to the vertical Kaplan turbine generator (G3) in the "Pup" powerhouse. A short tailrace channel extends from the "Pup" powerhouse to the Trent River.

The "Pup" substation is located to the southeast of the powerhouse, accommodating a 44 kV transformer and associated electrical equipment. It connected to Hydro One's 44 kV distribution line (R9S) at the wood pole located at the south abutment of the Ranney Gorge Suspension Bridge.

The "Pup" powerhouse is accessed from Trent Drive by a road that runs parallel to the penstock to the west of the main powerhouse. A stormwater culvert draining the adjacent property to the west discharges into the penstock trench.

Storage Facility

The storage facility consists of a fenced yard and storage shed to the east of the main powerhouse and public trail to Ranney Gorge Suspension Bridge (see Figure 1.3).

Existing Ranney Falls GS Operation

The current spill discharge for flood control at the site and emergency shutdown and normal outage of the GS is the sole responsibility of Trent-Severn Waterway (TSW). TSW Dam #10 has been operated to discharge the relevant flows.

The main powerhouse has the G1 and G2 units each operating at approximately 5 MW at design flows of 47.5 m^3/s and 45.4 m^3/s, respectively (OPG, 2011a). The "Pup" powerhouse contains the 0.72 MW G3 unit with a design flow of 8 m^3/s. Total design flow is 100.9 m^3/s. The G3 unit has reached its end-of-life and ceased operation in June 2014.

Both powerhouses share a common forebay intake structure, with the G3 unit fed by a penstock from a channel branching off the forebay. The headwater of the Ranney Falls GS is the Trent Canal at the upstream end of Lock #12, with the tailwater merging into the Trent River. The average gross head is approximately 14.27 m. Dam #10 diverts flow down a 1.5 km section of canal to feed the Ranney Falls GS and the operational requirements of Locks #11 and #12. The average available flow is approximately 118 m^3/s. River flow that is in excess to the GS and lockage requirements is spilled through Dam #10 (upstream of the GS) to the original Trent River channel. The Trent River flow merges with flows from the Ranney Falls GS tailrace at 1.1 km downstream of Dam #10.

1.2.4 Federal and Provincial Approvals

Federal Approvals

A number of permits, licences and approvals under federal legislation may be required for the proposed Ranney Falls G3 Project to proceed, including:

- Parks Canada licence to carry out the undertaking under the *Dominion Water Power Act* regulations;
- Parks Canada – TSW Work Permit under the Historic Canals Regulations pursuant to the *Department of Transport Act*;
- *Fisheries Act* authorization from the DFO for harm to fish and fish habitat with conditions for mitigation and compensation; DFO has determined that the proposed Project "will not

likely result in impacts to fish and fish habitat", a formal approval from DFO is not required (C. Strand, DFO, 2012, pers. comm. and follow up DFO Fisheries Protection email dated July 31, 2014);

- *NPA* approval of any substantial interference with navigation, or determination of no interference with navigation, from Transport Canada for any works built or placed in, on, over, under, through or across "scheduled" waters;
- *Species at Risk Act (SARA)* permit for the removal of plant species at risk (SAR), or damage or destruction of SAR habitat on federal lands in Ontario; and
- Explosives Transportation Permit from Natural Resources Canada under the *Explosives Act*.

As indicated in Section 1.0, based on technical information provided by OPG, DFO has determined that the proposed Project "is not likely to result in impacts to fish and fish habitat provided that additional mitigation measures are applied" (see Section 4.1.4). Based on the LOA dated July 17, 2012, a formal approval (authorization) from DFO is not required (C. Strand, DFO, 2012, pers. comm. and follow-up DFO Fisheries Protection email dated July 31, 2014).

Environment Canada, CWS, has approved the "Turtle Nesting Habitat Mitigation Plan" prepared by OPG to create and enhance access and nesting habitat for Northern Map Turtle (*Graptemys geographica*) and Eastern Snapping Turtle (*Chelydra serpentina serpentina*), both designated as Special Concern federally and provincially (K-A. Fagan, Environment Canada, 2012, pers. comm.) (see Section 4.1.3). An In-water and Shoreline Work Permit Application was submitted to Parks Canada – TSW on December 9, 2014 to obtain approval for implementation of the Plan under the Historic Canals Regulations pursuant to the *Department of Transport Act*.

As the Trent River/Canal from Rice Lake to Lake Ontario is included in the *NPA* List of Scheduled Waters, an application (Notice of Works Form) for approval of the proposed Project was submitted by OPG to Transport Canada on December 19, 2014. OPG subsequently received a letter dated December 30, 2014 from Transport Canada indicating that the information provided by OPG was complete for the purpose of commencing agency review.

Provincial Approvals

Based on current information, a number of permits, licences and approvals under provincial legislation may also be required. These approvals and permits may include:

- Permit for SAR plant removal, or disturbance or destruction of SAR habitat from the MNRF under the *Endangered Species Act (ESA)*;
- Permits to Take Water (PTTW) for construction (including use of temporary settling pond) and dewatering if greater than 50,000 L/day from the MOECC (MOE, 2007) under the *Ontario Water Resources Act (OWRA)*;

- Environmental Compliance Approval (MOE, 2011a) for air, noise, waste disposal and/or sewage works and wastewater for spill containment associated with the new facility from the MOECC under the *Environmental Protection Act (EPA)*;
- Waste Manifest from the Ontario Ministry of Transportation (MTC) under the *Dangerous Goods Transportation Act*;
- Letters of Clearance for archaeological resources from the Ontario Ministry of Tourism, Culture and Sport (MTCS) under the *Ontario Heritage Act*; and
- Fish Scientific Collectors Permit for fish removal and relocation from the MNRF under the *Fish and Wildlife Conservation Act*.

A transmission line (115 kV or higher) greater than 2 km long associated with a generation project requires a Section 92 Leave to Construct under the *Ontario Energy Board Act* from the Ontario Energy Board. As the proposed Ranney Falls G3 Project does not involve transmission infrastructure, a section 92 Leave to Construct will not be required.

As indicated in Section 1.0, OPG is exempt from the LTC Permit for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses under Ontario Regulation 163/06 of the *Conservation Authorities Act* (M. Lovejoy, LTC, 2012, pers. comm.).

Under subsection 62.0.1(1) of the *Planning Act*, energy projects that are approved under the *EA Act* are exempt from *Planning Act* requirements. However, as the proposed Ranney Falls G3 Project is not subject to the *EA Act*, OPG will apply for Site Plan approval and a Building Permit from Trent Hills. OPG will also consult with Trent Hills regarding construction planning, schedules, noise regulation (Trent Hills, 2005) and local traffic management. An Access/Use permit for municipal road and heavy load transportation may be required from Trent Hills.

Other Relevant Regulations/Guidelines Not Requiring Permitting

There are a number of federal and provincial regulations/guidelines that need to be considered throughout the regulatory approval process and the subsequent construction phase that do not necessarily require a formal permitting process. These include but are not limited to the following:

Federal

- *Migratory Birds Convention Act (MBCA)* and Migratory Birds Regulations prohibit the taking or killing of migratory birds and their nests and eggs, and the deposit of substances harmful to migratory birds in areas they frequent;
- Migratory birds environmental assessment guideline (Milko, 1998a);
- Ontario In-water Construction Timing Window Guidelines for the Protection of Fish and Fish Habitat (DFO, 2010);

- Canadian Technical Report of Fisheries and Aquatic Sciences 2107 Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters. (Department of Fisheries and Oceans, 1998);
- Policy on Wetland Conservation (Environment Canada, 1991) with the goal of sustaining wetland functions;
- Wetlands environmental assessment guideline (Milko, 1998b);
- A Wildlife Policy for Canada (CWS, 1990; Lynch-Stewart, 2004) with the goal to maintain and restore ecological processes and the diversity of ecosystems, species and genetic variability within species;
- Canadian Biodiversity Strategy (Environment Canada, 1995) based on the Convention on Biological Diversity (UNEP, 1994) with the goal of conserving biological ecosystems, species and genetic variability within species; and
- Practitioner's Guide to the Risk Management Framework for DFO Habitat Management Staff (DFO, 2006).

Provincial

- PPS which provides policy direction on matters of provincial interest related to land use planning and development (OMMAH, 2014);
- *Places to Grow Act* administered by the Ontario Ministry of Infrastructure and the Growth Plan for the Greater Golden Horseshoe (OMPIR, 2006);
- Under the *EPA*, regulations regarding the systematic control of collection, storage, transportation, treatment, recovery and disposal of waste including hazardous waste;
- Water Management Policies and Guidelines (Policy 1 and 2) of the MOECC (MOEE, 1994);
- Ontario Biodiversity Strategy (MNR, 2005; Ontario Biodiversity Council, 2011);
- Standards and Guidelines for Consultant Archaeologists (MTC, 2010); and
- Statements of Environmental Values by the Ontario Ministry of Natural Resources, (now MNRF), Ontario Ministry of the Environment (now MOECC) and Ontario Ministry of Culture (now MTCS) under the *Environmental Bill of Rights*.

In addition, the proposed Ranney Falls G3 Project must conform to Parks Canada policy and directives (see Section 2.2.5).

A final determination of the likely applicable federal and provincial permits and approvals cannot be made until the detailed design phase of the proposed Project is complete.

1.2.5 Conformance with Parks Canada Policy and Directives

As indicated in Section 2.2.1, the management plan for the TSW National Historic Site of Canada received ministerial approval in 2000 (Parks Canada, 2000). The process to develop a new management plan began in late 2011, and was subsequently postponed following a review

of the management plan cycle. The next management plan review is scheduled for completion in 2018. The proposed Project must conform to relevant Parks Canada policy and directives. Those policies and directives include:

Parks Canada Guiding Principles and Operational Policies guides stewardship responsibility to ensure that the record of our past, the rich diversity of wild spaces and species, the beauty and grandeur of our lands and seas, and the cultural character of our communities are not inadvertently lost over time. This policy document guides these efforts, designation and management.

National Historic Site Policy objectives are to foster knowledge and appreciation of Canada's past through a program of historical commemoration and to ensure commemorative integrity of national historic sites are maintained by protecting and presenting these sites and their associated resources for future generations.

Cultural Resources Management (CRM) Policy serves as the overall management policy for Parks Canada-administered national historic sites. As *CRM Policy* supports the management of cultural resources, it applies to conserving and preserving the national treasures that are under the stewardship of the Parks Canada Agency.

Historic Canals Policy Regulations outlines respecting the management, maintenance, proper use and protection of the historic canals administered by the Parks Canada Agency.

Historic Canals Policy fosters appreciation, enjoyment and understanding of Canada's historic canals by providing for navigation; by managing cultural and natural resources for purposes of protection and presentation; and by encouraging appropriate uses.

Canal Regulations outlines respecting the use and operations of canals.

OPG respectfully submits that the proposed Ranney Falls G3 Project does conform to the Parks Canada policy and directives presented above. As indicated in Section 3.1.7, the Trent Canal, Trent River, Ferris Provincial Park and Ranney Falls GS are considered to be cultural heritage landscapes (CHLs). As indicated in Section 4.2.5, construction of the proposed Project will not result in displacement of these CHLs. However, there is potential for temporary disruption to public access from the Ranney Falls GS property via the Ranney Gorge Suspension Bridge to Ferris Provincial Park on the opposite side of the Trent River (see Figure 1.3). To minimize and/or manage the potential conflict between public and construction traffic access, an Access Management Plan will be developed in consultation with Ontario Parks and Friends of Ferris Provincial Park. TSW will also be kept informed on the progress of the access management plan.

In addition, there is potential for disruption of local viewsheds from vessels using the section of the Trent Canal adjacent to the proposed Project forebay expansion, as well as for the public accessing the Ranney Gorge Suspension Bridge and Ferris Provincial Park. As partial mitigation, construction will not occur on Sundays and public holidays, likely the time of peak public boating use on the Trent Canal and recreational use of Ferris Provincial Park.

The potential access and visual disruption effects on these CHLs will be temporary, i.e., occurring during the construction phase of the proposed Project, and will be dissipated with the implementation of the Site Rehabilitation Plan.

Furthermore, there will be no displacement of the existing Ranney Falls GS powerhouse buildings. The proposed Ranney Falls G3 Project powerhouse building will adjoin the existing main powerhouse building and have a similar structure and façade, thereby providing overall architectural coherence. The “Pup” powerhouse building and tailrace will be preserved.

The operation of the proposed Ranney Falls GS Project will not affect the status and significance of the Trent Canal, Trent River, Ferris Provincial Park and Ranney Falls GS as CHLs.

As indicated in Section 4.2.4, during proposed Project operation, there will be negligible impacts on vessel utilization of the Trent Canal during the navigation season as a result of slightly higher flow velocities.

As indicated in Section 3.7, the Ranney Falls GS property supports a number of ecological functions and attributes that would potentially qualify portions of the property as Significant Wildlife Habitat. The displacement of turtle nesting habitat and potential snake hibernacula habitat will be offset by existing habitat enhancement on areas of the Ranney Falls GS property unaffected by the proposed Project, as well as on nearby TSW property (see Sections 4.1.2 and 4.1.3). Moreover, habitat on the property will be considerably increased in extent and enhanced after construction. Similarly, the implementation of mitigation measures will ensure that the proposed Project will not have an adverse effect on the proximate Significant Woodlands or their ecological functions (see Section 4.1.2).

As indicated in Section 2.2.1, the PFTSW (2008) was mandated in 2007 to assess and make recommendations to the federal Minister of the Environment concerning the future contributions and management of the TSW. The PFTSW concluded that the development of renewable energy resources is a sound public policy goal and supported a vigorous effort to pursue the potential for generation of green energy along the TSW. The proposed Ranney Falls G3 Project conforms with this policy recommendation.

1.3 Project Description

1.3.1 Project Components

It should be noted that the proposed Project components/structures and activities presented in this section will be refined in this phase, which involves detailed engineering design to be undertaken concurrently with DIA Report preparation.

With the exception of the electrical substation, all of the structures will be located entirely on the west side of the existing main powerhouse.

As indicated in Section 2.1, the stoplog gains and operating deck, and the portions of the supporting piers under the operating deck of the forebay intake structure require rehabilitation, which will be undertaken during construction of the proposed Ranney Falls G3 Project.

The general arrangement of the proposed Project components/structures is presented in Figures 1.5 and 1.6. A brief description of each proposed infrastructure is provided below.

Figure 1.5 Aerial Photo of Existing Ranney Falls GS Showing Proposed Project Infrastructure Layout

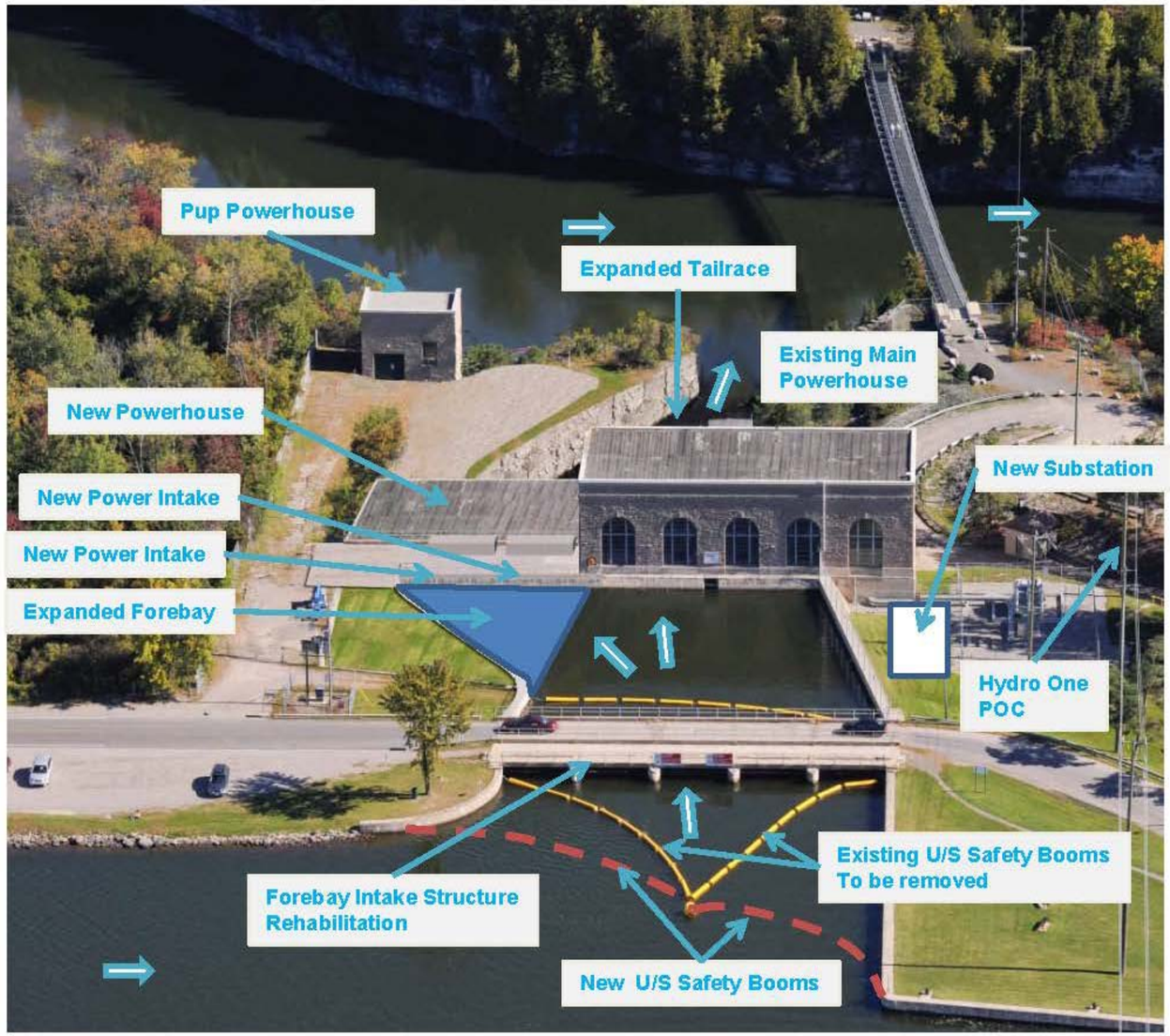
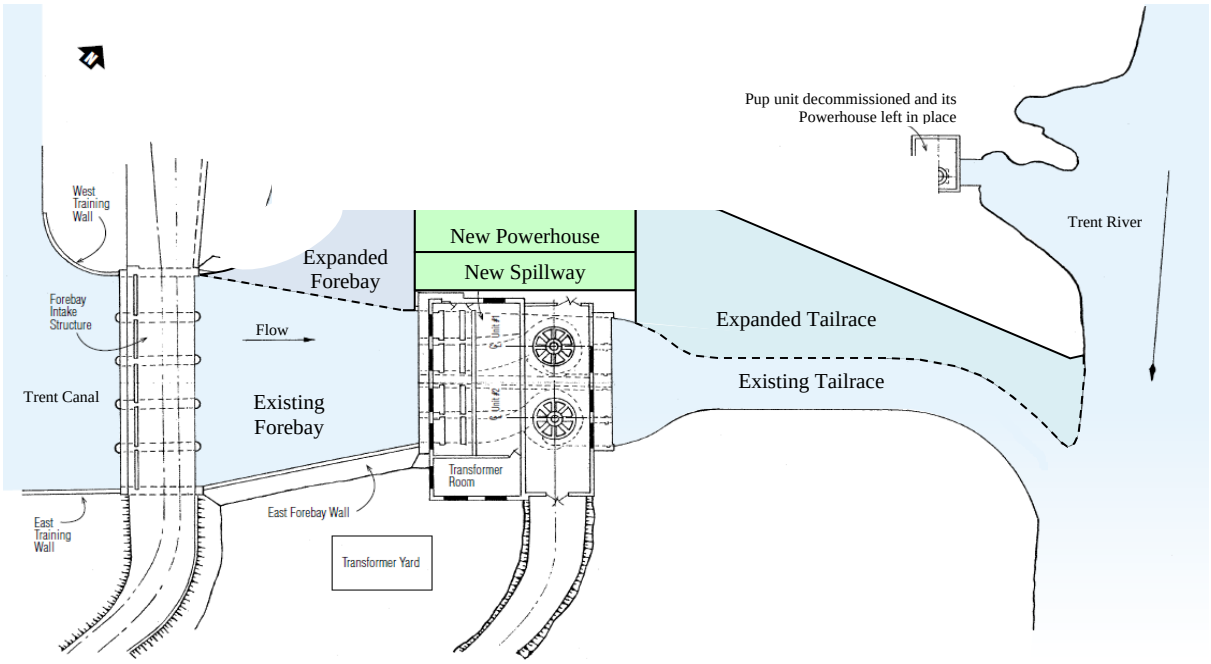


Figure 1.6 Schematic of Proposed Ranney Falls G3 Project Infrastructure Layout



Forebay Intake Rehabilitation

The forebay intake rehabilitation includes repairing the stoplog gains and operating deck, and resurfacing the portions of the supporting piers under the operating deck. The operating deck will be upgraded to accommodate the operational loads incorporate modern railings and safety signage to facilitate pedestrian use. All of the upgrade and repair work will include contemporary concrete and steel materials to renew the structure. The TSW will be provided with engineering drawings and will be consulted with on proposed repairs.

Expanded Forebay

The existing forebay will be extended westward to form a large open channel which will draw water from the Trent Canal through the forebay intake into the intakes of the existing two units (G1 and G2), the new unit (G3) and the new spillway. The new intakes will align with the existing intakes.

The west side wall of the approach channel will be streamlined from the west abutment pier of the forebay intake to the new spillway intake west wall.

The bottom slope of the expanded forebay starting from the forbay intake downstream bottom will smoothly transit downward at an approximately 16% grade. A 2 m wide and 1 m deep rock trap to capture potential debris will be constructed in front of the new powerhouse intake and spillway intake.

The expanded forebay will be designed and verified to satisfy hydraulic requirements under all new operating scenarios. Under normal operational conditions, the expanded forebay will be designed to pass the design flow of 80 m^3/s for the new G3 (a 10-time increase over the existing "Pup" unit), with total station design flow of 171 m^3/s (compared to existing flow of 100m^3/s). The current operating levels in the existing forebay fluctuate from 145.76 m to 146.21 m. The operating levels in the expanded forebay will not change. Under emergency conditions, the expanded forebay will be designed to pass the design flow of 171 m^3/s.

New Powerhouse Intake

The new G3 intake, to be constructed on competent rock foundation, will have one concrete hydraulic passage, approximately 24 m long and 10 m wide, which will initially consist of rectangular sections converging to a circular section of 7.5 m diameter that connects to a Kaplan turbine. The structure will be subject to dam safety requirements.

Trashracks made of steel will be installed in front of the new G3 intake. A 6.5 m high by 7.5 m wide vertical sliding steel gate with a lifting mechanism will be installed to allow for the complete shutdown of the turbine. The gate will be heated for winter operation. Two new sets of stoplogs will be installed upstream and downstream to dewater the water passage for station inspection and maintenance.

New Powerhouse Structures

The new powerhouse footprint will be approximately 10 m by 22 m with sufficient space to satisfy equipment operation and maintenance requirements. The powerhouse will be constructed on competent rock foundation to support the turbine generator, associated equipment and the powerhouse structure. The powerhouse will be above the unit draft tube and the spillway tunnel. The roof will be at elevation 143.0 m to facilitate the mechanical handling for turbine, spillway gate, unit gate and downstream sectional gates. The main floor will be at elevation of 134.0 m to accommodate the electrical and mechanical equipment and associated systems. All floor slabs will be designed and constructed to provide adequate lay-down area and to withstand the heaviest equipment anticipated for loading/unloading of the turbine generator. The west side wall of the powerhouse will be against rock surfaces. The east wall will be against the rock surface of the rock partition between the existing main powerhouse and the new spillway. The north bulkhead wall will face the tailrace. The south side wall will form the power intake downstream wall. All walls will be designed and constructed to be watertight. The walls will be designed to support all loads without dependence on the rock support and the support from second phase concrete. The north bulkhead wall will be designed to withstand the ice load from tailrace freezing.

A single Kaplan turbine (horizontal axis) unit with a nominal capacity of up to 10 MW at design flow of 80 m^3/s will be installed. The design of the draft tube will take into account the turbine hydraulic design requirements which prevent draft tube hydraulic instability.

New Spillway

OPG will operate the proposed expanded Ranney site within historical water levels (since 1951) and existing water management practices with a flow up to 171 cms at the Ranney site. There will be no increase in water levels operating the proposed site.

Spillway discharge capacity for flood control at Dam 10 (Ranney Falls) is the sole responsibility of the Trent-Severn Waterway (Parks Canada). Installation and operation of a new spillway to be built between the existing and new powerhouse to bypass powerhouse flows in the event of an emergency shutdown of the unit is the responsibility of OPG. The Spillway operation will minimize wave surge and mitigate any rapid increase in water level associated with unplanned station shutdown. The design for the new spillway will be developed during the next stage of development (Interim Licence) whereby General Construction Plans are prepared for the review and approval by the Parks Canada Agency.

The spillway consists of intake, tunnel, outlet and stilling basin with an overall foot print of 7 m wide by 37 m long and will be constructed on competent rock foundation. A 5 m high by 5 m wide vertical sliding steel spillway gate with heating system for winter operation will be installed at the downstream to control the flows. Stoplogs will be installed upstream and sectional gates will be installed downstream of the spillway gate to dewater the spillway tunnel.

The spillway intake will be designed to satisfy the hydraulic requirements and the outlet floor will be submerged below the minimum tailrace level to prevent ice formation in the tunnel. The spillway tunnel is 5 m by 5 m tunnel with floor sloping from elevation 13.0 down to elevation 121.44 m. The stilling basin will have energy dissipating concrete blocks to dissipate energy.

The intake and tunnel will be designed as watertight hydraulic structures and to meet dam safety requirements.

Expanded Tailrace Channel

The expanded tailrace channel will be designed with a maximum discharge capacity of 171 m^3/s, either from unit G1, G2 and G3 under normal operation or from spillway during emergency shutdown of the units. The expanded tailrace channel will be located to the east of the “Pup” powerhouse tailrace to accommodate paths for the G3 and stilling basin for the spillway. The tailrace channel will be expanded with the width near the powerhouses from 18 m to 36 m and the width at the outlet from 7 m to 18 m. The channel floor from the new G3 draft tube outlet will have a 5 m horizontal section and then subsequently change from elevation 123.0 m to 126.0 m with a slope 1V:5dvH. The channel floor from the spillway outlet will have a 15 m long stilling basin with energy dissipating blocks and then subsequently change from elevation 120.44 m to 126.0 m with a slope of 1V:2H. The channel floor from the existing G1 & G2 draft tube outlets will not be altered.

Distribution Connection

The new G3 will be connected to the other Hydro One 44 kV distribution line (R8S) that parallels the R9S line east of the existing Ranney Falls GS. The new substation will be built south to the existing substation to accommodate connecting electrical equipment and supporting structures and foundations.

Decommission of the Existing Pup Facilities

The existing Pup facilities will be decommissioned. The entrance gate will be dismantled. The existing approach channel will be incorporated into the expanded forebay. The intake structure and penstock will be removed. The powerhouse building will be preserved in accordance with the environmental assessment commitments. The existing Pup tailrace will be returned back to river bed. The single transformer station will be dismantled and all structures will be removed.

Relocation of the Upstream Safety Boom

The safety boom upstream of the forebay intake will be relocated slightly further upstream to accommodate the new operation. Safety fencing will be installed accordingly.

Creation of Habitat for Northern Map Turtle and Eastern Snapping Turtle

A complimentary habitat for Northern Map Turtle and Eastern Snapping Turtle has been created adjacent to the existing Pup tailrace area (TSW, Environment Canada and Ontario Parks will be consulted with respect to post construction monitoring).

1.3.2 Construction

The Ranney Falls G3 Project will be executed under a design-bid-build approach. During the Definition Phase, a water-to-wire (W2W) contractor will be engaged through a Request-for-Proposal (RFP) to complete the final design and layouts, and then the owner's engineer will complete the detailed design for permanent civil works. A Civil Contractor will be selected through a RFP process. All the temporary works will be the sole responsibility of the selected Civil Contractor and W2W Contractor. The Definition Phase is anticipated to be completed in December 2016.

The Execution Phase includes two stages – stage 1 for civil construction and stage 2 for W2W installation. During the stage 1, the existing G1 and G2 will be taken out of service, the Civil Contractor will design, build and remove the upstream and downstream cofferdams, complete the civil construction, including forebay intake rehabilitation, excavation and construction of the expanded forebay, powerhouse intake and powerhouse, spillway, expanded tailrace and new substation foundations, installation of auxiliary electrical and mechanical equipment and systems, trashrack, unit headgate, spillway headgate and stoplogs/section gates, water up the

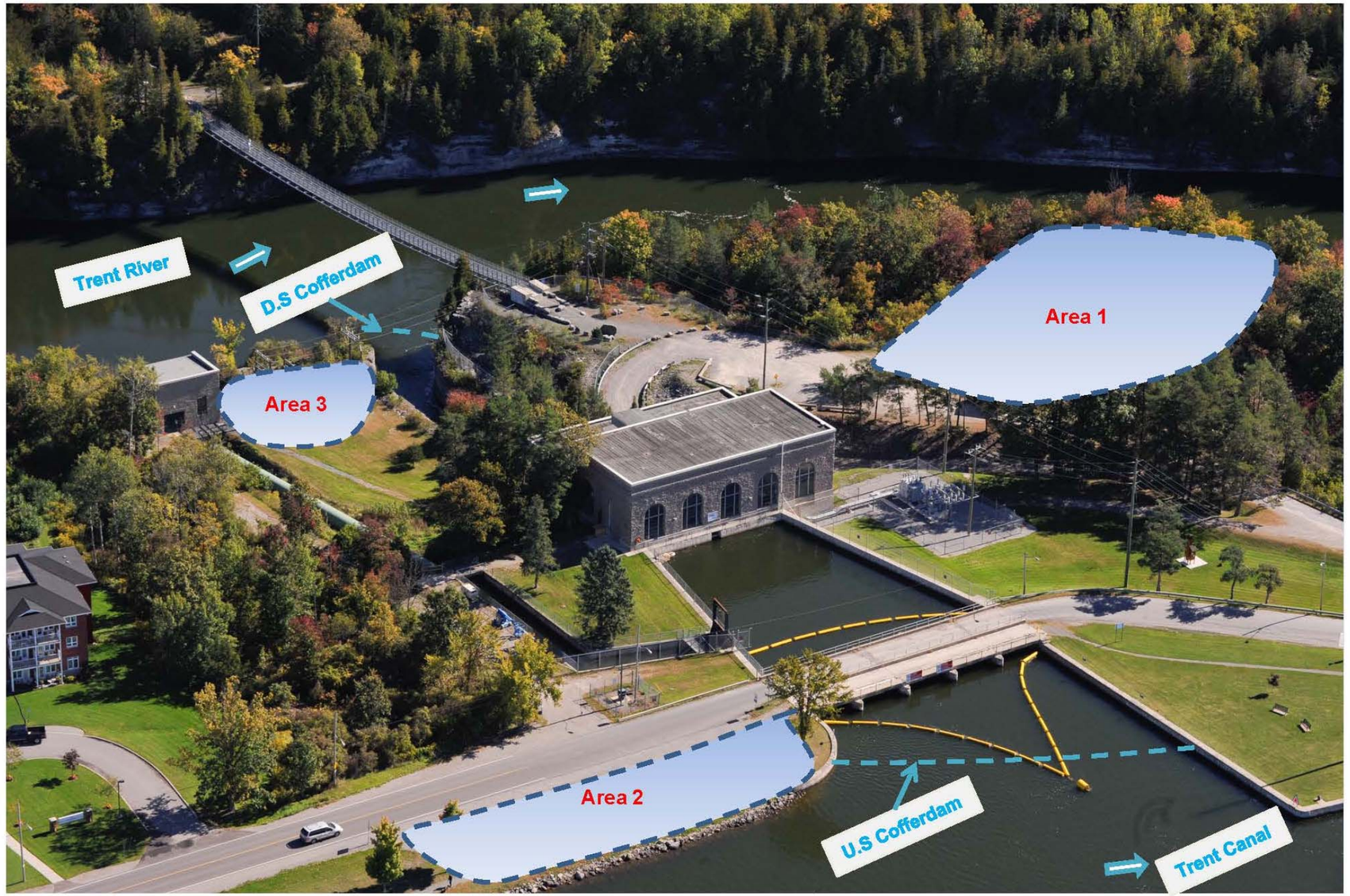
expanded forebay and tailrace, and return the existing G1 and G2 into service. Then the stage 2 starts. The W2W Contractor will install, test and commission the turbine, generator and ancillary electrical and mechanical equipment and systems, and place the new G3 into service. The OPG project team including Owner's engineer will provide oversight during the two stages to ensure quality and schedule. The Execution Phase is anticipated to start in January 2017 and be completed by December 2019.

As the environmental assessment process will be completed during the Definition Phase, the detailed engineering design will be undertaken concurrently with DIA Report preparation. Commitments made in the DIA are being communicated to the design team.

An initial perspective on what might be the construction and installation methods that would be employed by the contractors is presented below. However, it should be noted that the final sequencing, construction and dewatering methods used would be defined by the successful contractors on the basis of environmental requirements and constraints outlined in the OPG procurement process.

Proposed construction laydown areas include OPG's storage yard, the lawn to the south of the main powerhouse and the area between the access road to the "Pup" powerhouse and the proposed expanded tailrace (see Section 4.1.2). OPG is also pursuing approval from Parks Canada – TSW for use of the lawn area south of Trent Drive to the east and west of the existing forebay.

Figure 1.7 Construction Laydown Areas



Fencing will be installed prior to construction initiation to prevent turtle access to current nesting habitat in the construction area.

During stage 1, the Civil Contractor will be the Constructor. An upstream cofferdam will be installed upstream of the forebay intake for repairing the forebay structure and civil construction. The upstream cofferdam may be made of sheet piles or rock fill. The downstream cofferdam will consist of a dam within the existing tailrace channel outlet and rock plug to seal the expanded channel portion. The dam within the existing tailrace may be made of rocks from the excavation and waterproof membrane. A cementitious grout curtain may be installed through the rock plug to stop inflows from the Trent River.

After cofferdams installation, the existing forebay and tailrace channel will be dewatered and any fish present transferred to the Trent Canal and Trent River, respectively, prior to complete dewatering. Cofferdams installation and dewatering will be undertaken outside of the timing restriction for in-water construction to protect the fish spawning and egg incubation period for warmwater and coolwater fish communities (April 1 to June 30).

The upper shale-rich bedrock domain with a thickness in the range of 18 to 23 m will be the main domain encountered during excavation (see Section 3.4). This material will form the walls of all planned excavations, temporary plugs and at least some of the excavation floors, depending on excavation depth. It is expected that the overlying overburden and upper weathered bedrock horizon with a thickness likely varying between 1 and 4 m can be excavated using conventional earthmoving equipment such as excavators and bulldozers, without ripping, or drilling and blasting. Based on the geotechnical findings, the upper shale-rich bedrock domain is considered to be non-rippable and therefore its excavation is expected to require drilling and blasting (Knight Piésold Ltd., 2011a).

The lower shale-poor bedrock domain is likely to be near the base of the excavation and the new powerhouse may be founded on this domain, or near boundaries of the two domains, i.e., upper shale-rich and lower shale-poor. Therefore, significant excavation in the lower shale-poor bedrock domain is not anticipated. If excavation of the lower domain is necessary, it is expected that drilling and blasting will be required due to its greater competency. The current excavation plan indicates that the excavation will be limited to the upper shale-rich bedrock domain (Knight Piésold Ltd., 2011a).

As indicated in Section 3.4, the upper shale-rich bedrock domain consists of inter-bedded shale and limestone with a number of weak clay-like seams believed to be associated with the shale-rich layers. Any seams in the powerhouse foundation area will be excavated if they are within 1.5 m of the excavation base. In the absence of these weak materials in the immediate vicinity of the foundation, the bearing capacity is expected to be within the range of typical values for soft bedrock (Knight Piésold Ltd., 2011a).

It is expected that the material excavated from the upper shale-rich bedrock domain may be suitable for structural fill. It will be important to ensure that the excavated material is well graded and that it contains only a small proportion of thin, flat or elongated particles (which may come from the shale layers) if it is to be used for fill (Knight Piésold Ltd., 2011a).

The shale layers and soil seams encountered in the rock walls may become locally recessed during excavation, resulting in local wall stability issues associated with overhanging limestone beds. Intersecting steeper discontinuities will need to be mapped during excavation and may result in a few wedges that need to be stabilized. Rock mass performance is expected to be reasonable and steep walls should be achievable with careful excavation practices (Knight Piésold Ltd., 2011a).

The groundwater table on the lower level of the Ranney Falls GS property occurs within the upper shale-rich bedrock domain at an approximate depth of 5 to 7 m. Groundwater and precipitation/runoff inflows can be expected due to any excavation within the upper shale-rich bedrock domain. Based on the geotechnical survey findings, inflows are expected to be manageable during excavation with inflow at a rate up to 3 to 5 l/s. Higher than expected inflows may occur if high permeability features are encountered, or if blasting and rock excavation techniques significantly modify the intrinsic hydraulic conductivity of the rock mass (Knight Piésold Ltd., 2011a). To minimize dewatering requirements, a cementitious grouting curtain may be required along the excavation line just before starting the excavation to seal the paths of groundwater inflow. The cementitious grouting will be made of cement, fine sand and water in compliance with industrial practices. Other methods that are generally accepted in the construction industry to reduce or avoid the groundwater inflow may also be employed. All the water from the construction pit will be properly tested and pre-treated if required prior to discharging into Trent River.

The drainage culvert from the adjacent property will be diverted out of the construction pit.

Once the excavation is completed, the Civil Contractor will complete the repair of the forebay structure, decommission of the existing G3 facilities, the construction of the retaining walls, intakes, powerhouse and spillway and installation of the auxiliary electrical and mechanical equipment and systems and gates. Then the Contractor will remove the upstream cofferdam and water up the forebay. The expanded tailrace channel will be watered up, and then the downstream cofferdam including the rock plug and extended riverbed will be removed through in-water excavation, adequate silt curtains will be installed to protect the Trent River water body. After the downstream cofferdam is removed, the existing G1 and G2 units will be returned to service.

During stage 2, the W2W Contractor will be the Constructor. The W2W contractor will install, test, and commission the new G3, including turbine generator, transformer, switchgear, protection and control systems, and also have responsibility for the Hydro One Network connection.

After the Civil and W2W Contractors are retained, they will develop the EMPs that will be provided to the TSW to review. That EMP will be covering a number of details but may not include all the details such as rock plug removal in the EMPs. However, OPG is willing to involve the TSW in a further review of the grouting and removal of the rock plug activities when those work activities are further planned out.

The Execution Phase including civil construction and W2W installation is anticipated to last up to 36 months with the earliest possible in-service date in 2019.

1.3.3 Operation

Operation of the new Ranney Falls complex including the existing G1 and G2, new G3 and new spillway will result in optimal use of the total water available for power generation (mean annual flow of approximately 118 m^3/s), while still complying with the current water level limits.

The new spillway that is to be built in between the existing powerhouse and the new powerhouse will be used solely to control water levels within the Trent Canal which will ensure compliance with the current level limits during an emergency shutdown of the units.

During the navigation season from mid-May to mid-October, generating flows transported through the Trent Canal by TSW are generally up to the current Ranney Falls GS design capacity of 100.9 m^3/s. With the proposed project, the maximum flow transported through the Trent Canal for power generation will be increased from 100 to 120 m^3/s. During the non-navigation season from mid-October to mid-May, the maximum generating flows transported through the Trent Canal will be up to 171 m^3/s.

As illustrated in Figure 1.8 below, Dam #10 currently diverts flow to the 1.5 km section of the Trent Canal to feed the Ranney Falls GS and meet the operational requirements of Locks #11 and #12. River flow that is in excess of the generating station and lockage requirements is spilled through Dam #10 to the original Trent River. The Trent River flow merges with flows from the Ranney Falls GS tailrace approximately 1.1 km downstream of Dam #10. Currently, the 101 m^3/s, passes through the Ranney Falls GS and Locks #11 and #12. With the proposed increased generating capacity, it is planned that a flow of up to 171 cms will be diverted to the Ranney Falls complex and Locks #11 and #12. The hydrological conditions due to dam spillage and leakage are depicted in Photographs 1.1 and 1.2, respectively.

Figure 1.8 Dam #10 & Trent Canal &Trent River

Photograph 1.1 Trent River Hydraulic Regime During Dam #10 Spillage

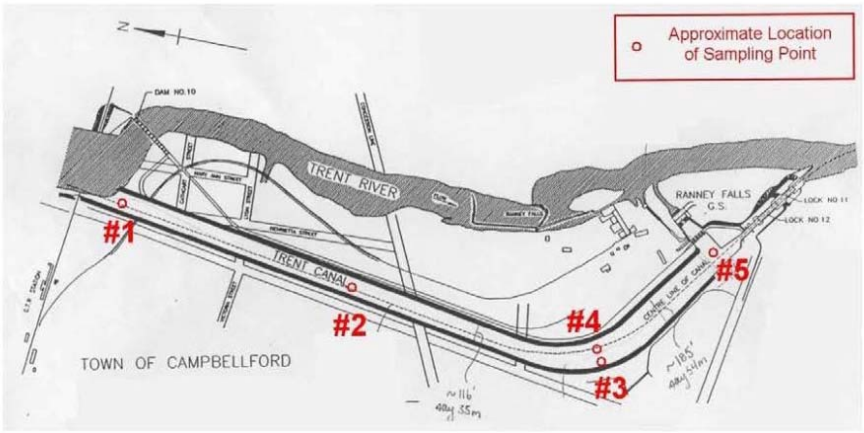
Photograph 1.2 Trent River Hydraulic Regime During Dam #10 Leakage

The new spillway will be used to by-pass station flow to the tailrace channel in emergency shutdown situations to control water levels within the Trent Canal in compliance with the current limits.

A number of studies have been undertaken to verify the hydraulic performance of this 1.5 km section of the Trent Canal under the existing water level limits with the existing and new operation flows, as well as the hydraulic performance of the existing G1 and G2 and proposed G3, and the new spillway. The conclusions have been taken into consideration ensuring the final design in compliance with the existing operation water level limits.

A study of erosion potential of bed substrate in the Trent Canal upstream of Ranney Falls GS (see Figure 1.9) due to increased flows as high as 171 m^3/s was undertaken by Environment Canada (Krishnappan, 2007). The objective of the study was to determine the critical shear stress and erosion rate of the canal's wetted perimeter. It was determined that with an applied shear stress of 8 Pa reflecting an increase in flow velocity from 0.9 m/s at the existing maximum flow of 101 m^3/s to 1.5 m/s at the proposed maximum flow of 171 m^3/s, the canal bottom armour layer remained stable with minor transport of fine material that underlies the armour layer. Moreover, the maximum equivalent canal flow rate of 171 m^3/s could be sustained in the canal without affecting canal dyke stability.

Figure 1.9 Trent Canal Bed Substrate Erosion Potential Study Locations



As part of a numerical hydraulic study, using HEC-RAS software, developed by the Hydrologic Engineering Centre (HEC) of the U.S Army Corps of Engineers (USACE), to investigate water surface profiles and flow velocities in the Trent Canal between Dam #10 and Ranney Falls GS, under the current water level limits, with the existing and future flows. The study concluded that the Trent Canal can transport the maximum power flows up to171 m^3/s, while maintaining the water levels within the current limits and maximum flow velocities within the Trent Canal will increase from 0.9 m/s to 1.5 m/s. Based on the scenarios modeled, the proposed spillway will be able to effectively control water level within the Trent Canal during an emergency shutdown of the units.

A hydraulic study using the Computational Flow Dynamics (CFD) model was undertaken to assess the potential for vortex formation at the forebay under existing and future flow conditions. Simulation of existing flow conditions indicated no major swirling flows in the flow field near the existing intakes, which is consistent with observations at Ranney Falls GS. Simulations of the future flow conditions indicated no significant cross-circulations near the new intakes, suggesting that the potential for vortex formation at the new G3 intake and spillway intake is likely to be negligible.

Figure 1.10 Flow Velocities in the Straight Canal Reach and at the Locks Based on Proposed Flow Increase

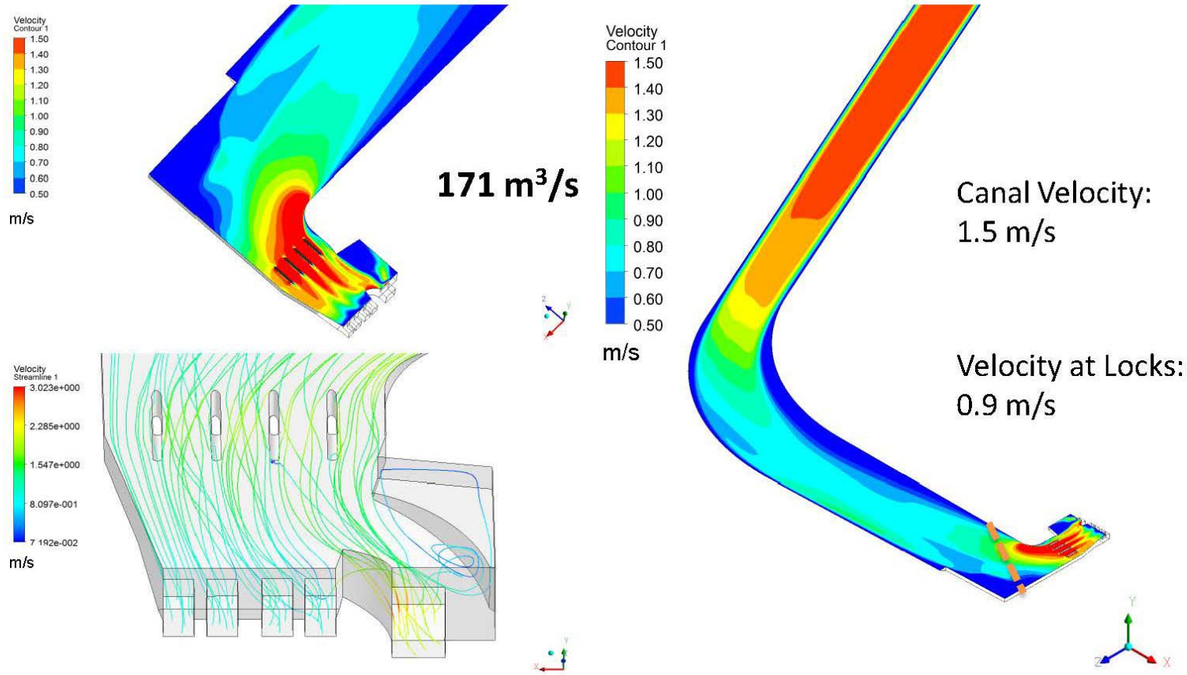
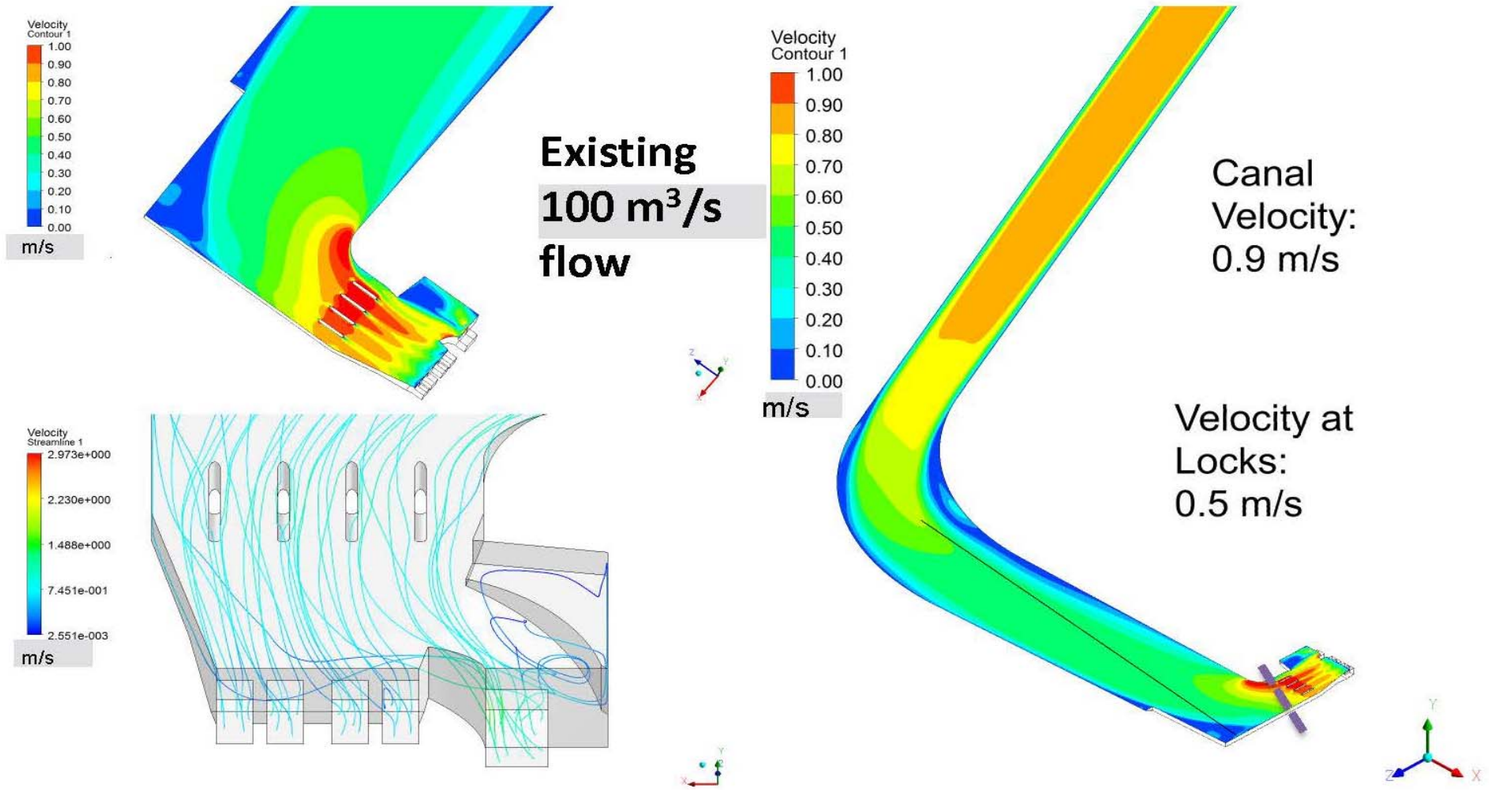


Figure 1.11 Flow Velocities in the Straight Canal Reach and at the Locks Based on Current Navigation Flow



Note: **velocities at flow of 120 m³/s is expected to be 1.0 m/s in the Canal and 0.6 m/s at the Locks**

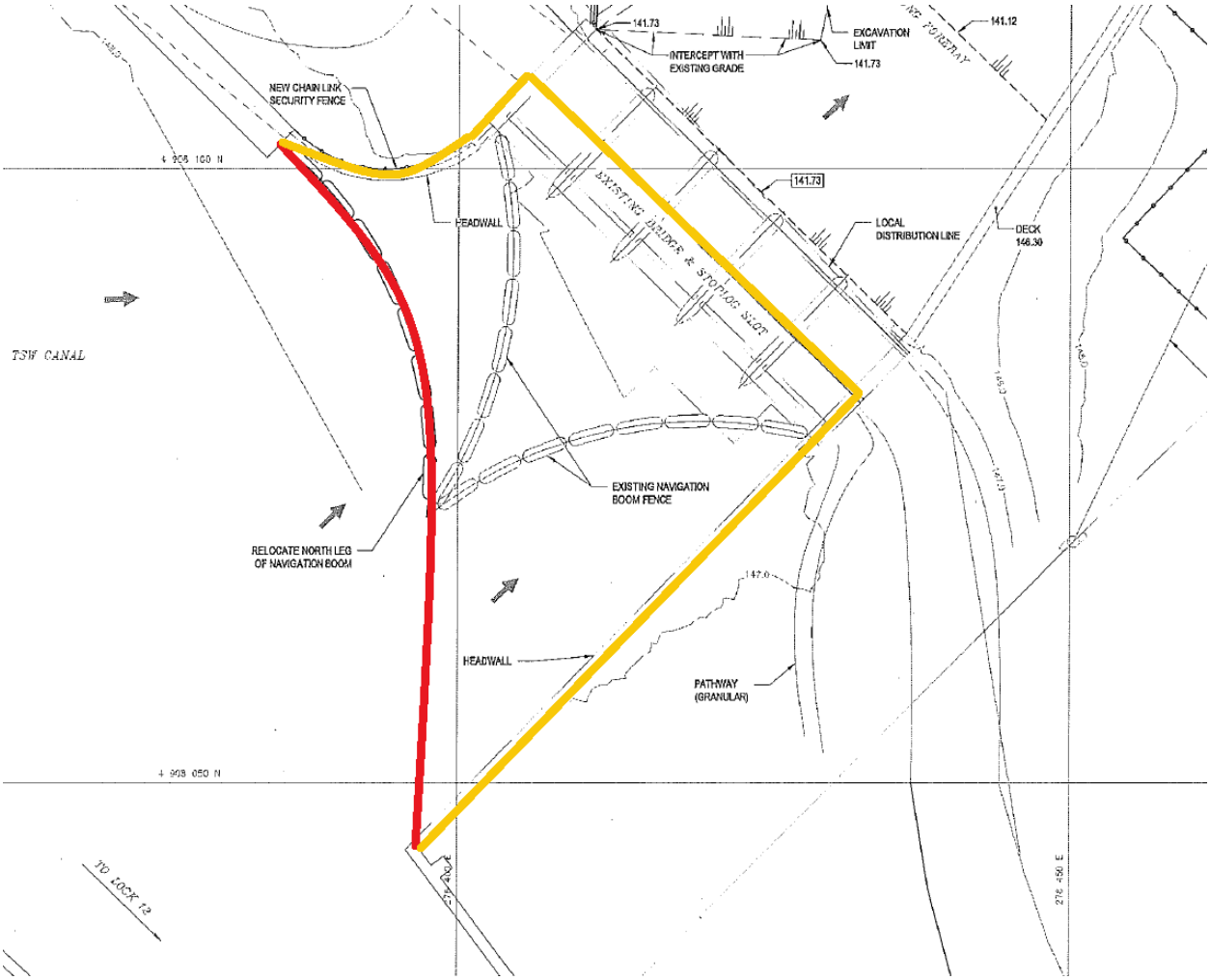
Based on a maximum flow of 171 m^3/s, velocities in the straight section of the canal and near the forebay intake structure were expected to increase from 0.9 to 1.5 m/s and from 0.5 to 0.9 m/s, respectively (see Figure 1.10). However, during the navigation season from mid-May to mid-October with flow limited to 120 m^3/s from the current 100 m^3/s, the maximum flow velocity in the straight section of the canal is expected to increase from 0.9 to 1.0 m/s (see Figure 1.11). In the area near the forebay intake structure, the maximum flow velocity is expected to only increase from 0.5 to 0.6 m/s. It should be noted that flow velocities in the navigable part of the Trent River near the Campbellford main town bridge are higher than those anticipated in the Trent Canal upstream of Locks #11 and #12.

The simulation indicated that the proposed spillway would have sufficient capacity to pass the increased flow up to 171 m^3/s.

As indicated in Section 2.3, a gate with lifting mechanism will provide for complete isolation. The existing stoplog gates in the forebay intake structure will be utilized to dewater the expanded forebay for station inspection and maintenance.

The V-shaped safety booms currently installed in the Trent Canal in front of the Forebay Intake structure will remain in place (see Figure 1.5), but will be reconfigured to prevent vessels from being subjected to the slightly higher traverse velocity. The anchor point at the tip of the north and south leg of the V will be moved outward or upstream along the curved training wall (see Figure 1.12 below).

Figure 1.12 Safety Booms



OPG will operate the proposed expanded Ranney site within historical water levels (since 1951) and existing water management practices with a flow up to 171 cms at the Ranney site. There will be no increase in water levels operating the proposed site.

Spillway discharge capacity for flood control at Dam 10 (Ranney Falls) is the sole responsibility of the Trent-Severn Waterway (Parks Canada). Installation and operation of a new spillway to be built between the existing and new powerhouse to bypass powerhouse flows in the event of an emergency shutdown of the unit is the responsibility of OPG. The Spillway operation will minimize wave surge and mitigate any rapid increase in water level associated with unplanned station shutdown. The design for the new spillway will be developed during the next stage of development (Interim Licence) whereby General Construction Plans are prepared for the review and approval by the Parks Canada Agency.

The technical and environmental aspects associated with the operation of the proposed Ranney Falls G3 Project will be reviewed during this phase, and will be refined and confirmed as the engineering work and DIA proceed.

1.4 STRUCTURE OF THE REPORT

As the proposed Ranney Falls G3 Project is on a federal waterway and subject to the federal *Dominion Water Power Act* administered by Parks Canada, it is not subject to the Ontario *Environmental Assessment Act* (V. Mitchell, MOE, 2012, pers. comm.). The proposed Project is also exempt from the Lower Trent Conservation (LTC) Permit for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses under Ontario Regulation 163/06 of the *Conservation Authorities Act* (M. Lovejoy, LTC, 2012, pers. comm.).

This report was prepared as a TSD to the DIA Report for the proposed Ranney Falls G3 Project (SENES, 2015a) to fulfill federal department obligations to the *CEAA 2012*. As part of the federal government plan for Responsible Resource Development, which seeks to modernize the regulatory system for project reviews, the *CEAA* (S.C. 1992, c. 37) was repealed when the *CEAA 2012* came into force. For projects on federal lands that are not designated projects, *CEAA 2012* requires that before federal authorities make any decision that would allow a project to proceed, they must determine whether the project is likely to cause significant adverse environmental effects. As *CEAA 2012* does not establish a process for determining whether the undertaking of a non-designated project is likely to cause significant adverse environmental effects, the involved federal departments, e.g., Parks Canada, DFO, Transport Canada, Environment Canada, must establish their own (or conduct joint efforts) for the environmental effects review process. The DIA Report and this Public and Agency Consultation TSD provide the requisite information to enable the involved federal departments to undertake the environmental effects review process.

The DIA Report provides a description of the proposed undertaking, summarizes the overall environmental setting and anticipated environmental effects, recommends appropriate mitigation measures to minimize or obviate these effects, and describes agency, public and Aboriginal consultation.

This Public and Agency Consultation TSD is organized into four main chapters:

- Chapter 1.0 **Introduction** – provides a description of the proposed Ranney Falls G3 Project;
- Chapter 2.0 **Public Consultation** – describes the public consultation and engagement program;
- Chapter 3.0 **Government Agency Consultation** – describes the government agency consultation and engagement program;
- Chapter 4.0 **Consultation Issues and Responses** – identifies the interests and concerns of the public and agencies with respect to the proposed Project and the responses and actions of OPG to address these interests and concerns;

- Chapter 5.0 **Ongoing Consultation** – emphasizes OPG's commitment to continue its consultation and engagement of the public and agencies during proposed Project construction and operation;
- Chapter 6.0 **Summary and Conclusions** – summarizes the outcome of public and agency consultation and engagement.

Chapters 7.0, 8.0 and 9.0 provide the References, Acronyms/Abbreviations and Glossary, respectively.

2.0 PUBLIC CONSULTATION

2.1 PUBLIC CONSULTATION ACTIVITIES

Public consultation activities for the proposed Ranney Falls G3 Project involved the following:

- stakeholder identification and communication, in addition to government agencies (see Section 3.0), including owners and/or residents of nearby properties, non-government organizations and other groups and persons such as elected officials with an interest in, or in possession of environmental baseline information relevant to, the proposed Project;
- scheduling of an informal Open House to inform the public about the proposed Project, describe the studies undertaken, present the results of the EA, and solicit input on proposed design, mitigation and effect management; and
- development of a Project-specific web site that was maintained throughout the EA providing a widely accessible venue for interested people to obtain and download Project information and reports in a timely manner, as well as an email and telephone number for interested people wishing to make comments or seeking further information.

2.2 OPEN HOUSE – JUNE 2015

A public Open House was held on June 17, 2015 at the OPG Campbellford Service Centre located at 8 Trent Drive, in Campbellford, Ontario, from 4:00 pm to 8:00 pm. The OPG Campbellford Service Centre is located approximately 260 m south west of the Ranney Falls GS. The purpose of the Open House was to:

- Introduce the Ranney Falls GS Expansion Project;
- Discuss the existing environment, future construction, future operation, and environmental mitigation measures;
- Introduce the environmental regulatory processes; and
- Provide the community with the opportunity to share with OPG their interests, concerns, input, questions, and ideas with respect to the Project.

The following methods were used to publicize the Open House:

- A “Notice of Public Open House” was published in the **Northumberland News** on Thursday May 7, 2015 and Thursday May 14, 2015;
- A “Notice of Public Open House” was published in **The Community Press** on Thursday May 7, 2015 and Thursday May 14, 2015;
- Hand delivery of the “Notice of Public Open House” to approximately 60 residences neighbouring the Ranney Falls GS, on May 20, 2015; and
- The “Notice of Public Open House” was posted to the Project website (www.ranneyfallsg3.com) in early June 2015.

Refer to Appendix A for a copy of the "Notice of Public Open House". In addition, on May 20, 2015, a presentation regarding the Project was conducted to the residents of the Island Park Retirement Residence located immediately northwest of the Ranney Falls GS, to provide information to these local residents in the event they could not easily access the Public Open House.

The format of the Open House provided an opportunity for attendees to view display panels and speak individually with members of the Project Team and environmental consultants. Two officials from Parks Canada were also present to answer any questions pertaining to the Trent-Severn Waterway. Thirty-one panels were on display describing various aspects of the Ranney Falls GS expansion project, including, but not limited to: information about OPG, location including existing environment, the history of hydroelectric generation along the Trent-Severn Waterway and the Ranney Falls GS, features and benefits of the expansion project, future construction, future operation, and environmental mitigation measures, and environmental regulatory processes. A series of location plan and site plan maps were also available for viewing in addition to engineering diagrams outlining the details of the expansion project.

Approximately 24 people attended the Open House of which 19 officially signed in at the door. Upon arrival, each participant was asked to sign-in at the reception desk if they wished to be added to the Project mailing list. Attendees included site neighbours, area residents, agency representatives, contractors, municipal staff, the mayor and one municipal councillor.

Upon signing in, attendees were informed of the format of the Open House and were provided with a questionnaire which they were encouraged to complete and submit at the Open House or by mail, fax, or email at a later date. The questionnaire included the following questions:

1. *Do you have comments or concerns about the Ranney Falls GS Expansion Project?*
2. *Are you aware of any particular environmental, social, or economic features or values near the Ranney Falls GS site that we should be aware of?*
3. *Do you have any other comments, questions, concerns or issues about the Project that you would like to share with members of the Project Team at this time?*
4. *In the event that OPG holds another event regarding the Project, would you like to be added to the mailing list?*

The overall tone of the Open House was generally neutral to positive. In general, the most common comments which were raised at the Open House pertained to:

- Details of the expansion project and project need;
- Employment opportunities and hiring locally;
- Managing and mitigating construction effects including noise, traffic, and wildlife;
- Facility safety; and
- Water levels related to facility operations.

One completed questionnaire was received at the meeting. Comments expressed concern regarding environmental impacts to water levels, water quality, and the thickness of the ice during the winter months. A detailed summary of all comments and questions raised at the Open House is provided in Table 2.1 below.

Table 2.1 Summary of Comments and Questions Received

Issue	Comments and Questions Received	Responses
Construction	What is the construction schedule? When will construction start? When will the facility be completed?	OPG is hoping to start construction in 2016. Construction is estimated to take approximately two years.
	Concern about impacts to nearby residents due to drilling and blasting during construction.	Blasting may not be required but drilling for sure will be. All blasting and drilling work will be carefully controlled and supervised and be done in conformance with all rules and regulations. Any immediate impact from blasting is restricted to a few meters near the blasting location. Noise control by-law will be adhered to.
	It would be preferred that there be no drilling or blasting when there will be a higher volume of visitors to the local parks, on weekends and during the months of July and August.	Construction activities will abide with the specific Trent Hills (2005) Municipal Noise By-Law and will be limited to between 6 a.m. and 9 p.m. No construction activities will occur on Sundays and holidays except in the case of urgent necessity.
	Concern regarding noise and dust resulting from construction activities.	Construction activities will abide with the specific Trent Hills (2005) Municipal Noise By-Law and will be limited to between 6 a.m. and 9 p.m. No construction activities will occur on Sundays and holidays except in the case of urgent necessity. Dust will be controlled by managing stockpiles and activities according to a series of mitigation measures identified in the environmental assessment process and in what will be the contractor's environmental management plan.

Issue	Comments and Questions Received	Responses
	Will the bridge be closed / inaccessible during construction?	For certain periods the bridge may be closed or inaccessible. It will be not closed over the course of the entire construction process; any closures will be communicated to the community ahead of time.
	Will there be a change in traffic flow due to construction activities?	Yes but this could happen only periodically and not throughout the duration of construction.
	Where will fill be deposited?	That has not been determined at present but the municipality has indicated an interest in receiving fill at a close location.
Employment Opportunities	Will workers be hired locally?	We expect that most of the workers will come from this area of central-eastern Ontario although this is not a requirement. Once the construction contractor is selected, it will be the contractor's responsibility to hire resources to complete the work.
	How will the expansion project impact the local economy? Will some jobs be created?	OPG has estimated that over $10 million will be spent locally either through expenditures, contracts and payments/wages to workers.
Environmental Effects	Concern regarding excess noise due to construction and operation resulting from expansion.	Construction activities will abide with the specific Trent Hills (2005) Municipal Noise By-Law and will be limited to between 6 a.m. and 9 p.m. No construction activities will occur on Sundays and holidays except in the case of urgent necessity.
	Concern pertaining to possibility of nighttime noise.	Construction activities will abide with the specific Trent Hills (2005) Municipal Noise By-Law and will be limited to between 6 a.m. and 9 p.m. No construction activities will occur on Sundays and holidays except in the case of urgent necessity.
	Concern regarding springtime water contamination (silt and mud) due to excavation activities, which may affect many species of fish during the spawning period.	A series of mitigation measures has been identified to reduce and eliminate the potential for such impacts. The contractor will be required to put in place an environmental management plan that will stipulate the activities they will do to prevent such effects. No in-water activity will take place during

Issue	Comments and Questions Received	Responses
		spawning period.
	Will water levels and river flow change due to the existence of the facility?	Water levels and flows will not be impacted. There will be slight velocity changes at certain times of years in the Canal itself. These will be slight and will not impact on boating during navigation season The Project will increase discharge capacity for the canal. During storm periods this will be an additional preventative measure that can reduce the likelihood of flooding of the canal, which has been an issue in the past.
	How will climate change affect water flows?	According to climate modeling scenarios provided by the Ministry of Natural Resources, even under a higher greenhouse gas scenario and projecting to the 2071 to 2100 period the projected increase in summer (April to September) precipitation will be in the 0 to -10% change range. This is also the maximum change in precipitation for this period. No major change to precipitation over the long-term is expected. As such, the long-term precipitation changes should have minimal impacts on flow, however there will always be seasonal and year to year variability.
Miscellaneous	What types of snakes are located at the Ranney Falls GS site?	The only snakes specifically identified at or near the Ranney Falls GS have been the eastern garter snake or the common water snake.
	The surplus rock fill removed during construction could be useful to build a walleye spawning site in this section of the river. Have you contacted the MNRF for their comments on this possibility?	There likely will be surplus rock fill. MNRF is aware of the Ranney Falls Project but has not approached OPG in wanting this rock.
	I am in favour of this project.	Comment Noted
	I am concerned about the local wind and solar projects but have a preference for hydroelectric power in the area.	Thank you. Comment Noted.

Issue	Comments and Questions Received	Responses
	What is the difference between solar and hydro power?	They are really two different technologies with different types of impacts. Hydro projects utilize available water to turn a turbine that generates electricity; OPG believes the Ranney Falls G3 Project makes logical sense because the infrastructure is already in place and in the case of the redevelopment the footprint is small and the proposed redevelopment can make use of existing infrastructure.
	How much power does 1 MW of electricity produce?	1 MW is approximately enough power for 750 to 1,000 homes.
Operations	Concern pertaining to noise resulting from facility operations. Will any noise be heard from local residences?	It is possible noise from the construction site will be audible at certain times. However, noise will be limited and construction activities will abide with the specific Trent Hills (2005) Municipal Noise By-Law and will be limited to between 6 a.m. and 9 p.m. No construction activities will occur on Sundays and holidays except in the case of urgent necessity. Noise during operations is contained inside the new powerhouse similar to the existing station.
	When will the expanded facility be fully operational?	Should the project proceed we anticipate that the project will become operational in 2019
Existing Ranney Falls GS Plant (including Pup)	What will happen to the "Pup"? I understand that it will be left behind, but will it be used for anything?	Yes it will be left in its present location. OPG has no plans for it at present.
Safety	Is there going to be an increase in water flow / current? There are a lot of kayakers / canoers that use this stretch of the Trent-Severn Waterway. Will the expansion project affect the current and endanger the kayakers / canoers?	No the flow changes are expected to be negligible.
	An increase in water flow during the winter months there may be less ice on the canal and/or ice may be thinner and more dangerous. On occasion, snowmobilers may attempt to cross the canal over the ice in the winter. For this reason, perhaps it is a good idea to place signage along the canal bank advising of faster water flow and thinning ice.	Signage will be placed as part of dam safety program in cooperation with TSW

Issue	Comments and Questions Received	Responses
	On occasion, I hear a rush of water from the station, will there be a sound signal installed to alert people of this?	The rush of water is from the Ranney Falls in the River. No sound signals exist at the site
Transmission	Can you provide power from the station directly to local residences? Why do you have to connect directly to the grid?	No – the power produced at the generating station is high voltage an cannot be directly connected to a home. The electricity coming to your home is via a low voltage line.

2.3 ISLAND PARK RETIREMENT COMMUNITY – MAY 2015

Prior to the June Open House a public meeting was held at the Island Park Retirement Community which is the adjacent neighbour to Ranney Falls. The presentation on the project continued largely the same content as provided in the June Open House. Approximately 15 residents and workers were present at the session.

No specific concerns were raised but there were questions about the history of the Ranney Falls Generating Station.

2.4 PUBLIC CONSULTATION SUMMARY

Table 2.2 provides a detailed summary of public consultation and engagement.

Table 2.2 Public Consultation and Engagement Summary

Date	Contact Type	Contact	Description
4-Jan-12	email	Dr. Eric Sager, Professor, Fleming College/Trent University	Request for baseline information on benthic macroinvertebrates, plankton, sediment quality, etc.
23-Jan-12	email	Dr. Eric Sager, Fleming College/Trent University	Provided other contacts for baseline information: Francine MacDonald, MNR and Dr. Mike Fox, Trent University.
26-Jan-12	email	Dr. Mike Fox, Professor, Trent University	Request for baseline information on benthic macroinvertebrates, plankton, sediment quality, etc.
26-Jan-12	email	Dr. Mike Fox, Trent University	No data available; Round Goby is present throughout the Trent River.
9-Feb-12	email	Peter Misener, Ground Force Environmental	Request for information regarding groundwater treatment.
9-Feb-12	email	Wendy Walker, Pall Power Generation	Request for information regarding groundwater treatment.
9-Feb-12	email	Harry Oussoren, Insitu Contractors	Request for information regarding groundwater treatment.
29-Feb-12	presentation	Island Park Retirement Community	Presentation to inform residents of the neighbouring Seniors Home about the proposed Project.
12-Jun-12	email	Stephen Wong, Suncor	Response to information request regarding capital cost of the proposed Project (to be finalized at the end of the Definition Phase), start date (dependent upon EA process completion and acquisition of permits/approvals) and construction duration (~24 months).
25-Sep-12	email	Anna Spears, SNL Energy, Energy Industry Content Analyst	Request for information regarding current status of the proposed Project.
15-Oct-12	email	David A. Gorovenko, Sr. Hydro Mechanical Engineer, Black & Veatch	Request to be included in the proposed Project mailing list.

Date	Contact Type	Contact	Description
3-Jan-13	email	Steve Josephson, Director, Business Development, Sodexo Canada – Remote Sites	Request to be included on proposed Project mailing list.
25-Jan-13	email	Dave Klapwyk, J-Tech Laser Scan Inc.	Request for information on proposed Project status and the engineering firm “preparing a review of the site”.
22-Mar-13	email	Uche Onyabuchi, Investment Consultant, Gondon Limited	Inquiry in the potential for investing in the proposed Project.
2-May-13	email	Nick Di Santo, Account Manager, Harsco Infrastructure Canada	Request to be included in the proposed Project mailing list.
19-Apr-13	email	Nabil Shehade, KTI, INC.	Request for contractor name for the proposed Project.
13-Jun-13	email	Michael Blackborrow, Chemical Engineering Technologist, Carboline	Request for information on study status and projected timeline for study completion.
17-Jun-13	email	Mr. Lv, China Yunnan Foreign Trade and Economic Cooperation Limited	Inquiry as to potential to address the “need to purchase some units of total stations to meet customers’ demand in Chinese market”.
19-Jun-13	email	Mr. Lv, China Yunnan Foreign Trade and Economic Cooperation Limited	Inquiry as to potential to supply “some units of total stations for large construction projects in China”.
13-Sep-13	email	Ron Mason, Business Development Rep, Black & McDonald	Request to be included in the proposed Project mailing list.

Date	Contact Type	Contact	Description
30-Sep-13	email	Jay A. Anders, Regional Director, Hydropower and Hydraulic Structures, Black & Veatch	Request to be included on the proposed Project mailing list.
22-Oct-13	email	Alex Bianchi, Territory Manager, Syntec Process Equipment	Request for contact name responsible for valve requirements for the proposed Project.
25-Nov-13	email	Bertin Rioux, President, Goscobec Modular Homes	Provision of information on modular design and building experience.
10-Jan-14	email	Nicolas Jolicoeur	Request to be included on the proposed Project mailing list.
21-Aug-14/ 27-Aug-14	email	James Keiller, Commercial Agent, CANADA INDAR ELECTRIC	Request for contact name responsible for generator requirements for the proposed Project.
May 20, 2015	Meeting	Island Park Retirement Community	Meeting with staff and residents at Island Park Retirement Community.
June 17, 2015	Meeting	Public Open House	Public Open House as documented elsewhere.

3.0 GOVERNMENT AGENCY CONSULTATION

3.1 ENVIRONMENTAL ASSESSMENT REGIMES

Based on consultation with federal and provincial agencies prior to the repeal of *CEAA* by *CEAA 2012*, it was determined that the proposed Ranney Falls G3 Project was subject to a federal screening EA under *CEAA* due to Parks Canada authorization under the *Dominion Water Power Act*. As the proposed Ranney Falls G3 Project is on a federal waterway and subject to the federal *Dominion Water Power Act*, it is not subject to the Ontario *EA Act* (V. Mitchell, MOE, 2012, pers. comm.).

This report was prepared as a Technical Support Document (TSD) to the Detailed Environmental Impact Analysis Report (SENES, 2015) prepared to fulfill federal department obligations to the *Canadian Environmental Assessment Act, 2012, CEAA,* section 67. Parks Canada's legal accountability under CEAA 2012 is to ensure that project activities undertaken on the lands it manages do not result in significant adverse (Section 67 CEAA 2012). Parks Canada has jurisdiction over the bed of the canal at Ranney Falls.

To conform with the federal screening EA process, a draft "Project Description for Federal Agency Review" (Project Description) was prepared by SENES (2012a) for the proposed Ranney Falls G3 Project for the Canadian Environmental Assessment Agency (CEA Agency), Ontario Region, and all interested provincial and federal regulatory agencies. The document followed the guidance for preparation of project descriptions under *CEAA* outlined in the CEA Agency (2007) Operational Policy Statement.

The draft Project Description provided an overview of proposed Project components, general information on the Project setting and relevant background information on the Project. The draft Project Description allows (i) potential responsible authorities to determine whether the proposed Project will trigger *CEAA*, and (ii) technical expertise departments to review and provide comment on the proposed Project and background information provided in the document.

The draft Project Description was provided to the CEA Agency, Parks Canada – TSW, DFO, Transport Canada, Aboriginal Affairs and Northern Development Canada (AANDC), Environment Canada, Ontario Ministry of the Environment (MOE), Ontario Ministry of Natural Resources (MNR), Ontario Ministry of Tourism and Culture (MTC), Lower Trent Conservation (LTC) and the Municipality of Trent Hills (Trent Hills) prior to an Agency Kickoff Meeting on March 14, 2012 (see Section 3.2).

3.2 AGENCY KICKOFF MEETING

The purpose of the Agency Kickoff Meeting was to:

- present the proposed Ranney Falls G3 Project;

- discuss EA and permitting requirements;
- obtain feedback on issues, completed field work and future information requirements; and
- ascertain whether the proposed Project will likely trigger *CEAA*.

The agenda, presentation and meeting notes are provided in Appendix C.

As indicated in Section 3.1, the MOE determined that the proposed Ranney Falls G3 Project that the Ontario *EA Act*, and therefore, the OWA Class EA, did not apply to the proposed Project. However, the proposed Project may still require MOE Environmental Compliance Approvals, such as Permit-To-Take-Water under the *Ontario Water Resources Act*.

Based on the draft Project Description, CEA Agency determined that the proposed Ranney Falls G3 Project was subject to an EA screening under *CEAA*. The "lead" Responsible Authority for the screening was Parks Canada – TSW due to the requirement for an issuance of a licence under the *Dominion Water Power Act* to enable the proposed Project to proceed. DFO and Transport Canada were identified as potential Responsible Authorities.

Upon finalization of the Project Description, a scoping document was subsequently to be prepared by Parks Canada – TSW with input from the potential Responsible Authorities and federal authorities that would outline their determination regarding Project-specific information requirements and establish the boundaries of the federal EA screening. In addition, a Notice of Commencement of an EA for the proposed Ranney Falls G3 Project was to have been posted by Parks Canada – TSW on the Canadian Environmental Assessment Registry. As the Project Description had not been finalized prior to the repeal of *CEAA* by *CEAA 2012*, the scoping document was not prepared and a Notice of Commencement of an EA was not posted.

As indicated in Section 1.4, for projects on federal lands that are not designated projects, such as the proposed Ranney Falls G3 Project, *CEAA 2012* requires that before federal authorities make any decision that would allow a project to proceed, they must determine whether the project is likely to cause significant adverse environmental effects. As *CEAA 2012* does not establish a process for determining whether the undertaking of a non-designated project is likely to cause significant adverse environmental effects, the involved federal departments, e.g., Parks Canada, DFO, Transport Canada, Environment Canada, must establish their own (or conduct joint efforts) for the environmental effects review process.

A final "Project Description for Federal Agency Review" (SENES, 2012b) which reflected the new obligations of federal authorities under *CEAA 2012* was submitted to Parks Canada to assist in the development of a Terms of Reference (ToR) that would form the basis for the environmental effects review process for the proposed Ranney Falls G3 Project. This was done in 2015

As the proposed Ranney Falls G3 Project occurs within a Parks Canada protected heritage area, the Trent-Severn Waterway National Historic Site of Canada, Parks Canada – TSW is responsible for the approval of the proposed Project, or rejection with explanation.

Parks Canada – TSW determined that under section 67 of the *CEAA 2012* a DIA will be required to assess potential environmental impacts of the proposed Project and to determine if proposed mitigation measures will address these impacts.

Prior to the DIA, a draft ToR was prepared by OPG that followed the guidance provided within the Parks Canada "Generic Terms of Reference for preparation of a Detailed Environmental Impact Analysis (DIA) Report pursuant to the Parks Canada Directive on Implementation of the Canadian Environmental Assessment Act 2012." The draft ToR (SENES, 2014) was submitted in June 2014 to Parks Canada – TSW for review by the Federal Review Team which included Parks Canada – TSW, DFO, Environment Canada and Transport Canada. The draft ToR was also reviewed by the Ontario Ministry of the Environment and Climate Change (MOECC) and MNRF. Based on the review comments, a final ToR was prepared which formed the basis for the environmental effects review process for the proposed Project (SENES, 2015b).

Based on the final ToR, a draft DIA Report together with TSDs was prepared by OPG for review by the Federal Review Team, MOECC and MNRF.

Based on technical information provided by OPG, DFO has determined that the proposed Project "is not likely to result in impacts to fish and fish habitat provided that additional mitigation measures are applied" (see Aquatic TSD). Based on the Letter of Advice dated July 17, 2012, a formal approval (authorization) from DFO is not required (C. Strand, DFO, 2012, pers. comm. and follow-up DFO Fisheries Protection email dated July 31, 2014).

Environment Canada, Canadian Wildlife Service, has approved the "Turtle Nesting Habitat Mitigation Plan" prepared by OPG to create and enhance access and nesting habitat for Northern Map Turtle and Eastern Snapping Turtle, both designated as Special Concern federally and provincially (K-A. Fagan, Environment Canada, 2012, pers. comm.) (see Terrestrial TSD). An In-water and Shoreline Work Permit Application was submitted to Parks Canada – TSW on December 9, 2014 to obtain approval for implementation of the Plan under the Historic Canals Regulations pursuant to the *Department of Transport Act*.

As the Trent River/Canal from Rice Lake to Lake Ontario is included in the *NPA* List of Scheduled Waters, an application (Notice of Works Form) for approval of the proposed Project was submitted by OPG to Transport Canada on December 19, 2014. OPG subsequently received a letter dated December 30, 2014 from Transport Canada indicating that the information provided by OPG was complete for the purpose of commencing agency review.

3.3 AGENCY CONSULTATION SUMMARY

Table 3.1 provides a detailed summary of federal, provincial and municipal government agency consultation and engagement. It should be noted that the Ontario Ministry of the Environment (MOE) was renamed as MOECC on June 24, 2014, whereas the Ontario Ministry of Natural Resources was renamed as MNRF on July 14, 2014.

Table 3.1 Government Agency Consultation Summary

Date	Contact Type	Contact	Description
21-Jul-11	meeting	Dawn Bronson, Parks Canada – TSW Field Unit Superintendent; Jacques Hache, Parks Canada Real Property Director; William Fox, Parks Canada – TSW Hydro & Business Development; Pierre Vanasse, Parks Canada Real Property Director	OPG presentation to Parks Canada – TSW regarding the proposed Project (see Appendix D).
2-Nov-11	email	Ewa Bednarczuk, LTC Watershed Planning Ecologist	Request for baseline information on fish, benthic macroinvertebrates and water quality.
4-Nov-11	email	Jim Peters, Trent Hills Director of Planning	Request for land use information.
8-Nov-11	email	Jim Peters, Trent Hills	Receipt of land use information.
14-Nov-11	email	Ewa Bednarczuk, LTC	Receipt of benthic metrics and water quality data (fish data available from Parks Canada – TSW and/ or MNR).
23-Nov-11	meeting	Greg Kinsman, Parks Canada – TSW EA Coordinator; Bryce Sharpe, Parks Canada –TSW EA Coordinator; William Fox Parks Canada – TSW	Presentation to update proposed Project status (see Appendix D); discussed federal EA coordination and Aboriginal consultation; established ongoing communication protocol; requested baseline information.
21-Dec-11	email	Ewa Bednarczuk, LTC	Request for other contacts with potential benthic macroinvertebrate data; Riona Sutherland, Parks Canada – TSW, was identified.
4-Jan-12	email	Riona Sutherland, Parks Canada – TSW, Species at Risk Technician	Request for baseline information on benthic macroinvertebrates, plankton, sediment quality, etc.
17-Jan-12	phone call and email	Bryce Sharpe, Parks Canada – TSW	Discussion regarding EA process for the proposed Project.
20-Jan-12	email	Bryce Sharpe, Parks Canada – TSW	Clarification of Parks Canada – TSW position on EA process for proposed Project – CEA Agency will coordinate
23-Jan-12	email	Jim Chan, CEA Agency, Ontario Region, Project Officer	Provision of draft final Project Description

Date	Contact Type	Contact	Description
26-Jan-12	email	Bryce Sharpe, Parks Canada – TSW; Jim Chan, CEA Agency; Jim Peters, Trent Hills; Lynn Phillips, Trent Hills Community Development; Glenda Rodgers, LTC, General Manager	Provision of revised draft final Project Description (SENES, 2012a).
26-Jan-12	email	Vicki Mitchell, MOE, Eastern Region, EA Coordinator	Provision of draft final Project Description as well as a list of potential provincial ministry contacts.
26-Jan-12	email	Francine MacDonald, MNR, Senior Invasive Species Biologist	Request for baseline information on benthic macroinvertebrates, plankton, sediment quality, etc.
27-Jan-12	email	Janet Leader, Ontario Ministry of Energy	Letter requesting clarification regarding which First Nations and Métis communities to consult with.
27-Jan-12	email	Bryce Sharpe, Parks Canada – TSW	Letter requesting clarification regarding which First Nations and Métis communities to consult with.
6-Feb-12	phone call	Vicki Mitchell, MOE	Request for clarification on MOE position regarding provincial EA process.
8-Feb-12	meeting	Hector Macmillan, Mayor of Trent Hills; Kim Macneil, Trent Hills Ward 2 Councillor; Mike Rutter, Trent Hills, CAO; Jim Peters; Chris Tye, Trent Hills Asst. Mgr. Roads and Urban Services	Meeting to introduce the proposed Project to municipal officials based on presentation and distribution of briefing note (see Appendix D).
8-Feb-12	email	Bryce Sharpe, Parks Canada – TSW	Received contact information for DFO (Tracy Allison).
8-Feb-12	email	Tammy Chung, MNR, Peterborough District Planner	Provision of final draft Project Description and HADD of Fish Habitat Risk Assessment (Coker *et al*., 2012) – will coordinate review amongst MNR District biologists.
8-Feb-12	email	Glenda Rodgers, LTC	Provision of HADD of Fish Habitat Risk Assessment.
9-Feb-12	email	Tracy Allison, DFO, Fish Habitat Biologist	Provision of HADD of Fish Habitat Risk Assessment.
9-Feb-12	email	Mike Lovejoy, LTC, Hazard Lands Program Coordinator	Confirmation that LTC has no formal jurisdiction with respect to HADD of fish habitat for the proposed Project.

Date	Contact Type	Contact	Description
9-Feb-12	email	Bryce Sharpe, Parks Canada – TSW	Provision of HADD of Fish Habitat Risk Assessment.
9-Feb-12	email	Susan Morgan, Vicki Mitchell, MOE	OPG request for clarification of application of Ontario *EA Act* to the proposed Project.
9-Feb-12	phone call	Jim Chan, CEA Agency	OPG reminder for CEA Agency to distribute Project Description and set Agency Kickoff Meeting date.
9-Feb-12	phone call	Jim Chan, CEA Agency; Jennifer Hughes, Transport Canada; Tracy Allison, DFO; Bryce Sharpe, Parks Canada – TSW; Kitty Mah, Cheyenne Loon, AANDC; Rob Dobos, Environment Canada, Head, Environmental Assessment Section	Invitation from CEA Agency to attend Agency Kickoff Meeting set for March 6.
9-Feb-12	phone call	Bryce Sharpe, Parks Canada – TSW	OPG informed Parks Canada – TSW of potential changes to EA requirements (potentially no need for provincial EA).
10-Feb-12	email	Mike Lovejoy, LTC	Confirmation that application for permits from LTC is not required as the proposed Project is not within jurisdiction.
10-Feb-12	meeting	Rob Milligan, MPP of Northumberland Quinte West	Bill Mckinlay of OPG met with MPP to introduce the proposed Project.
10-Feb-12	email	Heather Levecque, Ontario Ministry of Aboriginal Affairs (MAA)	Letter requesting clarification regarding which First Nations and Métis communities to consult with.
24-Feb-12	email	Ana Hamid, Transport Canada	Response indicating Transport Canada's interest in the proposed Project.
24-Feb-12	email	Vicki Mitchell, MOE	Letter indicating that the Ontario *EA Act* does not apply.
29-Feb-12	email	Linda Beaulieu, Transport Canada	Email to inform OPG that Linda is the contact for Transport Canada.
1-Mar-12	email	Heather Levecque; Ashley Johnson, MAA; Janet Leader, Ontario Ministry of Energy	Follow up for request of clarification regarding which First Nations and Metis communities to consult with. Updated them on status of federal EA.
1-Mar-12	email	Bryce Sharpe, Parks Canada – TSW; Jim Chan, CEA Agency; Tracy Allison, DFO; Linda Beaulieu, Transport Canada	Invitation to attend Agency Kickoff Meeting on March 14.

Date	Contact Type	Contact	Description
1-Mar-12	email	Bryce Sharpe, Parks Canada – TSW	Provision of Stage 1 Archaeological Assessment to Parks Canada – TSW.
1-Mar-12	phone call	Bryce Sharpe, Parks Canada – TSW	Discussion regarding federal EA process and steps going forward.
2-Mar-12	email	Jim Peters, Lynn Phillips, Trent Hills; Vicki Mitchell, MOE; Glenda Rodgers, LTC; Tammy Chung, MNR	Invitation to attend Agency Kickoff Meeting on March 14.
2-Mar-12	email	Eric Prevost, MNR Renewable Energy Planning Ecologist	Email to inform that Eric Prevost will be the MNR contact for this file, and that he will be attending the Agency Kickoff Meeting. Provision of Project Description and HADD of Fish Habitat Risk Assessment to Eric.
2-Mar-12	email	Katherine Kirzati, MTC	Invitation to attend Agency Kickoff Meeting on March 14. Provision of Project Description.
2-Mar-12	email	Vicki Mitchell, MOE	Will attend the Agency Kickoff Meeting.
7-Mar-12	email	Katherine Kirzati, MTC	Request for teleconference to discuss Cultural Heritage Resources with Tamara Anson-Cartwright (MTC).
7-Mar-12	email	Bryce Sharpe, Parks Canada – TSW	Advice from Parks Canada – TSW on which First Nations and Métis groups to contact.
8-Mar-12	email	Dan McDonell, Environment Canada, Environmental Assessment Officer	Confirmation that Environment Canada will attend the Agency Kickoff Meeting.
8-Mar-12	email	Tracy Allison, DFO	Confirmation that DFO will attend the Agency Kickoff Meeting.
8-Mar-12	email	Jim Chan, CEA Agency	CEA Agency federal agency coordination response to the Project Description.
8-Mar-12	email	Katherine Kirzati, MTC	Response to MTC request regarding cultural heritage.
12-Mar-12	email	Bryce Sharpe, William Fox, Parks Canada – TSW; Tracy Allison, DFO; Dan McDonell, Environment Canada; Linda Beaulieu, Transport Canada; Kitty Mah, Cheyenne Loon, AANDC; Vicki Mitchell, MOE; Eric Prevost, MNR; Katherine Kirzati, Tamara Anson-Cartwright, MTC; Glenda Rodgers, LTC; Jim Peters, Lynn Phillips, Trent Hills	Provision of Agency Kickoff Meeting Agenda and Presentation (see Appendix C).

Date	Contact Type	Contact	Description
12-Mar-12	email	Katherine Kirzati, MTC	Will attend the Agency Kickoff Meeting by telecom.
12-Mar-12	email	Jim Chan, CEA Agency	Bryce Sharpe, Parks Canada – TSW, will be the lead Responsible Authority; Parks Canada – TSW will manage the Registry and post the Notice of Commencement; due to its focus on delivery of comprehensive study type EAs, CEA Agency will likely no longer be involved with the proposed Project.
13-Mar-12	email	Bryce Sharpe, William Fox, Parks Canada – TSW; Tracy Allison, DFO; Dan McDonell, Environment Canada; Linda Beaulieu, Transport Canada; Kitty Mah, Cheyenne Loon, AANDC; Vicki Mitchell, MOE; Eric Prevost, MNR; Katherine Kirzati, Tamara Anson-Cartwright, MTC; Glenda Rodgers, LTC; Jim Peters, Lynn Phillips, Trent Hills	Provision of aerial photos of Ranney Falls GS setting and a figure showing Ecological Land Classification vegetation communities.
13-Mar-12	email	Tamara Anson-Cartwright, MTC	Confirmation that MTC will attend the Agency Kickoff Meeting via telecom and provision of the document “Provincial Standards and Guidelines for Conservation of Provincial Heritage Properties”, an orientation presentation on the Provincial Standards and Guidelines, and a template/outline for preparing a Cultural Heritage Evaluation Report; MTC requested OPG to address the Provincial Standards and Guidelines.
13-Mar-12	email	Glenda Rodgers, Mike Lovejoy, LTC	Confirmation that LTC will not attend the Agency Kickoff Meeting, and that LTC regulations do not apply to the proposed Project. LTC would like to be remain on the mailing list
13-Mar-12	email, phone	Jim Peters, Lynn Phillips, Trent Hills	OPG inquiry as to whether anyone from Trent Hills will be attending the Agency Kickoff Meeting. Lynn indicated she would not, and Jim forwarded the request to the Public Works Department.
13-Mar-12	email	Linda Beaulieu, Transport Canada	Confirmation that Transport Canada will attend the Agency Kickoff Meeting.
14-Mar-12	meeting	Eric Prevost, MNR; Bill Fox, Bryce Sharpe, Roger Stanley, Director of Canal Operations, Parks Canada – TSW; Tracy Allison, DFO; Dan McDonell, Environment Canada; Vicki Mitchell, MOE; Katherine	Agency Kickoff Meeting at the Parks Canada – TSW office in Peterborough, hosted by OPG.

Date	Contact Type	Contact	Description
		Kirzati, MTC; Linda Beaulieu, Transport Canada	
15-Mar-12	email	Eric Prevost, MNR; Bill Fox, Bryce Sharpe, Roger Stanley, Parks Canada – TSW; Tracy Allison, DFO; Dan McDonell, Environment Canada; Vicki Mitchell, MOE; Katherine Kirzati, MTC; Linda Beaulieu, Transport Canada	Request for agencies to provide comments on the draft Project Description.
15-Mar-12	email	Eric Prevost, MNR; Bryce Sharpe, Parks Canada – TSW	Provision of Northern Map Turtle Nesting Habitat reports to MNR and Parks Canada – TSW.
16-Mar-12	email	Tamara Anson-Cartwright, Katherine Kirzati, MTC	In response to MTC inquiry as to whether the items already sent will suffice for the heritage component, OPG indicated that further consultation will occur once the Cultural Heritage Resources TSD is complete.
19-Mar-12	email	Dan McDonell, Environment Canada	Recommendation to OPG that the Chimney Swift structure be capped immediately.
20-Mar-12	email	Dan McDonell, Environment Canada	Provision of Northern Map Turtle Nesting Habitat reports to Environment Canada.
20-Mar-12	email	Bryce Sharpe, Parks Canada – TSW; Eric Prevost, MNR; Dan McDonell, Environment Canada	Request for available dates for a site visit to Ranney Falls GS to reconnoitre turtle nesting habitat.
20-Mar-12	email	Eric Prevost, MNR	Available for turtle nesting habitat site visit in June.
20-Mar-12	email	Bryce Sharpe, Parks Canada – TSW	Available for turtle nesting habitat site visit in June.
21-Mar-12	phone call	Bryce Sharpe, Parks Canada – TSW	Parks Canada – TSW request for a figure showing the location of the turtle nesting habitat exclusion fence, and request that OPG consult with the Laurentian University professor on the turtle nesting mitigation plan.
21-Mar-12	email	Bryce Sharpe, Parks Canada – TSW	Provision of HADD of Fish Habitat Risk Assessment.
23-Mar-12	email	Linda Beaulieu, Transport Canada	Follow up from Transport Canada to reconfirm points made during Agency Kickoff Meeting.

Date	Contact Type	Contact	Description
23-Mar-12	email	Bryce Sharpe, Parks Canada – TSW	Provision of CEA Agency Operational Policy Statement for preparing Project Descriptions under *CEAA*, and comments from TSW on the draft Project Description.
23-Mar-12	email	Eric Prevost, MNR; Bill Fox, Bryce Sharpe, Roger Stanley, Parks Canada – TSW; Tracy Allison, DFO; Dan McDonell, Environment Canada; Vicki Mitchell, MOE; Katherine Kirzati, MTC; Linda Beaulieu Transport Canada; Jim Peters, Lynn Phillips, Trent Hills	Distribution of Meeting Minutes and Action Items from the Agency Kickoff Meeting.
26-Mar-12	email	Dan McDonell, Environment Canada	Environment Canada and Parks Canada – TSW are still discussing how they will coordinate the turtle nesting habitat site visit to determine if Environment Canada needs to attend.
27-Mar-12	email	Dan McDonell, Environment Canada	Confirmation of field surveys that have been undertaken for the proposed Project.
29-Mar-12	email	Bryce Sharpe, Parks Canada – TSW	Provision of contact information for the Cambellford Sewer Works EA, a proposed Parks Canada – TSW project located proximate to Ranney Falls GS.
29-Mar-12	email	Tracy Allison, DFO	Email indicating that DFO has no comments on the Project Description, and discussion of the potential need for a *Fisheries Act* s.32 authorization.
9-Apr-12	email	Bryce Sharpe, Parks Canada – TSW; Eric Prevost, MNR; Dan McDonell, Environment Canada	Email to agencies indicating that the site visit to Ranney Falls GS to reconnoiter turtle nesting habitat will be on June 13.
17-Apr-12	email	Eric Prevost, MNR; Bill Fox, Bryce Sharpe, Roger Stanley, Parks Canada – TSW; Tracy Allison, DFO; Dan McDonell, Environment Canada; Vicki Mitchell, MOE; Katherine Kirzati, MTC; Linda Beaulieu, Transport Canada	Provision to the agencies of a copy of the letter sent to First Nations and Métis Nation of Ontario.
17-Apr-12	letter	Hector MacMillan, Mayor of Trent Hills	OPG request for a Council Support Resolution in support of the proposed Project to gain priority points from the Ontario Power Authority Feed-in Tariff Program.
23-Apr-12	email	Dan McDonell, Environment Canada	Email informing Environment Canada will be attending the turtle nesting habitat site visit.

Date	Contact Type	Contact	Description
3-May-12	email	Bryce Sharpe, Parks Canada – TSW	Leaving Parks Canada – TSW for a position as Assessment Officer with the Yukon Environmental and Socio-economics Assessment Board.
11-May-12	phone call	Ashley Johnson, MAA, Advisor, Consultation Unit	Left message asking if the First Nation communities have replied to the OPG letter, and if OPG needs anything more from the MAA.
14-May-12	phone call	Ashley Johnson, MAA	OPG received information on additional First Nation and Métis communities to consult with. A letter will be sent with the official advice from the Province.
14-May-12	email	Beth Cockburn, Parks Canada – TSW	Email indicating that the site visit to Ranney Falls for turtle nesting habitat will be on June 13 (Beth replaced Bryce Sharpe at Parks Canada – TSW), and confirmation that she will attend.
14-May-12	phone call	Chris Strand, DFO, Fish Habitat Biologist	Indicated that Tracy Allison went on maternity leave on April 20 and that he will be responsible for the proposed Project file.
15-May-12	email	Ashley Johnson, MAA	Letter dated 15 May 2012 from Wendy Cornet, MAA, Manager, Consultation Unit, with provincial advice regarding First Nation and Métis community consultation.
22-May-12	email	Kim MacNeil, Trent Hills Percy Ward Councillor	Request to be placed on the proposed Project mailing list.
4-Jun-12	email	Beth Cockburn, Parks Canada – TSW; Eric Prevost, MNR; Dan McDonell, Environment Canada	Provision of the proposed turtle nesting habitat mitigation plan in advance of the agency site visit.
8-Jun-12	email	John Fischer, Environment Canada – Canadian Wildlife Service (CWS), Environmental Assessment Coordinator	John would be representing Environment Canada during the turtle nesting habitat site visit.
11-Jun-12	email	Eric Prevost, MNR	Eric will not be attending the turtle nesting habitat site visit and indicated that the proposed mitigation plan was excellent.
13-Jun-12	meeting	Beth Cockburn, Parks Canada – TSW; John Fischer, Environment Canada – CWS	Site visit to discuss the Northern Map Turtle and Snapping Turtle nesting habitat mitigation plan.
19-Jun-12	email	Beth Cockburn, Parks Canada – TSW	Provision of a copy of the letter sent to Scugog Island First Nation.
27-Jun-12	email	Beth Cockburn, Parks Canada – TSW; John Fischer, Environment Canada – CWS	Provision of draft meeting minutes from the turtle nesting habitat site visit on June 13, 2012, and the revised mitigation plan.

Date	Contact Type	Contact	Description
27-Jun-12	email	Chris Strand, Fish Habitat Biologist, Tom Hoggarth, Habitat Team Leader, DFO	Provision of the assessment of fish entrainment potential for the proposed Project in advance of a meeting on June 29, 2012.
29-Jun-12	meeting	Chris Strand, Tom Hoggarth, DFO	Meeting with DFO to discuss fish entrainment at Ranney Falls GS and potential for entrainment due to proposed GS expansion (see Appendix D); DFO indicated that an authorization will not be required.
9-Jul-12	email	Chris Strand, Tom Hoggarth, DFO	Provision of the June 29, 2012 fish entrainment meeting minutes.
11-Jul-12	email	Kelly-Anne Fagan, Environment Canada, Acting Environmental Assessment Officer	Provision of comments regarding the turtle nesting habitat site visit minutes and mitigation plan.
12-Jul-12	email	Kelly-Anne Fagan, Environment Canada	Response by OPG indicating that suggestions regarding the turtle nesting habitat mitigation plan will be reviewed.
18-Jul-12	email	Chris Strand, DFO	Provided letter dated 17 July 2012 indicating that the proposed Project will not require DFO authorization.
8-Aug-12	email	Linda Beaulieu, Transport Canada	Request for clarification of Transport Canada requirements under the *Navigable Waters Protection Act* with the repeal of *CEAA* by *CEAA 2012.*
10-Aug-12	email	Linda Beaulieu, Transport Canada	Indicated that *CEAA 2012* applies to the proposed Project as it is located on federal lands; for projects on federal lands that are not designated projects, *CEAA 2012* requires that before federal authorities make any decision that would allow a project to proceed, they must determine whether the project is likely to cause significant adverse environmental effects.
10-Aug-12	email	Linda Beaulieu, Transport Canada	OPG will be meeting with Parks Canada – TSW next week to discuss *CEAA 2012* implications on the proposed Project.

Date	Contact Type	Contact	Description
14-Aug-12	email	William Fox, Dawn Bronson, Parks Canada – TSW; Kelly-Anne Fagan, Environment Canada; Eric Prevost, MNR	Provision of final June 13, 2012 turtle nesting habitat site visit minutes (see Appendix D) and final turtle nesting habitat mitigation plan (see Terrestrial TSD); the mitigation plan will be included in documentation that is being prepared in support of the *Dominion Water Power Act* licence and other permits/approvals for the proposed Project; OPG is committed to preparing an Environmental Report that will identify all potential environmental impacts and present mitigation plans to ensure that there are no significant adverse environmental effects.
February 13, 2014	phone call	Kelly Thompson, Transport Canada	Discussion of Project; discussed TSW and Parks Canada EA, noted that TSW felt we should contact Transport Canada early in process.
March 7, 2014	phone call	Kelly Thompson, Transport Canada	Give status update on.
March 28	phone call	Ana Hamid, Transport Canada	New file contact who is reviewing the draft Terms of Reference sent from TSW; TSW advised us to submit Notice Application to TC.
June 4, 2014	email	Ana Hamid, Transport Canada	Indicating file coordinator is Linda Beaulieu.
December 4 2014	phone call	Kelly Thompson, Transport Canada	Discuss Notice Application package and requirements; she provided templates for submitting Notice Application.
Dev 19, 2014	email	Kelly Thompson, Transport Canada	Notice Application package couriered to TC, with followup email to Kelly Thompson attaching pdf version.
January 20, 2015	phone call	Kelly Thompson, Transport Canada	Follow up to check they received Notice Application.
Feb 16, 2015	email	Tania Havelka, Transport Canada	Person at TC reviewing the Notice Application – she noted that package has preliminary drawings, will need final drawing showing the location of cofferdams.
Feb 26, 205	phone call	Tania Havelk, Transport Canada	-had call with Tania and explained that we can't give final stamped drawings until we hire contractor after EA is done.
March 4, 2015	email	Tania Havelk, Transport Canada	Note from Tania summarizing our discussion on Feb 26th. She has put a note on the file to contact OPG in May if they have not yet received final drawings, and will keep the file open.

Date	Contact Type	Contact	Description
March 6, 2015	email	From Gillian to Tania, Transport Canada	Discussed final drawing coming later and also provided info on Aboriginal consultation that Tania has asked about in the earlier call.
April 9, 2015	phone call	Kelly Thompson, Transport Canada	Give status update.
August 4, 2015	email	Tania Havelka,Transport Canada	Discuss updated drawings; Gillian MacLeod to send update as soon as we get them form OE.
Aug 5, 2015	email	Tania Havelka,Transport Canada	Gillian called to find out what format Tania wants drawing, they are expected to be sent to OPG from the OE late today.
December 4, 2014	call	Liz Spax, MNR Peterborough District	Call to discuss TSDs and Map Turtle plan; she provided me with Rob's contact information.
Jan 7, 2015	call Rob Cunningham	Ontario Parks, MNR	
January 27, 2015	meeting	Rob Cunningham, Ontario Parks and Eileen Nowlan, TSW	Met to give status update on Ranney, and to also update Map Turtle Habitat Rehabilitation Plan and OPG interest with offering local FN opportunity to undertake the work.
Jan 28, 2015	face to face	Jim Peters. Director of Planning, Municipality of Trent Hills, as well two the Manager and Assistant Manager of Public Works	Meeting to provide project update and next steps. Discussed OPG commitment to manage construction impact especially noise, traffic and dust.
Jan 28, 2015	phone call	Eileen Nowlan and Pat Yarnell, TSW	Discuss aboriginal consultation plan.
Feb 2, 2015	phone call	Rob Cunningham	Discuss OPG's idea to have the Mississauga FN bid on RFP for the map turtle rehabilitation plan.
Feb. 2, 2015	phone call	Liz Spax, MNR	Provide status up date.
Feb 5, 2015	phone call	Colin Hoag	Discuss the need for gazette posting.
Feb 11, 2015	phone call	Speak to new file coordinator Kerry Holtby Levine, Transport Canada	Provided update on project and status update going forward.
March 13 2015	face to face	Colin Hoag	He attended meeting organized by OPG with 4 Mississauga FNs.
March 26, 2015	phone call	Rob Cunningham, Ferris Park Superintendent	Provide up date on Map Turtle Rehabilitation Plan.

Date	Contact Type	Contact	Description
June 17, 2015	face to face	Rob Cunningham Eileen Nowlan Colin Hoag	Participate in site walk down to see newly created Map Turtle Habitat prior to attending the Open House.
June 18, 2015	face to face	Eileen Nowlan, TSW	OPG/SENES and TSW review agency comments on draft TSDs.
July 29, 2015	phone call	Jim Peters, Director of Planning	Ask for info on wells in the town.

4.0 ONGOING CONSULTATION

OPG appreciates the cooperation and feedback received to date from the public and government agencies.

OPG is committed to continue its consultation and engagement with the public and government agencies as it moves forward

5.0 SUMMARY AND CONCLUSIONS

The proposed Ranney Falls G3 Project is being undertaken by OPG to improve the efficient use of the available hydroelectric potential at the site, to reduce greenhouse gas emissions and to increase the amount of clean renewable energy from OPG's CHPG. PFTSW (2008) concluded that the development of renewable energy resources is a sound public policy goal and supported a vigorous effort to pursue green energy generating potential along the TSW. Moreover, the proposed Project is consistent with the PPS, which recommends that the use of existing infrastructure and public service facilities should be optimized, whenever feasible, before consideration is given to developing new infrastructure and public service facilities (OMMAH, 2014). In early 2012, a public meeting was held by Northumberland-Quinte West MPP Rob Milligan to promote new waterpower development within the provincial riding.

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7.0 ACRONYMS/ABBREVIATIONS

Acronyms

&	And
#	Number
AANDC	Aboriginal Affairs and Northern Development Canada
Asst. Mgr.	Assistant Manager
c.	Chapter
CAO	Chief Administrative Officer
CAT	Compact Axial Turbine
CEAA	*Canadian Environmental Assessment Act*
CEAA 2012	*Canadian Environmental Assessment Act, 2012*
CEA Agency	Canadian Environmental Assessment Agency
CFD	Computational Fluid Dynamics
CHPG	Central Hydro Plant Group
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DFO	Department of Fisheries and Oceans
DIA	Detailed Environmental Impact Analysis
Dr.	Doctor
EA	Environmental Assessment
EA Act	*Environmental Assessment Act*
e.g.	For example (exempli gratia)
EIA	Environmental Impact Analysis
et al.	And others (et alia)
etc.	And so on (et cetera)
H	Horizontal
HADD	Harmful alteration, disruption or destruction (of fish habitat)
HEC	Hydrologic Engineering Centre
Hydro One	Hydro One Networks Inc.
i.e.	That is (id est)
KST	KST Hydroelectric Engineers
LTC	Lower Trent Conservation
Ltd.	Limited
MAA	Ontario Ministry of Aboriginal Affairs
MNO	Métis Nation of Ontario
MNR	Ontario Ministry of Natural Resources
MNRF	Ontario Ministry of Natural Resources and Forestry
MOE	Ontario Ministry of the Environment
MOECC	Ontario Ministry of the Environment and Climate Change
MPP	Member of Provincial Parliament
MTC	Ontario Ministry of Tourism and Culture

N	North
No.	Number
OMMAH	Ontario Ministry of Municipal Affairs and Housing
OPG	Ontario Power Generation Inc.
OWA	Ontario Waterpower Association
OWA Class EA	Ontario Waterpower Association Class Environmental Assessment
Parks Canada – TSW	Parks Canada – Ontario Waterways, Trent-Severn Waterway
pers. comm.	Personal communication
PFTSW	The Panel on the Future of the Trent-Severn Waterway
PPS	Provincial Policy Statement
Project	Ranney Falls Generating Station G3 Expansion Project or Ranney Falls G3 Project
Project Description	Project Description for Federal Agency Review
s.	Section
S.C.	Statutes of Canada
SENES	SENES Consultants Limited or SENES Consultants
SHARP	Small Hydroelectric Assessment and Retrofit Program
ToR	Terms of Reference
3D	Three-dimensional
Trent Hills	Municipality of Trent Hills
TSD	Technical Support Document
TSW	Trent-Severn Waterway
U.S.	United States
V	Vertical
W	West

Measurement Units

º	degree
‘	minute
“	second
GWh	gigawatt-hour
ha	hectare
km	kilometre
kV	kilovolt
L	litre
L/s	litre per second
m	metre
m/s	metre per second
m^3/s	cubic metre per second
MW	megawatt
Pa	pascal (unit of pressure)
%	percent

8.0 GLOSSARY

Bulkhead	A steep or vertical wall retaining an embankment, often used to line shorelines and maintain embankment stability and absorb the energy of waves and currents.
Canal	A channel dug or built to carry water.
Capacity	The greatest load which a unit, station or system can supply (usually measured in kilowatts, megawatts, etc.).
Cavitation	The process of increased water velocities due to channel narrowing resulting in decreased pressure to maintain a constant total energy. If the pressure decreases to the pressure of water as a vapour, bubbles form. As the velocity decreases due to channel expansion, the water pressure increases and the bubbles collapse. The collapse causes shock waves in the water, which move out to the channel walls, causing pitting.
Cofferdam	A temporary dam made of concrete, rockfill, sheet-steel piling, timber/timber-crib or other non-erodible material and commonly utilized during construction to exclude water from an area in which work is being executed.
Dam	A concrete or earthen barrier constructed across a river and designed to control water flow or create a reservoir.
Draft Tube	The flared passage leading vertically from a water turbine to its tailrace.
Forebay	The part of a dam's reservoir that is immediately upstream from the powerhouse.
Gain	A cut or groove to receive a timber, as a girder or fastener.
Geotechnical	Concerned with the physical properties of soil, rock and groundwater usually in relation to the design, construction and operation of engineered works.
Head	The difference in elevation between the water surface at the intake and tailrace.
Headgate (Headworks)	The gate that controls water flow into a hydroelectric powerhouse.
Headwater	The water that flows into a hydroelectric powerhouse from the section of river or stream with the highest elevation above sea level.
Hydraulic	Of water conveyed through a pipe or channel.

Hydraulic Conductivity	Property of a soil or rock, in the vadose zone or groundwater, that describes the ease with which water can move through pore spaces or fractures.
Intake	A structure which regulates the flow of water into a water-conveying conduit.
Limestone	Sedimentary rock composed of carbonate materials, particularly calcium carbonate.
Lock	Structure designed to raise and lower boats vertically through the use of water-filled chambers hydraulically, mechanically, or pneumatically operated.
Operating Deck	Work platform.
Overburden	The soil, rock and other material which lie on top of the underlying mineral or other deposit, e.g., bedrock.
Penstock	A structure associated with a hydroelectric station designed to carry water from the intake to the turbine.
Pier	As part of a hydroelectric station, an abutment extending from the station, either upstream or downstream, and lending foundation support and directionality to water passed through the structure.
Powerhouse	A primary part of a hydroelectric facility where the turbines and generators are housed and where power is produced by falling water rotating turbine blades.
Shale	Fine-grained sedimentary rock composed of lithified clay particles.
Sluiceway (Sluice)	An open channel designed to divert excess water which could be within the structure of a hydroelectric dam or separate of the main dam (see spillway).
Spillway	A passageway, or channel, located near or at the top of a dam through which excess water is released or “spilled” past the dam without going through the turbine(s); as a safety valve for the dam, the spillway must be capable of discharging major floods without damaging the dam while maintaining the reservoir level below some predetermined maximum level.
Stoplog	A gate (sometimes made from squared lumber) which can be placed into an opening to shut off or regulate the flow of water.
Tailrace	A channel through which the water flows away from a hydroelectric plant following its discharge from the turbine(s).
Tailwater	The water from a generating station after it has passed through the turbine.

Trashrack	Bar screen with larger space openings installed to prevent logs, stumps and other large solids from penetrating the intake.
Transformer	A device that changes electric voltage. In Ontario, electricity typically leaves the generator at 20,000 volts or less, is stepped up to 115,000, 230,000 or 500,000 volts to be transmitted long distances and then stepped down to lower voltages to be distributed to customers. Each change in voltage is accomplished with a transformer. Alternatively, the electricity is stepped up directly to the local distribution voltage.
Turbine	A mechanism in an electrical generation facility which converts the kinetic and potential energy of water (in the case of hydroelectric turbines) into mechanical energy which is then used to drive a generator converting mechanical to electrical energy.
Weir	A dam in the river to stop and raise the water.

APPENDIX A

Public Notice

NOTICE OF PUBLIC OPEN HOUSE:
RANNEY FALLS HYDROELECTRIC PROJECT EXPANSION

Ontario Power Generation Inc. (OPG) is proposing to expand the capacity of its existing Ranney Falls Generating Station (GS) located on the Trent-Severn Waterway (TSW) in the Municipality of Trent Hills. There are currently two powerhouses on site. The main powerhouse has the G1 and G2 turbine units, each operating at approximately 5 megawatts. A secondary powerhouse, referred to as the "Pup", contains a smaller unit that has reached its end-of-life. OPG is proposing to replace the Pup with a new G3 unit of up to 10 megawatts. This would increase total station capacity to approximately 20 megawatts. A map showing the general location of the Ranney Falls GS appears below.

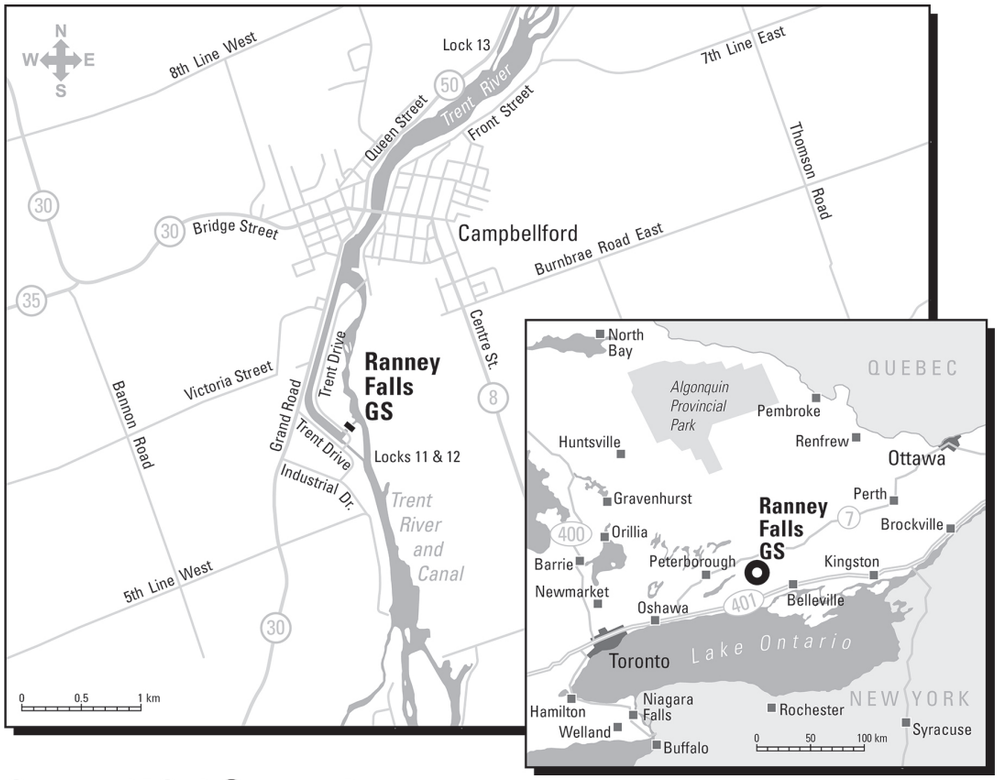
As the proposed Ranney Falls G3 Project is on a federal waterway it is subject to the federal *Dominion Water Power Act* administered by Parks Canada. A Detailed Environmental Impact Analysis (DIA) Report will be prepared to fulfill Parks Canada obligations under the *Canadian Environmental Assessment Act, 2012*. The DIA Report provides a description of the proposed undertaking, summarizes the overall environmental setting and anticipated environmental effects, recommends appropriate mitigation measures to minimize or eliminate these effects, and describes public, agency and Aboriginal consultation. Based on an assessment of the available baseline information and potential effects, as well as the implementation of the recommended mitigation measures, it is concluded that effects due to construction activities associated with the proposed Project will be minimal, localized and short-term. It is anticipated that substantial economic benefits will be realized by Campbellford and other local communities due to the supply of required goods and services during the construction phase. Based on assessment of the available baseline information and potential effects, as well as the implementation of the recommended mitigation measures, it is concluded that the operation of the proposed Project will have negligible effects on the environment.

Highlights of the proposed project as well as predicted impacts and recommended mitigation measures will be presented at a Public Open House on Wednesday, June 17, 2015. 4:00 p.m. – 8:00 p.m.

OPG Campbellford Service Centre
8 Trent Drive, Campbellford, ON
K0L 1L0

Please visit us at: www.ranneyfallsg3.com.

Under the *Freedom of Information and Protection of Privacy Act* (1987) 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 Proposed Undertaking and will be released if requested, to any person.



ONTARIO POWER GENERATION
opg.com

OPG has retained ARCADIS Canada Inc. to prepare the detailed environmental impact analysis. For more information please contact :

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or

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Trent-Severn Water Way (TSW)
Parks Canada

APPENDIX B

Presentation Panels

Ranney Falls Generating Station (GS) Expansion Project

Public Open House

Welcome to our Public Open House

ONTARIO POWER GENERATION

Meeting Objectives

- To introduce the Ranney Falls GS Expansion Project
- To discuss the existing environment, future construction, future operation, and environmental and mitigation measures
- To introduce the environmental regulatory processes
- To provide the community with the opportunity to share with OPG their interests, concerns, input, questions, and ideas with respect to the Project

Who is Ontario Power Generation?

Public Open House

- An Ontario-based electricity generation company whose principal business is the generation of electricity in Ontario.
- Focuses on efficient production of electricity from its generation assets, while operating in a safe, open and environmentally responsible manner.
- A commercial company, owned by the Province of Ontario – its sole shareholder.
- Ontario needs more electricity and OPG has been given a mandate from the Province of Ontario to develop and expand its hydroelectric capacity.
- This Project will provide more clean renewable environmentally friendly electricity for Ontario.

Trent-Severn Waterway and Hydropower

Public Open House

- Ranney Falls is one of twenty-six small hydroelectric generating stations on the Trent-Severn Waterway generating close to 100 megawatts of power
  - 1 megawatt can supply enough electricity for about 750 homes.
- The Panel on the Future of the Trent-Severn Waterway (PFTSW) concluded that “the development of renewable energy resources is a sound public policy goal” and it supports “a vigorous effort to pursue green energy generating potential along the waterway”.
- OPG is of the opinion that the proposed Ranney Falls G3 Project conforms to the relevant Parks Canada policy and directives.

ONTARIO POWER GENERATION

Ranney Falls Generating Station Site

Public Open House

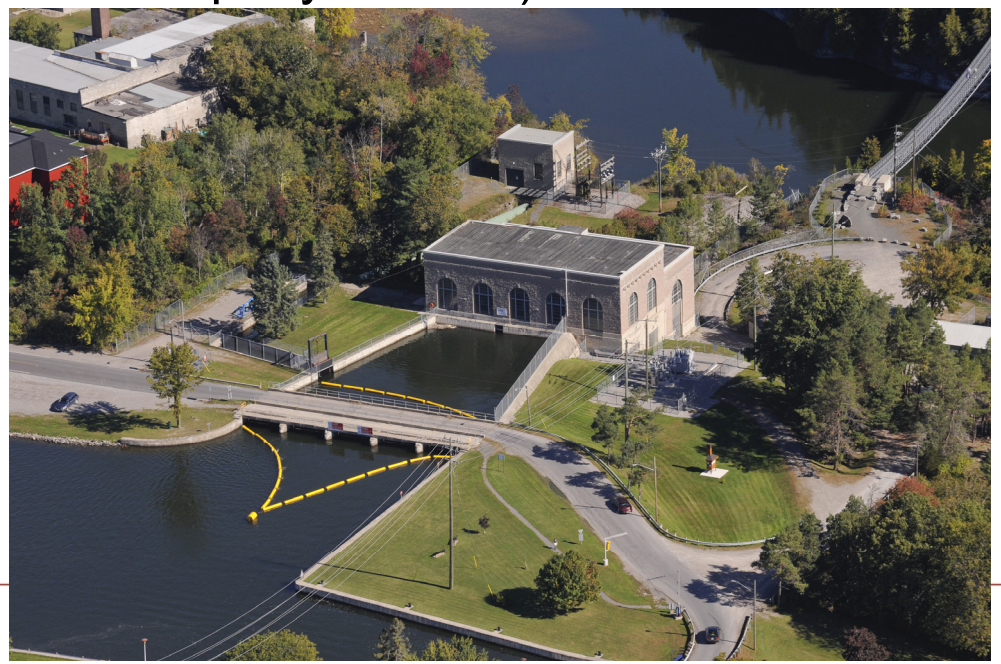
- Ranney Falls GS is located on land owned by OPG on the Trent River and adjacent to Lock #12 on the Trent-Severn Waterway.
- The Ranney Falls GS property is approximately 2 ha in size.
- The site is accessible via Trent Drive from Grand Road (County Road 30) in Campbellford.

ONTARIO POWER GENERATION

Ranney Falls Generating Station Site

Public Open House

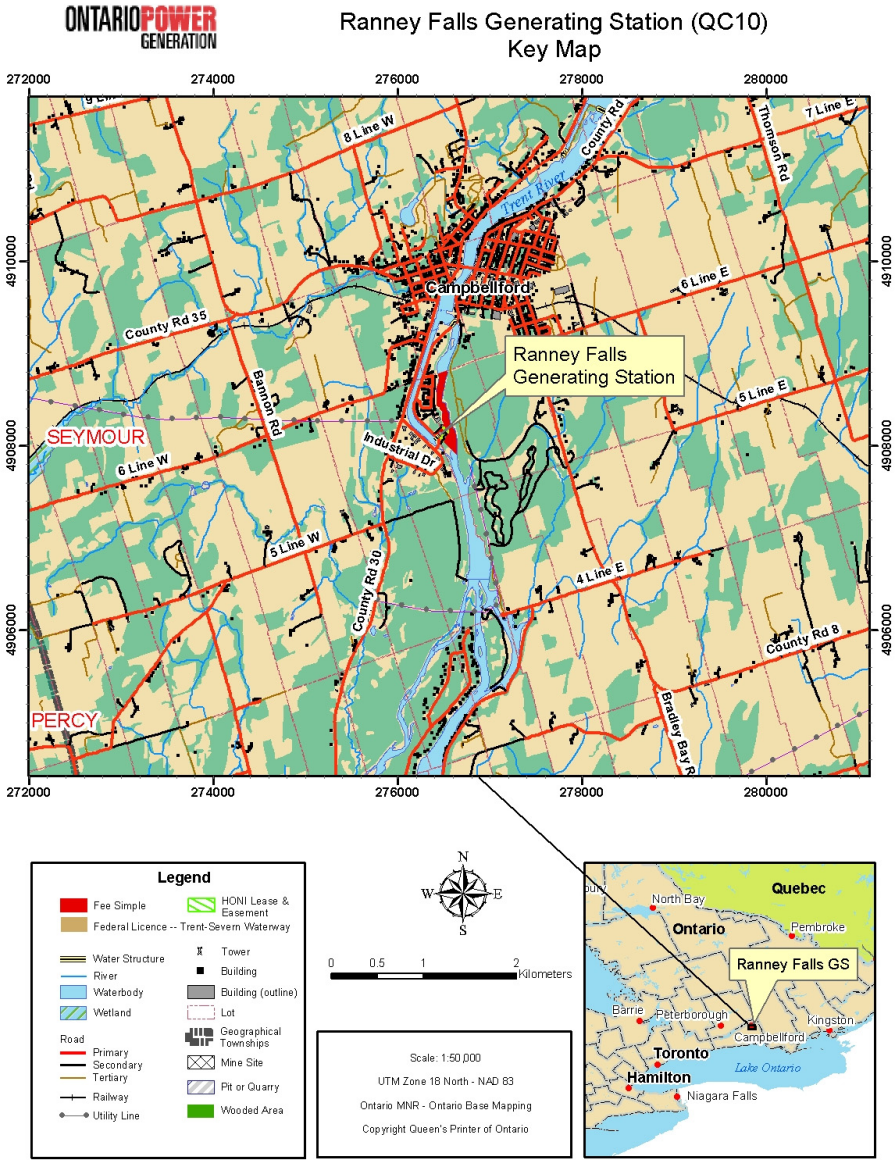
- There are currently two powerhouses on the site:
  - The main powerhouse, which contains G1 and G2 turbine units, each operating at approximately 5 MW during maximum flows.
  - A secondary powerhouse (the “Pup”), contains the 0.7 MW G3 unit that has reached its end-of-life.
- Ranney Falls G1 and G2 Units commissioned in 1922 and the Pup in 1926.
  - Acquired in 1937 by the Hydro-Electric Power Commission of Ontario (predecessor company to OPG) in 1937.



ONTARIO POWER GENERATION

Ranney Falls GS Key Map – Site Location

Public Open House



ONTARIO POWER GENERATION

Existing Ranney Falls GS Location Plan

Public Open House

ONTARIO POWER GENERATION

Ranney Falls GS Expansion Project Overview

Public Open House

The Expansion Project will consist of the following:

- Expansion of the existing forebay
- Construction of a new G3 powerhouse with a new intake structure and 10 MW turbine unit adjacent to the existing main powerhouse
- Construction of a new spillway to by-pass station flow to the tailrace channel for emergency situations
- Expansion of the existing tailrace channel
- Construction of a new electrical substation to connect with the existing Hydro One local distribution lines on site

Ranney Falls GS Expansion Project Overview

Public Open House

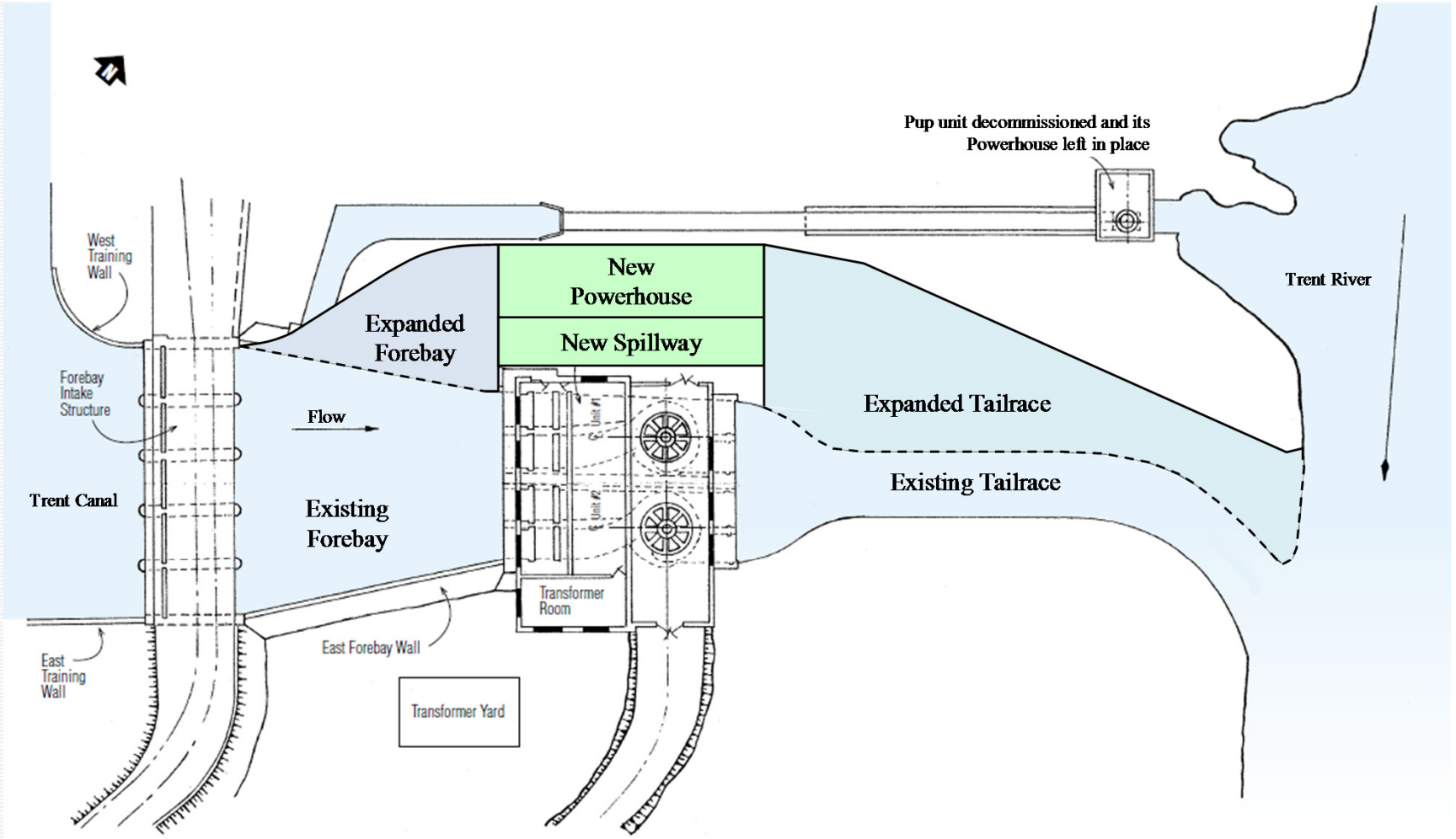
The Expansion Project will consist of the following:

- Decommissioning the “Pup” powerhouse
- Rehabilitation of the stoplog structure and its operating deck (work platform) adjacent to the roadway/TSW bridge
- Relocation of the existing boom
- Creation of enhanced habitat for Northern Map Turtle and Eastern Snapping Turtle and installation of fencing to prevent turtles accessing the construction area
- Proposed construction laydown areas include the lawn to the south of the main powerhouse and the area between the access road to the “Pup” powerhouse and the proposed expanded tailrace

ONTARIO POWER GENERATION

Schematic of Proposed Ranney Falls G3 Project Infrastructure Layout

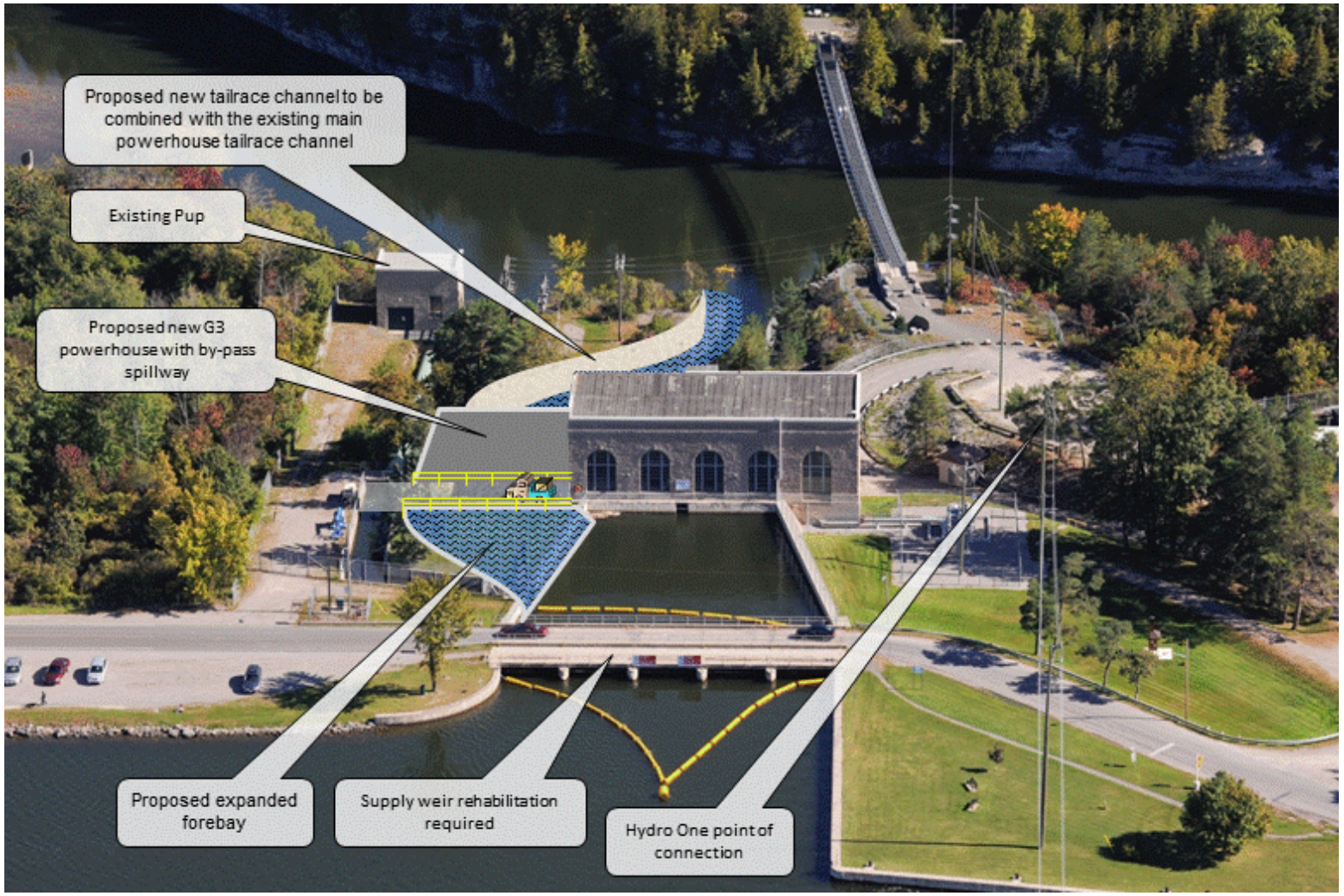
Public Open House



ONTARIO POWER GENERATION

Ranney Falls GS Site Plan

Public Open House

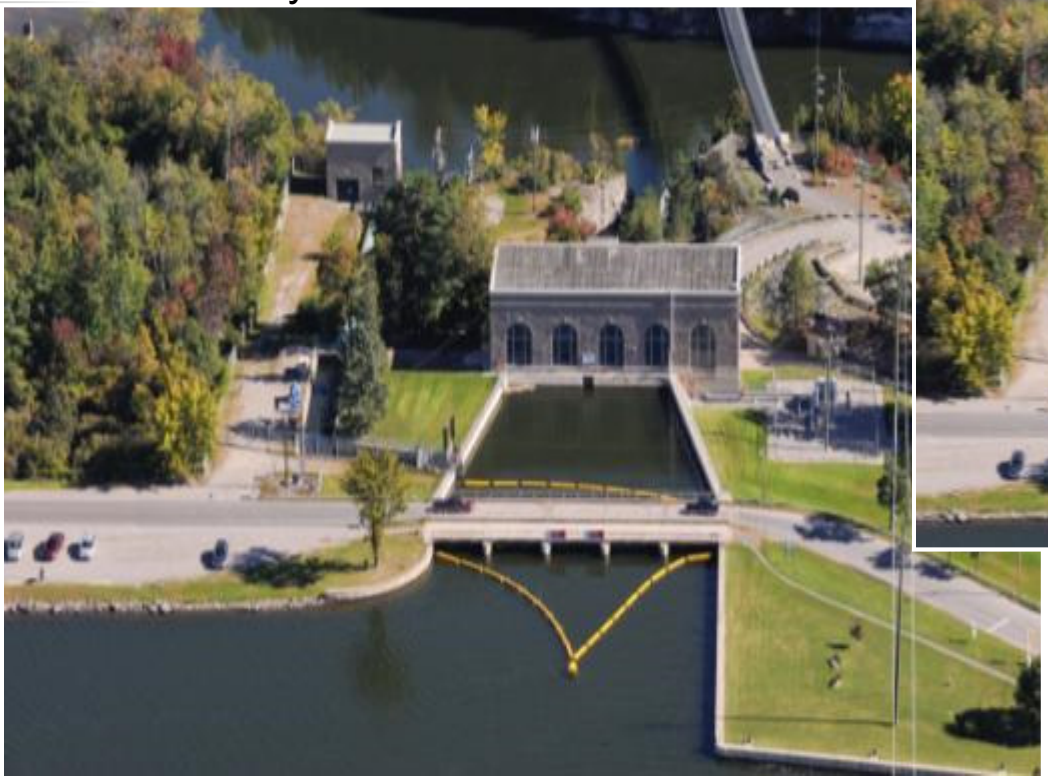


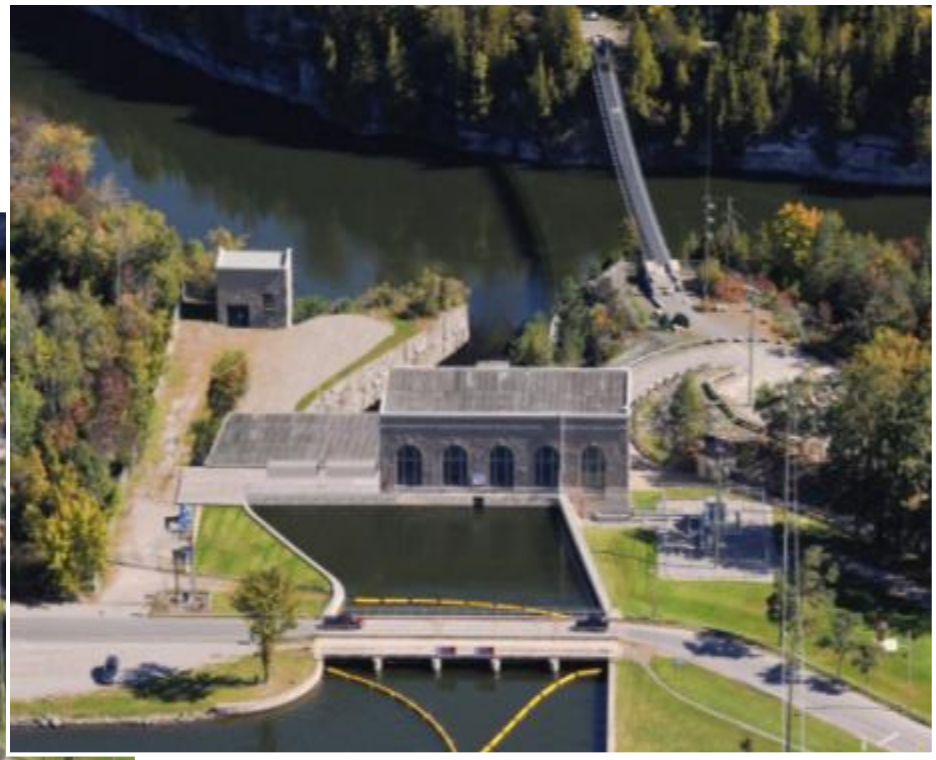
ONTARIO POWER GENERATION

Ranney Falls G3 Expansion Project
Upstream View – Current vs. Future

Public Open House

Current Ranney Falls GS





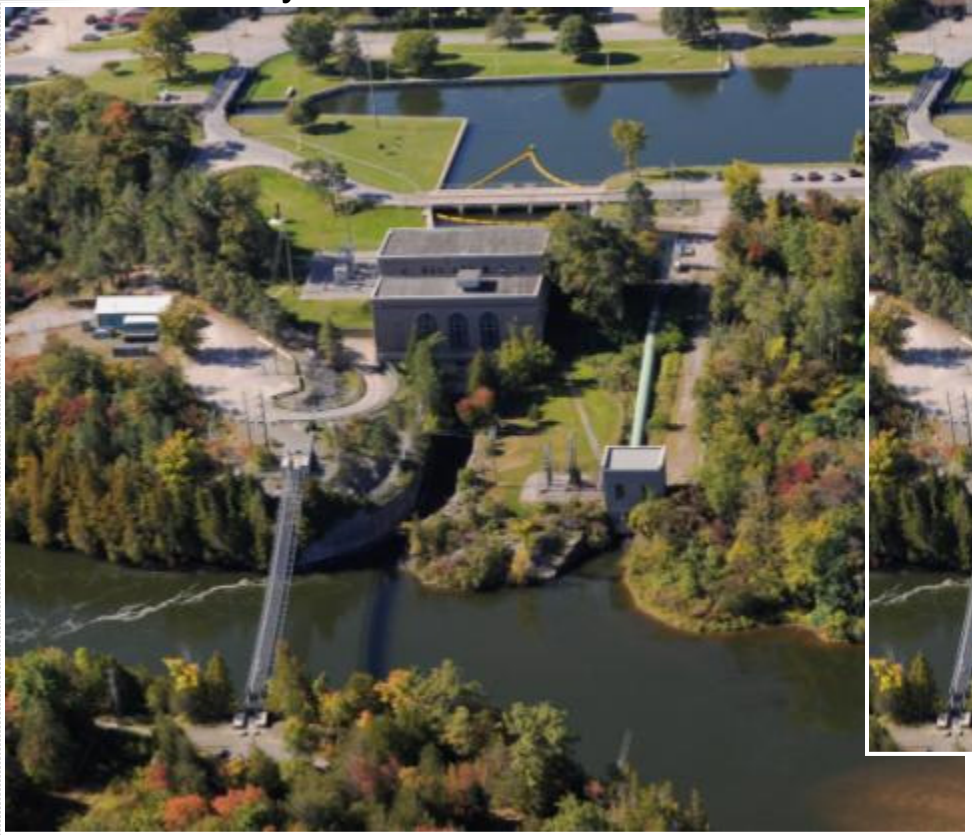
Future Ranney Falls GS

ONTARIO POWER GENERATION

Ranney Falls G3 Expansion Project
Downstream View – Current vs. Future

Public Open House

Current Ranney Falls GS



Future Ranney Falls GS

ONTARIO POWER GENERATION

Ranney Falls GS Future Operation

Public Open House

- Ranney Falls GS will operate essentially in the same way as it does currently.
- The expanded powerhouse will increase flow through the station from 101 cms to approximately 120 cms during navigation season and 170 cms outside the navigation season.
- This will not be noticeable to the public or have any negative effect on Trent-Severn Waterway operations.

ONTARIO POWER GENERATION

Environmental Assessment

Public Open House

- As the Project is on the Trent-Severn Waterway it is subject to the federal *Dominion Water Power Act* administered by Parks Canada and is subject to **their** requirements.
- A Detailed Environmental Impact Analysis (DIA) Report was prepared to fulfill Parks Canada obligations to the *Canadian Environmental Assessment Act, 2012*.
- Along with the environmental assessment several other kinds of permits and approvals are needed to construct the Project.

ONTARIO POWER GENERATION

Existing Environment

- The Trent River is highly modified and for more than a century has been part of the Trent-Severn Waterway. Numerous locks and dams punctuate the river, maintaining artificial water levels throughout the river and interconnected lakes for navigation purposes.
- Most of the study area is comprised of human modified vegetation features including lawn, ornamental plantings and cultural woodlands.

Trent River at Ranney Falls GS looking upstream

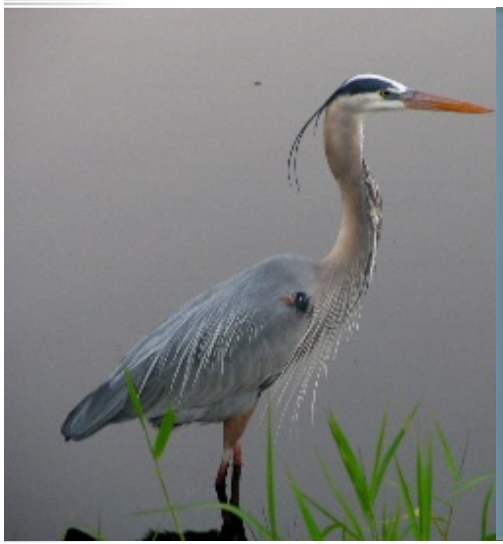
Existing Environment

- Semi-natural communities have developed on lands that have been previously disturbed or modified during construction of the Ranney Falls GS and the Trent-Severn Waterway.
- Natural vegetation communities in the study area are generally confined to the banks of the Trent River and undisturbed areas between the Trent-Severn Waterway and Ranney Falls GS.

Trent River at Ranney Falls GS looking downstream

Existing Environment

- Common bird species that have been observed on the site and nearby include: Great Blue Heron, Mallard, Pileated Woodpecker, Osprey, etc.
- The entire area southeast of the “Pup” powerhouse likely provides snake hibernacula (a seasonal concentration area).



Great Blue Heron

Mallard

Osprey

Existing Environment

- The area between the main powerhouse tailrace and the “Pup” powerhouse is utilized as nesting habitat by Northern Map Turtle and Eastern Snapping Turtle.
- Both of these species are designated as Special Concern federally and provincially.
- Environment Canada has approved a “Turtle Nesting Habitat Mitigation Plan” to create and enhance access and nesting habitat for Northern Map Turtle and Eastern Snapping Turtle.
- Midland Painted Turtles and Northern Map Turtles have also been observed.
- A River Otter feeding/denning site is located approximately 220 m from the main construction footprint.

North American River Otter

Northern Map Turtle and Eastern Snapping Turtle

Public Open House

Northern Map Turtle

Eastern Snapping Turtle

Turtle Nesting Habitat at Ranney Falls GS

ONTARIO POWER GENERATION

Creation of Turtle Nesting Habitat and Fencing at Ranney Falls GS

Public Open House

Turtle Nesting Habitat

Turtle Fencing

ONTARIO POWER GENERATION

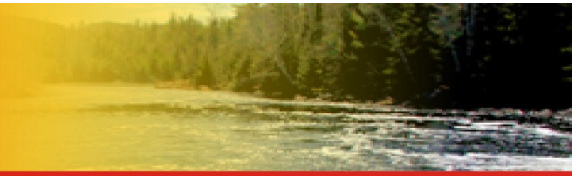
Existing Fisheries

- Fish species identified include: rock bass, smallmouth bass, brown bullhead, logperch, pumpkinseed, yellow perch, common carp, bluegill and white sucker.
- It is possible that the section of river between Ranney Falls and Lock #10 contains some Walleye (pickerel), although, if present, the population in this isolated reach would probably be small.
- Fish community in this section of river is sparse.

Pumpkinseed

Yellow Perch

Construction

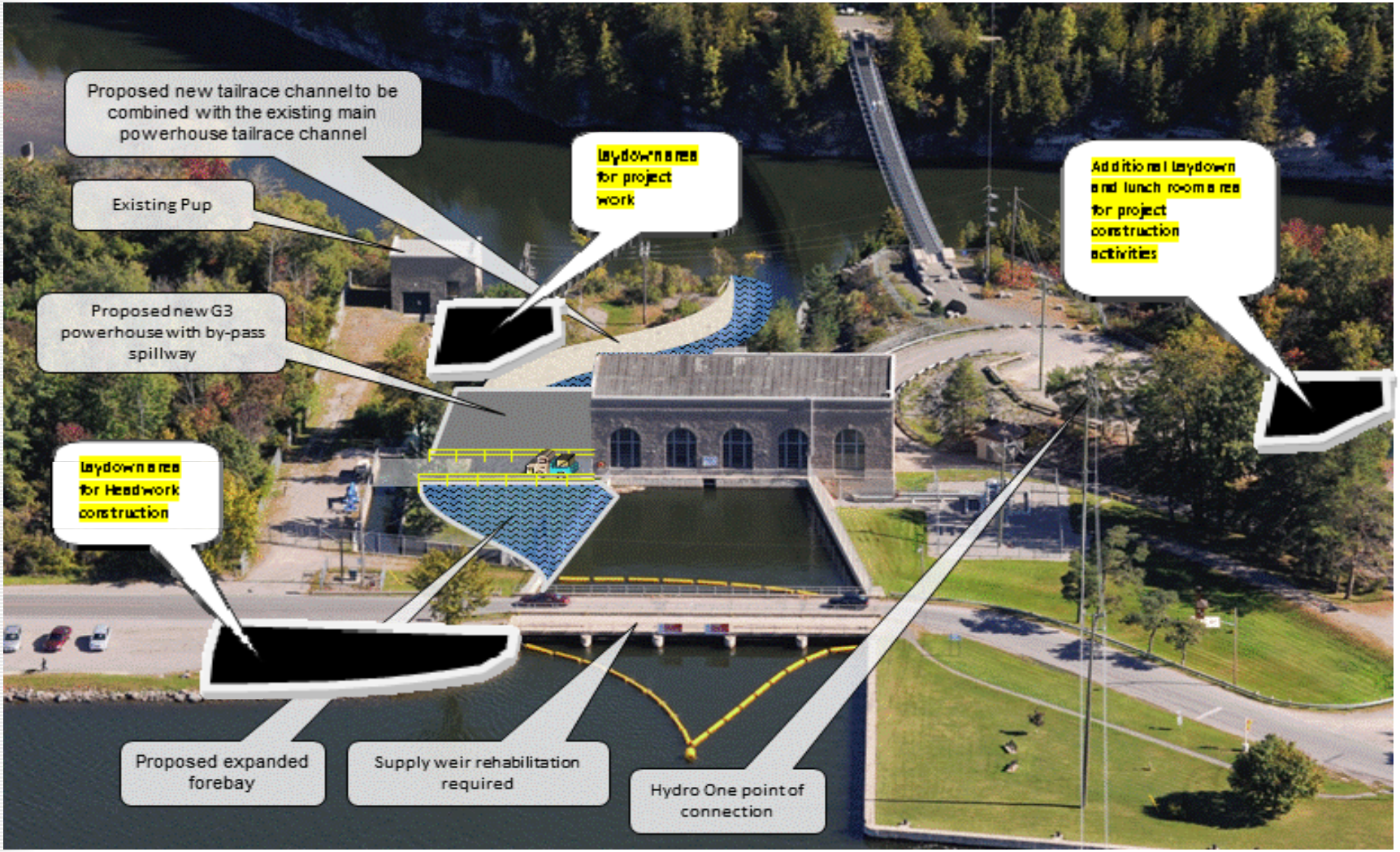


Public Open House

- Construction is expected to take approximately 30 months.
- Up to 80 workers could be on the site at one time.
- Focus on minimizing and/or managing the potential conflict between public and construction traffic access.
- Increased traffic due to worker and construction-related delivery vehicles primarily along CR 30 and Trent Road and, to a lesser extent, along CR 8 and CR 50, during construction.
- Mitigation measures that can be implemented to minimize potential adverse effects associated with increased traffic during the construction period include specific road restrictions, specific haul routes, advanced notice to OPP, traffic duty officers/flagmen and other traffic safety measures to be implemented by the contractor.
- Construction activities will abide with the specific Trent Hills Municipal Noise By-Law.

Construction Laydown Area

Public Open House



ONTARIO POWER GENERATION

Drilling and Blasting

Public Open House

- Drilling and blasting will be required to facilitate new powerhouse and expanded tailrace construction
- Only careful excavation methods and controlled drilling and blasting will be undertaken
- All blasting will be done under the supervision of a qualified blasting engineer who will adhere to all government requirements and guidelines
- Only authorized personnel will handle explosives
- Appropriate government agencies and the local residents will be informed of the blasting schedule in advance of construction
- All necessary permits will be obtained by the contractor, who will also comply with all legal requirements in connection with the use, storage and transportation of explosives

Environmental Measures During Construction

Public Open House

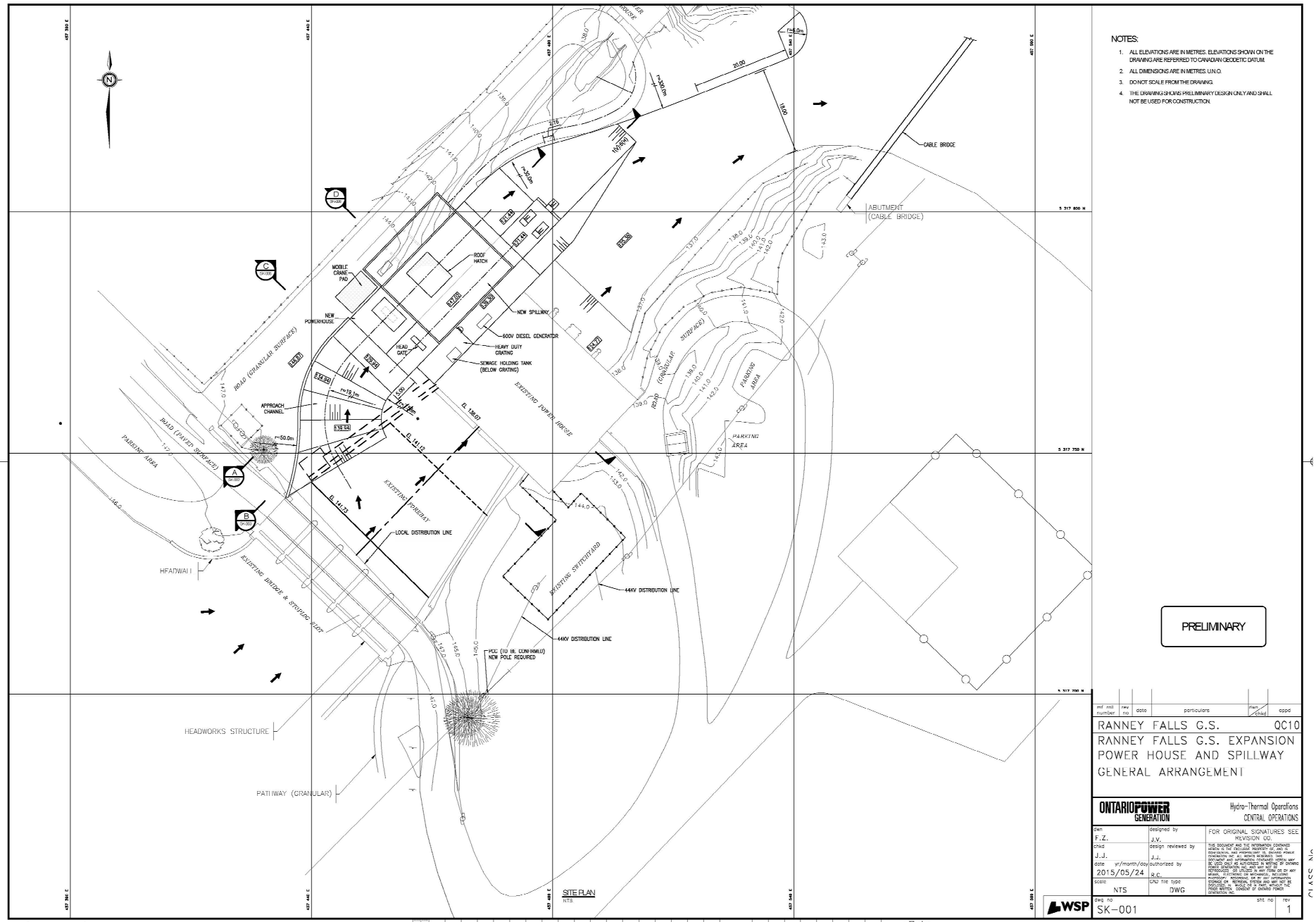
- Environmental protection during proposed Project construction and operation will be ensured by adherence to the Environmental Management Plan that the contractor **WILL** need to follow. Specific measures include:
  - Erosion and Sediment Control
  - Spills Emergency Preparedness and Response
  - Hazardous Materials Management
  - Waste Management
  - Site Rehabilitation Plan
- The Environmental Management Plan will be submitted to Parks Canada – TSW for review and approval prior to commencement of proposed Project construction.
- OPG will also require the Contractor to have an on-site health and safety coordinator who will review and monitor health and safety issues which arise during the course of construction.

Project Benefits

Public Open House

- Based on the Environmental Assessment and the implementation of the recommended mitigation measures, it is concluded that effects due to construction activities associated with the proposed Project will be minimal, localized and short-term.
- OPG estimates that the contribution of the proposed Project construction phase to the local economy will be over $10 million.
- Most of the workers on the Project are expected to be drawn from the local and regional area.
- There will be no observable change to Ranney Falls operations.
- Hydropower is a clean and renewable source of power for Ontario.
- Hydropower and the Trent-Severn Waterway have worked in co-existence for almost 100 years.

ONTARIO POWER GENERATION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PRELIMINARY
CABLE BRIDGE
ABUTMENT (CABLE BRIDGE)
ROAD (GRANULAR SURFACE)
PARKING AREA
MOBILE CRANE PAD
ROOF HATCH
NEW POWERHOUSE
NEW SPILLWAY
600V DIESEL GENERATOR
HEAVY DUTY GRATING
SEWAGE HOLDING TANK (BELOW GRATING)
HEAD GATE
APPROACH CHANNEL
EXISTING POWER HOUSE
EXISTING FOREBAY
LOCAL DISTRIBUTION LINE
EXISTING SWITCHYARD
44KV DISTRIBUTION LINE
PCC (TO BE CONFIRMED) NEW POLE REQUIRED
HEADWALL
EXISTING BRIDGE & STOPLOG SLOT
HEADWORKS STRUCTURE
PATHWAY (GRANULAR)
SITE PLAN
NTS
RANNEY FALLS G.S. QC10
RANNEY FALLS G.S. EXPANSION
POWER HOUSE AND SPILLWAY
GENERAL ARRANGEMENT
ONTARIO POWER GENERATION
Hydro-Thermal Operations
CENTRAL OPERATIONS
drawn F.Z.
designed by J.V.
checked J.J.
design reviewed by J.J.
date yr/month/day 2015/05/24
authorized by R.C.
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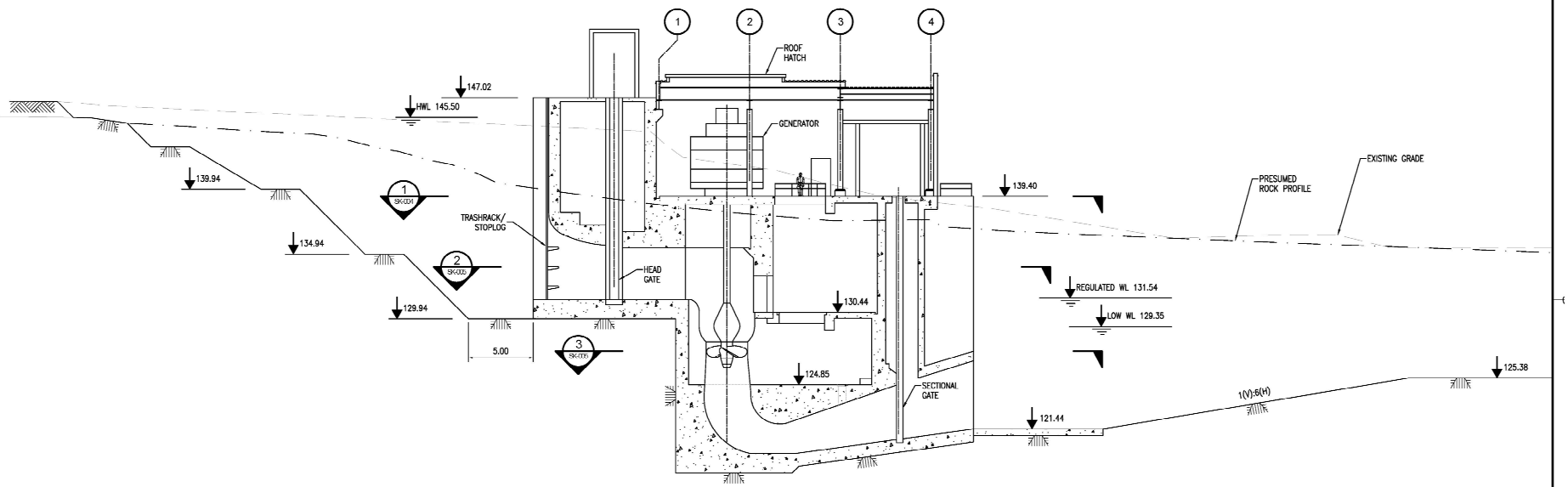

SECTION A
N.T.S. SK-001

PRELIMINARY

mf roll number	rev no	date	particulars	dwn / chkd	appd

RANNEY FALLS G.S. QC10

RANNEY FALLS G.S. EXPANSION

POWERHOUSE SECTION

ONTARIO POWER GENERATION

Hydro-Thermal Operations
CENTRAL OPERATIONS

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PLOT DATE: Jun 05, 2015 - 11:37am BY: (Andar Maria)

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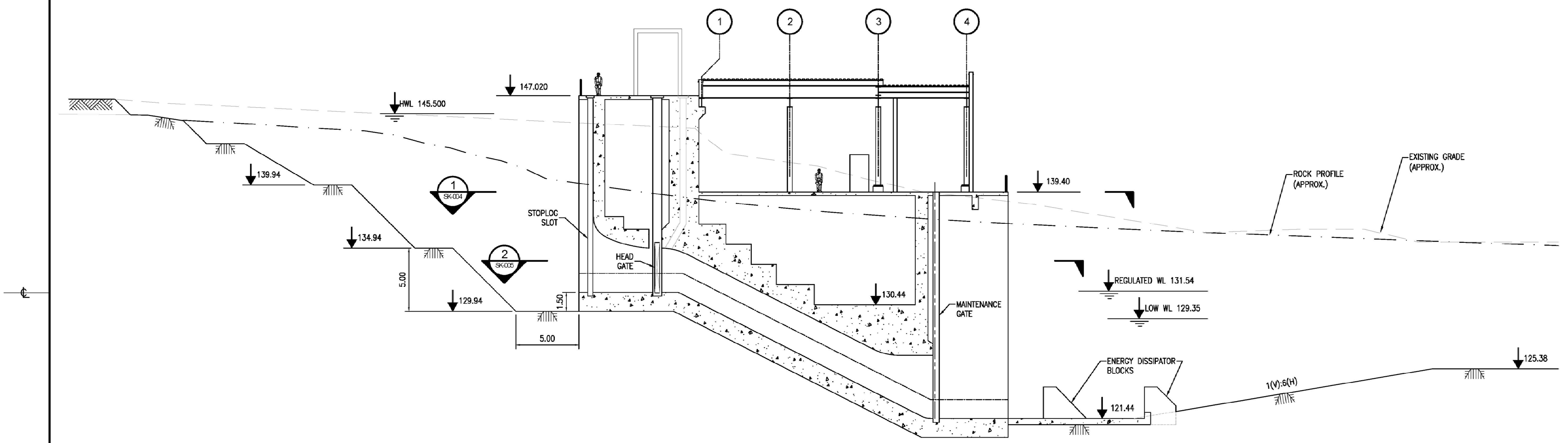

PRELIMINARY

SECTION B
N.T.S. SK-001

mf roll number	rev no	date	particulars	dwn / chkd	appd

RANNEY FALLS G.S. QC10

RANNEY FALLS G.S. EXPANSION
SPILLWAY
SECTION

ONTARIO POWER GENERATION — Hydro-Thermal Operations, CENTRAL OPERATIONS

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chkd J.J.	design reviewed by J.J.	THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN IS THE EXCLUSIVE PROPERTY OF, AND IS CONFIDENTIAL AND PROPRIETARY TO, ONTARIO POWER GENERATION INC. ALL RIGHTS RESERVED. THIS DOCUMENT AND INFORMATION CONTAINED HEREIN MAY BE USED ONLY AS AUTHORIZED IN WRITING BY ONTARIO POWER GENERATION INC. AND MAY NOT BE REPRODUCED OR UTILIZED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPY RECORDING, OR BY ANY INFORMATION STORAGE OR RETRIEVAL SYSTEM AND MAY NOT BE DISCLOSED, IN WHOLE OR IN PART, WITHOUT THE PRIOR WRITTEN CONSENT OF ONTARIO POWER GENERATION INC.
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CLASS No

APPENDIX C

Government Agency Kickoff Meeting

AGENDA:
Kickoff Meeting for Ranney Falls G3 Project

Trent Severn Waterway Office, 2155 Ashburnham Dr., Peterborough
March 14, 2012, 10am- 12pm
Teleconference information: 1 866-602-5089, 416-343-0138
Conference ID: 4201125

1) Introductions

2) Opening Remarks (Heather Brown)
3) Overview of Project (Jerry Fitchko)
4) Discussion of Issues
5) Discussion of Federal Coordination Response Letter
6) Next Steps

NOTES OF MEETING
Ontario Power Generation: Ranney Falls Kickoff Meeting

Date: March 14, 2012, 10:00 a.m to 11:30 a.m Location: TSW Office, Peterborough
Notes prepared by: Heather Brown/Tori Chai

Attendees:
In person:
Iskander Boulos, Project Manager, OPG
Heather Brown, Environmental Advisor, OPG
Loc Tran, Project Engineer, OPG
Tori Chai, co-op student, OPG
Jerry Fitchko, Senior Environmental Specialist, SENES Consultants Ltd
Eric Prevost, Renewable Energy Planning Ecologist, Ministry of Natural Resources
William Fox, Hydro & Business Development Manager, Parks Canada-Trent Severn Waterway
Bryce Sharpe, EA officer, Parks Canada-Trent Severn Waterway
Tracy Allison, Fish Habitat Biologist, Department of Fisheries and Oceans Canada
Roger Stanley, Director of Operations, Parks Canada-Trent Severn Waterway

Teleconference:
David Brandt, First Line Manager, OPG
David Stanley, Senior Environmental Scientist, OPG
Dan McDonell, EA officer, Environment Canada
Vicki Mitchell, EA Coordinator, Ministry of the Environment
Katherine Kirzati, Heritage Planner, Ministry of Tourism and Culture
Linda Beaulieu, Environmental Officer, Transport Canada

Handouts:
- Ranney Falls Generating Station G3 Expansion Project presentation slides
- Aerial photo of Ranney Falls GS Setting
- Aerial photo of proposed Ranney Falls G3 Project infrastructure layout
- ELC Communities within the Site-specific Study Area

Topic #1: Self-introduction by attendees

Topic #2: Species at Risk
- No Chimney Swift nesting activity has been observed in the artificial nesting structure on site.
- OPG will consider permanently relocating the artificial Chimney Swift nesting structure to another suitable location or temporarily put it away for construction (action 1).
- MNR cautioned against the need to consider Northern Map turtles as a Species At Risk (SAR), due to Endangered Species Act s.9 and s.10 provisions.
- A definition of what MNR considers to be “significant habitat” will be posted next week in the Significant Wildlife Habitat Technical Guide on the Environmental Bill of Rights Registry website.
- Federally, the Species at Risk Act (SARA) lists Snapping and Map turtles as species of “special concern” under Schedule 1. The EA must look at the effects of the project on

critical habitat and possible mitigation measures. TSW will be the point of contact for this issue.
- Discussions of SAR and ESA requirements will be facilitated between MNR, TSW, EC and OPG.
- SENES will provide Northern Map turtle reports to Bryce Sharpe and Eric Prevost (action 2).
- Site visit for MNR (Eric Prevost), TSW (Bryce Sharpe), and EC (Dan McDonell) will be arranged, to discuss turtle fence location and other mitigation measures (action 3).

Topic #3: DFO considerations
- American eel were noted to be found in the Holland Marsh in Fall 2011.
- OPG stocked eels in the Bay of Quinte.
- It was noted that no fish mortality has been measured or established with Ranney GS, and it will likely not be a significant problem.
- DFO will confirm HADD assessment submitted by OPG (action 4).
- Bill Fox of TSW mentioned that OPG is working with TSW to reconfigure the positioning of the safety booms in the forebay, in order to ensure safety of borders at the Lock entrance area.
- DFO noted that redevelopment projects trigger DFO to consider applying s.32 authorization to existing facility.
- David Stanley confirmed that OPG does not have a s.32 authorization for the existing plant (to kill fish by means other than fishing). OPG does not usually enter into Section 32 authorizations. Instead, OPG obtains action plans and a station-wide approval. DFO can provide authorizations for existing facilities (repairs/modifications), and wants an estimate of mortality and any monitoring OPG is planning. Every 2 or 3 years, report any fish killed to DFO. DFO will circulate this information to MNR to ensure it fits with their objectives. OPG will clarify for DFO, OPG's plans for the Ranney Project and give DFO an estimate of fish mortality (action 5).

Topic #4: Archaeology and Cultural Heritage
- OPG has submitted the Stage 1 Archaeological Assessment to MTC for review.
- Anything on the shoreline/river has the potential for marine archaeology; MTC wants this to be a consideration in the EA process. TSW (Bryce Sharpe) has forwarded the Stage 1 Archaeological Assessment to TSW's underwater archaeology specialist in Cornwall. Bryce will share any related information with MTC and OPG (action 6).
- It was noted that the area has already been disturbed because of construction of the current powerhouse. The archaeologist's study found that the land was primarily agricultural, from a settlement standpoint.
- OPG will talk to MTC in more detail if there are concerns with the Stage 1 Archaeological Assessment or Cultural Heritage Assessment.

Topic #5: Transport Canada (TC) and the *Navigable Waters Protection Act* (*NWPA*)
- TC asked about the ownership of the dam. It was noted that the site was formerly leased by the Federal government to Seymour Power Company, which was then purchased by the province along with rights to the site. The main powerhouse was subsequently commissioned by the Hydro-Electric Power Commission of Ontario (predecessor of OPG). The Pup powerhouse was acquired by the Hydro-Electric Power Commission of Ontario (HEPCO) from the Quinte and Trent Valley Power Company. Ranney Falls GS was transferred to OPG in 1999.

- The amended NWPA states that any non-legal dam used to required s.6 (4) approval, but now there is a grandfather clause for MNR-owned dams that makes them legal. S.6 (4) is a *CEAA* trigger for TC, so if there is no s.6 (4) approval required, then TC may not have a *CEAA* trigger. It may be a minor s.10 approval instead.
- Bill Fox indicated that a grandfathering exercise may be considered for OPG operations on waterways.
- Dam 10 has been owned by TSW since day 1. The main powerhouse (also a dam) was originally owned by Quinte and Trent Valley Power Company and then sold to HEPCO. A question was raised of whether the powerhouse is a crown-owned dam based on the fact that HEPCO and OPG have always been owned by the Province of Ontario.
- OPG will follow up with TC on this issue (action 7).

Topic #6: Public and First Nations Consultation

- Bryce Sharpe noted that the definition of environmental effects under CEAA includes health and socio-economics. Therefore public safety must be included as part of the EA process.
- TSW has provided OPG with advice on which First Nations communities to consult with. OPG is also expecting correspondence from the Ministry of Energy with advice of the provincial government. OPG will share the letter to First Nations with the agencies, which will be sent out within a few weeks. TC would like to be forwarded the letter (action 8).
- TC indicated that at the end of the EA there is a 30 day advertising period associated with NWPA approval in the local newspapers, and the Canada Gazette. The Sarnia office of TC will provide guidance on how to do that. The NWPA ad seeks public concern with navigation, and must be kept separate from any EA ads.
- Bill Fox indicated that the Notice of Commencement is voluntary and is not required under the Dominion Water Power Act, since it is a “Change of Undertaking.” OPG stated that it will be notifying local residents about the Project through a voluntary notice or ad.

Topic #7: Other

- Bryce Sharpe from TSW is the Federal Environmental Assessment Coordinator.
- If there are any other permits required, please inform SENES (Jerry Fitchko).
- Agencies will provide comments on the draft Project Description to be submitted to Parks Canada (action 9).
- Proponent (OPG) will submit a draft of final Screening Report to agencies, and agencies will provide comments.
- OPG will send certain sections of report in advance of the final draft, in order to determine if there are any concerns as early as possible.

Summary of Action Items:

From Topic #2:

1) OPG will consider permanently relocating the artificial Chimney Swift nesting structure to another suitable location or temporarily put it away for construction.
2) SENES will provide Northern Map turtle reports to Bryce Sharpe (TSW) and Eric Prevost (MNR).
3) Site visit for MNR (Eric Prevost), TSW (Bryce Sharpe), and EC (Dan McDonell) will be arranged, to discuss turtle fence location and other mitigation measures.

From Topic #3:

4) DFO will review HADD assessment submitted by OPG.
5) OPG will confirm the need for a s.32 authorization from DFO, and will give DFO an estimate of fish mortality and monitoring.

From Topic #4:

6) TSW will share its response to the Stage 1 Archaeological Assessment with MTC and OPG.

From Topic #5:

7) OPG will follow up with TC on the issue of whether s.6(4) approval is required under the NWPA.

From Topic #6:

8) OPG will share the letter to First Nations and Métis Nation of Ontario with the agencies.

From Topic #7:

9) Agencies will provide comments on the draft Project Description by March 30, 2012.

If you have any questions or concerns, please contact:

Heather Brown (905) 592-6818
Jerry Fitchko (905) 764-9380

APPENDIX D

Other Government Agency Meetings/Communications

MINUTES OF MEETING
Ontario Power Generation (OPG) – Municipality of Trent Hills (MTH)

Date: February 8, 2012 **Location: TSW Office, Peterborough**

Attendees:

Iskander Boulos, Project Manager, Ontario Power Generation
David Brandt, First Line Manager, Ontario Power Generation
Hector MacMillan, Mayor, Municipality of Trent Hills
Kim MacNeil, Councillor, Municipality of Trent Hills
Jim Peters, Director of Planning and Development, Municipality of Trent Hills
Mike Rutter, Chief Administrative Officer, Municipality of Trent Hills
Chris Tye, Municipality of Trent Hills
Loc Tran, Project Engineer, Ontario Power Generation

Topic: **Ranney Falls G3 Expansion Project**

Handouts:

- Ranney Falls G3 Expansion Project – presentation slides (provided by OPG)
- Ranney Falls G3 Expansion Project – briefing notes (provide by OPG)

Discussions:

- David Brandt started the presentation by describing Ontario Power Generation as a company.

- Iskander Boulos continued with the presentation by describing Ranney Falls hydroelectric generating station (Ranney Falls GS), and the expansion being planned for at Ranney Falls GS. The description on the expansion project included the project scope, objectives, benefits and tentative timeline of the project.

- A few details discussed as part of the presentation include:

  Project Features:

  a) The project impacts on the access to the suspension bridge and TSW concrete bridge would be minimized

  b) The downstream face of the new powerhouse would be finished with materials that would provide a consistent look with the exterior of existing main powerhouse.

  c) The roof of the new powerhouse would consist for a removable hatch for future maintenance of heavy equipment. The roof would be at the sample level with Trent Drive. However, it is acceptable to MTH officials if the powerhouse roof has to be higher than Trent Drive and can been seen by the public from the upstream side.

  d) The new spillway would be used to pass the station water to the Trent River during emergency outages.

Flow and Water Level Management

e) TSW would continue to provide flood and water management for the Trent River system. TSW would continue to pass water for generation through the Ranney canal, and pass any flow above the station capacity through their Dam # 10 to the Trent River.

f) Water flow in Trent Canal during navigation season would remain virtually the same. Water flow to the station would increase only outside navigation season.

g) Less water would be spilled in the Trent River at the back during the early winter and the fall times similar to the existing navigation season conditions.

h) There would be no change to water levels all year around. Water levels would continue to be managed and controlled by TSW.

- Mayor Hector MacMillan suggested that the swing bridge at Trent-Severn Waterway (TSW) locks is of highway capacity and that construction traffic should be routed through this bridge to minimize traffic through the sensitive residential area along the Trent Drive as complaints were received during the rehabilitation of TSW concrete bridge.

- Mayor Hector MacMillan also indicated that the excavated rocks from the site would benefit the MTH. Iskander Boulos confirmed that the excavated rocks would be available to MTH. However, there would be a formal agreement for the transfer during construction.

- It was agreed that it is sufficient to contact home or business along Trent Drive. Other residents in the area, especially those along Trent Canal long Highway 30 would be informed of the project through local newspaper. Jim Peters indicate that MTH would provide OPG with a list of names and contact information of homes along Trent Drive.

- It was agreed that “tender loving care” principle would be observed by the project and its workers to ensure the seniors from the adjacent Island Park Retirement Community have access to the waterfront of Trent Canal.

- It was agreed that the project would bring economic benefits to local businesses.

- MTH officials in attendance saw no issues with the project proceeding.

Minutes of meeting prepared by: Loc Tran

MEETING NOTES
Ontario Power Generation: Ranney Falls G3 Project DFO Authorization Status

Date: June 29, 2012 **Location: DFO Office, Peterborough**
Notes prepared by: Jerry Fitchko/George Coker

Attendees:
Jerry Fitchko, Senior Environmental Specialist, SENES Consultants Ltd
George Coker, Fisheries Biologist, C. Portt & Associates
Tom Hoggarth, Habitat Team Leader, Department of Fisheries and Oceans (by teleconference)
Chris Strand, Fish Habitat Biologist, Department of Fisheries and Oceans

Meeting Minutes

The purpose of the meeting was to determine DFO authorization status for the proposed Ranney Falls G3 Project.

Prior to the meeting, Jerry Fitchko provided a document entitled "Assessment of Fish Entrainment Potential – Proposed Ranney Falls G3 Project" to Tom Hoggarth and Chris Strand.

A presentation was made by Jerry Fitchko which was provided as a hard copy to Chris Strand and electronic copy to Tom Hoggarth.

The presentation provided the following:

- project description and benefits;
- adherence to planning principles;
- environmental assessment status and federal permit requirements;
- fisheries field work findings; and
- potential issues.

Five potential issues relevant to DFO were subsequently further elaborated and discussed.

1. Fish species at risk, particularly Lake Sturgeon and American Eel
    - Based on limited occurrence of Lake Sturgeon, its habitat requirements, the poor habitat conditions at Ranney Falls GS and the proposed minor changes in habitat due to the proposed Project, potential habitat will not be affected by construction or operation of the proposed Project.
    - Similarly, insignificant negative effects on American Eel were predicted due to the proposed Project due to very low numbers that likely occur at Ranney Falls GS, because of the distance and barriers between Ranney Falls GS and Lake Ontario, and their generally low numbers in their primary habitats of Bay of Quinte and Lake Ontario

2. Operating regime between Dam #10 and Locks #11 and #12
    - Using the DFO Risk Management Framework, it was concluded that alterations to flow within the Trent Canal and Trent River between Dam #10 and the expanded GS tailrace will not have a detrimental effect on fish production within these two sections of fish habitat

3. Increased Flow Velocities and Trent Canal Structural Integrity
   - Based on an *in-situ* study of erosion potential of bed substrate in the Trent Canal undertaken by the Environment Canada National Water Research Institute, the maximum canal flow (171 m^3/s) could be sustained in the canal without affecting its stability (and fish habitat)

4. Potential for Fish Entrainment
   - Fish entrainment at Ranney Falls GS appears to be negligible due to its small size, intake velocity and head, its offset location relative to the main canal channel and poor fish habitat
   - Fish entrainment due to GS expansion will remain negligible due to unchanged flow velocities during the summer (fish egg incubation and larval emergence) period, lower new powerhouse intake velocity and use of modern conventional turbine design

5. Construction Impacts on Trent Canal and Trent River
   - Civil construction of the new powerhouse will be undertaken in the "dry", with any fish in existing forebay and tailrace removed during dewatering

Based on the comprehensive technical information provided in document and presentation, Tom Hoggarth indicated that DFO will prepare a letter next or the following week indicating that a DFO authorization did not apply to the proposed Ranney Falls G3 Project. He concurred that the current fish injury/mortality due to entrainment would be similar or even reduced as a result of the proposed Ranney Falls G3 Project due primarily to the lower intake flow velocity (≤ 1.5 m/s as a BMP) and turbine design. He complemented Jerry Fitchko and George Coker for providing the comprehensive technical information that formed the basis for him to come to this conclusion and would be used to address any public challenges on this decision. The use of the DFO Risk Management Framework to assess the effect of changes in the operating regime on fish production was commended by DFO.

With respect to American Eel, Tom Hoggarth indicated that COSEWIC has recommended in May 2012 that the species be elevated from "special concern" to "threatened" status. Moreover, although American Eel runs in the TSW have diminished significantly, they may return to the large numbers occurring in the past. In that event, the installation of a removable thin screen at the proposed G3 powerhouse intake that would be deployed during the three- to four-month migration period may become a future operational requirement. Tom Hogarth suggested that OPG consider making the necessary allowances for screen installation in the design of the proposed G3 intake. Jerry Fitchko requested that this suggestion be provided in the forthcoming letter from DFO.

Fisheries and Oceans Canada | Pêches et Océans Canada

501 Towerhill Road
Unit 102
Peterborough, Ontario
K9H 7S3

July 17, 2012

Your file *Votre référence*

Our file *Notre référence*
12-HCAA-CA4-00176

Iskander Boulos
Project Engineer
Ontario Power Generation Inc.
700 University Avenue
Location H9-D27
Toronto, Ontario
M5G1X6

Dear Mr. Boulos:

Subject: Proposed Raney Falls Generating Station expansion not likely to result in impacts to fish and fish habitat provided that additional mitigation measures are applied.

Fisheries and Oceans Canada - Fish Habitat Management Program (DFO) received your proposal on February 9, 2012. Please refer to the file number and title below:

DFO File No.: **12-HCAA-CA4-00176**
Title: **Ranney Falls Generating Station Expansion, Trent River, Municipality of Trent Hills**

You may be aware of recent changes to the *Fisheries Act*, however these have not affected the review of your project at this time. For more information on current changes to the *Fisheries Act*, as well as changes taking effect in the coming months, please refer to the DFO website http://www.dfo-mpo.gc.ca/habitat/habitat-eng.htm.

Your proposal has been reviewed to determine whether it is likely to result in impacts to fish and fish habitat which are prohibited by the habitat protection provisions of the *Fisheries Act* or those prohibitions of the *Species at Risk Act* that apply to aquatic species.*

*Those sections most relevant to the review of development proposals include 20, 22, 32 and 35 of the *Fisheries Act* and sections 32, 33 and 58 of the *Species at Risk Act*. For more information please visit www.dfo-mpo.gc.ca.

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Canada

Our review consisted of the following documents:

- Project Description for Federal Agency Review Ranney Falls Generating Station G3 Expansion Project, dated January 2012.
- HADD of Fish Habitat Risk Assessment, Proposed Ranney Falls Generating Station G3 Expansion Project, dated February 3, 2012.
- Assessment of Fish Entrainment Potential, Proposed Ranney Falls G3 Project, June 29 Meeting supplemental information.
- Meeting Notes, June 29, 2012.

We understand that you propose to:

- Expand the existing forebay.
- Construct a new G3 powerhouse with a new intake structure and 10MW kaplan turbine unit adjacent to the existing main powerhouse.
- Expand the tailrace channel.
- Construction of a new electrical substation to connect with one of the Hydro One local distribution lines on site.
- Construction of a new spillway to bypass full station flow to the tailrace in emergency situations.
- Decommissioning of the "Pup" powerhouse.
- Rehabilitation of the stoplog structure and its operating deck adjacent to the TSW bridge.

It is also our understanding that the majority of the works will be excavation of areas that are dry land or areas that are existing infrastructure associated with the current power facility. Direct habitat impacts would be minimal.

Fish entrainment at Ranney Falls Generating Station appears to be negligible due to its small size, intake velocity and head, its offset location relative to the main canal channel and poor fish habitat. Furthermore, fish entrainment due to generating station expansion will remain negligible due to unchanged flow velocities during the summer (fish egg incubation and larval emergence) period, lower intake velocities at the new powerhouse and use of modern conventional turbine design.

To reduce potential impacts to fish and fish habitat we are recommending the following mitigation measures be included into your plans:

- No in-water work should occur from April 1 to June 30 to protect local fish populations during their spawning and nursery periods.

- All materials and equipment used for the purpose of site preparation and project completion should be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum products, silt, etc.) from entering the water.

- Sediment and erosion control measures should be implemented prior to work and maintained during the work phase, to prevent entry of sediment into the water.

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- All instream work should be completed in the dry by de-watering the work area and diverting and/or pumping flows around cofferdams placed at the limits of the work area.
    - Fish should be removed from the work area prior to de-watering and released alive immediately downstream.

- Follow DFO's *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* *(http://www.dfo-mpo.gc.ca/habitat/role/141/1415/14155 /explosives-explosifs/index-eng.asp)*

Provided that the additional mitigation measures described above are incorporated into your plans, DFO has concluded that your proposal is not likely to result in impacts to fish and fish habitat. You will not need to obtain a formal approval from DFO in order to proceed with your proposal. It remains your responsibility, however, to meet the requirements of any other federal, provincial and municipal agencies.

In addition to the above mitigation measures, DFO recommends that you design your intake structures such that future installation of fish screens is possible. Currently, American Eel numbers are extremely low within the Trent-Severn Waterway, therefore no eel mortality has been observed at the Rainey Falls GS. However, American Eel are protected under the Provincial Endangered Species Act and the Committee on Status of Endangered Wildlife in Canada has just recommended that American Eel be listed as threatened. If American Eel populations increase within the Trent-Severn Waterway, OPG may be asked to provide additional mitigation at the Rainey Falls GS to protect this fish species. A properly designed intake structure could reduce potential financial risk in the future.

If the plans have changed or if the description of your proposal is incomplete you should contact this office to determine if the advice in this letter still applies.

Please be advised that any impacts to fish and fish habitat which result from a failure to implement this proposal as described or incorporate the additional mitigation measures included in this letter could lead to corrective action such as enforcement. In addition, under the new *Fisheries Act*, there is a requirement to notify DFO of any harmful alteration or disruption, or any destruction of fish habitat that has not been authorized.

If you have any questions or are required to contact DFO, as above please contact the undersigned at (705) 750-4013, by fax at (705) 750-4016, or by email at Chris.Strand@dfo-mpo.gc.ca.

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Yours sincerely,

Chris Strand
Fish Habitat Biologist

c.c. Trent Severn Waterway
Jerry Fichko, SENES
George Coker, C. Portt and Associates

Ministry of the Environment

P.O. Box 22032
Kingston, Ontario
K7M 8S5
613/549-4000 or 1-800/267-0974
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Ministère de l'Environnement

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Via Email Only

February 24, 2012

SENES Consultants Limited

Attention: Jerry Fitchko
Project Manager
EA Consulting Team
jfitchko@senes.ca

Dear Mr. Fitchko:

Re: Ranney Falls Generating Station Expansion, Lock 12 Trent Canal/Trent River

Thank you for your January 26, 2012 email. The email included a project description.

Project Overview

The Ranney Falls Generating Station (GS) is owned by Ontario Power Generation Inc. (OPG). It is located on land owned by OPG on the Trent River and adjacent to Lock # 12 on the Trent-Severn Waterway within the community of Campbellford in the Municipality of Trent Hills. The 0.72 MW G3 unit has reached its end-of-life. The headwater of the Ranney Falls GS is the Trent Canal at the upstream end of TSW Lock #12, with the tailwater being the Trent River.

The project will involve expansion of the existing forebay; construction of a new G3 powerhouse with a new intake structure and 10 MW turbine unit adjacent to existing main powerhouse; expansion of the existing tailrace channel; construction of a new electrical substation to connect with one of the Hydro One local distribution lines; construction of a new spillway to by-pass full station flow to the tailrace channel for emergency situations; decommissioning a powerhouse and; rehabilitation of the stoplog structure and its operating deck (work platform) adjacent to the roadway/TSW bridge.

The project is subject to a federal Environmental Assessment under the Canadian Environmental Assessment Act, and to the Dominion Water Power Act.

Applicability of Ontario Environmental Assessment Act

Based on the Ministry's understanding of the proposed waterpower project, as discussed above, it is the Ministry's position that the Ontario Environmental Assessment Act – and therefore the Class Environmental Assessment for Waterpower Projects – does not apply to the project.

However, it is our position that MOE Environmental Compliance Approvals will still be required. MOE approvals for waterpower projects are described later on in this letter.

We request to be kept informed of the project, and to receive two copies of the federal screening level environmental assessment document on CD, when it is available.

MOE Technical Issues

Issues of interest to this Ministry, which staff would consider during our technical review of the project, include impacts to surface water quality and flow, impacts to other stakeholders which discharge to the river (for example, sewage treatment plants) due to changes in the flow regime, impacts to base flows and groundwater levels, disposal of waste and excess material, temporary and permanent noise impacts to nearby residents, sewage and water servicing of the facility, and commitments to obtain approvals under Ministry of Environment legislation where appropriate.

Impacts to Surface Water

The federal screening level environmental assessment should include information on existing and proposed water levels and water flows.

The report should also discuss proposed mitigation measures to protect water quality during construction. Typical mitigation measures that should be considered include: machinery should not operate directly in a watercourse; refuelling of all vehicles and equipment should be done away from watercourses; adequate erosion and sedimentation controls must be incorporated into the planning and construction for the project; the time of excavation to restoration must be kept to a minimum; disturbed shoreline should be stabilized as soon as possible; removal of vegetation from the right-of-way should be kept to a minimum; materials removed and stockpiled such as excavated soil and backfill material must be contained in a manner to ensure sediment does not enter a waterway. Long term erosion and water quality impairment must not occur as a result of this project.

Where dredging is required, consideration should be given to appropriate storage, handling, dewatering and disposal of excavated material. Excavated materials must be disposed of in accordance with this Ministry's legislation and guidelines.

Guidance on nearshore construction and dredging may be obtained from this Ministry's *Guidelines for Evaluating Construction Activities Impacting on Water Resources* dated January 1995 and *Evaluating Construction Activities Impacting on Water Resources, Part III A, Part III B, and Part III C* updated January 2011.

Impacts to Water Intakes, Wells and Septic Systems

Water intakes and water supplies must be protected during construction. Care must be taken to avoid impacts to wells due to construction or spills. The report should identify whether there are any wells and septic systems that may be impacted by changes to water levels.

Waste Management

Waste material must be managed in accordance with MOE standards. The *Environmental Protection Act* (EPA) and Regulation 347 in particular, require waste to be classified and disposed of appropriately. Waste is to be transported by haulers who have an "Environmental Compliance Approval – Waste Management System". Where waste is other than solid non-hazardous, the generator requires a "Generator Registration Number" from the Ministry and has obligations regarding manifesting of waste. When determining the waste category, the proponent must ensure compliance with Schedule 4 of Regulation 347.

Where contaminated soil is encountered, Ontario Regulation 153/04 and the accompanying *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* provide direction on assessment, restoration and MOE soil criteria.

Construction Impacts

A plan should be in place for preventing and dealing with spills. Spills must be reported to the Spills Action Centre of the Ministry of the Environment at 1-800-268-6060.

If blasting is necessary, then noise, dust and flyrock should be controlled. Where blasting is required, we recommend that protocols be set up and followed for on-site and receptor blast monitoring (vibration and concussion), and that 48 hour notice be given to area residents prior to blasting. Pre-blast surveys are recommended so that the company has baseline data when responding to complaints of property damage due to blasting.

Dust should be controlled along access roads and in construction areas.

We recommend that complaint response protocols be developed to address reported well water disturbances, noise, dust and claims of property damage.

MOE Approvals

Permits to Take Water (PTTW), under section 34 of the *Ontario Water Resources Act*, are required where taking, dewatering, storage or diversion of water will exceed 50,000 litres in a day. Activities that could require a PTTW include construction or alteration of a dam and/or power canal (the dam permanently holds back water; the power canal is a new intake) and construction dewatering. Questions about the PTTW program should be directed to Nicholas Murphy at (613) 540-6868.

Noise impacts from generating stations and transformers should be evaluated and discussed in the Environmental Report. Air discharges and noise sources may require approval under Section 9 of the *Environmental Protection Act* (EPA). Please contact Approvals staff at (416) 314-8001 if you have questions about air approval requirements.

Sewage works approvals under section 53 of the *Ontario Water Resources Act* (OWRA) may be required for treatment of wastewater during construction (for example, directing wastewater from construction dewatering into a settling pond for treatment). A sewage works with a design capacity of greater than 10,000 L/day requires an approval under Section 53 of the *Ontario Water Resources Act*. Wastewater approvals may also be required for spill containment for on-site transformers if a discharge is proposed. Questions about approval of sewage works should be directed to Environmental Approvals Branch at the number given above.

Thank you for bringing this project to my attention. If you have questions or concerns, please contact me at (613) 540-6852.

Yours truly,

Vicki Mitchell
VM/gl

ec: Bryce Sharpe, Parks Canada
Jim Chan, CEAA
Victor Castro, MOE
David Bradley, MOE

APPENDIX E

Government Agency Comments and OPG Responses

PARKS CANDA, TSW AND AGENCIES COMMENTS ON DRAFT DETAILED IMPACT ANALYSIS (DIA) FOR G3 EXPANSION OF RANNEY FALLS GENERATING STATION (NOVEMBER 30)

Section	Comments	Response
Environment Canada		
TSW cover letter to agencies with review request	States that "the compensation turtle habitat plan including fencing has been completed". If possible could you please send EC photos of these works?	Photos of fencing & completed turtle compensation habitat sent via email Sept 28, 2015 (E.Nolan)
2.3.2 Operation P. 2-25	It was unclear if the Pup Powerhouse (to be decommissioned) and the adjacent habitat (Turtle areas 1, 3, 4, 5 and 6) were assessed for potential contamination (such as hydrocarbons, PCBs, etc.). Please provide further clarification and include any results, or direct our attention to the correct area in the DIA.	Phase I Site Environmental Assessments were conducted in both 1995 and more recently in 2012 as part of the present work. The "Pup" powerhouse was included in the scope of the studies and assessments were done for both hydrocarbons and PCBs. This study can be provided to the TSW and EC if desired. With respect to PCBs the Phase 1 indicated that: "there is no known in-service PCB-contaminated pieces of equipment at the Ranney Falls GS. Three askeral potential transformers were in place in the powerhouse in 1995. The units were taken out of service in October 1995 and replaced by dry transformers. The contents of the three transformers and contaminated equipment were placed in the Campbellford Service Centre PCB storage site. The main indoor transformers have a PCB content of 4 ppm while the "Pup" transformer has a PCB content of 27 ppm. A spill report was obtained for a spill from a voltage transformer that occurred in December 1990. Only 0.5 L was spilled. All cleanup materials were shipped to the Campbellford Service Centre PCB storage site. A record of testing of the oil in the transformer confirmed that the PCB content was less than 2 ppm." Section 4.1.3 now has a statement indicating that the map turtle area is free of PCBs. The DIA does outline in general terms how the Pup is to be decommissioned but it should be noted that the equipment inside the Pup will not be dismantled.

Section	Comments	Response
4.1.3 Wildlife P. 4-10	It is noted that the onsite chimney which is potential chimney swift habitat (although has never been recorded to have been used) was capped on March 19, 2012. However, it was not clear if this will remain permanently capped or if this is only for the duration of the project. CWS is currently recommending that this feature remain capped until further notice.	OPG agrees with the comment. The intention is to keep the chimney capped. No change is proposed to the text.
4.1.3 Wildlife P. 4-11	While the DIA outlines how the fencing (and the timing for its installation) will be used to mitigate impacts on nesting SAR turtles it does not include a strategy for what should be done if these turtles and/or nests are found within the fenced off area. Please include this information within the DIA and in the Environmental Management Plan. Mitigation measures related to inspecting the site prior to the start of construction and what actions contractors should take if they note SAR within the site should also be included.	The turtle fencing was installed in ground to a depth of two to four inches in order to prevent the turtles from accessing areas beyond the fence. During construction OPG will ask the contractor to have the environmental monitor daily check the area to ensure no turtles are going below the fencing. For whatever reason should a turtle nest beyond the fencing during the breeding season, the fencing will be moved back to let the hatchlings access the water. This point has been added to section 4.1.3.
4.1.5 Pollution P. 4-28	It was noted that the groundwater shows elevated concentrations (above the PWQO) of benzene, phenolics and n-hexane that are considered non-anthropogenic. It was also noted that it is recommended that a monitoring program be developed to confirm that any groundwater which accumulates within the cofferdam area be suitable for direct discharge to the Trent River and/or Trent Canal based on MOE water	For the 2010 field investigation, details of the groundwater and surface water sampling program are provided in Appendix H1 and H6 of the 2010 Ranney Falls Geotechnical Report. The results indicated higher than anticipated concentrations of silver, sodium and chloride. Resampling was conducted in June 2011 and confirmed the results. At that time, surface water samples were also taken from the Trent Canal up-gradient of the GS. The water samples were field tested for temperature, pH, conductivity, and TDS and laboratory samples were submitted and analyzed for dissolved anions, nutrients, inorganic sulphur compounds, dissolved metals and other select parameters. It was noted that the 2010 work had investigated to a depth of 50 metres below ground surface, which significantly exceeded the anticipated design depth of the proposed

Section	Comments	Response
	management policies. However, please note that any discharges into these water bodies must be in compliance with the *Fisheries Act* s36(3). State that all wastewater must be in compliance with the *Fisheries Act* s36(3) prior to discharge.	excavation. The 2012 groundwater quality investigation program that was undertaken solely focused on groundwater quality at a depth of 25 metres below surface to reflect the proposed foundation excavation. Groundwater from three new wells installed by SENES Consultants Limited, designated as BH12-1, BH12-2, and BH12-3, were sampled for sodium and chloride concentrations. The results of that testing show that the sodium and chloride concentrations are below the standard limits. The 2012 investigation also concluded that no significant issues were present in sampled shallow groundwater at the site with respect to inorganic chemical parameters, as compared to the noted Table 8 standards. No PCB concerns were likewise reported. The following organic parameters were detected in the groundwater samples. According to SENES, concentrations of these chemicals are not expected to meet Sewer Use Criteria or Provincial Water Quality Objectives: • BH12-2: phenols, non-phenols, Total PAH, benzene, toluene, total xylenes • BH12-3: phenols, bis(2ethylhexyl)phthalate, benzene, toluene and total xylenes. A Geotechnical Baseline Report for the environmental assessment was prepared (Geotechnical Baseline Report for Environmental Assessment (GBR-EA) WSP Ranney Falls Hydro Development Project) was prepared in November 2015. It recommended that no effluent be discharged to the natural environment without being tested and pre-treated as needed. The discharges from construction dewatering activities at the site shall meet the applicable quality standards of the receiving water body or system. These include acceptable standards for dissolved metals, inorganic anions and cations, organic chemicals, and other quality parameters such as pH and total suspended solids (TSS). Since the groundwater quality will affect construction dewatering plans, the Contractor is urged to review the full 2012 SENES Environmental Report for more information. Concentrations of chemicals in the groundwater will fluctuate with time and recharge events, so re-sampling prior to and during construction should be considered to assess the persistence of the

Section	Comments	Response
		impacts previously found in 2012. Should there be an issue with groundwater quality with respect to any seepage into the proposed excavation, groundwater will need to be properly treated prior to discharge. The SENES report indicates options for groundwater treatment, which may be considered in allowing construction dewatering discharge to local receptors (with necessary permits) (including the Trent River or the local storm sewer system). Most of the suggestions are related to oxidation processes, using either in-situ or ex-situ treatment techniques. Another possible option involves use of portable Granular Activated Carbon (GAC) filtration systems that could be set up on site to remove organic chemicals from the water and achieve acceptable quality for release. GAC systems may be combined with in-line fractionation or flocculation tanks, or possibly geo-tubes, if necessary, to remove suspended sediment. For direct discharge to local receptors the Contractor will need to carefully consider the reported water quality and plan for some form of approved treatment system, which must have a valid ECA - Environmental Compliance Approval or Certificate of Authorization from the MOECC. Regulatory approval and monitoring of construction performance will also be required. Alternately, water could be hauled to a licensed liquid waste handling facility, but higher costs for this option are to be expected.
6.0 Residual Impacts P. 6-5	It was noted that the DIA mentioned that an Environmental Management Plan will be developed. EC is interested in participating in the review of this plan. We would also like confirmation that the mitigation timing windows (e.g. related to migratory birds and nesting turtles) will be clearly outlined in this plan.	If the TSW recommends that EC should participate in reviewing the EMP that is acceptable to OPG. OPG always requires its contractors to ensure all commitments in its impact assessment reports are adhered to.
8.0 Monitoring Requirements 8-2	It was noted that the DIA mentioned that a monitoring program will be developed to assess the success of the “Turtle Nesting Habitat Mitigation Plan”. EC is interested in participating in the review of this program and receiving its future findings.	Yes OPG did agree to a monitoring program assess the success of the “Turtle Nesting Habitat Mitigation Plan”. As indicated in the DIA the turtle nesting habitat has already proven to be successful in that turtles laid eggs at the site in 2015. As the mitigation plan has been successful OPG does not see the need for an elaborate program, however OPG will monitor the site during and immediately after

Section	Comments	Response
		construction to assess whether turtles are utilizing the site. Following construction OPG wants to ensure the habitat is successful and therefore will undertake monitoring in the first year following construction to assess success. Should nesting not occur in the first year a biologist will be brought in to assess possible reasons for the lack of success and make recommendations to improve success. Once nesting is proven no further follow-up monitoring is recommended. This point has been added to the DIA. EC are welcome to participate in monitoring subject to TSW's approval OPG will also communicate with the Ontario Parks Superintendent since they indicated interest in the plan.
MOECC		
	Include email from MOECC to Jfitchko@senes.ca Feb 24, 2012 in agency consultation appendix & see comments relating to contents and review below	Acknowledged. The e-mail will be acknowledged and the MOE letter included.
Letter from Mark Phillips Surface Water Scientist 2015 10 14	Flooding may result from the changes in river water levels (water levels are predicted to increase by 25 cm upstream of dam 10), shoreline areas which may be subject to additional erosion, nor the potential for methyl mercury production and its potential impacts on fish consumption/aquatic ecosystems.	No flooding will occur with the proposed project. The operations of the new GS are to be in compliance with the existing water levels for the TSW. OPG apologies that this text was not correctly written. OPG has provided revised and corrected alternative text for this operations section.
Letter from Mark Phillips Surface Water Scientist 2015 10 14	Review impacts to water intakes, sewage outfalls, and impacts if the upstream water levels will be increased (mercury levels). None of these issues appear to be addressed in the EIA. The report states that the Campbellford water treatment plant takes water from the Trent River, and the Campbellford sewage treatment plant discharges to the Trent River, but there is no information on how far the intake and	As indicated above, the proposed project will not result in any inundation and will operate according to existing approved water levels by the TSW. Therefore there is no change from the current situation.

Section	Comments	Response
	outfall are from the project area and from Dam #10, and no discussion on how or if the change in river flow or levels will affect them. The report states there will be an increase in water levels upstream of dam #10 by 0.25 metres, but does not include any information on the inundation area or how flooding of lands will impact mercury levels in the river.	
4-31	The report does not provide accurate information on MOECC comments re EA process. Page 4-31 states that MOECC "determined that the proposed Ranney Falls G3 project was subject to federal EA under CEAA and to the Dominion Water Power Act" and refers to "V. Mitchell, Pers. Comm." In fact, MOECC is not in the position to determine what federal process and approvals are required, and we did not provide comments to that effect. Our formal comments were provided in a February 24, 2012 email commenting on the project description – MOE are not sure that should be considered a "personal communication"	Acknowledged. OPG agrees that the wording does not reflect the contents of the letter and that MOECC is not in a position to determine what federal process and approvals are required. Rather the MOE indicated that: the Ontario Environmental Assessment Act does not apply.
	The TofR, page 1-4, states that more flow will be diverted through the Trent Canal and expanded Ranney Falls GS than is currently diverted. It is not clear how this will affect historical or approved range of water levels and flows, and if changes in levels and flows will impact existing wells, water intakes, sewage outfalls (dilution of effluent), and flooding of lands. For example, if water levels are increased, flooding of lands not currently being flooded can increase mercury concentrations in the water. These issues should be discussed in	As indicated above the proposed project will not result in an exceedance in approved water levels. Please see the new Operations section.

Section	Comments	Response
	the DIA.	
Department of Fisheries and Oceans	Include LOA from Chris Strand 2012-07-17 in agency consultation appendix DFO state that the advice provided as part of the letter of advice is still valid as long as the plans related to DFO's mandate have not changed since the issuing of the letter. DFO has no further comments on the Draft DIA. DFO recommend consultation with MNRF regarding American Eel	The LOA has been provided as part of the Public and Agency Consultation TSD. The LOA is still valid. . With respect to the DIA, MNRF has made no comment with respect to the American Eel. The DIA included a discussion on American Eel in the Report and noted that: "In addition to the above mitigation measures, DFO recommended that OPG design the new intake structures such that future installation of fish screens is possible. Currently, American Eel numbers are extremely low within the TSW; therefore, no eel mortality has been observed at the Rainey Falls GS. If American Eel populations increase within the TSW, OPG may be asked to provide additional mitigation at the Rainey Falls GS to protect this fish SAR. The Project will ensure that future mitigation can be accommodated if necessary.
Transport Canada		
4.2.1.3	TC Aboriginal Consultation Officer has the following suggestions: - suggests that sub-section 4.2.1.3 (Aboriginal Consultation) be updated to reflect all recent AbC actions to date, as the current text in the DIA seems not up to date (it mostly mentions 2012 actions). There was a recent (2015) letter / meeting with the interested First Nations and public information sessions. - Further to the recent (2015) letter, meeting or info sessions with the interested First Nations, could you or the proponent please provide any documentation associated with this (i.e. the actual letter, Meeting Minutes or Session Notes) as it was understood that Transport Canada's role in the AbC efforts would be mentioned to the interested First Nations. - TC AbC role and efforts should be reflected in sub-section (Aboriginal Consultation). TC would like a copy of the Appendix for the First Nations Consultation	Transport Canada's role was discussed at these sessions. The DIA will be updated and Aboriginal Consultation TSD circulated.

Section	Comments	Response
	and the TSD report for review and file.	
MNR		
Ministry of Natural Resources and Forestry	Oct 01, 2015 requested ELC Figure 3.1 with better resolution than DIA for review – MNRF do not have any further comments at this time other than keeping Ferris Provincial Park folks involved where the project may impact the park e.g. access	A figure with better resolution was sent to the TSW and MNRF. With respect to the second issue, OPG has already acknowledged that it will work with MNRF on ensuring access to Ferris Provincial Park during the construction period. OPG fully agrees with the intent of the comment.

Section	Comment	Response
Parks Canada, Trent-Severn Waterway (TSW) comments on draft Detailed Impact Analysis (DIA) for G3Expansion of Ranney Falls Generating Station October 28, 2015 TSW reviewer Eileen Nolan, Environmental Assessment Officer.		
Parks Canada – Trent-Severn Waterway		
1.0	Include all correspondence referenced from agencies into an Agency Correspondence appendix.	Acknowledged.
2.2.3	Use of term Headworks Structure instead of weir in DIA text is fine – for consistency change to Headworks Structure on all Figures too.	Note that the term headworks structure has now been replaced with the term Forebay intake Structure and is now consistent in all DIA and TSDs.
Fig 2.3 on Page 2-6	The 'compass' symbol in top left corner is reversed – correct in final DIA	Acknowledged. OPG will either eliminate this or correct it.
Fig 2.5 Also in Section 4.2.4	Show location of proposed laydown areas (as stated in s2.31 3rd paragraph) on drawings in DIA. Also include PCA lands that are requested for use for this project	Acknowledged. The figure with the laydown areas has been provided.
Heated by-pass gates	Construction of a new spillway for by-pass flow is mentioned in several sections – state that the structure will be heated….e.g. …….heated by-pass gates –state as such in each section that addresses the new spillway. • See email "Notes on TSDs" dated May 8, 2015 Item 4 (copy of email attached)	Acknowledged – heated gates are now mentioned in the Report.
Page 2-10 and 2-11	Include DFO guidance document in list : C*anadian Technical Report of Fisheries and Aquatic Sciences 2107 Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters. 1*998 Department of Fisheries and Oceans	Acknowledged. These will be added.
Page 2-12	Keep TSW informed on progress with access management plan (to be developed with Ferris Provincial Park staff)	Acknowledged.

Section	Comment	Response
Page 2-13	In paragraph 5 reference SAR turtle compensation plan and its appendix #.	Please note that there is a Turtle Nesting Habitat Mitigation Plan not a SAR turtle compensation plan. See Section 4.1.3.
Page 2-14 1st paragraph	This section (and a few other sections in the draft) states that the operating deck of the Headworks structure will require rehabilitation during construction of G3. Provide scope of work if rehab work is to be scoped into this DIA or state this will be addressed later as a separate project. • See email "Notes on TSDs" dated May 8, 2015 Item 2 (copy of email attached)	Acknowledged. The headworks structure piers (note that the term headworks structure has now been replaced with the term Forebay intake Structure and is now consistent in all DIA and TSDs) will be resurfaced and decking will be replaced with new ones. See Section 4.3. See Pg 2-15 under title called Forebay Intake Rehabilitation
Section 2.3.1 Construction Page 2.20	State that following hiring of contractor an Environmental Management Plan (EMP) will be developed and provided to TSW for review. EMP will incorporate mitigation measures to address final design plans including grouting and removal of rock plug and sediment and erosion control plan.	This point is generally acknowledged. An EMP is to be developed by the contractor and provided to the TSW for review. The EMP does typically identify how mitigation is to be addressed. OPG does require its contractors or itself to ensure all commitments in the DIA are met. However, some details on very specific work activities may not be in an EMP but may be in later construction stage documents such as workplans or component environmental management plans (each constructor has their own names for these types of plans) which would likely provide even more specific detail. OPG is fine with sharing this information with the TSW to review and therefore proposes the following text. "After the Civil Contractor is retained, they will develop an EMP that will be provided to the TSW to review. That EMP will be cover a number of details but may not include all the details such as rock plug removal in the EMPs. However, OPG is willing to involve the TSW in a further review of the grouting and removal of the rock plug activities when those work activities are further planned out."
	Can you provide some information about whether or not (or if still under discussion) if the existing power station will remain operational during some or all of construction phase. • See email Notes on TSDs dated May 8, 2015 Item #7	Acknowledged. During civil work the existing station will not run. During the second phase of new unit installation and commissioning, the existing station will be in operation. This has been clarified in the revised Project Description.

Section	Comment	Response
Page 2-19& Page 3-1	Provide copy of geotechnical report to TSW and include in appendices.	Acknowledged, OPG has provided this.
Page 2-20 3rd parag.	Change to 'Section 2.0' (information is not located in Section 1.0)	Acknowledged
Section 2.3.2 Operation Page 2.20	TSW Operations and Water Control Engineer have reviewed this section and in order to clarify that TSW will have the final call in flow levels include the following statement: ***Flow levels will be monitored throughout navigation season to ensure safe navigational conditions, should operational concerns be identified flows will be curtailed and/or additional safety measures will be installed. The Director of the Ontario Waterways Unit shall be the sole judge of the quantity of surplus water available for use by the Licensee.***	OPG has provided revised text to address this concern.
3.0	Could you send a copy of the geotechnical survey and bathymetric evaluation to TSW for our files	The geotechnical report has been provided. The bathymetric evaluation that was referred to was the Trent River bathymetry collected by George Coker of C. Portt & Associates. The bathymetry maps were included in the Aquatic TSD. There was no stand-alone bathymetric report.
3.5 Soils Last paragraph	The following statement is located in Aquatic TSD Page 2-3 (last line of 2nd paragraph) and could be added as a final statement in 3.5 for clarification, i.e. *It was concluded that hydrocarbons occur naturally within petroliferous or bituminous shale rocks.*	OK – we can insert this point. The point is made in more detail in the existing groundwater section.

Section	Comment	Response
3.14	Bullet points ….should Eastern Snapping Turtle be included in this list of species? It is on Schedule 1 of SARA	Snapping Turtle is mentioned on the following page: "Environment Canada, CWS (2010/2011) distribution range mapping is also not available for Eastern Snapping Turtle. This species is designated as Special Concern federally and provincially and has been observed on the Ranney Falls GS property."
Page 3-26	Ferris Provincial Park state that access to the suspension bridge will not be affected as a result of the project or reference where additional information on plans are located in the DIA.	In Section 2.2.5 the issue of access to Ferris Provincial Park is already described. This is also described in more detail in 4.2.4.
Page 3-30	Community of Campbellford ..1st line …the population of Campbellford **swells** with …	Acknowledged. Change made.
Page 3.31 & Page 3-32	Include Mississaugas of Scugog First Nation with other 3 FNs in bullet points…..or short explanation how they became involved (ref our phone call last week)	Acknowledged. This is mentioned 5 paragraphs below.
Page 3-33 Middle page	Include the wording Cultural Heritage Landscape with CHL to explain meaning of acronym. Also include on page 4-38.	Acknowledged. The acronym is spelled out twice in the Report.
Page 3-34	The wording ….*and complete clearance of the archaeological condition on the site was recommended* is unclear – could you clarify what this means.	This merely indicates that no further assessment or mitigation is required.
4.0	A paragraph listing the TSDs with a brief explanation about the detail that the studies provided would be helpful here. and that the DIA captures the results and recommendations provided by the TSDs… they can also be included in the appendices. The applicable TSD appendix should be referenced in key sections of the DIA.	Acknowledged. A paragraph has been added.

Section	Comment	Response
4.1.1 Page 4-1	State that a sediment and erosion control plan will be developed by the contractor for the Environmental Management Plan (EMP) and will be subject to review and feedback from TSW.	Acknowledged. This point has been added.
Page 4-2 Landform	As indicated in Section 2.3.1…. (not in 2.3.2)	This now just refers to section 2 generally.
Page 4-3	State that Site Development Plan will include mitigation measures for sediment and erosion control.	We would prefer not to add this to the Site Development Plan. OPG has already indicated that a sediment and erosion control plan will be developed as part of a broader Environmental Management Plan and that OPG will provide this for TSW to review. Also, the Site Development Plan would not normally contain details on temporary construction measures.
Page 4-3	Sentence beginning with ….. *No effects on geology and ….* is unclear – perhaps it should state… following completion of work and operation of G3?	Agreed. A statement is made that this is the case following construction.
Page 4-3 Soils	Reference Aquatic TSD page 2-3 for sentence beginning with… *Elevated concentrations of metals…*	Acknowledged. The reader is encouraged to examine the Aquatic TSD for more details.
Page 4-4	With reference to statement that *Exposed soils will be stabilized as soon as sufficiently dry* conditions prevail….– this would be unacceptable to TSW --- a proper sediment and erosion control plan with appropriately placed silt fencing would need be in place in advance of construction so as to prevent till and gully erosion. State that sediment and erosion control techniques, as part of the EMP, will be in place prior to commencement of construction.	The intention of the text has been somewhat taken out of context, however, OPG agrees that sediment and erosion controls need to be in place as required prior to activities that may result in erosion and sedimentation. OPG will re-iterate this point.
Page 4-4	Bullet point 6: TSW recommend 30 meter, 5m is too close to shoreline unless there are no other options available.	The wording of this could be slightly better. The emphasis on distance is somewhat misplaced as the real intention is to prevent any movement of soils or sediment. As well, there may be cases where soil is to be excavated within 30 meters of shore and therefore must be immediately placed within that 30 meter limit. All that being said, OPG is in agreement with TSW's general concern. Therefore, we propose the following text: "any storage of stripped materials is to be placed in stable locations which will prevent the movement of the materials (soils, sediments)" and that

Section	Comment	Response
		"any short-term storage of soil near shoreline is only to be done on a temporary basis and with appropriate controls in place to prevent any off-site movement. Soils stripped near shore should be moved as fast as possible to stable locations."
Page 4-5	1st sentence – include …and will be provided to TSW for review and feedback.	Acknowledged. Change to be made.
Page 4-5	Change all "should be" statements to "will be" Middle paragraph – sentence beginning with *Fuelling and lubrication of construction equipment ……* include the statement that this will occur *at a minimum distance of 30 meters from watercourse.*	Agreed. These statements should be will. OPG acknowledges that re-fuelling 30 meters or more from a watercourse is a good practice and is outlined in the Liquid Fuels Handling Code. However, most of the Ranney site is within a 30 meter radius of either the canal or the River. For mobile re-fuelling, the Liquid Fuels Handling Code allows for a modification to procedure where the mobile re-fueller has an approved procedure to prevent the loss or escape of product from: (a) creating a hazard to public health or safety; (b) contaminating a fresh water source or waterway; (c) interfering with the rights of any person; or (d) entering into a sewer system, underground stream, or drainage system. As OPG will require its constructor to develop an environmental management plan, the constructor will be obligated to provide a procedure that addresses (a) through (d).
Page 4-5	*No effects on soils anticipated ……. no mitigation required* – this sentence is a bit vague …. perhaps this refers to after all work is completed and the proposed G# is operating? Same comment as in Page 4-3 above	Yes the comment was in context to after construction is completed.
Page 4-9	3rd paragraph change to *…..noise baffling equipment **will** be provided…*	OPG and its contractors will ensure adherence to the noise by-law.
Page 4-9	Bottom of page notes Section 4.3.6 – this section is not in DIA …should this be section 3.8 ?	Acknowledged. We will revise to correct.
Page 4-11	2nd paragraph re enhancement plans also name Environment Canada.	Acknowledged.

Section	Comment	Response
Page 4.12	2nd paragraph --- change word 'could' to 'will' i.e. *…plant species will be created…*	We think TSW has misinterpreted the text. OPG has agreed to habitat enhancement in areas that will be potential affected by the project. However, OPG does not think it should be required to do habitat enhancement in other areas.
Section 4.1.4.2 Page 4-13	*…..as indicated in Section 2.1* …not there should this be Section 2.3?	Should indicate 4.1.1.
Section 4.1.4.3	Within this section state: *However, as indicated in Section 2.3.2 flow levels will be monitored throughout navigation season to ensure safe navigational conditions, should operational concerns be identified flows will be curtailed and/or additional safety measures will be installed. The Director of the Ontario Waterways Unit shall be the sole judge of the quantity of surplus water available for use by the Licensee.*	OPG has discussed this with TSW and both parties have agreed to the revised description.
Page 4-23	Last Paragraph…. Is there any new information about the Kaplan unit that will be installed in the G3? if so, can this be provided to update this section.	There is no new information on the Kaplan unit at this point
Page 4-25	Reword … *that the potential American Eel issue **will** be reassessed as updated information on their presence within the TSW becomes available*. & At end of the opening paragraph entitled Risk Management state that DFO have advised that the advice provided as part of their Letter of Advice (LOA) dated July 17, 2012 is still valid as long as the plans related to DFO's mandate have not changed since the issuing of the LOA. There have been no changes.	We agree with the TSW in that this wording is a bit confusing. We have proposed the following alternative wording: "The potential American Eel issue will be reassessed if new information on their presence in the TSW becomes available."
Page 4-28 Groundwater	There is no Section 4.4.2 – correct to state where the referenced information is located	Acknowledged.

Section	Comment	Response
Page 4-29	1st line….there is no Section 5.2.2 - correct to state where the referenced information is located. Also that : *..a site specific Sediment and Erosion Control Plan will be prepared and implemented* ***prior to*** (not during) *commencement of construction*. In addition that the plan will be provided in EMP and sent to TSW for review and feedback when contractor is hired.	Acknowledged. This will be corrected. It should be prior to construction.
Page 4-29	3rd paragraph silt curtain information is not in Section 2.1 - correct to state where the referenced information is located. Also at end of this sentence state that a detail plan for removal of the rock plug & cofferdam will be provided in the EMP. 4th paragraph state that fuelling and lubrication…..will be done at a recommended 30 meters from watercourse. MOE spill line should be provided here 1-800-268-6060	Acknowledged. Will be revised. Acknowledged, specific procedures will need to be developed for the rock plug and cofferdam removal and will be reviewed by TSW. Please see our previous comment about fuelling within 30 meters of the water course. Acknowledged, will add other points on fuelling 30 meters from shore and MOE spill line. Acknowledged
Section 4.2.1.1 Page 4.30	2nd bullet point ….provide web link	Acknowledged
Page 4-32	Review of Public and Agency Consultation TSD …. Nolan is misspelled (not Nowlan)	Acknowledged
Page 4-33	Last paragraph …could you provide a sentence or two to explain how consultation went for 3 to 4 FNs (ref phone call last week)	Acknowledged
Section 4.2.4 Public Safety Page 4-37	Also include following statement*: As indicated in Section 2.3.2 Flow levels will be monitored throughout navigation season to ensure safe navigational conditions, should operational concerns be identified flows will*	Revised language has been agreed to with TSW

Section	Comment	Response
Section 4.2.4 Public Access	*be curtailed and/or additional safety measures will be installed. The Director of the Ontario Waterways Unit shall be the sole judge of the quantity of surplus water available for use by the Licensee.* There is no Section 4.5.1 and see note in Figure 2.5 above	
Page 4-38 Built Heritage	Include the wording Cultural Heritage Landscape for CHL	Acknowledged
Page 4-41	Last paragraph: Council resolution is not included in Socio–Economic Appendix A of TSD	OK. This may have not been referenced properly. It is in some appendix.
Page 5-2	Nowlan misspelling …should be Nolan	Acknowledged
Additional TSW Comments (note page numbering is likely incorrect as this comes from the Cultural TSD		
Sections Page ES-1, 4th paragraph, 1.21 last parg	references the Canadian Environmental Assessment Act 2012 (CEAA 2012) - this could include: Parks Canada's legal accountability under CEAA 2012 is to ensure that project activities undertaken on the lands it manages do not result in significant adverse effects (Section 67 CEAA 2012). Parks Canada has jurisdiction over the bed of the canal at Ranney Falls.	This change has already been made.
Page 1-1 &1-6 & 1-8 & 1-12 & 1-14	Could the DIA include an outline of the nature of the repairs to be undertaken on the operating deck, and portions of the supporting piers under the deck at forebay intake structure.- TSW Engineering Dept (Mary) will review when drawings of the proposed work is available .	Acknowledged. More detail has been provided.
Page 1-10	Include more detail about rock trap	Acknowledged. More detail has been provided.

Section	Comment	Response
Page 1-10 (6th paragraph) & 1-11(5th & 7th paragraph)	addresses the vertical sliding steel gate (8.5m x 5.5m) and supporting superstructures, the TSDs don't state that they will be heated (we spoke about this already)- in the DIA state that the gates will be heated and include any additional detail on design/installation that is available also the back-up power generator - and all subject to review and approval by TSW Water Control and Operations	Acknowledged. More detail has been provided.
Page 1-11 (1st paragraph)	check if the east and west alignment are correct	Acknowledged. We reviewed this section and have made a few changes.
Page 1-12	Laydown area to be shown on drawings in DIA (got this thank you)	Acknowledged. This has been revised.
Page 1-13	will G1 & G2 remain on line throughout construction ? or perhaps be shut down for part of the time ? - could the DIA elaborate on this. Methods to remove the rock plug i.e. where/how the rock plug will be breached and water brought back into the expanded tailrace and forebay and installation/placement of cofferdams could also be elaborated on. Again with the understanding that when the contract is awarded the contractor will recommend a plan - and this may change depending on construction factors that present themselves as the project evolves, but the plan of action with best information available at this time can be included in the DIA .	Yes there will need to be a shutdown. This has been described further in section 2. More information has been provided on the rock plug.
Page 1-14 (2nd and 23rd paragraph)	provide more detail on grouting along excavation line and grouting curtain in rock plug in DIA	Acknowledged. More detail has been provided.

Section	Comment	Response
Page 1.15, 1-18, 1.19	the summer flows through the generating station will be determined through further discussions with TSW Water Management and Operations - some concerns have been raised about increased flows during navigation season.	Acknowledged. Further discussion has occurred with the OPG on this matter.
Page 1-19, 4th	show proposed new position of safety booms	OPG has provided a figure that shows conceptually where the safety booms will be located. The locations may be altered prior to final implementation. The re-installation of the safety boom will be undertaken in consultation with Transport Canada.
Page 1-20	have MTC reviewed the Cultural TSD? - any comments?.. Parks Canada CRM are satisfied that there are no known indicators that cultural artifacts may be encountered as the landscape has been significantly excavated over the past century.	The Ministry of Tourism Sport and Culture did not and would not review the TSD as it is not within their mandate. However, they did review the Stage 1 Archaeological Assessment prepared by Advance Archaeology. The Report was accepted by the Ministry without special comment.
Page 3-1	will the Access Management Plan in the DIA provide more specifics on when access disruptions will occur and for how long and how public will be advised (website, newspaper)? There was some discussion about an interpretative signs i .e turtle habitat, Pup building - could be discussed further later.	We don't intend to provide any more detail in the DIA at this point. There isn't really much more that can be said until a constructor is on-board. Obviously, the intention is to minimize or eliminate access disruptions and various forms of communication can be considered but the communication tools should be commensurate with the extent of the disruption. As previously stated, the access management plan will be discussed with TSW and Ontario Parks and also the municipality. OPG is open to discuss interpretive signs at a later date.
Page 9, Stage 1 report Map 3	spillway will be located between existing the GS 1&2 powerhouse and new G3 powerhouse - (Map 3 on opposite side is from earlier plans).	Acknowledged. But we do not intend to update the map in the Stage 1 archaeological assessment report. This was a study done a few years ago and there is no point in re-engaging the consultant.